COUPLE FUNCTIONING AND HEALTH IN CANCER PATIENTS AND THEIR PARTNERS

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ABSTRACT

When one member of a couple is diagnosed with cancer, both members experience many physical, psychological, and relational changes. These changes are also dependent on several contextual factors including the type of cancer, whether an individual is the patient or partner of the patient with cancer, individual responses to cancer, and relationship dynamics. This dissertation investigated the links between cancer type, additional patient health stressors, role (i.e., patient versus spouse), and gender in 679 couples across four types of cancer: head or neck, lung, breast, and prostate cancer. I also investigated the potential for bidirectional associations between individual responses to cancer and relationship functioning as well as communication patterns as a mediator of the aforementioned association. Couples coping with head, neck, and lung cancer were the most distressed. Spouses experienced more relationship functioning difficulties than patients. There were no differences in couples where the patient was male versus female, a crucial contribution to the current literature. Psychological health and relationship satisfaction were bidirectionally associated. Findings are discussed within the context of cancer research as “moving target” of study.

This dissertation is dedicated to Elisabeth Elsner; my Oma and Elizabeth Leahy, my mother. Oma, you have been my humbling anchor. Mom, you have been my guiding light on this voyage. The E in my name is for both of you. May this document live in service of your support, strength, and perseverance.

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CLOSE RELATIONSHIPS, STRESS, AND HEALTH

Nearly 35 years ago, House et al. (1988) published their seminal paper providing clear evidence that our social relationships are closely tied to our physical health. More recently, the Holt-Lunstad et al. (2010) meta-analysis found that people with close social ties were more likely to live longer. Put simply, our close relationships and health and well-being are connected. This dissertation focused on understanding the role of major health stressors in married or long-term cohabitating (primarily but not exclusively heterosexual) couples coping with a range of different cancers. Specifically, I examined couple functioning in 679 couples for which one person has head or neck cancer, lung cancer, breast cancer, or prostate cancer. These data come from studies conducted by Manne and colleagues (2010; 2012; 2019; 2016). First, I examined how individual functioning (e.g., psychological distress) and couple functioning (e.g., communication, relationship satisfaction) differ as a function of cancer type. Second, I examined how health factors, such as indicators of additional serious health problems (e.g., comorbidities, functional impairment) relate to individual and couple functioning. Third, I examined how gender (being a man or woman), role (being a cancer patient or the partner), and being in a couple where the patient is female (versus male) relate to individual and couple functioning. Fourth, I examined bidirectional associations between couple functioning and individual distress. Fifth and finally, I examined whether communication patterns (e.g., constructive, demand/withdraw) mediate the links between individual functioning and couple functioning.

Married and cohabitating couples have been a focus of research on the links between close relationships and health, particularly in the subfield of coping with cancer. Couples who live together spend much of their time with each other, giving them many opportunities for positive and negative interactions. Couples must navigate challenging circumstances to maintain

their individual and relational health, which may vary by the type of cancer they experience and the degree of health stressors they encounter. Research shows that positive interactions are associated with better health and negative interactions are associated with worse health (Slatcher & Selcuk, 2017). Conflict and hostility within couples are associated with elevated inflammation markers, slower wound healing, and worse endocrine functioning (Kiecolt-Glaser et al., 1997; Kiecolt-Glaser et al., 2005). On the flip side, worse health is also associated with more marital distress or lower relationship quality. In other words, there is evidence to suggest that the links between marital quality and health are bidirectional (Karney & Bradbury, 1995; Robles et al., 2014). In a meta-analysis examining the links between marital quality and measures of health, better physical health, having less pain due to a disability, and fewer self-rated symptoms were associated with higher quality relationships (Robles et al., 2014). Additionally, these links were stronger for women than men, highlighting the need to examine gender as a moderator of the link between health and relationship functioning (Revenson et al., 2005).

Couples coping with chronic illness

Couples must navigate serious life changes that occur when one person is diagnosed and treated for major illnesses such as cancer. They may need to renegotiate roles, make alterations to life plans, and adjust to greater uncertainty for the future. The past few decades of research on chronic illness in couples has considered coping with chronic illness as a dyadic process. Berg and Upchurch (2007) have proposed a developmental-contextual model of couples coping with chronic illness. The model assumes that when one individual is facing a chronic illness, the adjustment and coping resources of both partners are activated. The patient and partner are an intimately connected unit influencing each other's appraisal, coping resources, and overall adjustment. Dyadic appraisal is defined as how couples construct or understand the illness'

presence or role in their lives. Dyadic coping can be defined as the strategies couples use to manage their own and their partner's stress related to the chronic illness. Distinct from classic understandings of individual coping (e.g., Lazarus & Folkman, 1984), dyadic coping involves how individuals perceive their own as well as their partner's coping effort in an interconnected unit. Coping may be cooperative, supportive, uninvolved, or even controlling. Dyadic adjustment can be defined as how couples function and adapt as a unit to the chronic illness (e.g., well-being, relationship satisfaction). Configurations of coping and adjustment are also situated in broader social and relational contexts. That is, coping and adjustment may differ as a function of the quality of the couple's relationship, their appraisals of the illness, and their renegotiation of the balance and structure of social roles.

Checton et al. (2015) provided a demonstration of this model in a sample of couples where one person had a non-visible illness (e.g., a heart-related, endocrine, psychiatric, rheumatologic, digestive, pulmonary, neurologic, or hematologic condition). The authors examined associations between patients' and partners' reports of relationship quality (their proxy of dyadic appraisal), support (dyadic coping), and health condition management (dyadic adjustment) in an actor partner interdependence model (APIM; Kenny et al., 2006). Happier couples provided more support to one another, and the more couples supported one another, the better the illness was managed. However, when the illness interfered in the couple's lives to a great extent, they provided less support and reported worse management of the chronic illness. This result is consistent with the challenges that patients and partners face when coping with chronic illness, as well as provide support for the developmental-contextual model outlined here.

This model has also been tested with couples in which one person has cancer. Some participants in this study had sex-linked cancer (e.g., gynecologic, male genitourinary) while

others were not sex-linked (e.g., hematologic, throat/neck, digestive). Magsamen-Conrad et al. (2015) found communication efficacy was higher for both patients and partners when patients reported higher relationship quality. In contrast, when partners reported high relationship quality, communication efficacy was higher only for the partner. A highly uncertain cancer prognosis was associated with worse communication efficacy. However, when couples reported better communication efficacy, this was associated with better management of the cancer. In sum, the investigations by Checton et al. (2015) and Magsamen-Conrad et al. (2015) provide support for the developmental-contextual model as well as provide insights into common experiences of patients and partners adjusting to cancer and other chronic illnesses. This model will guide some of the proposed analyses in this dissertation.

In general, cancer is a stressful chronic illness and can have impacts on patients and partners even after treatment ends (Kim & Given, 2008). Like many other chronic illnesses, patients with cancer and their partners experience three common themes. First, they experience disruptions in their daily lives including role and responsibility shifts. Often, the partner without the chronic illness takes on more of the ill partner's responsibilities or fulfills their role entirely (Given et al., 2001). Second, partners report increases in caregiving demands for which they may not necessarily feel prepared. They often become caregivers with little to no training or assistance, which can leave them feeling less supported by their ill partners. As caregivers, partners are at an increased risk of feeling burnt out and developing mental and physical illnesses themselves (Braun et al., 2007; Ji et al., 2012). Third, couples must deal with the emotional toll that cancer brings which involves managing each other's emotional lability, distress, and uncertainty (Harden et al., 2002; Sprung et al., 2011). Patients deal with the grief and loss of their physical health, life plans, and cope with physically and emotionally taxing treatments.

Partners feel this burden, too, and may feel unequipped to help their partner deal with these changes (Kim et al., 2006). Although these experiences are common across all types of cancer, it is important to understand the unique challenges associated with different types of prevalent cancers. Cancer experiences vary widely due to the location of the cancer, the stage at diagnosis, the intensity of the treatment, and the likelihood of recurrence.

Key concerns in four types of cancer

Although there are many common experiences when one member of a couple is diagnosed with cancer, the type and location of the cancer affect the physical and psychological challenges faced by patients and partners. This section will detail, for each type of cancer covered in this dissertation, the prevalence of the cancer, survival rates, the intrusiveness of treatment, and research findings regarding the effects treatment has on marital relationships. Illness conditions and representations are key components of the developmental-contextual model (i.e., illness condition is a moderating factor, illness representation is part of dyadic appraisal), such that the type of illness and couple's appraisal of that illness are associated with individual and couple functioning.

Head and neck cancer

The 5-year survival rate of head and neck cancers (i.e., the percentage of individuals who survive at least five years after the cancer is identified) ranges from 58% to 75% (*Head and Neck Cancer: Introduction*, 2021). Head and neck cancer treatment involves major surgeries that can result in disfigurement in the head and throat and ultimately disrupt patients' basic functioning such as the ability to eat, breathe, and speak. Thus, a major consideration during treatment is preserving the patient's functioning, and reconstructive surgery and forms of therapy may be necessary (*Head and neck cancers*, 2021). Disruptions to eating, breathing, and talking take a

psychological toll on the individual and their partner. For example, patients with head and neck cancer describe undergoing treatment as isolating and report many difficulties with speech (Fletcher et al., 2012). They also report intolerance of larger group settings and report not communicating for very long due to pain. With disruption to these basic activities, patients report feeling a "loss of togetherness" being unable to participate in mealtimes with family and friends the way they used to (Larsson et al., 2003, p. 566). Partners feel this loss, too, and make changes to their daily lives as they take on the caregiver role. Partners report patient's dysphagia (difficulty swallowing) as a strain on the relationship as they struggle to find food that is appropriate for the patient and worry about them choking or aspirating during the meal (Nund et al., 2014). In essence, patients with head and neck cancer and their partners worry daily about the changing conditions under which they must perform basic tasks and functions.

Lung cancer

Lung cancer is one of the most common types of cancer diagnosed in men and women. The 5-year survival rate for people with non-small cell lung cancer ranges from 26% to 64% and 7% to 29% for those with small cell lung cancer (*Lung Cancer Survival Rates*, 2022). Lung cancer is often diagnosed at later stages (Manser et al., 2003) at which point patients experience significant declines in health and functional status. Thus, the prognosis of lung cancer is very poor (Carlsen et al., 2005). Patients cite fatigue and pain as among the most distressing symptoms they experience (Cooley et al., 2003). These declines in health are an important risk factor for developing depression (Hopwood et al., 2000). Some literature suggests that lung cancer patients are among the most distressed cancer patients (Houts et al., 1986; Zabora et al., 2001).

Although not all patients with lung cancer were smokers, there is still considerable stigma associated with lung cancer. Current and former smokers with lung cancer report feeling more internalized stigma related to their cancer than individuals with lung cancer who never smoked (Williamson et al., 2018). Patients with lung cancer report feeling more ashamed and embarrassed of their cancer than patients with breast and prostate cancer, and also feel their behavior (smoking) contributed to their cancer diagnosis (LoConte et al., 2008). People with lung cancer also report feeling disconnected from their social network due to stigma. In a qualitative study of lung cancer patients, individuals reported family members feeling uncertain about how to treat them, and sometimes considering them to be dirty or at fault for having the cancer (Chapple et al., 2004). Unsurprisingly, lung cancer patients report withdrawing from their loved ones shortly after diagnosis and feeling otherwise socially isolated (Missel et al., 2015). This can take a toll on their relationships. Patients who reported high levels of shame and guilt related to lung cancer engaged in lower rates of relationship talk with their partners (Dirkse et al., 2014). This shame was also associated with lower relationship satisfaction. Partners of patients with lung cancer are also very distressed after taking on the caregiving role. Though their personal experiences vary, partners report oscillating waves of many negative emotions: worry, distress, and unfairness (Pusa et al., 2012). In essence, couples experience considerable levels of distress throughout the prognosis of lung cancer.

Breast cancer

After skin cancer, breast cancer is the most common type of cancer diagnosed in women[1]. Although men can also get breast cancer, they make up less than 1% of cases (Jemal et al.,

[1] At the time data were collected, participants were asked whether they were male or female and thus gender identity was not ascertained. Within the scope of this dissertation, man and male were used interchangeably as was woman and female.

2008). Because all the individuals with breast cancer in the current study are women, I will focus this section on discussing breast cancer in women. The 5-year survival rate for breast cancer ranges from 29% to 99% (*Breast Cancer: Statistics*, 2022). Like head and neck cancer, breast cancer is distressing because treatment is invasive and potentially disfiguring. However, instead of affecting basic bodily functions, treatment may involve surgery (e.g., mastectomy) that alters a woman's appearance and how she feels about her body. In general, women report struggling with their sexuality and femininity (Weber & Solomon, 2008). Following a mastectomy, women reported more shame and less satisfaction with their appearance (Moreira & Canavarro, 2010). In a qualitative study of breast cancer patients, women reported struggling with their self-esteem after losing their hair due to treatment (Williams & Jeanetta, 2016). After treatment, women experience greater difficulties with sexual functioning. They report decreases in sexual pleasure, feeling less desirable, and less intimacy (Emilee et al., 2010; Ussher et al., 2012). Overall, these experiences can be demoralizing for women who report substantial changes to their conception of womanhood (Ussher et al., 2012). Intimacy between partners is also affected and maintaining it is important for the patient and her partner (Manne & Badr, 2008). As sexual functioning is affected by cancer treatment, couples often navigate this issue by finding other ways to maintain closeness and intimacy in their relationship (Hawkins et al., 2009). Partners of women with breast cancer (typically men) also experience distress as changes occur in their relationship. Women describe a wide range of responses from their partners following diagnosis including emotional withdrawal, over controlling behavior, and anxiety (Sprung et al., 2011). Partners of women with breast cancer report feeling fatigued and somewhat unprepared to take on their wives' responsibilities (e.g., housework, grocery shopping, errands; Lopez et al., 2012). In a

qualitative study, men reported making major life changes to care for their wives and reduce her stress (Chung & Hwang, 2012).

Prostate cancer

After skin cancer, prostate cancer is the most common type of cancer diagnosed in men. The 5-year survival rate for prostate cancer ranges from 31% to 99% (*Cancer Facts & Figures*, 2022). Many of the available treatments for prostate cancer including radiation therapy, prostatectomy, and androgen deprivation therapy leave men suffering with hormonal, urinary, bowel, and sexual functioning issues. Men often describe these issues as challenging and affecting every part of their lives. For example, one study found bidirectional associations between functioning and emotional distress such that worse urinary, bowel, and sexual functioning was associated with greater emotional distress and vice versa (Orom et al., 2018). In another study, men with greater urinary and bowel symptoms also had higher anxiety (Sharp et al., 2016). Because these symptoms can be embarrassing to discuss, men most often confide only in their wives (Jakobsson et al., 1997), who play a significant physical and emotional caregiving role. There are major shifts in household responsibilities and wives struggle to keep up with household tasks (Harden et al., 2002). Social dynamics within the couples may change during treatment as well. In a study of couples' experiences with prostate cancer, patients felt fatigued, were unable to work, and experienced financial difficulties while their partners felt perpetually worried about the cancer and took on the role of a round-the-clock care provider (Harden et al., 2006). Wives of men with prostate cancer take on the brunt of the caregiving burden, often experiencing as much or more anxiety about the illness as their husbands (Kornblith et al., 1994). Some treatments such as androgen deprivation therapy affect intimacy within couples. Even if treatments do not affect sexual functioning, many men report feeling less masculine (Zaider et

al., 2012), which is associated with their levels of intimacy. Couples who redefine intimacy and closeness beyond sexual contact report feeling closer and more intimate (Walker & Robinson, 2010).

In sum, patients and their partners deal with a number of unique challenges depending on the type of cancer they are facing. The first analysis in this dissertation will examine whether there are differences in psychological health, disclosure, and relationship health as a function of cancer type. However, there are three overlapping concerns across all cancer types reviewed here that deserve more consideration. The first concern is the presence of additional health stressors. Two important health stressors include comorbidities, defined as illnesses or conditions beyond cancer that were present prior to the start of the research, and functional status, which can be defined as "a person's ability to perform specific tasks and activities [(e.g., difficulty performing household tasks, eating, grooming, driving, ambulating)] as measured by a standardized scale" (Garman & Cohen, 2002, p. 192) such as the Cancer Rehabilitation Evaluation System or CARES (Schag et al., 1991). The second concern is the effect of role and gender differences on couple functioning. Social roles are influenced by gender and how these roles play out in the context of cancer is important to elucidate. That is, in traditionally heterosexual relationships, women tend to take on more of a caregiving role. This norm may be enhanced when her husband is sick, and disrupted when she is sick, leading her husband to assume her role. The final concern relates to how each individual's psychological functioning is associated with their relationship outcomes and vice versa. In other words, members of the couple bring their own levels of distress and concern which may be associated with how happy and fulfilled they are in their relationships. On the other hand, how satisfied partners are in their relationship may also be associated with their levels of distress about the cancer. Thus, identifying potential bidirectional

links between couples' responses to cancer and their relationship functioning may be illuminating. The following three sections will focus on describing the current literature on these topics, with attention to how they relate to the developmental-contextual model of couples coping with chronic illness (Berg & Upchurch, 2007).

Additional health stressors and cancer

It is common for cancer patients to have comorbid illnesses (Ogle et al., 2000). This is partially because cancer and comorbid conditions share many common risk factors including age, diet and exercise, and smoking (Extermann, 2007). Patients with each type of cancer covered in this dissertation experience a set of common comorbidities. For example, common comorbidities in individuals with head and neck cancer include hypertension, hyperlipidemia, chronic obstructive pulmonary disease (COPD), and diabetes (Eytan et al., 2019). Some of the most common comorbidities in patients with lung cancer include cardiovascular disease and COPD (Janssen-Heijnen et al., 1998). Common comorbidities with breast cancer include hypertension and rheumatological illnesses (Fleming et al., 1999). Common comorbidities with prostate cancer include hypertension, heart disease, and COPD (Hall et al., 2005).

We know from past work that patients with comorbidities may experience alterations in normal treatment protocols for their cancer (typically reductions or less aggressive treatments are selected) and have higher healthcare costs (Sarfati et al., 2016). These factors can ultimately affect a patient's prognosis, treatment options, and adherence to treatment (Søgaard et al., 2013). In one study of individuals with head and neck cancer, having more comorbidities was associated with shorter survival (Piccirillo, 2000) and worse prognosis (Ribeiro et al., 2003). As another example, although the presence of comorbidities is associated with being diagnosed with lung cancer earlier (Janssen-Heijnen et al., 1998), it typically has a net-negative effect on

treatment. After adjusting for histology and cancer stage, 19 separate comorbidities predicted worse survival in lung cancer patients (Tammemagi et al., 2003). In another study, lung cancer patients with higher degrees of comorbidity were more likely to have complications (Rueth et al., 2012), which may affect how treatments are selected. Breast cancer patients with high levels of comorbidities were more likely to delay radiation treatment (Gold et al., 2008). 3-year (Satariano & Ragland, 1994) and 5-year survival rates (Louwman et al., 2005) for women with breast cancer and comorbidities were considerably lower than those without comorbidities. Being older as well as having comorbidities were linked with receiving less aggressive treatments and having higher mortality compared to younger and healthier prostate cancer patients (Houterman et al., 2006).

Even though comorbidities are clearly important to treatment outcomes, in much of the cancer and relationships literature they are typically included as a covariate (e.g., Badr et al., 2010) or cited as a much needed future direction to be explored (Kim et al., 2008; Sarfati et al., 2016; Søgaard et al., 2013). However, the number of comorbidities a patient has is an important indicator of the patient's overall health beyond their cancer diagnosis. Thus, an open question is whether and how comorbidities have an effect on psychological and relational functioning within the couple.

When the number of comorbidities has been examined in past work, it has shown mixed effects on relational outcomes. One study examining couples dealing with prostate cancer found that the partner's number of comorbidities was associated with lower relationship satisfaction for both patient and partner over time (Ross et al., 2016). This finding highlights the importance of disentangling gender from role as partners in the study were women. Another study of couples dealing with breast cancer found that a patient's comorbidities were not associated with

relationship satisfaction or cancer-specific distress (Badr et al., 2010). A third study examining the relationship between depression and dyadic adjustment in patients with breast cancer and their partners also did not find an association between the patient's number of comorbidities and these outcomes (Badr & Shen, 2014). However, comorbidities have not been examined in other aspects of relationships. Of particular importance are disclosure and intimacy. Couples who already have experience dealing with life changing illnesses or illnesses that require active management may be more willing to disclose to their partners and may be higher in intimacy than those without comorbid illnesses. Alternatively, couples who have dealt with one partner's many chronic illnesses may be exhausted or more troubled. In other words, relationship functioning may differ as a function of existing health stressors like comorbid illness.

Functional status

Functional status can be defined as one's ability to execute self-care behaviors (e.g., eating, ambulating; Garman & Cohen, 2002). Patients encounter pain, fatigue, and sleep disturbances during cancer treatment, which are associated with less functional ability (Cheng & Lee, 2011; Dodd et al., 2001), and reduced functional ability may increase the stress and strain of both partners. As patients experience functional impairment, they may feel less equipped to deal with their circumstances or may be unable to provide support to their partner. The caregiving partner often takes on more responsibilities in addition to assisting their ill partner, and this burden is often associated with a worsening of their own health and well-being (Wen et al., 2019). In a study of cancer patients and their partners, decreases in the patient's physical functioning were associated with increases in depression for both patients and partners (Lyons et al., 2014). Declines in functional status can also take a toll on the quality of the relationship as a whole. In a study of colorectal, breast, and lung cancer patients, Fang et al. (2001) found that the

patient's own distress mediated the association between functional impairment and marital satisfaction. Said differently, greater functional impairment was associated with greater distress, which, in turn, was associated with lower marital satisfaction. In a study of breast cancer patients and their partners, functional impairment moderated the association between communication patterns and psychological distress. Compared to individuals with low functional difficulties, individuals with more functional difficulties were less distressed when they used mutually constructive communication (Manne et al., 2006). In a sample of colon cancer patients, individuals with greater social support and better functional status reported improvements in anxiety and depression (Gonzalez-Saenz de Tejada et al., 2017). Thus, functional status is an important factor in cancer patients' and their partners' relationships and well-being. Like comorbidities, an individual's functional status may be an additional health stressor on top of coping with cancer.

Gender and role differences in caregiving for partners with cancer

When an individual is dealing with cancer, their long-term partner or spouse is typically the primary informal caregiver. Part of coping with cancer requires partners to renegotiate their social roles and household responsibilities. This involves the partner without cancer taking on the role and responsibilities of the partner with cancer, which may play out differently for men and women.

Although there are some notable gender differences in patient and caregiving roles across men and women, these findings are inconsistent. Some studies find that women are more distressed, do more work, and have less support than men in caregiving roles. In one study, female caregivers reported doing more work than male caregivers, and had worse physical functioning over time (Nijboer et al., 2001). Female caregivers also reported a greater loss of

physical strength over time compared to their male counterparts (Nijboer et al., 2000). In both the patient and caregiver role, women reported more emotional distress, more role issues, and lower marital satisfaction (Northouse et al., 2000). A meta-analysis on the effect of role and gender on caregiver distress found that women were more distressed than men regardless of their role (Hagedoorn et al., 2008). However, other studies find the opposite: men are more distressed than women in both patient and caregiver roles (Baider et al., 2003; Goldzweig et al., 2009). Other studies find that there are mixed results or no differences in men and women in patient and caregiving roles (Pinquart & Sörensen, 2006; Swinkels et al., 2019; Tuinstra et al., 2004).

Some scholars have argued that the construction of marital roles is inextricably linked to gender. For example, women are closely attuned to their relationships and this may be related to their caregiving role (Hong & Coogle, 2016). In one study, women caregivers maintained their levels of support provision before and after surgery while men caregivers' support levels declined after surgery (Luszczynska et al., 2007). However, better integrating oneself into the caregiver role can be beneficial for men. Men with higher caregiver esteem experienced lower caregiving stress (Kim et al., 2006). Men also tend to receive more support from friends and family when they are the primary caregivers compared to women (Kim et al., 2006).

Despite the inconsistencies in the aforementioned findings in couples coping with chronic illness, there are two other less addressed issues when examining gender and role effects. First, the effects of role, gender, and being part of a couple where the patient is male versus female are challenging to study in cancer patients and their partners because for sex-linked cancers (e.g., breast and prostate cancer), gender and role are almost always confounded. The current study will take advantage of data from cancer patients with 4 different types of cancer by pooling across cancer type to estimate both main effects of role and gender and their interaction. The

second issue is that most of the literature addressing gender and role effects has focused on general stress, anxiety, and depression. Although stress and mood disruptions are an important part of the patient's and caregiver's experience, they do not address the broader relationship context. Most of the close relationships literature assumes that coping with cancer is dyadic (Berg & Upchurch, 2007; Hagedoorn et al., 2008) and involves other aspects of the relationship, like intimacy, relationship satisfaction, communication patterns, and cancer specific concerns and stressors. According to the developmental-contextual model (Berg & Upchurch, 2007), how couples appraise, cope, and adjust to chronic illness is influenced by proximal contextual factors like gender. More work is needed to disentangle role and gender effects as they relate to these relationship and cancer-specific variables.

Relationship functioning and cancer management: bidirectional associations and potential mechanisms

As previously discussed, relationship functioning may change when couples are dealing with cancer. It could be the case that when couples are happier or more satisfied, they are more able to cope with the cancer experience. It also could be the case that couples who cope better with cancer report being happier or more satisfied in their relationship. Past work on the link between close relationships and health has identified the potential for bidirectional associations (Kiecolt-Glaser & Wilson, 2017), suggesting both cases may be true. It is important to examine this possibility to better understand the temporal continuity from appraisal to coping to adjustment. For example, in a cross-sectional sample, depressed individuals were more likely to have more dysfunctional interactions with their partners, and individuals in more dysfunctional relationships were more depressed (O'Leary et al., 1994). Davila et al. (2003) found longitudinal

within-person changes in marital satisfaction and depression such that greater levels of depression predicted worse relationship satisfaction and vice versa.

Within the literature of couples coping with cancer, when patients and their partners engaged in relationship maintenance behaviors such as positivity and shared tasks, they each had less distress (Badr & Taylor, 2008). The patient's engagement in relationship behaviors was also associated with the partners' lower distress, suggesting the importance of the patient's role in reducing distress for their partners (Badr & Taylor, 2008). However, because managing all of the stressors associated with cancer is challenging, individuals may neglect to share their feelings with their partners in an attempt to shield the partner from these feelings (Lindau et al., 2011). In a study of lung cancer patients and their partners, relationship quality was negatively associated with holding back sharing concerns (Oh & Ryu, 2019). Engaging in negative relationship behaviors can be particularly detrimental when relationships are strong to begin with. For example, when relationship quality was high, individuals who attempted to protect their partner from their own negative feelings (i.e., engage in protective buffering) were more distressed (Manne et al., 2007).

According to the developmental-contextual model of couples coping with chronic illness (Berg & Upchurch, 2007) dyadic appraisal (how couples make sense of the illness) is associated with dyadic adjustment (relationship functioning) through dyadic coping (the mechanisms and strategies by which managing occurs). From changes to daily routines to managing expectations and emotions, couples must communicate effectively to manage life in the context of cancer. Thus, one potential mechanism linking psychological functioning and relationship satisfaction is communication. Barry et al. (2019) found that in a sample of couples, disengaged communication mediated the association between depression and relationship satisfaction. They

also tested relationship satisfaction as the predictor and depression as the outcome. In this case, disengaged communication mediated the association between relationship satisfaction and depression. Finally, in a new sample of couples, they tested both dyadic mediation models for the possibility of bidirectional mediation across two time points. Barry et al. (2019) found that husband's depression predicted a decrement in his relationship satisfaction via his disengaged communication. This framework could be extended to couple functioning in other contexts, such as couples coping with cancer. It is possible that bidirectional associations exist between cancer management and relationship functioning and that this association is mediated by communication patterns.

The current study

The current study is a secondary analysis of pooled data comprised of 679 dyads from four large studies of couples in which one partner has been diagnosed with head or neck cancer, lung cancer, breast cancer, or prostate cancer. All four studies include data from both patient and spouse across two time points, baseline and 6 months post-baseline. Note that from this point forward in the dissertation, the patient's partner is referred to as the spouse regardless of marital status to avoid overlapping use of the term "partner" which I reserve for describing actor (i.e., individual) and partner effects from the Actor-Partner Interdependence Model (described in detail in the Data Analytic Plan section; Kenny et al., 2006). It is worth noting that over 90% of the couples across all data sources were married. The studies included measures of the patient's number of comorbidities, the patient's number of medications, relationship satisfaction, intimacy, self-disclosure, perceived partner disclosure, psychological distress, and cancer-specific distress. Although not present in the prostate cancer study, functional status was assessed in the head and neck, lung, and breast cancer studies. Likewise, although not present in

the breast cancer study, communication patterns and cancer-related concerns were measured in the head and neck, lung, and prostate cancer studies. A final but important difference between the studies is that the prostate cancer study included two intervention conditions as well as a control or untreated condition, the breast cancer study included two intervention conditions only, but the head and neck study and the lung cancer study did not include interventions. A summary of these differences can be found in Table 1.

By pooling data across studies that used the same measures this dissertation addressed five overarching issues. A basic first question concerned whether there were differences in individual and relationship processes as a function of cancer type. This first analysis also examined the relative importance of control variables (see Data Analytic Section). Two subsets of the data can address this question: The baseline measures for all studies and the 6-month post-baseline measures for the head, neck, and lung cancer studies and the control condition in the prostate cancer study. Second, I used the pooled data to assess whether additional health stressors for the patient such as the number of comorbidities and functional impairment predicted psychological health and relationship processes. The third issue addressed gender and role differences. The pooled data are unique in that two of the datasets involve cancers where gender is confounded with patient/spouse role (i.e., breast and prostate) and two are not (head and neck and lung), which allowed me an (admittedly imperfect) opportunity to disentangle gender differences from role differences. Fourth, because there are assessments at two time points, the pooled dataset also allowed me to examine bidirectional associations between relationship outcomes and individual responses to cancer. Fifth and finally, the dissertation tested whether communication patterns served as a mediator of the association between individual responses to cancer and relationship outcomes. Each of the issues addressed in the dissertation will provide

empirical tests for different aspects of the developmental-contextual model of couples coping with chronic illness (Berg & Upchurch, 2007).

A summary of my research questions and their accompanying analytic plan can be found in be found in Table 2. The first set of analyses examined whether cancer type and role are associated with differences in psychological health, relationship health, cancer concerns, and communication patterns. Analysis 1a addressed, across all four datasets, whether there were differences in, for example, psychological distress and relationship health for patients and spouses as a function of cancer type (head and neck, lung, breast, or prostate cancer) and role (patient or spouse). Analysis 1b addressed, across the head and neck, lung, and prostate cancer datasets whether there were differences in communication patterns and cancer-specific concerns as a function of cancer type and role.

The second set of analyses examined how a patient's additional health stressors were associated with psychological health, relationship health, cancer concerns, and communication patterns. Analysis 2a addressed, across all four datasets, whether greater degrees of health stressors (as indexed by cancer type, number of comorbidities, and number of medications) were associated with worse psychological health, disclosure, and relationship health. I also examined interactions between cancer type, role, and the patient's number of comorbidities, as well as cancer type and number of medications taken. Analysis 2b addressed, across the head and neck, lung, and prostate cancer datasets, whether greater degrees of health stressors were associated with communication patterns and cancer-related concerns.

The third set of analyses provide a better understanding of the sociocultural context (e.g., gender) as identified in the developmental-contextual model of couples coping with chronic illness (Berg & Upchurch, 2007). Analysis 3a examined, across all four datasets, whether

psychological health, disclosure, and relationship health differed as a function of role (patient or spouse), sex (male or female), and whether the respondent was in a couple where the patient was male (versus female). Analysis 3b examined, across the head and neck, lung, and prostate cancer datasets, whether communication patterns and cancer-related concerns differed as a function of role, gender, and their interaction.

The fourth set of analyses addressed bidirectional associations between individual responses to cancer and relationship outcomes. Analysis 4a examined, across all four datasets, whether psychological health at baseline predicted relationship outcomes 6 months later and vice versa for both patients and spouses. Analysis 4b examined, across the head and neck, lung, and prostate cancer datasets, whether communication patterns and cancer concerns at baseline predicted relationship outcomes 6 months later and vice versa for both patients and spouses.

The fifth analysis addressed the question of mediation, specifically the mediating role of communication patterns. Analysis 5 examined, across the head and neck, lung, and prostate cancer datasets, whether communication patterns mediated the association between individual responses to cancer and relationship health. That is, do communication patterns mediate, for example, the association between cancer distress at baseline and relationship satisfaction 6 months later?

METHOD

The current study used data on patients with four types of cancer: head or neck, lung, breast, and prostate cancer and their spouses. There were 679 couples across all datasets. Each study will have its own subsection under the Participants section. Each measure in the Measures section will detail which datasets have a particular variable. Psychometric information for all variables by dataset can be found in Table 3. All datasets include measures of patients' and spouses' psychological functioning, relationship satisfaction, intimacy, disclosure, cancer-specific distress, and patients' number of comorbidities and number of medications. All the studies are dyadic in nature and longitudinal with details on each study described in the Procedure section.

Participants

Head and neck cancer data

Participants were 77 head and neck cancer patients and their spouses (98.7% heterosexual) recruited from a cancer center in northeast Pennsylvania. To qualify for the study, participants had to be at least 18 years of age, English speaking, currently living with a partner, have a Karnofsky Performance Status of 80 or greater (Karnofsky & Burchenal, 1949) or an Eastern Cooperative Oncology score of 0 or 1 (ECOG; Zubrod et al., 1960).[2]

Lung cancer data

Participants were 63 lung cancer patients and their spouses (95.2% heterosexual) recruited from a cancer center in northeast Pennsylvania. To qualify for the study, participants had to be at least 18 years of age, English speaking, currently living with a partner, have a

[2] The Karnofsky Performance Status scale and ECOG are widely used measures that assess a patient's functional status. A Karnofsky Performance Status score of 80 or greater indicates normal levels of activity with few symptoms or signs of illness. A score of 0 or 1 on the ECOG indicates high functional status (few restrictions).

Karnofsky Performance Status of 80 or greater (Karnofsky & Burchenal, 1949) or an ECOG score of 0 or 1 (Zubrod et al., 1960).

Breast cancer data

Participants were 302 early-stage breast cancer patients and their spouses (99.3% heterosexual) attending outpatient visits. To qualify for the study, participants had to be at least 18 years or older, English speaking, currently living with a partner, both partners able to consent, have a primary diagnosis of Ductal surgery in the past twelve months (though they could still be in active treatment), and live within one hour from the center they were recruited.

Prostate cancer data

Participants were 237 prostate cancer patients and their spouses (99.1% heterosexual). To qualify for the study, participants needed to be 18 years or older, married or living with a partner for at least one year, had to have received treatment for non-metastatic prostate cancer within the last 18 months, have an ECOG score of 0 or 1 (Zubrod et al., 1960), either patient or spouse had an elevated cancer distress score at recruitment (≥16 for patients, ≥17 for spouses) on the Impact of Events Scale (IES; Horowitz et al., 1979), and live within a one hour commute from the cancer center.

Procedure

Head and neck cancer data

Data come from a study of head and neck cancer patients undergoing active treatment and their spouses. The study focused on dyadic indicators of cancer communication, intimacy, and social cognitive processes for patients and spouses. Research assistants contacted potential participants via telephone or after an outpatient visit. Participants were given written consent forms and a study questionnaire to fill out and mail back. Couples were followed across three

assessment points: baseline, 3 months later, and 6 months later. For additional details on the protocol, see Manne and Badr (2010); Manne et al. (2012).

Lung cancer data

Data come from a study of lung cancer patients in active treatment and their spouses. Couples in the lung cancer study were contacted after an outpatient visit or by telephone. Those who consented filled out a consent form and study questionnaire to mail back, which included dyadic indicators of cancer communication, intimacy, and social cognitive processes. Couples completed these measures at three assessment points: baseline, 3 months later, and 6 months later. More information on study protocol can be found at Manne and Badr (2010) and Manne et al. (2012).

Breast cancer data

Data come from a randomized clinical trial evaluating the effectiveness of an enhanced couple-based group (ECG) intervention for breast cancer patients (some of whom were still in active treatment, some who had completed treatment) and their spouses. Participants were randomly assigned to either an ECG (n = 151) or a support group (SG; n = 151). In the ECG, patients and their spouses completed eight weekly 90-minute groups sessions hosted by two clinicians. There were 63 groups with an average of 4 couples per group (range=2-6 couples). Sessions covered topics including listening, communication, identifying and expressing support and needs, support provision, sexuality, stress management, problem-solving, and preparing for the future. The SG also met for eight weekly 90-minute sessions and covered general topics related to communication, coping with cancer, and managing occupational life. For full details on the protocol and intervention, see Manne et al. (2016). Eligible participants were contacted in person after outpatient appointments, via phone or mail. Patients and their spouses were provided

with a consent form and baseline questionnaire. Patients and their spouses were also given follow-up questionnaires at three time points: one week after the eight-week intervention, 6 months post-intervention, and 12 months post-intervention for a total of four assessment points.

Prostate cancer data

Data come from a randomized clinical trial evaluating the effectiveness of an intimacy enhancing intervention for prostate cancer patients who had undergone treatment within the last 18 months and their spouses. Participants were randomly assigned to one of three conditions: intimacy-enhancing couples therapy (IET; n = 80), a general health and wellness couples intervention (GHW; n = 76), and usual care (UC; n = 81). In IET, couples focused on improving support provision, problem solving skills, and enhancing emotional intimacy. In GHW, couples focused on improving diet, nutrition, and physical exercise. Both IET and GHW consisted of five 90-minute weekly sessions with a booster session after the intervention. Usual care involved referrals to psychiatrists or psychologists when requested. For full details on the protocol and intervention, see Manne et al. (2019). Eligible participants were contacted in person at the cancer center, via telephone, or by mail. Patients and their spouses were provided with a consent form and baseline questionnaire. They were also given follow-up questionnaires at three time points: 5 weeks post-baseline, 3 months post-baseline, and 6 months post-baseline for a total of four assessment points.

Measures[3]

Demographic information (appeared in all data sources)

Age. Patients and spouses were asked to report their age in years.

[3] All scale scores presented use the raw mean. I also computed scale scores for participants with at least 80% of complete item data for each scale to examine whether missing data contributed to large differences between these two means. The raw and 80% means, were virtually identical so I left the raw means as the computed scale scores.

Gender. Patients and spouses were asked whether they were male or female.

Education. Patients and spouses were asked, "How far did you go in school?" with the following options: 0-4 years, 5-8 years, some high school, finished high school, 1-3 years of college, 4 years of college, trade or business school, some graduate school, or graduate degree.

Income. Patients and spouses were asked to estimate their income before taxes to the nearest thousand dollars.

Employment status. Patients and spouses were asked their current employment status with the following options: working full-time, working part-time, on leave from work, retired/not employed outside the home, unemployed, or disabled/on disability[4].

Occupation.[5] Patients and spouses were asked to select a job they held for the major portion of their lives with the following options: major professional; manager, lesser professional; admin, small business owner, minor professional; clerical & sales; skilled manual; machine operators; unskilled employees; or housewife.

Race/ethnicity. Race/ethnicity was asked with one question in the head and neck, lung and prostate cancer datasets. Patients and spouses were asked to identify their ethnicity with the following options: White/Caucasian, Black/African American, Asian, Hispanic, Native American, or Other. Race/ethnicity was asked with two questions in the breast cancer dataset. Patients and spouses were asked to identify their ethnicity with the same aforementioned options; however they could also select Native Hawaiian or other Pacific Islander. Patients and spouses were also asked whether they identified as Hispanic or Latino (yes or no).

[4] This option was only available in the breast cancer dataset.
[5] Patients and spouses in the breast cancer study were not asked about their occupation in a comparable manner to the other studies.

Length of marriage.[6] Patients and spouses were asked to report, in years, how long they had been married to their partner.

Years living together, if not married. If in the previous question the patient and spouse indicated they were not married, they were asked to report, in years, how long they had been living together.

Time since diagnosis, months (appeared in all data sources)

Time since the patient's diagnosis was calculated by subtracting their diagnosis date from the date they completed their baseline questionnaires.

Smoking status (appeared in all data sources)

Patients were asked if they had ever smoked (yes or no) and whether they were currently smoking (yes or no).

ECOG/Karnofsky Score (appeared in all data sources)

Patients were assessed on one of two widely used measures of functional status that is attributable to disease (in this study, cancer). In the original four studies, participants were included in the study if their ECOG or Karnofsky score indicated high functional ability (0 or 1, or 90 or above, respectively).[7]

Cancer stage (appeared in all data sources)

Cancer stage was standardized to a scale of 0-4 (*Cancer*, 2021; *What do cancer stages and grades mean?*, 2021). Stage 0 refers to cancer that is localized (in situ) and has not spread. In Stage 1, the cancer is small and has not spread to other areas of the body. In Stage 2, the cancer has grown but has not spread to other areas of the body. In Stage 3, the cancer has grown

[6] Patients and spouses reported on their length of marriage or years living together (if not married). The patient's report of each were retained as a covariate in the analyses.
[7] Worth noting, 10 patients had an ECOG score of 2 or 4. Although these scores are lower than the original studies' cut-off, these participants were retained in my analyses.

again and possibly spread to surrounding tissues or the lymph nodes. In Stage 4, the cancer has become metastatic or advanced (i.e., moved to other parts of the body). The head or neck and lung cancer data already used this scale. However, the breast cancer study reported stages 0, 1, 2a, 2b, and 3a and were recoded (*Stage 2 (II) And Stage 2A (IIA) Breast Cancer Overview*, 2020; *Stage 3 (III) A, B, and C Breast Cancer Overview*, 2020). Stages 2a and 2b were recoded as Stage 2. Stages 3a was recoded as Stage 3. The prostate cancer study reported stages 1, 2a, 2b, and 3 and were recoded (*Prostate Cancer: Stages and Grades*, 2021). Stages 2a and 2b were recoded as Stage 2.

Comorbidities (appeared in all data sources)

Comorbidities were measured by the number of existing conditions endorsed by the patient at baseline. The following diagnoses could be endorsed across all data sources: asthma, diabetes, emphysema, epilepsy/seizure disorder, heart attack, high blood pressure, lupus, Lyme disease, multiple sclerosis, osteoarthritis, renal insufficiency, rheumatoid arthritis, and stroke. Although all patients were given an assessment of their comorbidities at baseline, several important distinctions exist. First, the number of comorbidities that could be endorsed differed across data sources. Head and neck, and lung cancer patients could endorse up to three comorbidities. Breast cancer patients could endorse up to four comorbidities. Prostate cancer patients could endorse up to five comorbidities. Second, the diagnoses one could endorse differed across data sources. An “other” category was available in the head and neck, lung, and prostate cancer data, but not in the breast cancer data. In the prostate cancer data only, patients could endorse a thyroid condition and migraine. Although the data sources had different maximum numbers of comorbidities that could be endorsed, I will include all of them in the

analysis. To include all number of comorbidities, the variable was recoded such that participants could endorse having 0, 1, 2, or 3 or more comorbidities.

Medications (appeared in all data sources)

Medications were measured by the number of medications patients endorsed taking at baseline. The following types of medications could be endorsed across all data sources: antiemetics, analgesics, antibiotics, anticoagulants, anticonvulsants, antidepressants, antidiabetics, antifungals, antiglaucoma, antihistamines, antihypertensives, anti-inflammatories, antimigraine, antipsychotics, antiulcer, bronchodilator, cardiac drugs, cholesterol lowering agents, corticosteroids, hormones, laxatives, narcotics/opioids, tranquilizers, and vitamins/minerals. Although patients in all studies were given an assessment of the medications they took at baseline, two important distinctions exist. First, the number of medications that could be endorsed differed across data sources. Head, neck, and lung cancer patients could endorse up to three medications. Breast cancer patients could endorse up to six medications. Prostate cancer patients could endorse up to five medications, not including antidepressants, anxiolytics, and antipsychotics for which participants could select from a list of each medication type and dosage. Second, anxiolytics and "other" were not available in the breast cancer data. Although the data sources had different maximum numbers of medications that could be endorsed, I will include all of them in the analysis. Similar to the number of comorbidities, a new variable was created such that participants could endorse taking 0, 1, 2, or 3 or more medications.

Functional status (appeared in head, neck, and lung, and breast cancer data)

Patients' functional status was measured using the 26-item functional status subscale of the Cancer Rehabilitation Evaluation System (CARES; Schag et al., 1991). Participants rated the

degree to which they experienced difficulty performing tasks in the past month on a scale from 0 (*not at all*) to 4 (*very much*). Example items include, “I have difficulty bending or lifting”, “I have difficulty planning activities because of the cancer or its treatment”, “I have difficulty driving”, “I do not have the energy I used to”, “I have difficulty doing household chores”, “I have difficulty bathing, brushing my teeth, or grooming myself”, and “I have difficulty preparing meals.” Items were averaged within the patient by time point.

Psychological Health

Psychological Distress and Well-being (appeared in all data sources). Psychological health was measured with the 38-item Mental Health Inventory (MHI; Veit & Ware, 1983). The MHI contains five categories of items: anxiety (5 items), depression (7 items), loss of behavioral/emotional control (9 items), general positive affect (11 items), and emotional ties (3 items). The anxiety, depression, and loss of behavioral and emotional control items form a psychological distress subscale, while the general positive affect and emotional ties items form a psychological well-being subscale. Participants answered items such as “During the past month, how much of the time have you felt lonely?”, “During the past month, how much of the time did you feel relaxed and free of tension?”, and “During the past month, how often did you feel that nothing turned out for you the way you wanted it to?” on a scale from 1 (*All of the time*) to 6 (*None of the time*). Items 9 and 28 were on a 5-point scale and were transformed to match the 6-point scale before scoring. Items were averaged within each partner by time point.

Cancer-specific distress (appeared in all data sources). Cancer-specific distress was measured with 15 items in the Impact of Events Scale (IES; Horowitz et al., 1979). The IES measures the frequency with which people endorse distressing feelings about cancer during the past week. Participants rated the degree to which a series of statements about stressful events

occurred on a 4-point scale where 0 was “Not at all”, 1 was “Rarely”, 3 was “Sometimes”, and 5 was “Often.” Example items include, “Thought about it when I didn’t mean to”, “I tried not to talk about it”, “I had waves of strong feelings about it”, “I avoided letting myself get upset when I thought about it or was reminded of it”, “I was aware that I had a lot of feelings about it, but I didn’t deal with them”, “I tried not to think about it”, and “My feelings about it were kind of numb.” Items were averaged within each partner by time point.

Relationship health

Intimacy (appeared in all data sources). The Personal Assessment of Intimacy in Relationships (PAIR), a 6-item questionnaire, was used to assess relationship intimacy (Schaefer & Olson, 1981). Participants rated on a scale from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*) the degree to which they felt close with their partner. Example items include, “My partner listened to me when I needed someone to talk to” and “I sometimes feel lonely when we’re together” (reverse coded). Items were averaged within each partner by time point.

Relationship satisfaction (appeared in all data sources). Relationship satisfaction was measured with the Dyadic Adjustment Scale (DAS). The DAS is a widely used, 32-item questionnaire used to measure relationship satisfaction (Spanier, 1976). Example items include, “Do you confide in your mate?” on a scale from 0 (*never*) to 5 (*All the time*) and “Do you kiss your mate” on a scale from 0 (*Never*) to 4 (*Every Day*). Items were summed within each partner by time point. Scores range from 0 to 151 and scores that fall below 97 indicate relationship distress (Jacobson et al., 1987).

Disclosure

Self-disclosure (appeared in all data sources). Self-disclosure was measured with three items adapted from Laurenceau et al. (1998). Participants rated on a scale from 1 (*Not at all*) to 7

(*Very much*) the degree to which they disclosed thoughts, information and facts, and feelings to their partner. Items were averaged within each partner by time point.

Perceived partner disclosure (appeared in all data sources). Perceived partner disclosure was measured with three items adapted from Laurenceau et al. (1998). Participants rated on a scale from 1 (*Not at all*) to 7 (*Very much*) the degree to which their partner disclosed thoughts, information and facts, and feelings to them. Items were averaged within each partner by time point.

Cancer Concerns

Cancer-related concerns (appeared in head, neck, and lung and prostate cancer datasets). This scale was designed to measure how much people are able to discuss 10 different cancer-related concerns with their spouses. The items included in this study were adapted from Pistrang and Barker (1995). In the head and neck and lung datasets, participants rated the degree to which they had a particular concern in the past week on a 6-point scale ranging from 0 (*Not at all*) to 5 (*A great deal*). In the prostate cancer dataset, participants rated the degree to which they had a particular concern in the past week on a 5-point scale ranging from 1 (*Not at all concerned)* to 5 (*Extremely concerned*). Example items include concerns about, "your (your partner's) cancer treatment", "emotional reactions to cancer such as fear, worry, or sadness", "relationship with your partner/spouse", "relationship with others", "fear or worry about disease progression or death", "financial related concerns", and "job related concerns". Because items in the prostate cancer dataset were on a 5-point scale, they were transformed to match the 6-point scale before scoring. Items were averaged within each partner by time point.

Holding back sharing concerns (appeared in head, neck, and lung and prostate cancer datasets). This scale is designed to measure how much people hold back discussing the

concerns about cancer they have with their spouses. Holding back sharing concerns was measured with the same 10 items adapted from Pistrang and Barker (1995) as mentioned in the previous section. In the head and neck and lung datasets, participants rated the degree to which they held back talking to their partner about cancer concerns in the past week on a 6-point scale from 0 (*Not at all*) to 5 (*A great deal*). In the prostate cancer dataset, participants rated the degree to which they held back talking to their partner about cancer concerns in the past week on a 5-point scale ranging from 1 (*Not at all)* to 5 (*A great deal)*. Example items include, "your (your partner's) cancer treatment", "emotional reactions to cancer such as fear, worry, or sadness", "concerns about your relationship with your spouse/partner" and "financial concerns." Because items in the prostate cancer dataset were on a 5-point scale, they were transformed to match the 6-point scale before scoring. Items were averaged within each partner by time point.

Communication Patterns

Constructive communication, Patient Demand/Spouse Withdrawal, Spouse Demand/Patient Withdrawal (appeared in head, neck, and lung and prostate cancer datasets). Communication patterns were measured with the Communication Patterns Questionnaire (Christensen, 1988; Christensen & Sullaway, 1984; Heavey et al., 1993). There are three subscales (Crenshaw et al., 2017): constructive communication (9 items), patient-demand/spouse withdraw (7 items), and spouse-demand/patient-withdraw (7 items). Participants rated the degree to which they would use a particular strategy to deal with problems or issues related to cancer on a scale from 1 (*very unlikely*) to 9 (*very likely*). Example items include "You (your partner) criticizes while you (your partner) defend(s) yourself(themselves)"; You (your partner) pressures you (your partner) to take some action or stop some action, while you (your partner resist(s) (demand/withdraw) and "Both members suggest possible solutions and

compromises"; "Both members express their feelings to each other" (constructive communication). Items were averaged into their respective subscales within each partner by time point.

Data Analytic Plan

The overarching approach to the following analyses was multilevel modeling (MLM) treating individuals nested within dyads. I used the variance-covariance structure of heterogeneous compound symmetry, which specifies different residual variances for patients and spouses and a correlation between patient and spouse. Past work has established that age covaries with cancer type and additional health stressors, and demographic and contextual factors such as education, time since diagnosis, and relationship length are associated with important outcomes in cancer patients and spouses (e.g., Hamilton et al., 2016; Song et al., 2011). Therefore, these covariates were included in the initial models that tested the most basic effects (i.e., Analyses 1a and 1b). First, models including only the two main effects (cancer type and role) and their interaction were run for each of the outcomes of interest. Then, I examined the bivariate correlations between the covariates and each outcome separately. Finally, the models were run again including the covariates (age, education, time since diagnosis, and relationship length). Age was the only consistent predictor of the outcomes. Specifically, age was a significant covariate in the baseline models when psychological well-being, psychological distress, cancer-specific distress, and relationship quality were the outcomes. Age was a significant covariate in the 6 months later models when psychological well-being, psychological distress, intimacy, and relationship quality were the outcomes. Education was significant covariate in the baseline models for perceived partner disclosure and relationship quality. However, due to the inconsistency of this covariate, education was dropped from the final

models. None of the other covariates were consistent predictors of the outcomes. Therefore, only age was retained as a covariate in the models presented henceforth.[8]

Because I was interested in whether outcomes differed depending upon whether the individual is the patient or spouse, role was included as a moderating variable in analyses 2 and 3. Since a subset of the breast and prostate cancer couples received an intervention, I controlled for whether or not couples received an intervention in the 6 month later models of analyses 2 and 3.

Analysis 1a-b: Examining mean differences in psychological and relationship health as a function of cancer type and role.

The goal of analysis 1a was to examine whether there were differences in psychological health (psychological well-being, psychological distress, and cancer specific distress), disclosure (self-disclosure, perceived partner disclosure), and relationship health (intimacy and relationship satisfaction) across the four datasets as a function of cancer type and role. These MLMs were conducted using the baseline measures. I also examined whether there were differences in the aforementioned outcomes as a function of cancer type and role 6 months later in the head, neck, and lung cancer datasets and in the usual care couples from the prostate cancer dataset. Because the breast and prostate cancer studies included an intervention component, including the couples who received the intervention(s) could have biased my understanding of differences from baseline to 6 months later.

The goal of analysis 1b was to examine whether there were differences in communication patterns (constructive communication, Patient Demand/Spouse Withdrawal communication, Spouse Demand/Patient Withdrawal communication) and cancer-related concerns (number of

[8] Models were run with and without the covariates to see how results changed. Dropping the covariates did not change the main conclusions.

cancer-related concerns, degree of holding back sharing cancer-related concerns) as a function of cancer type. Because the breast cancer dataset does not include these measures, the analysis did not include that sample. Analysis 1b followed the same analytic plan as analysis 1a. Because I had substantial evidence from analysis 1a and b that outcomes differed as a function of role, I included role as a predictor in subsequent analyses.

Analysis 2a-b: Examining differences in psychological and relationship outcomes as a function of the patient's health stressors.

The goal of analysis 2a was to examine whether health stressors (number of comorbidities, number of medications, cancer stage, and cancer type at baseline) were associated with psychological health (psychological well-being, psychological distress, and cancer specific distress), disclosure (self-disclosure, perceived partner disclosure), and relationship health (intimacy and relationship satisfaction). Role was included as a moderator of all health stressors (number of comorbidities, number of medications, and cancer stage at baseline). Analyses were pooled across the four cancer datasets and examined the effect of the predictors on the outcomes at baseline and again 6 months later. For the subset of head and neck, lung, and breast cancer data, I also examined whether functional impairment predicted the aforementioned outcomes over and above the other predictors. The goal of analysis 2b was to examine whether health stressors were associated with communication patterns (constructive communication, Patient Demand/Spouse Withdrawal communication, Spouse Demand/Patient Withdrawal communication) and cancer-related concerns (number of cancer-related concerns, degree of holding back sharing cancer-related concerns). Analyses include head and neck, lung, and prostate cancer couples. Analysis 2b followed the same analytic plan as analysis 2a, with the exception that functional status as a predictor was examined over and above the other health

stressors only on the head and neck and lung cancer datasets. As a reminder, in analysis 2b and 3, a coded variable was included in the 6 months later models to denote couples who received an intervention between baseline and 6 months post-baseline.

Analysis 3a-b: Examining mean differences in psychological and relationship outcomes as a function of role, sex, and their interaction.

The goal of analysis 3a was to examine whether psychological health (psychological well-being, psychological distress, and cancer specific distress), disclosure (self-disclosure, perceived partner disclosure), and relationship health (intimacy and relationship satisfaction) differed as a function of role (patient or spouse), sex (male or female), and whether the respondent was in a couple where the patient was male (versus female) across all four datasets at baseline and 6 months later. Note that sex and role are both within-dyad variables. To examine an interaction between two within-dyad variables, I treated sex as a within-dyads variable (let's call it X), created a between-dyads variable, Z, which is the interaction between sex and role (Kenny et al., 2006), and created an interaction variable between X and Z. This allowed me to examine differences in couples where the patient was male or female. A display of these variables can be found in Table 4. To be clear, Z designates whether the patient is a male or a female. The effect of sex tells whether there are differences in the outcomes as a function of sex. The interaction between sex and Z (computationally an interaction between sex and sex by role) tells us whether there are differences in the outcome as a function of being the cancer patient or spouse (i.e., the effect of role). The variable Z is the interaction effect of role and sex, or whether outcomes differ in couples when the male has cancer versus the female has cancer. Worth noting, this MLM tests 3 planned contrast effects instead of two main effects and an interaction. Analysis 3b examined, across the head and neck, lung, and prostate cancer datasets, whether

communication patterns and cancer-related concerns differed as a function of role and gender. Analysis 3b followed the same analytic plan as analysis 3a.

Analysis 4a-b: Examining bidirectional associations between psychological health and relationship health.

The goal of analysis 4 is to examine whether bidirectional associations exist between psychological health at baseline and relationship processes 6 months later and vice versa for both patients and spouses across all four datasets. Relationship processes encompass both disclosure and relationship health. In other words, self-disclosure, perceived partner disclosure, intimacy, and relationship satisfaction were considered measures of relationship processes.

Analysis 4a used the actor-partner interdependence model (APIM; Kenny et al., 2006) to examine whether actor and partner psychological health at baseline predicts relationship processes 6 months later and vice versa (whether relationship processes at baseline predict psychological health 6 months later). A potential problem with examining bidirectional associations is that patients' and spouses' reports of relationship satisfaction tend to be highly correlated. This multicollinearity may cause problems with interpretation. To address this problem, baseline measures of each outcome were included in the models. An example of this model is included in Figure 1. The top portion of the figure depicts patient and spouse cancer distress predicting both partners' relationship satisfaction 6 months later. The bottom portion of the figure depicts patient and spouse relationship satisfaction at baseline predicting both partners' cancer distress 6 months later. The goal of analysis 4b was to examine whether cancer concerns predicted relationship processes 6 months later and vice versa for both patients and spouses using the head and neck, lung, and prostate cancer datasets. Analysis 4b followed the same analytical plan as outlined for analysis 4a with the exception that communication patterns will be added as

part of the examination of relationship processes. These variables were only examined in 4b because they are not present in the prostate cancer study.

Analysis 5: Examining whether individual responses to cancer are associated with relationship health through communication patterns.

The goal of analysis 5 was to examine whether communication patterns mediated the association between individual responses to cancer (e.g., cancer-specific distress) at baseline and relationship health (e.g., relationship satisfaction) 6 months later for both patients and spouses across the head and neck, lung, and prostate cancer datasets. Analysis 5 used a multiple mediation model to investigate these associations. I used Mplus to test, for example, the implied indirect effect of cancer distress on relationship satisfaction through communication patterns (constructive communication, Patient Demand/Spouse Withdrawal Communication, and Spouse Demand/Patient Withdrawal Communication). The mediation analyses were repeated with the other relationship health variables (self-disclosure, perceived partner disclosure, and intimacy) for a total of four multi-mediation models.

RESULTS

Demographic information for patients and spouses, health demographic information for patients, and descriptive statistics collapsed across all datasets can be found in Tables 5-7, respectively. On average, couples were primarily heterosexual and in their late fifties. The majority of the couples at least finished high school, worked full-time, and had a median salary of $100,000. The overall sample was majority White/Caucasian. The average marriage length was around 27 years and the average relationship length (if not married) was around 10 years. The majority of cancer patients were in Stage 1 or 2. Most of the cancer patients had high functioning scores and few functional impairments. Demographic information, health demographic information, and descriptive statistics separated by dataset can be found in Tables 8-10, respectively. The frequency and type of head, neck and lung cancer diagnoses can be found in Table 11.

Analysis 1a: Examining mean differences in psychological health, disclosure, and relationship health as a function of cancer type, role, and their interaction.

Multilevel models (MLMs) treating individuals nested within dyads were used to examine whether there were differences in psychological health (psychological well-being, psychological distress, and cancer-specific distress), disclosure (self-disclosure and perceived partner disclosure), and relationship health (intimacy and relationship quality) as a function of cancer type, role, and their interaction. The variance-covariance structure used was heterogeneous compound symmetry, which allows for different residual variances for patients and spouses and a correlation between patient and spouse. MLMs were first run using only baseline data, then using data from the head and neck and lung cancer studies as well as prostate

cancer couples who were in the control condition 6 months later. Models at baseline are presented first, models 6 month later are presented second.

Models at baseline

Data from all four datasets are included in the baseline models. Age was grand mean centered before analysis. Role was effects coded where 1=patient and -1=spouse. Significant cancer type main effects were followed up with Bonferroni-corrected pairwise comparisons. Significant cancer type by role interactions were followed up by creating four dummy coded cancer type variables, one for each cancer type. Intraclass correlations (ICCs), which reflect the degree to which the unexplained variation in the outcome is correlated across partners after taking the predictors into account, at baseline ranged from .16 (perceived partner disclosure) to .61 (relationship quality).

Psychological Health. Mean differences in psychological well-being, psychological distress, and cancer-specific distress as a function of cancer type, role, and their interaction can be found in the first three panels of Table 12. Patients reported higher psychological well-being than spouses (d = .11[9]). Psychological distress differed significantly by cancer type. Lung cancer patients and spouses were the most distressed followed by couples dealing with head and neck cancer, breast cancer, and prostate cancer. However, none of the Bonferroni-corrected pairwise comparisons were significantly different from one another. There was also a cancer type by role interaction for psychological distress. As seen in Figure 2, spouses of patients with head and neck and prostate cancer reported greater psychological distress than patients. However, the opposite was true for breast cancer patients who reported greater psychological distress than their spouses. Similar to psychological distress, cancer-specific distress also differed by cancer type.

[9] The denominator in all Cohen's d calculations in the baseline models of Analysis 1a is the pooled standard deviation across cancer datasets.

Again, none of the pairwise comparisons were significantly different, but the pattern of differences was similar. Couples coping with lung cancer were the most distressed followed by breast cancer, prostate cancer, and head and neck cancer. Patients reported higher cancer-specific distress than spouses (d = .12). In addition, as seen in Figure 3, the interaction between cancer type and role was significant. Breast cancer patients were significantly more distressed than their spouses (d = .41). Finally, older participants reported higher well-being, lower psychological distress, and lower cancer specific distress.

Disclosure. Mean differences in self-disclosure and perceived partner disclosure as a function of cancer type, role, and their interaction can be found in the fourth and fifth panels of Table 12. Patients reported higher rates of self-disclosure than spouses (d = .29). The interaction between cancer type and role in perceived partner disclosure was significant. As seen in Figure 4, compared to spouses, patients with head and neck and prostate cancer reported higher levels of perceived partner disclosure. However, the opposite was true for the breast cancer sample. Compared to patients, spouses reported higher levels of perceived partner disclosure.

Relationship Health. Mean differences in intimacy and relationship quality as a function of cancer type, role, and their interaction can be found in the last two panels of Table 12. Patients reported greater levels of intimacy compared to spouses (d = .24). The interaction between cancer type and role in intimacy was also significant. As seen in Figure 5, patients with head and neck, lung, and prostate cancer reported greater levels of intimacy compared to their spouses. The largest differences in levels of intimacy were between head and neck cancer patients and their spouses. The smallest differences in intimacy were found between prostate cancer patients and their spouses while differences between lung cancer patients and their spouses were in the middle. There were no differences in intimacy between patients with breast cancer and their

spouses. Individuals with breast cancer and their spouses reported higher relationship quality than those with head and neck (d = .60) and lung cancer (d = .58). Individuals with prostate cancer and their spouses also reported higher relationship quality than those with head and neck (d = .49) and lung cancer (d = .47). There were no additional significant pairwise differences. Older participants reported greater levels of intimacy and higher quality relationships.

Models 6 months later

Because all participants in the breast cancer study and some participants in the prostate cancer study received an intervention, their data are excluded from the analyses conducted on data collected 6 months after baseline. Participants in the head and neck study and lung cancer study did not receive an intervention ($n_{\text{head and neck couples}}$ = 77, $n_{\text{lung couples}}$ = 63). Thus, only patients and spouses from the prostate cancer study who did not receive an intervention (n = 81), head and neck cancer study, and lung cancer study were included in this analysis ($n_{\text{total couples}}$ = 221). The goal of this analysis was to examine whether psychological health, disclosure, and relationship health differed as a function of cancer type, role, and their interaction 6 months after baseline. The procedure for centering age, coding for role, and following up the interactions were the same as the models at baseline. ICCs, which represent a correlation between the unexplained variation in the outcome across the dyad after taking into account the model's predictors 6 months later ranged from .16 (perceived partner disclosure) to .45 (relationship quality).

Psychological Health. As seen in the first two panels of Table 13, only the effect of cancer type was significant for psychological well-being, psychological distress, and cancer-specific distress. Prostate cancer patients and their spouses reported higher psychological well-

being scores than head and neck cancer patients and their spouses (*d* = .37[10]). Prostate cancer patients and their spouses also reported lower psychological distress scores than head and neck cancer patients and their spouses (*d* = .49) as well as lung cancer patients and their spouses (*d* = .44). However, lung cancer and their spouses reported higher levels of cancer-specific distress compared to patients with head and neck cancer and their spouses (*d* = .35) and prostate cancer patients and their spouses (*d* = .91). Older participants reported higher psychological well-being and lower psychological distress.

Disclosure. The effect of cancer type, role, and their interaction on self-disclosure and perceived partner disclosure can be found in the third and fourth panels of Table 13. Patients reported more self-disclosure than spouses (*d* = .32). Prostate cancer patients and their spouses reported more self-disclosure than head and neck cancer patients and spouses (*d* = .37). Similar to self-disclosure, patients reported higher perceived partner disclosure scores than spouses (*d* = .26).

Relationship Health. Mean differences in intimacy and relationship quality can be found in the last two panels of Table 13. There was a significant main effect of role such that patients reported higher levels of intimacy (*d* = .27). Prostate cancer patients and their spouses reported higher quality relationships than those with head and neck (*d* = .49) or lung cancer (*d* = .49). However, those in the head and neck and lung cancer datasets were not different from each other. Older individuals reported greater levels of intimacy and higher quality relationships.

[10] The denominator in all Cohen's *d* calculations in the 6 months later models of Analysis 1a is the pooled standard deviation across the head and neck cancer and lung cancer datasets as well as those in the control condition in the prostate cancer dataset.

Summary of findings in Analysis 1a.

Across both time points (baseline, 6 months later), a few consistent results emerged. For example, similar patterns of psychological health emerged across cancer type. In general, couples dealing with prostate cancer reported higher psychological well-being and lower psychological distress than those dealing with head and neck and lung cancer. Lung cancer patients reported the highest levels of cancer-specific distress. Cancer patients tended to self-disclose more than their spouses and reported greater intimacy than spouses. Couples coping with breast and prostate cancer reported higher relationship quality than couples coping with head and neck and lung cancer. These findings suggest there are some meaningful differences in couples' psychological and relational experiences depending on the type of cancer they are dealing with and their role in the dyad.

There were, however, some notable differences between the baseline analyses and the 6 months later analyses. Differences as a function of the interaction between cancer type and role emerged for psychological distress, cancer-specific distress, perceived partner disclosure, and intimacy at baseline while none emerged 6 months later. Differences as a function of role emerged inconsistently across the outcomes examined in this analysis. Beyond the aforementioned patterns, it is difficult to make sense of the disparate effects between baseline and 6 months later. Worth noting, the sample 6 months later did not include couples who received an intervention, so none of the differences observed here could be explained due to an intervention. Subsequent analyses (analysis 2 and 3) will take into account whether or not couples received an intervention in the model examining outcomes 6 months later.

Analysis 1b: Examining mean differences in cancer concerns and communication outcomes as a function of cancer type, role, and their interaction.

Data from the head and neck, lung, and prostate cancer studies were included in this analysis ($n_{couples}$ = 377; participants in the breast cancer study did not complete these measures). This analysis also employed the same MLM technique to examine whether there were differences in cancer concerns (degree of cancer concerns, holding back sharing concerns) and communication patterns (constructive communication, Patient Demand/Spouse Withdrawal, Spouse Demand/Patient Withdrawal) as a function of cancer type, role, and their interaction at baseline and six months later. Recall that demand/withdrawal patterns refer to communication patterns where partners engage in negative push and pull dynamics(e.g., one partner nags while the other withdraws; one partner criticizes while the other defends themselves). Results were organized by time point and outcome.

Models at baseline

Cancer Concerns. Mean differences in the number of cancer concerns and the degree to which one held back sharing their concerns as a function of cancer type, role, and their interaction can be found in the first two panels of Table 14. Participants in the prostate cancer study reported a greater degree of cancer-related concerns than those in the head and neck cancer study (*d*=.79). Similarly, participants in the lung cancer study reported a greater degree of cancer-related concerns than those in the head and neck cancer study (*d* = .16). However, participants in the prostate and lung cancer studies were not different from one another. Similar to the degree of cancer concerns, participants in the prostate cancer study reported holding back sharing their concerns more often than those in the head and neck (*d* = .90) and lung cancer study (*d* = .74). Spouses reported holding back sharing concerns more than patients (*d* = .23).

Communication patterns. As seen in the last three panels of Table 14, constructive communication, Patient Demand/Spouse Withdrawal, and Spouse Demand/Patient Withdrawal communication patterns did not differ significantly as a function of cancer, role, and their interaction. Older individuals reported greater rates of constructive communication, Patient Demand/Spouse Withdrawal, and Spouse Demand/Patient Withdrawal communication patterns.

Models 6 months later

This analysis followed the same procedure as the analysis for the baseline models. As with the 6 months later models in Analysis 1a, only those in the control condition in the prostate cancer study, head and neck, and lung cancer studies are included ($n_{\text{total couples}}$ = 221).

Cancer Concerns. There were no significant differences in the number of cancer concerns as a function of cancer type, role, and their interaction, see Table 15. Older individuals reported fewer cancer concerns. Participants in the prostate cancer study reported holding back sharing their cancer concerns more than those in the head and neck (d = .43) and lung cancer studies (d = .44). Spouses reported holding back their cancer concerns more than patients (d = .32). As seen in Figure 6, spouses in the head and neck cancer study and prostate cancer study reported holding back sharing their cancer concerns more than patients.

Communication patterns. As seen in Table 15, constructive communication and Patient Demand/Spouse Withdrawal communication patterns did not differ by cancer type, role, or their interaction. There was a significant interaction between cancer type and role for Spouse Demand/Patient Withdrawal. As displayed in Figure 7, patients with prostate cancer reported greater levels of Spouse Demand/Patient Withdrawal than their spouses. Finally, older participants reported engaging in more constructive communication.

Summary of findings in Analysis 1b

Findings were relatively consistent across the baseline and 6 months later models. At both time points, participants in the prostate cancer study reported holding back their sharing their concerns more so than those in the head and neck and lung cancer studies. Additionally, spouses reported holding back sharing concerns more than patients. There were no significant main effects or interactions for constructive communication and Patient Demand/Spouse Withdrawal communication patterns at either time point.

Analysis 2a: Examining mean differences in psychological health, disclosure, and relationship health as a function of health stressors

This analysis employed the same MLM technique as Analysis 1 to examine whether there were differences in psychological health, disclosure, and relationship health as a function of health stressors (cancer stage, number of comorbidities, number of medications, and functional status), role (patient or spouse), and their interaction at baseline and six months later. As in Analyses 1a and 1b, role was effects coded where 1=patient and -1=spouse. Cancer type was dummy coded for head and neck, lung, and breast cancer participants (prostate cancer was the reference group). Significant health stressor by role interactions were followed up by creating dummy coded variables for role. Grand mean centered age was included as a covariate. Data from all four datasets are included in the baseline models. Bivariate correlations between the continuous health stressor predictors can be found in Table 16.

Models at baseline

Psychological Health. Table 17 displays the effects of health stressors on psychological health. When patients endorsed taking a greater number of medications, psychological well-being was lower for patients and spouses. A greater number of medications was also associated

with higher psychological distress. A cancer stage by role interaction emerged for psychological distress, though the slope differences were not statistically significant. The general pattern showed that patients dealing with later stage cancers reported less psychological distress (b = -.05, p =.097) while their spouses reported more distress (b = .04, p =.141). Three interactions with role emerged for cancer-specific distress and are displayed in Figures 8-10. Patients with later stage cancer reported less cancer-specific distress but spouse cancer-specific distress was not related to stage – a surprising and counterintuitive finding. In contrast, patients on more medications reported higher cancer-specific distress, but spouse distress was not a function of number of medications. Patients with a greater number of comorbidities reported lower cancer-specific distress but spouse distress did not differ as a function of number of medications.

Disclosure. Mean differences in disclosure as a function of health stressors are displayed in Table 18. Although there were no significant effects of health stressors on self-disclosure, there were two significant role interactions for perceived partner disclosure. Figure 11 displays the interaction between cancer stage and role. Compared to patients with an earlier stage of cancer, patients with a later stage of cancer perceived greater levels of disclosure from their spouses. The opposite was true for spouses of patients with a later stage of cancer, who perceived lower levels of disclosure from the patient. As seen in Figure 12, patients with a greater number of comorbidities perceived more disclosure from their spouses but the slope for perceived partner disclosure for spouses was not significant.

Relationship Health. The effect of health stressors on relationship health can be found in Table 19. When patients endorsed taking a greater number of medications, levels of intimacy were lower for patients and spouses. In addition, as seen in Figure 13, there was a cancer stage

by role interaction. Spouses of patients with later stage cancer reported lower intimacy than spouses of patients with earlier stage cancer but stage was not related to intimacy for patients.

Models at baseline including functional status

A subset of the baseline models were conducted to examine whether functional status – an individual's ability to perform basic mobility, grooming, and daily living tasks – predicted psychological health, disclosure, and relationship health above and beyond the health stressors examined in the aforementioned analysis. These models mirror the models at baseline with the exception that they include the main effect of functional status and the interaction between functional status and role. Because of this, I will only present and interpret these two effects below. Finally, the sample size for these analyses is smaller than the aforementioned models because prostate cancer patients did not complete a measure of functional status. Thus, the sample includes couples from the head and neck, lung, and breast cancer datasets ($n_{couples}$ = 442).

Psychological Health. When patients reported a greater degree of functional difficulties, both patients and spouses reported significantly lower psychological well-being (b = -.35, p <.001), significantly greater psychological distress (b = .27, p <.001), and greater cancer-specific distress (b = .29, p <.001) over and above the other health status predictors. Functional status by role interactions for psychological well-being, psychological distress, and cancer-specific distress also emerged. Patients and spouses of patients with more functional difficulties reported significantly worse psychological well-being (b = -.21, p <.001), however the effect was stronger for patients, see Figure 14. As seen in Figure 15, functional status interacted with role for psychological distress (b = .18, p <.001). Patients with more functional difficulties reported significantly greater psychological distress. The same pattern was found for spouses, however the effect was not significant. Figure 16 displays the interaction between functional status and

role for cancer-specific distress by patient and spouse (b = .12, p = .005). Both patients and spouses of patients with a greater degree of functional difficulties reported more cancer specific distress, but the effect was much stronger for patients.

Disclosure. Self-disclosure did not differ as a function of functional status (b = .11, p = .310) nor was the interaction between functional status and role significant (b = .06, p = .473). The same was true for the main effect functional status on perceived partner disclosure (b = .06, p = .545) and the interaction between role and functional status (b = -.06, p = .519).

Relationship Health. There was no effect of functional status (b =-.09, p = .091) nor the interaction between functional status and role (b =.006, p = .864) on intimacy. Similarly, there was no effect of functional status (b = -1.97, p = .079) or the interaction (b = -.52, p = .351) on relationship quality. Said differently there was no significant effect of functional status or the interaction between functional status and role over and above the health stressors already in the model (number of medications, number of comorbidities, and cancer stage) for both relationship health outcomes.

Models 6 months later

The goal of this analysis was to examine whether psychological health, disclosure, and relationship health differed as a function of health stressors 6 months after baseline. As with the baseline models, age was centered, role was effects coded, and the same procedure was implemented for following up the interactions between health stressors and role. Whether or not participants received an intervention was included as a control variable. This variable was effects coded such that 1= those who received an intervention and -1= those who did not.

Psychological Health. Differences in psychological well-being, distress, and cancer specific distress 6 months later as a function of health stressors at baseline can be found in Table

20. Patients' and spouses' psychological well-being was lower when patients reported taking a greater number of medications. Patients' and spouses' psychological distress and cancer-specific distress was higher when patients reported taking a greater number of medications. A comorbidity by role interaction emerged for cancer-specific distress such that patients reported less cancer-specific distress when they had a greater number of comorbidities but spouses' cancer-specific distress was not related to number of comorbidities, see Figure 17.

Disclosure. Table 21 displays the effect of health stressors on self- and perceived partner disclosure, and as seen in the table, the only significant effect was for the cancer stage by role interaction predicting perceived partner disclosure 6 months post-baseline. As seen in Figure 18, patients at a later stage of cancer perceived more disclosure from their spouses compared to patients at an earlier stage of cancer. The slope for spouses was nonsignificant.

Relationship Health. As seen in Table 22, a greater number of medications endorsed by the patient predicted lower levels of intimacy and relationship quality for patients and spouses six months post-baseline. There was also a stage by role interaction for intimacy. Figure 19 displays the interaction. Spouses of patients with later stage cancer reported less intimacy than spouses of patients with earlier stage cancer, but there was no association between stage and intimacy at six months post-baseline for patients.

Models 6 months later including functional status

As done with the baseline models, additional models were conducted to examine whether functional status – an individual's ability to perform basic mobility, grooming, and daily living tasks – predicted psychological health, disclosure, and relationship health above and beyond

health stressors 6 months later.[11] These models mirror the models in 2a, and thus I will present and interpret only the main effect of functional status and the interaction between functional status and role.

Psychological Health. Psychological well-being at 6 months for both patients and spouses was worse when patients reported more functional difficulties at baseline (b = -.42, p < .001) over and above the other health variables. Patients and spouses of patients with more functional difficulties reported more psychological distress (b = .29, p < .001) and cancer-specific distress (b = .43 p < .001). Psychological well-being at 6 months differed as a function of the interaction between role and the patient's functional status (b = -.21, p <.001) such that spouses of patients with a great deal of functional difficulties at baseline reported lower psychological well-being at 6 months. This effect was also present for patients and was stronger. This interaction is displayed in Figure 20. An interaction also emerged for the outcomes psychological distress (b = .16, p < .001) and cancer-specific distress (b = .13, p = .012), which are displayed in Figures 21 and 22, respectively. The interactions display the same pattern. Both members of the couple experienced greater psychological and cancer-specific distress when the patient reported high levels of functional difficulties, but for both aspects of distress, the effect was stronger for patients.

Disclosure. There were no significant differences in self-disclosure at 6 months for functional status (b = .28, p = .077) or the interaction (b = .14, p = .273). The same was true for perceived partner disclosure ($b_{functional\ status}$ = .18, p = .244; $b_{interaction}$ = .14, p = .303). That is, self-

[11] Although these models use couples' data 6 months post-baseline, the intervention covariate was not included because the variable broke the model (i.e., gave 0 df and did not compute F-tests for the intercept, cancer type variables, and intervention covariate.)

disclosure and perceived partner disclosure did not differ as a function of functional status or their interaction above and beyond the health stressors already included in the model.

Relationship Health. When the cancer patient experienced greater difficulties with functioning at baseline, both members of the couple reported lower levels of intimacy at 6 months (b = -.15, p = .026). No significant differences were found in relationship quality ($b_{functional\ status}$ = -1.83, p = .167; $b_{interaction}$ = -.46, p = .539).

Summary of findings in Analysis 2a

I will first discuss the consistent patterns across the models that did not include functional status. Across both timepoints, couples experienced less psychological well-being and more psychological distress when the cancer patient was taking a greater number of medications. Patients with more advanced cancer perceived greater disclosure from their spouses than spouses of patients with later stage cancer. Intimacy levels for patients and spouses were lower when cancer patients took more medications. Spouses of patients with advanced cancer reported feeling less intimacy. Taken together, these findings suggest that the additional health stressors examined here are associated with worse psychological health for both members of the couple and worse relationship health for the spouse.

When functional status was included in the model, psychological health was worse for both patients and spouses across all three indicators (psychological well-being, distress, and cancer-specific distress). However, interactions between functional status and role for each outcome revealed the negative effect of functional status was stronger for the cancer patient. Functional status was not consistently associated with disclosure or relationship health across both timepoints.

Analysis 2b: Examining mean differences in cancer concerns and communication patterns as a function of health stressors

This analysis followed the same procedure as analysis 2a. The goal of analysis 2b was to examine the effect of health stressors on cancer concerns and communication patterns. These outcomes are not available in the breast cancer sample. Thus, this analysis uses data from the head and neck, lung, and prostate cancer study ($n_{couples}$ = 377).

Models at Baseline

Cancer Concerns. Table 23 contains information about the effect of health stressors on the number of cancer concerns and the degree to which patients and spouses held back sharing their concerns. An interaction between the patient's number of medications and role emerged, for the number of concerns, however, the simple slopes for patient (b = .09, p = .194) and spouse (b = -.10, p = .152) were not significantly different from zero. The trends indicate that patients taking more medications reported more cancer concerns but spouses of patients taking more medications reported fewer cancer concerns. No other significant differences were found.

Communication Patterns. No significant differences in constructive communication, Patient Demand/Spouse Withdrawal, and Spouse Demand/Patient Withdrawal communication patterns were found. For additional information, see Table 24.

Models at baseline including functional status

A set of parallel models were conducted to examine the effect of functional status over and above the other health stressors for the cancer concerns and communication pattern outcomes. As before, only the main effect of functional status and the interaction between functional status and role will be discussed in text. Because prostate cancer patients did not

complete a measure of functional status, this sample includes only couples from the head and neck and lung cancer datasets (n = 140).

Cancer Concerns. When patients had greater functional difficulties, couples had more cancer concerns (b = .41, p = .013) and reported holding back sharing their cancer concerns more (b = .33, p = .009). Figure 23 displays the interaction between functional status and role for the degree to which couple members held back sharing their concerns about cancer (b = .27, p = .004). Patients who had a greater degree of functional difficulties reported holding back more than patients with no functional difficulties. The simple slope for spouses was not significant.

Communication Patterns. There was a significant interaction between functional status and role for the constructive communication pattern **(**b = -.20, p = .028) however the simple slopes for patient **(**b = -.24, p = .123) and spouse **(**b =.16, p = .327) were not significantly different from zero. There were no differences as a function of the patient's functional status (b = .03, p = .864) or the interaction (b = .22, p = .069) in Patient Demand/Spouse Withdrawal communication patterns. Similarly, no differences as a function of the patient's functional status (b = .07, p = .641) or the interaction (b = .17, p = .133) in Spouse Demand/Patient Withdrawal communication patterns were found.

Models 6 months later

Cancer Concerns. The number of cancer concerns as well as the degree to which patients and spouses held back sharing their concerns at 6 months post-baseline did not significantly differ as a function of cancer stage, the patient's number of comorbidities and medications taken, role, or their interactions. Full details can be found in Table 25.

Communication Patterns. The Patient Demand/Spouse Withdrawal communication pattern differed as a function of the interaction between the patient's number of comorbidities

and role. The full model can be found in Table 26. As seen in Figure 24, spouses of patients who reported a greater number of comorbidities had lower levels of Patient Demand/Spouse Withdrawal communication patterns. The patient's simple slope was not significant. The Spouse Demand/Patient Withdrawal communication pattern differed as a function of the interaction between cancer stage and role, however the simple slopes for patient (b = -.065) and spouse (b = .191) were not significantly different (ps > .053).

Models 6 months later including functional status

These models examined the effect of functional status over and above the other health stressor variables as well as an interaction between functional status and role. This sample included the head and neck and lung cancer couples only (n = 140) because prostate cancer patients did not complete a functional status measure. Thus, the effect coded variable denoting whether an intervention occurred was not included because couples in the head and neck and lung studies did not receive an intervention.

Cancer Concerns. For patients who reported more functional difficulties at baseline, patients and spouses also reported more cancer concerns 6 months later (b = .56, p <.001). The number of cancer concerns at 6 months differed as a function of the interaction between functional status and role (b = .23, p = .049). As seen in Figure 25, patients with greater functional difficulties at baseline reported more cancer concerns than patients with no functional difficulties. The degree to which patients and spouses differed in their degrees of holding back sharing concerns also differed as a function of the interaction (b = .34, p = .010). Displayed in Figure 26, the pattern is the same. Patients with more functional difficulties reported holding back more than patients with no functional difficulties.

Communication Patterns. Constructive communication at 6 months did not differ as a function of the patient's baseline functional status (b = -.14, p = .335) and the role by functional status interaction (b = -.05, p = .728). Similarly, there were no differences as a function of the interaction (b = .26, p = .096) and patient's functional status (b = -.21, p = .293) in Patient Demand/Spouse Withdrawal communication nor in Spouse Demand/Patient Withdrawal communication patterns ($b_{functional\ status}$ = .05, p = .781), ($b_{interaction}$ = .18, p = .224).

Summary of findings in Analysis 2b

Overall, few significant differences as a function of health stressors emerged for the cancer concerns and communication patterns. Those that did emerge concerned functional status and the interaction between functional status and role. In both waves (baseline and 6 months later), the more functional difficulties patients experienced, the more cancer concerns reported by the couple (both patient and spouse). Additionally, patients with a greater degree of functional challenges reported holding back their cancer concerns much more than patients with little to no functional challenges. This may suggest patients who already struggle with caring for themselves day to day restrict how much they express concerns about cancer to their spouses more so than cancer patients who do not struggle with daily functioning.

Analysis 3a: Examining mean differences in psychological health, disclosure, and relationship health as a function of sex and role.

The goal of this analysis was to attempt to disentangle the effects of sex and role in couples in which one person has cancer. Specifically I examined whether psychological health, disclosure, and relationship health differed as a function of three contrasts: (1) respondent sex (i.e., did males report greater psychological health than women), (2) respondent role (i.e., did patients report greater psychological health than spouses), and (3) whether the couple was one in

which the patient was male rather than female (i.e., was average psychological health different for dyad members for couples in which the patient was male) controlling for age (centered). Because sex and role are within-dyads variables, a new variable was created to indicate whether the patient in the couple was male or female. This new variable is a between-dyads variable, which allowed me to examine the third contrast (Kenny et al., 2006). Because psychological health, disclosure, and relationship health outcomes differed as a function of cancer type (head and neck, breast, prostate, lung), this variable was also included in the models as a covariate. Data from all four datasets were used.

Models at baseline

Multilevel models testing for mean differences as a function of sex, role, and whether couple was one in which the patient was male versus female predicting psychological health, disclosure, and relationship health can be found in Table 27.

Psychological Health. Patients reported higher psychological well-being compared to spouses (d = .09). Females reported higher psychological distress than males (d = .21). Cancer-specific distress was higher in females than males (d = .23) and higher in patients than spouses (d = .17). However, after taking into account the main effects of sex and role, there was no evidence that couples in which the patient was male differed from couples in which the patient was female.

Disclosure. Patients self-disclosed more than spouses (d = .27). Males perceived more disclosure from their spouses than females (d = .56). Spouses perceived more disclosure from patients (than patients perceived from spouses (d = .25)).

Relationship Health. There were no differences in intimacy and relationship quality as a function of sex, role, and couples where the patient is male versus female.

Models 6 months later

Results for the following models can be found in Table 28. Worth noting, the effects coded variable denoting whether the couple received an intervention was included in these models but it was not significant in any of the models presented in this subsection.

Psychological Health. Patients reported better psychological well-being than spouses (*d* = .10). Females reported greater levels of psychological distress compared to males (*d* = .14). Patients' levels of cancer-specific distress were higher than spouses (*d* = .16). Females' levels of cancer-specific distress were higher than males (*d* = .10).

Disclosure. Males perceived greater levels of disclosure from their spouses than females (*d* = .43). Spouses also perceived greater levels of disclosure from patients than patients perceived from spouses (*d* = .14).

Relationship Health. Males reported more intimacy than females (*d* = .21). Patients reported more intimacy than spouses (*d* = .10).

Summary of Analysis 3a

A number of consistent effects emerged across both timepoints. Patients reported higher psychological well-being than spouses, however, they also reported more cancer-specific distress than spouses. Females reported more psychological distress and cancer-specific distress than males. Spouses perceived that cancer patients disclosed more about their thoughts feelings than cancer patients perceived their spouses disclosing. Worth noting, no differences were found for couples in which the patient was male versus those in which the patient was female.

Analysis 3b: Examining mean differences in cancer concerns and communication patterns as a function of sex and role.

Analysis 3b is a parallel analysis to 3a with the exception that cancer concerns and communication patterns are the outcomes of interest. These variables are not present in the breast cancer data set and thus the sample size is smaller ($N_{couples}$ = 377). Table 29 displays the findings for the models at baseline while Table 30 displays the findings for the models 6 months following baseline.

Models at baseline

Cancer Concerns. Spouses reported more cancer concerns than patients with cancer (*d* = .33).

Communication Patterns. Spouses reported greater levels of Patient Demand/Spouse Withdrawal communication than patients (*d* = .27). Males reported more Spouse Demand/Patient Withdrawal communication patterns than females (*d* = .33).

Models 6 months later

Cancer Concerns. Spouses reported more cancer concerns than patients with cancer (*d* = .37).

Communication Patterns. Males reported using more Patient Demand/Spouse Withdrawal communication than females (*d* = .29). Spouses also reported using more Patient Demand/Spouse Withdrawal communication than patients (*d* = .33). That is, spouses reported greater rates of the patient engaging in demanding communication while they withdrew. Patient Demand/Spouse Withdrawal communication patterns differed as a function of whether the patient was male or female. In couples where the patient was female, couples reported greater

levels Patient Demand/Spouse Withdrawal communication patterns (*d* = .46). Males reported more Spouse Demand/Patient Withdrawal communication patterns than females (*d* = .32).

Summary of Analysis 3b

Compared to patients, spouses report a greater number of cancer concerns and Patient Demand/Spouse Withdrawal communication. Compared to females, males report more use of Spouse Demand/Patient Withdrawal communication patterns.

Analysis 4a: Examining bidirectional associations between psychological health and relationship health.

The purpose of this analysis was to examine whether there is evidence for bidirectional associations between couples' psychological health and their relationship health. To do this, an APIM was used to examine whether actor and partner psychological health measures (psychological well-being, psychological distress, and cancer-specific distress) at baseline predicted relationship health 6 months later (self-disclosure, perceived partner disclosure, intimacy, and relationship satisfaction), controlling for actor and partner relationship health at the previous wave (baseline). Then, an APIM was used to examine whether actor and partner relationship health at baseline predicted psychological health 6 months later, controlling for actor and partner psychological health at baseline. Including the outcome variable from the previous wave as a predictor in the APIMs allowed me to control for the stability of variables over time. Because role (whether the respondent is a patient or spouse) has consistently emerged as an important predictor, role (effects coded where 1 is for patient and -1 is for spouse) and the interaction between role and the predictors were included in the model. Originally, I proposed the number of comorbidities as a potential moderator of these bidirectional associations.

However, analyses 2a and 2b did not reveal this health stressor as a significant predictor, and thus was dropped from this analysis.

Tables 31-33 display the models conducted in analysis 4a. The main effects of interest, the actor and partner effects, are highlighted in gray for easy reading. The results below are organized by each psychological health variable.

Psychological Well-Being

Figure 27 displays the significant associations between psychological well-being and relationship health. Note that only significant actor effects are included in this figure and subsequent figures that summarize the bidirectional effects. The arrows that point toward the relationship health variables (e.g., self-disclosure) depict psychological well-being at baseline predicting relationship health 6 months post-baseline, controlling for relationship health at baseline. The arrows that point toward psychological well-being depict relationship health at baseline predicting psychological well-being 6 months later, controlling for baseline psychological well-being. When psychological well-being at baseline was high, individuals reported higher levels of self-disclosure, perceived partner disclosure, and intimacy 6 months later, holding constant baseline levels of each relationship health variable, respectively. However, levels of self-disclosure, perceived partner disclosure, and intimacy at baseline did not predict psychological well-being 6 months later after controlling for baseline levels of psychological well-being. Actor relationship satisfaction and actor psychological well-being were bidirectionally associated. High levels of psychological well-being at baseline predicted higher relationship satisfaction in individuals 6 months later, controlling for baseline relationship satisfaction. Higher levels of baseline relationship satisfaction predicted higher psychological well-being for individuals 6 months later, controlling for baseline psychological well-being.

Psychological Distress

As seen in Figure 28, levels of self-disclosure and intimacy 6 months after baseline were lower for individuals who reported higher levels of psychological distress at baseline, controlling for baseline ratings of self-disclosure and intimacy. Actor relationship satisfaction and actor psychological distress were associated with one another at each consecutive timepoint (i.e., bidirectionally associated). Individuals who reported high levels of baseline psychological distress reported lower levels of relationship satisfaction 6 months later, controlling for baseline relationship satisfaction. Individuals with higher levels of baseline relationship satisfaction reported lower levels of psychological distress 6 months later, controlling for baseline psychological distress.

Cancer-Specific Distress

An interaction between actor cancer-specific distress and role emerged when self-disclosure was the outcome. As seen in Figure 29, compared to spouses, patients reported lower levels of self-disclosure at six months when individuals reported higher levels of cancer-specific distress at baseline. The opposite pattern emerged in the interaction between partner cancer-specific distress at baseline and role. Figure 30 displays this interaction. Compared to patients, spouses reported lower self-disclosure at six months when their partners reported higher rates of cancer-specific distress at baseline.

Individuals who reported higher levels of cancer-specific distress at baseline reported lower levels of intimacy 6 months later, controlling for baseline intimacy, see Figure 31. Likewise, partners of individuals who reported lower levels of intimacy at baseline reported higher levels of cancer-specific distress 6 months later, controlling for baseline distress. Partners

of individuals who reported high relationship satisfaction at baseline reported lower cancer-specific distress 6 months post-baseline, controlling for baseline cancer-specific distress.

Summary of Analysis 4a

Psychological well-being at baseline emerged as a consistent predictor of all relationship outcomes at six months – self-disclosure, perceived partner disclosure, intimacy, and relationship satisfaction. Generally speaking, individuals or partners of individuals who reported higher levels of psychological distress and cancer-specific distress generally reported lower intimacy and relationship satisfaction. Two bidirectional actor (individual) effects emerged. Individuals who reported high well-being at baseline also reported having a higher-quality relationship 6 months later, and individuals who reported high quality relationships also reported high well-being 6 months later. The opposite was true for psychological distress – individuals with high levels of baseline distress reported worse relationship satisfaction six months later, and individuals reporting feeling less satisfied in their relationship also reported more distress six months post-baseline.

Worth noting, individual and partner measures of the outcomes at baseline were included in every model in analysis 4a. Although some significant findings emerged, the psychological and relationship variables here were very stable across time; individual (actor) effects of stability emerged for all models. For example, people who reported high levels of intimacy at baseline tended to report high levels of intimacy 6 months later.

Analysis 4b: Examining bidirectional associations between cancer concerns and relationship health.

A parallel analysis was conducted to examine whether there was evidence for bidirectional associations between couples' cancer concerns (both the number of concerns and

the degree to which they held back sharing those concerns) and their relationship health. Analysis 4b followed the same analytic plan as 4a, with two exceptions. First, communication patterns (how couples converse with one another during conflict and general discussions) were included as a measure of relationship health. Second, couples coping with breast cancer did not complete measures of cancer concerns and communication patterns, so the sample size reflects those only in the head and neck, lung, and prostate cancer studies ($N_{couples}$ = 377). Results from the analysis were organized by the number of cancer concerns and the degree to which couple members held back from sharing their concerns about cancer with each other. Tables 34 and 35 display the full models for the analyses described below. Figures 32 and 33 display the significant actor path models.

Number of Cancer Concerns

Individuals who reported high levels of self-disclosure and perceived partner disclosure at baseline reported fewer cancer concerns 6 months later, controlling for their baseline number of cancer concerns. Intimacy and relationship satisfaction at baseline were not associated with the number of cancer concerns 6 months post baseline (controlling for baseline levels); similarly, the number of cancer concerns at baseline was not associated with intimacy and relationship satisfaction 6 months post baseline.

Individuals who reported a fewer number of cancer-related concerns at baseline reported using more constructive communication 6 months later, controlling for baseline levels of constructive communication. Holding constant the rate of using Patient Demand/Spouse Withdrawal communication at baseline, individuals who reported a greater number of cancer concerns at baseline also reported higher rates of Patient Demand/Spouse Withdrawal communication 6 months later. Similarly, individuals who reported a greater number of cancer

concerns at baseline also reported higher rates of Spouse Demand/Patient Withdrawal communication at 6 months, controlling for baseline rates of Spouse Demand/Patient Withdrawal communication. A partner effect emerged in the opposite direction – when partners reported a greater degree of Spouse Demand/Patient Withdrawal communication at baseline, the individual had a greater number of cancer concerns 6 months later after controlling for the individual's baseline number of cancer concerns.

Holding Back Sharing Concerns

Individuals reported holding back sharing their concerns about cancer to a greater degree at baseline, they reported lower rates of self-disclosure 6 months after baseline, controlling for baseline levels of self-disclosure. Interestingly, the opposite was true for partners. When the partner reported holding back concerns to a great degree at baseline, the individual reported greater levels of self-disclosure 6 months later, controlling for baseline levels of self-disclosure. Individuals who reported high levels of self-disclosure at baseline reported holding back their cancer concerns less often 6 months later, controlling for baseline levels of holding back cancer concerns. However, there was no evidence of a partner effect. When individuals reported high levels of perceived partner disclosure at baseline, they reported holding back their cancer concerns to a lesser degree 6 months later, controlling for the degree to which they held back sharing concerns at baseline.

There was evidence of a bidirectional association between the degree to which individuals held back sharing concerns and their reported levels of intimacy. When individuals reported holding back concerns to a great degree at baseline, they reported lower levels of intimacy 6 months later, controlling for baseline levels of intimacy, and when individuals reported lower levels of intimacy at baseline, they reported holding back concerns to a greater

degree 6 months later, controlling for their baseline levels of holding back. Interestingly, when a person's partner reported a greater degree of holding back sharing concerns at baseline, the person also reported higher relationship quality 6 months later, controlling for baseline levels of relationship quality. When individuals reported higher levels of relationship quality at baseline, they reported holding back sharing concerns less often 6 months post-baseline, controlling for baseline levels of holding back sharing concerns.

A bidirectional association between the degree to which individuals held back sharing concerns and their reported levels of constructive communication emerged. Individuals who reported high rates of holding back sharing their concerns at baseline reported lower levels of constructive communication 6 months later, controlling for baseline levels of constructive communication. Individuals who reported lower levels of constructive communication at baseline reported holding back sharing their concerns more 6 months later, controlling for their baseline levels of holding back. Individuals who reported high rates of holding back at baseline reported higher levels of Patient Demand/Spouse Withdrawal 6 months later, controlling for baseline levels of Patient Demand/Spouse Withdrawal communication. Similarly, individuals who reported holding back to a great degree at baseline reported higher levels of Spouse Demand/Patient Withdrawal 6 months later, controlling for baseline levels of Spouse Demand/Patient Withdrawal communication. One partner effect emerged. When partners of individuals reported greater use of Spouse Demand/Patient Withdrawal communication at baseline, individuals reported holding back their concerns about cancer more often 6 months later, controlling for baseline levels of holding back.

Summary of Analysis 4b

A few interesting findings emerged. Individuals who reported high levels of disclosure, both self-disclosure and perceived partner disclosure at baseline reported fewer cancer concerns and they reported holding back sharing cancer concerns less often with their partner 6 months later. Intimacy and relationship satisfaction were associated with the degree to which individuals held back sharing their concerns at both time points. An individual who reported few cancer concerns and reported low rates of holding back sharing their concerns at baseline also reported high rates of constructive communication 6 months later. However, high rates of cancer concerns and the degree to which individuals held back sharing those concerns at baseline was associated with higher rates of Patient Demand/Spouse Withdrawal and Spouse/Demand and Patient withdrawal communication patterns. Again, in general, cancer concerns and communication variables were highly stable across timepoints. For example, someone with a high rate of constructive communication at baseline also reported a high rate of constructive communication 6 months later.

Analysis 5: Examining communication patterns as a mediator of the association between individual responses to cancer and relationship health.

The purpose of this analysis was to examine whether the association between individual responses to cancer and relationship health was mediated by how couples communicate with one another. Figures 34-37 display separate mediation models for each of the relationship health outcomes (self-disclosure, perceived partner disclosure, intimacy, and relationship satisfaction, respectively) For example, the question of whether psychological well-being at baseline is associated with relationship satisfaction 6 months later through constructive communication is addressed in Figure 34. As seen in the figure, included are all 5 individual responses to cancer as

predictors at baseline (psychological well-being, psychological distress, cancer-specific distress, the number of cancer-related concerns, and the degree to which an individual held back sharing concerns about cancer), the 3 communication mediators at baseline (constructive communication, patient demand/spouse withdrawal communication, and spouse demand/patient withdrawal communication), and one of the four relationship outcomes 6 months later (self-disclosure, perceived partner disclosure, intimacy, and relationship satisfaction). Worth noting, the outcome (relationship health) at baseline was included as a predictor to control for stability. Analyses were conducted using MPlus Version 8.8 (Muthén & Muthén, 1998-2022) using maximum likelihood estimation and 1,000 bootstrapped samples. Results below are organized by outcome.

Self-Disclosure

Table 36 displays the total indirect and specific indirect effects for each mediation pathway and Tables 37 reports the unstandardized A path and B path coefficients. Table 38 displays the correlations among the predictors in each model and in the first panel are the correlations for self-disclosure followed by perceived partner disclosure, intimacy, and relationship satisfaction. Figure 34 displays the directional pathways and includes significant pathways and covariances. Subsequent figures will follow this structure.

Psychological well-being as a predictor is in the first panel of Table 36, psychological distress in the second, cancer-specific distress in the third, the number of cancer concerns in the fourth panel, and the degree to which people held back sharing their concerns in the fifth and final panel. None of the total indirect nor specific indirect effects were significant. Said differently, the three types of communication patterns – constructive, patient demand/spouse

withdrawal, and spouse demand patient withdrawal – did not mediate the association between individual responses to cancer and self-disclosure, one aspect of relationship health.

Perceived Partner Disclosure

A parallel analysis was conducted to investigate the association between individual responses to cancer and perceived partner disclosure through communication, see Tables 39 and 40. Communication patterns did not mediate the associations between individual responses to cancer and perceived partner disclosure.

Intimacy

As seen in Table 41, the total indirect effect of holding back sharing concerns on intimacy through communication patterns was significant. However, only one specific indirect effect was significant: Individuals who reported high rates of holding back sharing concerns also used more patient demand/spouse withdrawal communication, which, in turn, was associated with lower levels of intimacy, as shown in Table 42. No other indirect effects were significant.

Relationship Satisfaction

No significant indirect effects were found, see Tables 43 and 44. Individual responses to cancer were not associated with relationship satisfaction through any of the communication mediators.

Summary of Analysis 5

Generally speaking, the evidence suggests that communication patterns did not mediate the relationship between individual responses to cancer (psychological well-being, psychological distress, cancer-specific distress, number of cancer concerns, and the degree of holding back cancer concerns) and relationship health.

DISCUSSION

Cancer is a negative life experience that is associated with a range of difficulties in couples' individual and relational functioning. This study is unique in that it takes advantage of data from couples where the patient has one of four common types of cancer: head and neck, lung, breast, and prostate cancer using similar measures across two time points. The questions investigated in this dissertation were guided by three broad experiences captured in Berg and Upchurch's (2007) model of how couples cope with cancer and other chronic illnesses. Couples navigate role changes that may result in an imbalance in labor that is disruptive for both partners. This dissertation focused heavily on role differences in individual and couple functioning with particular attention to sex differences in the patient. Role and responsibility changes for patients and spouses leave them both vulnerable to worsening health. In addition, different types of cancer and preexisting health challenges evoke difficult circumstances that both partners must work through. To that end, this dissertation focused on how aspects of the cancer itself, the patient's existing health stressors, role, and sex were associated with individual and couple functioning. Finally, this dissertation also conducted tests of temporal precedence of individual responses to cancer and couple functioning.

Differences by cancer type and role: Head, neck, and lung cancer are the most challenging, and spouses deserve a greater focus in the cancer and relationships literature.

An important first inquiry into the lives of couples coping with cancer is understanding how patients' and spouses' individual and relational functioning varies as a function of cancer type and the individuals' role in the couple. When I examined differences as a function of cancer type, two overarching patterns emerged. First, couples coping with head, neck, or lung cancer experienced more distress, in general and specific to cancer, and reported lower quality

relationships with their partners. This is not surprising since, out of all the cancers surveyed here, those with head, neck and lung cancer typically experience the greatest disruptions to their lives (Carlson et al., 2019; Dirkse et al., 2014; Fletcher et al., 2012; Larsson et al., 2003; Pusa et al., 2012). For those with head and neck cancer, these disruptions are reflected in daily physical, social, and emotional changes. When and how much patients eat, losing sense their of taste, and losing their ability to eat at normal mealtimes with loved ones are associated with feelings of loneliness, isolation, and an existential loss of self (Lang et al., 2013; McQuestion et al., 2011). Caring for a partner who is experiencing drastic changes to eating – both what they eat and their method of obtaining nutrients – has shown to be quite distressing for partners as well (Verdonck-de Leeuw et al., 2007).

For lung cancer patients and spouses, life disruptions come in the form of coping with poor survival rates (*Lung Cancer Survival Rates*, 2022) and sharp declines in functional status (Manser et al., 2003). Additionally, patients with lung cancer and their spouses experience the worst prognosis of all the cancers surveyed here (Carlsen et al., 2005). This is a heavy psychological burden to bear for both patients and spouses as the patient's quality of life decreases. Compared to patients with colon and prostate cancer, lung cancer patients have reported serious difficulties with recreation activities, ambulating, and other activities of daily life even after surviving lung cancer (Schag et al., 1994).

The second pattern that emerged was that patients with lung and prostate cancer and their spouses reported holding back sharing their concerns about cancer more often than those with head and neck cancer. This is consistent with what is known about survivors of lung and prostate cancer. One possible explanation is that this reflects a decline in communication about cancer in general because most participants in these data sets were surveyed near the end of treatment.

Cancer patients and their spouses tend to communicate less about their cancer after they complete treatment (Song et al., 2011). Another explanation is that discussing difficulties related to cancer is challenging because of the physical and emotional toll it takes to navigate the cancer. Couples coping with both types of cancer (prostate and lung) report difficulty discussing their cancer, their fears, the future, and general feelings (Schag et al., 1994). Patients and spouses dealing with lung cancer have been shown to rely on maladaptive communication strategies such as denial, avoidance, and conflict (Badr & Taylor, 2006). Men with prostate cancer and their spouses also express avoidance, devising strategies about what to share and with whom. In a study that interviewed men several weeks after their prostatectomy, almost none of them shared information about their lingering incontinence and sexual functioning issues. Additionally, spouses of prostate cancer patients respected their partners' wishes by not sharing progress updates with other family members, even if this made them feel upset (Gray et al., 2000). Although challenging, communicating with one's partner is beneficial for the overall quality of their relationship. Couples who used reflective listening, shared their feelings, and used strategies to facilitate their partner's disclosure were happier in their relationships (Porter et al., 2009). More work is needed to help patients and spouses develop strategies for discussing cancer.

Role was also an important factor in understanding variation in individual and relational functioning. Collapsing across cancer type, relative to patients, spouses reported lower psychological well-being, self-disclosed less often, held back sharing their concerns about cancer more often, and reported feeling less intimacy in their relationships. Thus, it is important to understand how spouses of patients experience cancer. Spouses of patients with cancer often fare worse at many phases during the cancer experience due to their heavy caregiver burdens (Kim &

Schulz, 2008). In this study, patients and spouses were in the post-treatment phase/survivorship phase. Common emotional features of this phase include a great deal of uncertainty and turmoil as caregivers struggle to finding meaning in the illness and fear recurrence (Northouse et al., 2012). Physical deterioration due to caregiving burdens is also prevalent among spousal caregivers (Nightingale et al., 2016). Cancer patients with spouses tend to live longer and get diagnosed at an earlier stage than those without spouses (Goodwin et al., 1987; Wang et al., 2011). This demonstrates the significance of the role of the spouse at every phase of the cancer experience. Although in the developmental-contextual model couples are treated as a unit, it is clear both individuals each have specific needs to be addressed. Overall, this pattern of role differences is consistent with the existing literature.

The role of the cancer patient's additional health stressors in predicting individual and relationship functioning: Functional status as the most important health factor

A few interesting patterns of differences emerged as a function of the cancer patient's health stressors. First, over and above all other health stressors, cancer patients' lower functional status was associated with worse psychological health for both patients and spouses, and the negative effect on psychological functioning was significantly worse for patients relative to spouses at both timepoints (baseline and 6 months post-baseline). Second, some health stressors only affected the patient and were not necessarily detrimental. Specifically, cancer patients with later stage cancer perceived their spouses disclosing more often to them. Additionally, cancer patients with a greater number of comorbidities reported lower cancer specific distress. Third, and finally, for couples where the cancer patient was taking a greater number of medications, both partners reported lower psychological well-being and greater levels of distress.

That functional status was worse over and above all other health stressors for patients and spouses' psychological and relational health (but especially for patients) is consistent with the literature on chronic illness in couples insofar as functional status has been examined. For example, in couples where one person has rheumatoid arthritis, patient's higher levels of pain, physical disability, and psychological disability were associated with worse marital adjustment after controlling for disease severity (Reese et al., 2010). Why is functional status such an important health indicator? Functional status or ability encompasses daily care and maintenance activities and is a reliable predictor of cancer patients' prognosis, anxiety, depression, and quality of life (Gonzalez-Saenz de Tejada et al., 2017; Nightingale et al., 2021; Viganò et al., 2000). It is distressing to lose independence performing everyday tasks (e.g., eating, walking, toileting), and cancer patients who are more depressed also report more physical symptoms such as fatigue, pain, and trouble sleeping (Fitzgerald et al., 2015). From these factors, it is reasonable to assert that the patient's functional status was the best measure of patients' overall physical health I had access to from the data. More than that, functional status is linked to the changes in relationship dynamics that patients and spouses experience when chronic illness arises. Patients with lower levels of functional ability feel more like a burden to their caregiving spouse (McPherson et al., 2010). The patient's feeling of being a burden concurs with spousal reports of caregiving burden. As the cancer patient's functional needs increase so do the spouse's caregiving burdens and rates of anxiety (Sauer et al., 2022) and depression (Grunfeld et al., 2004). One limitation in this analysis was the lack of information from prostate cancer couples, who did not receive a measure of functional status in their battery of questionnaires. Common physical functioning declines for prostate cancer patients include bladder, bowel, and sexual functioning (Maggi et al., 2019; Orom et al., 2018). Although sexual functioning is not thought of as a daily "task" in the way

that walking or toileting is, having one's partner aid in toileting changes the nature of their ascribed roles. They are no longer just romantic partners – the partner with cancer becomes the patient and the spouse becomes the caregiver, which can make it challenging for couples to connect romantically (McPherson et al., 2010). The couple's role renegotiation considering the patient's physical functioning due to the particulars of their cancer should be the focus of future research on functional status in couples coping with cancer, especially in cancers that greatly impact the patient's functional status.

Why might some cancer patients experience less distress in the presence of greater health stressors? One possibility is that cancer is less disruptive at later stages because patients experience a change in priorities and redefine their quality of life (Addington-Hall & Kalra, 2001). When people are faced with life changing events, they make choices to maximize the good in their lives (Carstensen et al., 1999), and patients diagnosed with cancer prefer to spend time with their closest relationships over seeking new connections (Pinquart & Silbereisen, 2006).

Couples' psychological health might be associated with a greater number of medications that the patient takes due to the burden of medication adherence. Not taking medications as prescribed can worsen health outcomes (Marcum et al., 2017). It could also be the case that the number of medications itself is burdensome. For example, being on a greater number of medications is also associated with a greater risk of serious health events such as falls or stroke (Alenazi et al., 2018). Ultimately, the purpose of examining medications as a health stressor was that the measure served as a proxy measure of the patient's health, but perhaps not the most precise proxy measure. A limitation in this analysis was the truncated nature of the question of the number of medications for participants to fill out. The number of medications that patients

could report on differed across studies. For example, head, neck, and lung cancer patients could report up to three medications, breast cancer patients could include up to six medications, and prostate cancer patients could include up to seven medications. Thus, patients from any study could have taken more medications than could be captured in their studies.

Disentangling gender and role: no differences emerge among couples where the patient is a man versus couples where the patient is a woman.

The majority of past work has found differences in psychological health as a function of gender and role, controlling for one another (Hagedoorn et al., 2000; Hagedoorn et al., 2008; Li et al., 2013; Perz et al., 2011; Tuinstra et al., 2004). One highlight of this dissertation is that I collapsed across all four types of cancer (head and neck, lung, breast, and prostate cancer) to examine three contrasts – differences as a function of whether (1) the respondent was a man or woman, (2) the respondent was the patient or the spouse, and (3) the respondent was a member of a couple in which the patient was a woman or man.

Collapsing across gender, spouses perceived that cancer patients disclosed more about their thoughts feelings than cancer patients perceived their spouses disclosing. Spouses also reported a greater number of cancer concerns and greater use of Patient Demand/Spouse Withdrawal communication, which is consistent with past work that finds partners are greatly affected by the course of cancer from diagnosis to far after treatment has concluded. Collapsing across role, I found women reported more psychological distress and cancer-specific distress than men, consistent with prior work (Hagedoorn et al., 2008) and men reported using more Spouse Demand/Patient Withdrawal communication patterns than women. In fact, couples who believed cancer had put distance between them reported worse communication and support from their partner (Carlson et al., 2000). Patients had higher levels of cancer-specific distress

compared to spouses. This is consistent with the literature, given that cancer has been shown to be distressing in general. In one study, nearly half of a geographically diverse sample of cancer patients experienced moderate cancer-specific distress and over a quarter of the sample experienced clinical-levels of distress (Carlson et al., 2019). Patients also reported higher levels of psychological well-being compared to their spouses, which is more difficult to explain. The datasets used in this dissertation did not have measures that could allow for assessing possible moderators of this association. Work examining how cancer patients appraise and cope with having cancer provides an empirical avenue for understanding this association (Schroevers et al., 2011; Zimmermann et al., 2018), and highlights the need for more research in this area.

The last contrast – which examined variation in individual and relational outcomes when the respondent was a member of a couple in which the patient was a woman or man – is the most interesting because few studies have had large enough samples to test differences when the patient is a woman and the spouse is a man and vice versa (patient is a man, woman is the spouse)[12].

A well-established pattern within the literature is that women's expectations for caregiving are reflected in traditional gender roles as they are often considered "family kin-keepers and care providers" and their lives are "tied inexorably to the lives of others" (Moen et al., 1995, p.259). From this perspective, we might expect to find that when the patient is a woman and the spouse is a man, couples report worse psychological health and more difficulties in their relationship because the male spouse is in an unfamiliar and less practiced caregiving role. However, in this dissertation, I found very little evidence to suggest systematic differences

[12] The majority of couples in the study (over 98%) were heterosexual and thus the discussion will focus on the influence of gender norms within heterosexual relationships.

in individual and relationship functioning between couples where the patient was a man, and the patient was a woman.

Indeed, many studies, including this dissertation, have found that both men and women experience deleterious effects when providing care to ailing partners (see Li et al., 2013), and in some studies stress and exhaustion appear to be exacerbated in women (Gaugler et al., 2008; Morgan et al., 2016). In this dissertation, I found women were more distressed than men and men reported greater rates of unhealthy communication patterns. Previous and present work notwithstanding, there are many elements at play when considering the absence of differences when the patient is a man versus a when the patient is a woman.

One possibility is that the conditions that contribute to burden or the caregiving experience itself differs for men and women. Although this study did not include measures to test for differences in the caregiving experience, Swinkels et al. (2019) examined gender differences in a sample of over 1,600 caregivers and found that providing more hours of care to their husbands did not increase women's caregiving burden, however, providing more hours of care to their wives increased men's caregiving burden. They also found that women providing more care to their husbands required more support from other care providers, which in turn, increased their levels of caregiver burden, but this mediational path was not significant for men caring for their wives. Finally, Swinkels et al. (2019) found similarities across men and women caregivers caring for opposite sex partners – for both men and women, the more care their partner required was associated with higher caregiver burden due to secondary stressors such as financial difficulties and challenges balancing other daily tasks. Because the research investigating differences in couple dynamics for male patient/female spouse and female patient/male spouse couples is limited, major conclusions cannot be drawn. However, the Swinkels et al. (2019) study provides

an illustrative example of the possible contributors to differences (and the lack thereof) when the patient is a man versus when the patient is a woman.

Bidirectional Associations: Healthy individual, happy relationship and vice versa

When examining the associations between individual responses to cancer and relationship functioning, there was evidence that psychological well-being and distress were bidirectionally associated with relationship satisfaction. That is, well-being and distress at baseline predicted relationship satisfaction 6 months later and relationship satisfaction at baseline predicted well-being and distress 6 months post-baseline. Indeed, there is evidence for reciprocal associations in positive dimensions of well-being (Roberson et al., 2018) as well as negative (Whitton & Whisman, 2010) and relationship satisfaction. However, a major limitation in this examination of temporal precedence is that the association was examined across only two waves of data, which just meets the qualifications for longitudinal inquiry. Thus, it is important to note that these findings could reflect a common theme in the literature on relationship quality and people's overall wellbeing (Proulx et al., 2007): Put simply, happy, healthy people tend to be in satisfying relationships (Diener & Seligman, 2002), and satisfying relationships tend to be made up of happy, healthy people (Robles et al., 2014).

There was also evidence of bidirectional associations between the degree to which couples held back sharing their concerns about cancer and relationship health. Couples who held back sharing their cancer concerns at baseline reported self-disclosing less often, reported less intimacy, and lower rates of constructive communication 6 months post-baseline. Couples who reported lower rates of self-disclosure, intimacy, and constructive communication at baseline reported holding back sharing their concerns much more 6 months later. Cancer treatment contributes to major changes to patients' and spouses' daily lives and routines. Many cancer

foundations recommend that couples talk with one another about their feelings because it can help both patient and spouse (*For Caregivers - Focus on Communication*, 2023; *Talking With Your Partner*, 2020). Despite norms that recommend couples share their feelings with one another, one explanation for this finding is that holding back allows both members of the couple to avoid facing unpleasant emotions as focusing on them can make them feel worse (Goldsmith & Miller, 2015). Moreover, clinical trials research has made similar recommendations about open communication, but has not found many couple interventions that perform better than interventions targeted at only patients or only partners (Baik & Adams, 2011; Regan et al., 2012). Said differently, although couples are theorized to cope and adjust as a unit, they may rely on different strategies for achieving adjustment. Thus, another important consideration is that patients and spouses may hold back sharing their concerns for different reasons. For example, men with prostate cancer held back their concerns about their physical functioning to not worry their wives, or because they noticed their wives becoming more attuned to changes on their own (i.e., sharing them felt unnecessary; Boehmer & Clark, 2001). Spouses report suppressing their own needs or feelings to prioritize caring for the ailing patient and to reduce potential conflict (Ussher & Perz, 2010). These differences are especially important to consider when using the developmental-contextual model as a theoretical framework to understand how couples cope with cancer. The developmental-contextual model derives an alternative assumption from other models of dyadic coping (e.g., Bodenmann, 2005) viewing dyadic coping as a "first line of coping" rather than coping that occurs when individual aspects of coping have been exhausted, as is assumed in Bodenmann's framework of dyadic coping (2005; Berg & Upchurch, 2007, p. 931). Although my data cannot address *why* couples held back, it is important for future research

to strategically consider theoretical models' assumptions about when and how dyadic coping is enacted in the process of couples coping with chronic illnesses like cancer.

I also found consistent unidirectional relationships – that all psychological health variables at baseline (psychological health, psychological distress, and cancer-specific distress) consistently predicted intimacy 6 months later, but not vice versa. In other words, couples who reported higher psychological wellbeing at baseline reported more intimacy 6 months later and couples who reported higher psychological and cancer-specific distress reported less intimacy 6 months later. Intimacy is a common challenge that cancer patients and spouses in this sample face during and after treatment (Lindau et al., 2011; Ussher et al., 2012). Intimacy is the practice of fostering close and personal connections with loved ones (Holmberg et al., 2001). Couples can benefit from sharing small moments of joy with one another and increase feelings of intimacy. When patients and spouses shared good news with one another, and were responsive to that news, both experienced increases in intimacy (Otto et al., 2015). On days when patients and spouses provided support to one another – listening, offering tangible help in solving a problem – they both reported higher levels of intimacy (Belcher et al., 2011). Thus, fostering intimacy in a variety of ways can help couples remain connected and satisfied in their relationships.

Finally, the number of cancer concerns expressed was unidirectionally associated with all aspects of relationship health. Having a greater number of cancer concerns at baseline was associated with lower rates of self- and perceived partner disclosure as well as worse communication patterns between partners 6 months later. The number of cancer concerns that a patient or spouse may have is dependent on how salient the cancer is in the couples' lives. The majority of couples sampled in this dissertation were approaching the end of treatment. Therefore, it is reasonable to suggest that many couples simply had fewer concerns to disclose at

the time they were queried. In past work, when couples were sampled during the course of treatment, both partners reported higher rates of disclosure and lower rates of holding back (Porter et al., 2005). It is not uncommon for cancer talk to decline once treatment has ended. Sometimes this is expressed as a "return to normalcy" where couples simply discuss cancer less as they move farther away from the active phases of treatment (Song et al., 2012).

No evidence of mediation

The final analysis addressed the possibility of communication patterns mediating the association between individual responses to cancer and relationship health. Mediation was proposed as a method to test the associations between the key components of the developmental-contextual model such that how couples internalize their experience of the chronic illness (dyadic appraisal) would be associated with their relationship outcomes (dyadic adjustment) through the mechanisms and strategies they use to manage the changes they are experiencing (dyadic coping). In this study, there was no evidence that communication patterns mediated the association between each partner's response to cancer (e.g., psychological distress) and their relationship health (e.g., self-disclosure). The lack of findings could have occurred due to the constraints of the data, namely, that the analyses relied on two waves of data sampled 6 months apart. In other words, perhaps this period of time is not appropriate to expect the proposed association to emerge. The developmental-contextual model, although useful in its identification of relevant variables and influences on couples, does not provide guidance on what the patterns of dyadic appraisal, coping, and adjustment look like at each stage of the temporal process of coping. That is, there isn't enough empirical data using this model as a guide to describe what patterns we might expect at each stage. Another possibility for the lack of significant findings again has to do with the context during which the couples were sampled. The data examined here

came from couples who were near or at the end of treatment. By the time treatment has ended, couples typically settle into their new way of life after cancer and enter the phase of discovering a "new normal." That new normal is defined by the patient's prognosis. Was treatment successful because the clinicians did all they could to extend the person's life? Was treatment successful because the patient is in remission? Or was the treatment unsuccessful? These contextual factors are important to consider because the partners' prognosis is just as important as how the couples redefine themselves after the experience (Miller & Caughlin, 2013). Additionally, patients and spouses may still have unmet needs which are associated with higher rates of distress (Hodgkinson et al., 2007). Overall, more work is needed to examine couples' individual and relational health long after cancer treatment has ended.

Strengths, Limitations, and Future Directions

A boon of this dissertation was being able to examine a variety of individual and relationship outcomes across four types of cancer at two time points. Additionally, the majority of the variables included in this dissertation used the exact same items and scales to operationalize my constructs of interest. The sample was also large enough to address differences in outcomes as a function of relationships where the man was the cancer patient versus the woman was the cancer patient, an important and understudied area in the cancer relationships literature.

Strengths notwithstanding, there are several general limitations of the data that should be discussed. These limitations are all related to the context in which the data were collected. The first limitation is that the four data sets were not directly parallel with respect to some important aspects of the cancer experience. There are a few features of the current study's construction that could have contributed to the differences observed across role and cancer type. Couples dealing

with head, neck and lung cancer were approached for the study while the patient was actively undergoing treatment, whereas couples in the breast and prostate cancer samples were approached during the patient's outpatient visits. It is possible that differences occurred as a function of cancer due to the timing of the sampling.

A second limitation deals with the meaning of "baseline". Couples were surveyed at baseline and 6 months after baseline. The head, neck, and lung data were collected from 2006-2010, the breast cancer data were collected from 2009-2014, and the prostate cancer data were collected from 2011-2017. Thus, the context of baseline varies systematically across the head, neck, lung, breast, and prostate cancer datasets. Cancer treatment and technology continue to advance, improving outcomes for individuals with cancer, and those improvements look different for different types of cancer. For example, the American Cancer Society estimates that lung cancer rates have dropped 1.5% for women and 3% for men between 2009-2018, and one reason for those drops are reductions in rates of smoking in the population (*Lung Cancer Research Highlights*, 2023). Rates of prostate cancer dropped 50% between the mid-1990s to the mid-2010s, and one reason for those drops are due to increased PSA screenings (*Prostate Cancer Research Highlights*, 2023). Still, lung and prostate cancer are the first and second leading causes of death in men, respectively (*Lung Cancer Research Highlights*, 2023; *Prostate Cancer Research Highlights*, 2023). This ultimately makes research on cancer a moving target; as diagnosis rates and treatments change, the context in which cancer is researched becomes more important and nuanced.

The third limitation deals with inclusion criteria. All four datasets were collected by research assistants polling couples leaving their outpatient or treatment appointments from cancer clinics. In this way, the data are relatively homogenous, as the majority of couples who

agreed to participate were white heterosexual couples with a median income from the Northeast region of the United States. Cancer can happen to anyone, and those without access to high-quality medical care (e.g., those who experience socioeconomic barriers) get diagnosed later, experience less direct treatment courses, and have higher mortality rates (Grant et al., 2016; Hines et al., 2014; Kim et al., 2011; Pagedar et al., 2019). According to Grant et al. (2016), the biggest discrepancies in the stage of diagnosis occurred in common cancers that have concrete screening guidelines including breast and prostate cancer. Furthermore, there are wide disparities among Black Americans' experience with cancer. The mortality rate for breast cancer is 41% higher for Black women and rates of prostate cancer are 73% higher in Black men (*Prostate Cancer Research Highlights*, 2023). Thus, a central focus of future research should be to increase the representation of participants, especially those from diverse racial backgrounds and socioeconomic status.

A final limitation of the present research was with the theoretical model selected to inform the research questions of interest. Berg and Upchurch's (2007) developmental-contextual model provided a complete picture of the mechanisms that contribute to a couple's process of coping with chronic illness across the lifespan. This allowed for a logical flow of inquiry at the development of this dissertation. However, deriving theoretically meaningful conclusions from the data based on the model ultimately proved challenging. The findings from this dissertation contribute more to the understanding of the contexts of different types of cancer for couples rather than elucidating the mechanisms at play.

I have two main considerations for future research. First, more funding should be allocated to research projects following couples many years after treatment has finished. Following couples for many years after treatment would allow for a better understanding of

whether couples maintain their levels of functioning or establish a new baseline for themselves. In a similar vein, an innovative line of research could involve following couples who participate in regular cancer screens according to the screening guides for common types of cancer (e.g., breast, prostate, colon, and cervical cancer) to identify those who could need supports related to cancer in the future based on the risks present before cancer. Research could be carried out similar to other large panel studies that follow specific groups of people over time (e.g., older adults in the Health and Retirement Study). This could allow researchers to follow couples before diagnosis, after diagnosis while in treatment, and years following treatment.

Conclusion

Cancer is a challenging chronic illness that alters the future of the patients and spouses who endure it. As patients deal with the existential loss of self, spouses renegotiate their role as partner *and* caregiver, and experience declines in their own health. This dissertation provided a comprehensive overview of couples dealing with head and neck, lung, breast, and prostate cancer and showed that couples' experiences are shaped by the type of cancer, health stressors of the patient, gender and role of each member of the couple, and found individual responses to cancer are bidirectionally associated with relationship functioning.

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APPENDIX

Table 1.
Key variables available in each dataset for both patient and spouse at baseline and 6 months later (unless specified otherwise)

Variable	Head or Neck	Lung	Breast	Prostate
Relationship Satisfaction	X	X	X	X
Intimacy	X	X	X	X
Self-disclosure	X	X	X	X
Perceived partner disclosure	X	X	X	X
Psychological well-being	X	X	X	X
Cancer-specific distress	X	X	X	X
Cancer-related concerns	X	X		X
Holding back sharing concerns	X	X		X
Communication patterns	X	X		X
Experimental manipulation			X	X
Cancer Type[a]	*X*	*X*	*X*	*X*
Cancer Stage[a]	*X*	*X*	*X*	*X*
Number of comorbidities	*X*	*X*	*X*	*X*
Number of medications	*X*	*X*	*X*	*X*
Functional status	*X*	*X*	*X*	

Note. Italicized variables were only measured in the patient.
[a]Measured only at baseline.

Table 2.
Summary of dissertation questions and data analytic plan[a]

Question 1[b]	**Analysis**	**Data used**	**Variables used**
Are there differences in psychological health, disclosure, and relationship health as a function of cancer type and role?	1a	H, L, B, P	Predictors: Cancer type, Role, Age Outcomes: Psychological well-being, Psychological distress, Cancer-specific distress, Self-disclosure, Perceived partner disclosure, Intimacy, Relationship satisfaction
Are there differences in communication patterns and cancer-related concerns as a function of cancer type and role?	1b	H, L, P	Predictors: Cancer type, Role, Age Outcomes: Communication patterns, Cancer-related concerns, Holding back sharing concerns
Question 2[c]	**Analysis**	**Data used**	**Variables used**
Are there differences in psychological health, disclosure, and relationship health as a function of additional health stressors?	2a	H, L, B, P	Predictors: Cancer type, Cancer stage, Number of comorbidities, Number of medications, and Functional status, Age Outcomes: Psychological well-being, Psychological distress, Cancer-specific distress, Self-disclosure, Perceived partner disclosure, Intimacy, Relationship satisfaction
Are there differences in communication patterns and cancer-related concerns as a function of additional health stressors?	2b	H, L, P	Predictors: Cancer type, Cancer stage, Number of comorbidities, Number of medications, and Functional status, age; Outcomes: Communication patterns, Cancer-related concerns, Holding back sharing concerns
Question 3	**Analysis**	**Data used**	**Variables used**
Are there differences in psychological health, disclosure, and relationship health as function of gender and role?	3a	H, L, B, P	Predictors: Gender, Role, Age, Cancer stage Outcomes: Psychological well-being, Psychological distress, Cancer-specific distress, Self-disclosure, Perceived partner disclosure, Intimacy, Relationship satisfaction
Are there differences in communication patterns and cancer-related concerns as function of gender and role?	3b	H, L, P	Predictors: Gender, Role, Age, Cancer stage Outcomes: Communication patterns, Cancer-related concerns, Holding back sharing concerns
Question 4	**Analysis**	**Data used**	**Variables used**

Table 2. (cont'd)

Are there bidirectional associations between individual responses to cancer and relationship outcomes?	4a	H, L, B, P	Psychological well-being, Psychological distress, Cancer-specific distress, Self-disclosure, Perceived partner disclosure, Intimacy, Relationship satisfaction
Are there bidirectional associations between communication patterns and cancer concerns and relationship outcomes?	4b	H, L, P	Communication patterns, Cancer-related concerns, Holding back sharing concerns, Self-disclosure, Perceived partner disclosure, Intimacy, Relationship satisfaction Moderator: number of comorbidities/health factor
Question 5[d]	**Analysis**	**Data used**	**Variables used**
Do communication patterns mediate the association between individual responses to cancer and relationship outcomes?	5	H, L, P	Predictors[e]: Psychological well-being, Psychological distress, Cancer-specific distress, Cancer-related concerns, Holding back sharing concerns (all at baseline) Mediator: Communication patterns (at baseline) Outcomes: Self-disclosure, Perceived partner disclosure, Intimacy, Relationship satisfaction (all 6 months post-baseline)

Note. H = Head and Neck Cancer; L = Lung Cancer; B = Breast Cancer; P = Prostate Cancer.

[a] Analyses 1-3 will include two time points examined separately: baseline and 6 months later.

[b] If outcomes differ to a great degree as a function of cancer type and role, these predictors will be included in subsequent analyses. Because the breast and prostate studies include interventions which could bias the interpretation of differences in outcomes 6 months later, I will use data from only the head and neck, lung, and control group from the prostate cancer study when looking at differences in outcomes 6 month later for all analyses.

[c] In analysis 2a, I will examine whether functional impairment predicts the individual and relationship outcomes over and above the other predictors in the head and neck, lung, and breast cancer data. In analysis 2b, I will examine whether functional impairment predicts the communication patterns and cancer-related concerns over and above the other predictors in the head and neck and lung data.

[d] The predictors and mediators will be examined with baseline measures; the outcomes will be examined using the 6 months later measures.

[e]Four models will be conducted, one for each relationship functioning outcome. Each model will also include the relationship functioning outcome at baseline as a control variable.

Table 3.
Cronbach's alpha for all variables, all datasets

Dataset	**Head and Neck Cancer Dataset**			
Person	Patient		Spouse	
Time Point	*Baseline*	*Six months later*	*Baseline*	*Six months later*
Cancer-specific distress	0.91	0.90	0.92	0.93
Psychological health				
Well-being subscale	0.93	0.92	0.95	0.96
Distress subscale	0.93	0.94	0.95	0.95
Self-disclosure	0.91	0.97	0.94	0.95
Perceived partner disclosure	0.93	0.97	0.94	0.96
Intimacy	0.88	0.82	0.89	0.86
Relationship satisfaction[a]	0.90	0.90	0.92	0.87
Communication patterns				
Constructive communication	0.70	0.73	0.81	0.74
Patient-Demand/Spouse-Withdraw	0.80	0.74	0.87	0.89
Spouse-Demand/Patient-Withdraw	0.86	0.71	0.78	0.75
Cancer-related concerns	0.81	0.86	0.76	0.84
Holding back sharing concerns	0.93	0.89	0.69	0.79
Functional status	0.93	0.91	--	--
Dataset	**Lung Cancer Dataset**			
Person	Patient		Spouse	
Time Point	*Baseline*	*Six months later*	*Baseline*	*Six months later*
Cancer-specific distress	0.90	0.91	0.90	0.91
Psychological health				
Well-being subscale	0.92	0.93	0.92	0.95
Distress subscale	0.95	0.95[b]	0.94	0.95[b]
Self-disclosure	0.92	0.96	0.82	0.86
Perceived partner disclosure	0.92	0.94	0.92	0.97
Intimacy	0.81	0.89	0.83	0.91
Relationship satisfaction	0.84[c]	0.86[c]	0.91[c]	0.94[c]
Communication patterns				
Constructive communication	0.70	0.79	0.76	0.75
Patient-Demand/Spouse-Withdraw	0.79	0.82	0.76	0.95
Spouse-Demand/Patient-Withdraw	0.82	0.84	0.84	0.92
Cancer-related concerns	0.87	0.80	0.59	0.78

Table 3. (cont'd)

Holding back sharing concerns	0.91	0.89	0.76	0.87
Functional status	0.93	0.94	--	--
Dataset	**Breast Cancer Dataset**			
Person	Patient		Spouse	
Time Point	*Baseline*	*Six months later*	*Baseline*	*Six months later*
Cancer-specific distress	0.87	0.90	0.89	0.90
Psychological health				
Well-being subscale	0.95	0.95	0.94	0.94
Distress subscale	0.96	0.95	0.96	0.95
Self-disclosure	0.93	0.97	0.90	0.94
Perceived partner disclosure	0.93	0.98	0.93	0.97
Intimacy	0.89	0.88	0.88	0.84
Relationship satisfaction	0.94	0.94	0.94	0.93
Communication patterns				
Constructive communication	--	--	--	--
Patient-Demand/Spouse-Withdraw	--	--	--	--
Spouse-Demand/Patient-Withdraw	--	--	--	--
Cancer-related concerns	--	--	--	--
Holding back sharing concerns	--	--	--	--
Functional status	0.93	0.93[d]	--	--
Dataset	**Prostate Cancer Dataset**			
Person	Patient		Spouse	
Time Point	*Baseline*	*Six months later*	*Baseline*	*Six months later*
Cancer-specific distress	0.90	0.91	0.91	0.91
Psychological health				
Well-being subscale	0.94	0.95	0.94	0.94
Distress subscale	0.95	0.94	0.94	0.95
Self-disclosure	0.92	0.97	0.95	0.96
Perceived partner disclosure	0.96	0.96	0.95	0.96
Intimacy	0.86	0.86	0.86	0.87
Relationship satisfaction	0.93	0.95	0.94	0.96
Communication patterns				
Constructive communication	0.81	0.82	0.80	0.81
Patient-Demand/Spouse-Withdraw	0.79	0.82	0.77	0.81
Spouse-Demand/Patient-Withdraw	0.83	0.83	0.80	0.80

Table 3. (cont'd)

Cancer-related concerns	0.84	0.85	0.83	0.84
Holding back sharing concerns	0.88	0.88	0.85	0.90
Functional status	--	--	--	--

Note. [a]The determinant of the covariance matrix was approximately zero due to relatively small sample sizes to the number of items (n's ranged 26-52).
[b]The determinant of the covariance matrix was approximately zero due to small sample sizes relative to the number of items (n's ranged 33-37).
[c]The determinant of the covariance matrix was approximately zero due to small sample sizes relative to the number of items (n's ranged 23-45).
[d]The determinant of the covariance matrix was approximately zero due to sample size (242) relative to the number of items (26).

Table 4.
Visual display of three contrasts: (1) respondent's gender, (2) respondent's role, and (3) gender when respondent is the patient Kenny et al., (2006)

	Respondent is Male	*Respondent is Female*	*Marginal means show the effect of sex when the respondent is the patient*
Z: Couple in which Patient is Male	**Patient**	Spouse	Patient is Male
Z: Couple in which Patient is Female	Spouse	**Patient**	Patient is Female
Marginal means show main effect of sex	Male	Female	

Note. Bolded patient and underlined spouse indicate the main effect of role, or whether patients differ from spouses.

Table 5.
Demographic information, combined across all datasets

Variable	Patient N (%)	Spouse N (%)
Age, years [M (SD) Range]	58.19 (9.92) 27-85	57.12 (10.31) 26-88
Gender		
Female	356 (52.4)	327 (48.2)
Male	323 (47.6)	352 (51.8)
Income, USD [M Med (SD) Range]	$125,431.52 $100,000 ($104,851.52) $5,000-$1,000,000)	$122,683.19 $100,000 ($100,683.19) $2,000-$1,000,000
Education		
5-8 years	4 (0.6)	1 (0.1)
some high school	19 (2.8)	12 (1.8)
finished high school	118 (17.4)	135 (19.9)
1-3 years of college	132 (19.4)	139 (20.5)
4 years of college	152 (22.4)	128 (18.9)
trade or business school	36 (5.3)	41 (6.0)
some graduate school	47 (6.9)	47 (6.9)
graduate degree	167 (24.6)	157 (23.1)
missing	4 (0.6)	19 (2.8)
Employment Status		
working full-time	313 (46.2)	351 (51.7)
working part-time	68 (10)	70 (10.3)
on leave from work	58 (8.5)	12 (1.8)
retired/not employed outside the home	182 (26.8)	185 (27.2)
unemployed	43 (6.3)	30 (4.4)
disabled/on disability	0 (0)	1 (0.1)
missing	15 (2.2)	30 (4.4)
Race/ethnicity		
White/Caucasian	575 (84.7)	553 (81.4)
Black/African American	78 (11.5)	75 (11.0)
Asian	4 (0.6)	6 (0.9)
Hispanic[a]	8 (1.2)	12 (1.8)
Native American	4 (0.6)	1 (0.1)
Native Hawaiian or other Pacific Islander	0 (0)	1 (0.1)
Other	8 (1.2)	8 (1.2)
Missing	2 (0.3)	23 (3.4)
Hispanic or Latino?[b]		
Yes	412 (60.7)	406 (59.8)

Table 5. (cont'd)

No	20 (2.9)	25 (3.7)
Missing	247 (36.4)	248 (36.5)
Length of Marriage, years [M (SD) Range]	26.66 (14.42) 0.08-62	27.55 (14.04) 0.6-62
Years living together if not married [M (SD) Range]	10.68 (8.73) 0.25-36	10.19 (9.28) 0.25-36

Note. Percentages are valid percent values (excluding any missing data).

[a]The Head and Neck and Lung cancer datasets asked about race and ethnicity together.

[b]Ethnicity was a separate question in the Breast and Prostate datasets.

Table 6.

Patient health demographic information, combined across all datasets

Time Point	*Baseline N (%)*	*Six months later N (%)*
Stage		--
Stage 0	80 (11.8)	--
Stage 1	162 (23.9)	--
Stage 2	269 (39.6)	--
Stage 3	120 (7.7)	--
Stage 4	47 (6.9)	--
Missing	1 (0.1)	--
ECOG/Karnofsky Score[a]		
0	579 (85.3)	440 (64.8)
1	80 (11.8)	41 (6.0)
2	4 (0.6)	6 (0.9)
4	1 (0.1)	0 (0)
90	3 (0.4)	3 (0.4)
Missing	12 (1.8)	189 (27.8)
Time since dx, months [M (SD) Range]	8.57 (16.17) -0.03-286.85[b]	--
Number of comorbidities		
0	204 (30)	--
1	216 (31.8)	--
2	135 (19.9)	--
3 or more	100 (14.7)	--
Missing	24 (3.5)	
Number of medications		
0	44 (6.5)	--
1	96 (14.1)	--
2	109 (16.1)	--
3 or more	419 (61.7)	--
Missing	11 (1.6)	
Functional status [M (SD) Range]	.90 (0.69) 0-3.31	0.59 (0.59) 0-3.35
Ever smoked?		
Yes	298 (43.9)	--
No	350 (51.5)	--
Missing		--
Currently smoking?		
Yes	36 (5.3)	--

Table 6. (cont'd)

No	612 (90.1)	--
Missing	31 (4.6)	--

Note. ECOG = Eastern Cooperative Oncology Status -- a measure of functional ability where a 0 or 1 indicates few restrictions (selected based on a 0 or 1).

[a]Patients either had an ECOG score or a Karnofsky score to indicate overall functioning. The values 0-2 and 4 correspond to the ECOG scale and the value of 90 corresponds to the Karnofsky scale. Patients with an ECOG score of 2 or 4 were retained in the analyses.

[b] The -0.3 value occurs only once where a patient reported a prostate cancer diagnosis one day after he began the baseline prostate cancer survey. Treating this person's negative value as missing did not substantially change the M and SD, so his negative decimal value was retained.

Table 7.

Descriptive statistics for all variables, combined across all datasets

Person	Patient				Spouse			
Time Point	*Baseline*		*Six months later*		*Baseline*		*Six months later*	
	M	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**
Cancer-specific distress	1.47	1.02	0.99	0.92	1.30	0.97	0.83	0.85
Psychological distress								
Well-being subscale	3.93	1.09	4.23	1.09	3.93	1.02	4.21	1.03
Distress subscale	2.69	1.32	2.38	1.32	2.61	1.24	2.29	1.25
Self-disclosure	4.93	1.82	4.26	2.16	4.45	1.82	4.05	2.01
Perceived partner disclosure	4.36	2.02	3.98	2.25	4.92	1.82	4.29	1.97
Intimacy	3.97	0.85	4.05	0.82	3.85	0.86	3.97	0.81
Relationship satisfaction[a]	114.89	16.45	117.16	16.31	113.96	18.17	116.47	18.12
Communication patterns								
Constructive communication	6.55	1.21	6.67	1.23	6.42	1.33	6.63	1.23
Patient-Demand/Spouse-Withdraw	2.13	1.26	1.94	1.12	2.33	1.33	2.13	1.40
Spouse-Demand/Patient-Withdraw	2.24	1.38	2.03	1.21	2.09	1.28	1.85	1.13
Cancer-related concerns	2.92	1.07	2.49	1.00	3.20	1.03	2.82	1.05
Holding back sharing concerns	2.31	1.31	1.89	1.03	2.51	1.12	2.30	1.15

Note. [a]A sum was taken.

Table 8.
Demographic information, separated by dataset

	Head and Neck Cancer Dataset		Lung Cancer Dataset		Breast Cancer Dataset		Prostate Cancer Dataset	
Person	Patient N (%)	Spouse N (%)	Patient N (%)	Spouse N (%)	Patient N (%)	Spouse N (%)	Patient N (%)	Spouse N (%)
Age, years [M (SD) Range]	58.28 (10.65) 34-85	55.66 (9.74) 34-75	64.03 (10.20) 41-80	62.36 (10.79) 38-88	55.10 (10.44) 27-83.50	56.49 (11.34) 26-88	60.56 (7.29) 41-82	57.09 (8.50) 28-75
Gender								
Female	25 (32.5)	52 (68.8)	29 (46)	37 (58.7)	302 (100)	2 (0.7)	0 (0)	235 (99.2)
Male	52 (67.5)	24 (31.2)	34 (54)	26 (41.3)	0 (0)	300 (99.3)	237 (99.2)	2 (0.8)
Income, USD [M Med (SD) Range]	$74,209.68 $70,000 ($46,882.53) $5,000-$230,000	$68,161.11 $57,500 ($44,267.30) $10,000-$225,000	$69,465.18 $55,000 ($51,738.74) $8,000-$250,000	$78,351.35 $60,000 ($63,665.02) $16,000-$350,000	$114,125.31 $98,000 ($88,717.15) $12,000-900,000	$115,009.23 $100,000 ($92,512.20) $10,200-$980,000	$169,152.00 $150,000 ($126,689.16) $6,000-$1,000,000	$159,648.31 $148,500 ($116,303.45) $2,000-$1,000,000
Education								
5-8 years	1 (1.3)	0 (0)	3 (4.8)	0 (0)	0 (0)	0 (0)	0 (0)	1 (0.4)
some high school	4 (5.2)	1 (1.3)	7 (11.1)	0 (0)	5 (1.7)	5 (1.7)	3 (1.3)	6 (2.5)
finished high school	22 (28.6)	23 (29.9)	16 (25.4)	25 (39.7)	59 (19.5)	56 (18.5)	21 (8.9)	31 (13.1)
1-3 years of college	16 (20.8)	14 (18.2)	14 (22.2)	11 (17.5)	63 (20.9)	65 (21.5)	39 (16.5)	49 (20.7)

Table 8. (cont'd)

4 years of college	11 (14.3)	10 (13)	11 (17.5)	8 (12.7)	68 (22.5)	58 (19.2)	62 (26.2)	52 (21.9)
trade or business school	5 (6.5)	9 (11.7)	2 (3.2)	7 (11.1)	16 (5.3)	20 (6.6)	13 (5.5)	5 (2.1)
some graduate school	5 (6.5)	4 (5.2)	3 (4.8)	1 (1.6)	20 (6.6)	24 (7.9)	19 (8.0)	18 (7.6)
graduate degree	12 (15.6)	8 (10.4)	6 (9.5)	4 (6.3)	69 (22.8)	72 (23.8)	80 (33.8)	73 (30.8)
missing	1 (1.3)	8 (10.4)	1 (1.6)	7 (11.1)	7 (0.8)	2 (0.7)	0 (0)	2 (0.8)
Employment Status								
working full-time	34 (44.2)	34 (44.2)	13 (20.6)	23 (36.5)	122 (40.4)	186 (61.6)	144 (60.8)	108 (45.6)
working part-time	5 (6.5)	12 (15.6)	8 (12.7)	5 (7.9)	37 (12.3)	15 (5)	18 (7.6)	38 (16.0)
on leave from work	8 (10.4)	3 (3.9)	11 (17.5)	2 (3.2)	37 (12.3)	2 (0.7)	2 (0.8)	5 (2.1)
retired/not employed outside the home	23 (29.9)	16 (20.8)	29 (46)	26 (41.3)	74 (24.5)	81 (26.8)	56 (23.6)	62 (26.2)
unemployed	4 (5.2)	4 (5.2)	1 (1.6)	1 (1.6)	31 (10.3)	13 (4.3)	7 (3.0)	12 (5.1)
disabled/on disability	--	--	--	--	--	1 (0.3)[a]	--	--
missing	3 (3.9)	8 (10.4)	1 (1.6)	6 (9.5)	1 (0.3)	4 (1.3)	10 (4.2)	12 (5.1)
Occupation					-	-		
major professional	13 (16.9)	12 (15.6)	14 (22.2)	9 (14.3)	-	-	39 (16.5)	20 (8.4)
manager, lesser professional	15 (19.5)	15 (19.5)	11 (17.5)	10 (15.9)	-	-	57 (24.1)	40 (16.9)

Table 8. (cont'd)

admin, small business owner, minor professional	17 (22.1)	12 (15.6)	9 (14.3)	10 (15.9)	-	-	51 (21.5)	67 (28.3)
clerical & sales	9 (11.7)	17 (22.1)	9 (14.3)	10 (15.9)	-	-	9 (3.8)	11 (4.6)
skilled manual	15 (19.5)	4 (5.2)	14 (22.2)	10 (15.9)	-	-	19 (8.0)	5 (2.1)
machine operators	2 (2.6)	0 (0)	0 (0)	0 (0)	-	-	2 (0.8)	2 (0.8)
unskilled employees	2 (2.6)	1 (1.3)	2 (3.2)	1 (1.6)	-	-	0 (0)	1 (0.4)
housewife	1 (1.3)	7 (9.1)	1 (1.6)	5 (7.9)	-	-	45 (19)[a]	70 (29.5)[a]
missing	3 (3.9)	9 (11.7)	3 (4.8)	8 (12.7)	-	-	1 (0.4)	21 (8.9)
Race/ethnicity								
White/ Caucasian	71 (92.2)	63 (81.8)	58 (92.1)	53 (84.1)	267 (88.4)	261 (86.4)	179 (75.5)	176 (74.3)
Black/African American	2 (2.6)	1 (1.3)	3 (4.8)	2 (3.2)	26 (8.6)	26 (8.6)	47 (19.8)	46 (19.4)
Asian	1 (1.3)	1 (1.3)	2 (3.2)	1 (1.6)	3 (1.0)	3 (1.0)	1 (0.4)	4 (1.7)
Hispanic	1 (1.3)	2 (2.6)	--	--	--	--	4 (1.7)	7 (3.0)
Native American	1 (1.3)	--	--	--	--	--	--	1 (0.4)
Native Hawaiian or other Pacific Islander	--	--	--	--	3 (1.0)	--	--	1 (0.4)
Other	--	--	--	--	3 (1.0)	8 (2.6)	5 (2.1)	--
Missing	1 (1.3)	10 (13)	0 (0)	7 (11.1)	0 (0)	4 (1.3)	1 (0.4)	2 (0.8)
Hispanic or Latino?								
Yes	--	--	--	--	290 (96.0)	16 (5.3)	9 (3.8)	9 (3.8)
No	--	--	--	--	11 (3.6)	283 (93.7)	122 (51.5)	123 (51.9)
Missing	--	--	--	--	1 (0.3)	3 (1.0)	106 (44.7)	105 (44.3)

Table 8. (cont'd)

Length of Marriage, years [M (SD) Range]	26.81 (14.43) 5-54	27.93 (14.91) 2-55	35 (14.9) 3-59	35.74 (14.35) 2.5-59	24.69 (14.40) 0.25-62[b]	25.73 (14.06) 0.6-62	26.99 (13.60) 0.1-60	27.71 (13.01) 0.7-58
Years living together if not married [M (SD) Range]	12 (N/A)[c] N/A	14 (2.83) 12-16	20.6 (11.59) 7-36	24 (10.10) 12-36	8.46 (6.00) 0.25-20	7.88 (6.24) 0.25-21	10.23 (9.38) 1-32	11.84 (10.03) 1-32

Note. Percentages are valid percent values (excluding any missing data).

[a] Due to the way the variable was presented to participants, this value combines those who endorsed housewife, retired, unemployed.

[b]People with 0's on length of marriage and years living together were treated as missing data.

[c]Only one person in the patient data indicated they were unmarried living with a partner.

Table 9.
Patient health demographic information, separated by dataset

	Head and Neck Cancer Dataset		**Lung Cancer Dataset**		**Breast Cancer Dataset**		**Prostate Cancer Dataset**	
Time Point	*Baseline*	*Six months later*	*Baseline*	*Six months later*	*Baseline*	*Six months later*	*Baseline*	*Six months later*
Stage		-		-		-		-
Stage 0	1 (1.3)	-	0 (0)	-	79 (26.2)	-	0 (0)	-
Stage 1	13 (16.9)	-	12 (19)	-	123 (40.7)	-	14 (5.9)	-
Stage 2	16 (20.8)	-	7 (11.1)	-	85 (28.1)	-	161 (67.9)	-
Stage 3	23 (29.9)	-	20 (31.7)	-	15 (5.0)	-	62 (26.2)	-
Stage 4	23 (29.9)	-	24 (38.1)	-	-	-	0 (0)	-
Missing	1 (1.3)	-	0 (0)	-	0 (0)	-	0 (0)	-
ECOG/Karnofsky Score[a]		-		-		-		-
0	50 (64.9)	36 (46.8)	28 (44.4)	18 (28.6)	267 (88.4)	219 (72.5)	234 (98.7)	167 (70.5)
1	23 (29.9)	13 (16.9)	31 (49.2)	14 (22.2)	26 (8.6)	14 (4.6)	0 (0)	0 (0)
2	1 (1.3)	3 (3.9)	3 (4.8)[b]	2 (3.2)	0 (0)	1 (0.3)	0 (0)	0 (0)
4	0 (0)	0 (0)	1 (1.6)[b]	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
90	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3 (1.3)	3 (1.3)
Missing	3 (3.9)	25 (32.5)	0 (0)	29 (46.0)	9 (3.0)	68 (22.5)	0 (0)	67 (28.3)
Time since dx, months [M (SD)	13.56 (22.04)		14.63 (37.60)		4.91 (2.52)		10.03 (12.40)	
Range]	2.46-148.01	-	0-286.85	-	0.95-13.83	-	-0.30[c]-157.83	-
Number of comorbidities		-		-		-		-
0	12 (15.6)	-	4 (6.3)	-	151 (50.0)	-	34 (14.3)	-
1	17 (22.1)	-	13 (20.6)	-	101 (33.4)	-	88 (37.1)	-
2	15 (19.5)	-	16 (25.4)	-	38 (12.6)	-	66 (27.8)	-
3 or more	28 (36.4)	-	29 (46.0)	-	6 (2.0)	-	37 (15.6)	-

Table 9. (cont'd)

Missing	5 (6.5)		1 (1.6)		6 (2.0)	-	12 (5.1)	
Number of medications		-		-		-		-
0	6 (7.8)	-	0 (0)	-	21 (7.0)	-	14 (5.9)	-
1	9 (11.7)	-	2 (3.2)	-	57 (18.9)	-	34 (14.3)	-
2	11 (14.3)	-	7 (11.1)	-	50 (18.6)	-	45 (19.0)	-
3 or more	48 (62.3)	-	54 (85.7)	-	167 (55.5)	-	141 (59.5)	-
Missing	3 (3.9)		0 (0)		7 (2.3)	-	3 (1.3)	
Functional status [M (SD) Range]	.93 (0.70) 0-2.96	.79 (0.64) 0-2.52	1.10 (0.68) 0.08-3	.96 (0.64) 0.08-2.46	.85 (0.69) 0-3.31	.49 (0.54) 0-3.35	-	-
Ever smoked?								
Yes	20 (26)	-	56 (88.9)	-	104 (34.4)	-	82 (34.6)	-
No	56 (72.7)	-	7 (11.1)	-	172 (57.0)	-	151 (63.7)	-
Missing	1 (1.3)	-	0 (0)	-	26 (8.6)	-	4 (1.7)	-
Currently smoking?								-
Yes	67 (87)	-	4 (6.3)	-	18 (6.0)	-	225 (94.9)	-
No	6 (7.8)	-	58 (92.1)	-	262 (86.8)	-	8 (3.4)	-
Missing	4 (5.2)	-	1 (1.6)	-	22 (7.3)	-	4 (1.7)	-

Note. ECOG = Eastern Cooperative Oncology Status -- a measure of functional ability where a 0 or 1 indicates few restrictions (selected based on a 0 or 1).

[a] Patients either had an ECOG score or a Karnofsky score to indicate overall functioning. The values 0-2 and 4 correspond to the ECOG scale and the value of 90 corresponds to the Karnofsky scale.

[b] Patients with an ecog score of 2 or 4 were retained in the analyses.

[c] The 0.3 occurs only once where a patient reported a prostate cancer diagnosis one day after he began the baseline prostate cancer survey. Treating this person's negative value as missing did not change the M and SD to a great degree, so his negative decimal value will be retained.

Table 10.
Descriptive statistics for all variables, separated by dataset

Dataset	**Head and Neck Cancer Dataset**							
Person	Patient				Spouse			
Time Point	*Baseline*		*Six months later*		*Baseline*		*Six months later*	
	M	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**
Cancer-specific distress	1.29	1.00	0.99	0.86	1.27	1.04	1.08	1.03
Psychological distress								
Well-being subscale	4.27	0.81	4.38	0.78	4.05	0.99	4.10	0.97
Distress subscale	2.10	0.55	2.02	0.60	2.34	0.72	2.21	0.70
Self-disclosure	5.18	1.61	4.70	1.98	4.29	1.93	3.87	1.95
Perceived partner disclosure	5.07	1.77	4.76	1.95	4.43	1.99	3.89	2.00
Intimacy	4.07	0.87	4.19	0.72	3.67	0.96	3.67	0.88
Relationship satisfaction[a]	107.57	15.10	110.07	12.74	105.97	17.38	106.81	13.31
Communication patterns								
Constructive communication	6.43	1.14	6.61	1.14	6.54	1.25	6.52	1.07
Patient-Demand/Spouse-Withdraw	2.20	1.25	1.79	0.84	2.37	1.51	2.23	1.43
Spouse-Demand/Patient-Withdraw	2.23	1.42	1.84	0.89	2.24	1.18	2.07	1.03
Cancer-related concerns	2.55	1.16	2.31	1.22	2.59	0.99	2.67	1.15
Holding back sharing concerns	1.66	1.33	1.41	1.07	2.07	0.97	2.09	1.06
Dataset	**Lung Cancer Dataset**							
Person	Patient				Spouse			
Time Point	*Baseline*		*Six months later*		*Baseline*		*Six months later*	
	M	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**
Cancer-specific distress	1.49	1.00	1.64	1.08	1.42	1.03	1.32	1.00
Psychological distress								
Well-being subscale	4.36	0.76	4.35	0.77	4.21	0.78	4.38	0.83
Distress subscale	2.20	0.63	2.05	0.60	2.16	0.63	1.99	0.58
Self-disclosure	5.04	1.81	4.76	1.86	4.73	1.68	4.43	1.77

Table 10. (cont'd)								
Perceived partner disclosure	4.80	1.86	4.76	1.87	4.80	1.82	4.68	1.71
Intimacy	4.17	0.74	4.07	0.91	3.85	0.80	3.94	0.86
Relationship satisfaction[a]	109.85	12.36	109.00	12.69	108.65	17.37	110.34	16.86
Communication patterns								
Constructive communication	6.72	1.21	6.68	1.27	3.76	1.17	6.86	1.14
Patient-Demand/Spouse-Withdraw	2.12	1.38	1.81	0.97	2.19	1.20	2.43	1.99
Spouse-Demand/Patient-Withdraw	2.15	1.49	1.99	1.22	2.38	1.46	2.42	1.82
Cancer-related concerns	2.71	1.33	2.60	1.09	3.08	0.80	2.67	1.10
Holding back sharing concerns	1.74	1.30	1.81	1.23	2.06	1.02	1.62	1.09
Dataset	**Breast Cancer Dataset**							
Person	Patient				Spouse			
Time Point	*Baseline*		*Six months later*		*Baseline*		*Six months later*	
	M	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**
Cancer-specific distress	1.69	1.03	1.12	0.93	1.26	0.90	0.81	0.78
Psychological distress								
Well-being subscale	4.15	0.95	4.53	0.85	4.12	0.89	4.45	0.81
Distress subscale	2.25	0.80	1.91	0.66	2.08	0.72	1.79	0.60
Self-disclosure	4.71	1.96	3.29	2.15	4.37	1.70	3.30	1.87
Perceived partner disclosure	3.63	2.04	2.68	2.03	5.42	1.57	3.96	2.03
Intimacy	3.88	0.89	3.99	0.83	4.00	0.84	4.14	0.72
Relationship satisfaction[a]	116.41	17.16	118.84	15.66	116.83	16.95	119.95	15.42
Communication patterns								
Constructive communication	--	--	--	--	--	--	--	--
Patient-Demand/Spouse-Withdraw	--	--	--	--	--	--	--	--
Spouse-Demand/Patient-Withdraw	--	--	--	--	--	--	--	--
Cancer-related concerns	--	--	--	--	--	--	--	--
Holding back sharing concerns	--	--	--	--	--	--	--	--
Dataset	**Prostate Cancer Dataset**							

Table 10. (cont'd)

Person	Patient				Spouse			
Time Point	*Baseline*		*Six months later*		*Baseline*		*Six months later*	
	M	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**
Cancer-specific distress	1.24	0.95	0.72	0.81	1.32	1.02	0.70	0.82
Psychological distress								
Well-being subscale	4.37	0.85	4.58	0.81	4.26	0.85	4.49	0.82
Distress subscale	1.97	0.66	1.78	0.57	2.14	0.63	1.88	0.60
Self-disclosure	5.09	1.69	5.22	1.76	4.54	1.96	4.90	1.87
Perceived partner disclosure	4.96	1.79	5.17	1.76	4.44	1.90	4.70	1.87
Intimacy	3.99	0.83	4.07	0.82	3.75	0.87	3.84	0.85
Relationship satisfaction[a]	116.85	16.13	118.52	17.60	114.30	19.06	115.55	20.88
Communication patterns								
Constructive communication	6.54	1.23	6.69	1.26	6.30	1.37	6.61	1.28
Patient-Demand/Spouse-Withdraw	2.11	1.24	2.00	1.20	2.35	1.30	2.06	1.28
Spouse-Demand/Patient-Withdraw	2.26	1.35	2.09	1.28	1.98	1.24	1.71	0.96
Cancer-related concerns	3.02	0.99	2.51	0.92	3.31	1.03	2.87	1.02
Holding back sharing concerns	2.67	1.17	2.03	0.94	2.74	1.12	2.46	1.13

Note. [a]A sum was taken.

Table 11.
Frequency and type of head or neck or lung cancer diagnoses

Head or Neck Cancer	Frequency N (%)
Larynx	5 (6.5)
Thyroid	21 (27.3)
Esophagus	8 (10.4)
Pharynx	1 (1.3)
Mouth	5 (6.5)
Neck	2 (2.6)
Tonsils	10 (13.0)
Tongue	17 (22.1)
Parotid	1 (1.3)
Jaw	1 (1.3)
Maxillary Alveolar	1 (1.3)
Uvula	1 (1.3)
Pyriform Sinus	1 (1.3)
Oral vestibule	1 (1.3)
Vocal cords	1 (1.3)
Missing	1 (1.3)
Lung Cancer	**Frequency N (%)**
Lung	59 (93.7)
Bronchoalveolar	1 (1.6)
Mesothelioma	2 (3.2)
Other Lung	1 (1.6)

Table 12.
Multilevel models predicting psychological and relationship outcomes as a function of cancer type, role, and their interaction at baseline

Psych. Well-being	HN		L		B		P		***Role ME Means***		*F*c (*df*)	*F*r (*df*)	*F*c*r (*df*)	Age	ICC
	M	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	1.48 (686)	4.59 * (690)	0.38 (684)	0.02 ***	0.36 ***
Patient	4.26	0.10	4.23	0.11	4.20	0.05	4.31	0.06	4.25	0.04					
Spouse	4.09	0.10	4.09	0.11	4.13	0.05	4.27	0.06	4.15	0.04					
Cancer Type Main Effect Means	4.18	0.08	4.16	0.09	4.17	0.04	4.29	0.05							
Psych. Distress	HN		L		B		P		***Role Main Effect Means***		*F*c (*df*)	*F*r (*df*)	*F*c*r (*df*)	Age	ICC
	M	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	2.87 * (682)	0.79 (690)	5.89 ** (683)	-0.02 ***	0.26 ***
Patient	2.11	0.08	2.30	0.09	2.21	0.04	2.02	0.05	2.16	0.03					
Spouse	2.32	0.08	2.26	0.09	2.07	0.04	2.14	0.04	2.20	0.03					
Cancer Type Main Effect Means	2.21	0.06	2.28	0.07	2.14	0.03	2.08	0.04							
Cancer-specific Distress	HN		L		B		P		***Role Main Effect Means***		*F*c (*df*)	*F*r (*df*)	*F*c*r (*df*)	Age	ICC

Table 12. (cont'd)

											3.10 * (688)	4.43 * (695)	6.39 *** (688)	-0.02 ***	0.23 ***
	M	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***					
Patient	1.30	0.11	1.61	0.13	1.65	0.06	1.28	0.07	1.46	0.05					
Spouse	1.27	0.12	1.51	0.13	1.24	0.06	1.32	0.06	1.34	0.05					
Cancer Type Main Effect Means	1.29	0.09	1.56	0.10	1.45	0.04	1.30	0.05							
Self Disclosure	HN		L		B		P		***Role Main Effect Means***		*F*c (df)	*F*r (df)	*F*c*r (df)	Age	ICC
											2.20 (689)	22.76 *** (694)	1.66 (687)	-.004	0.24 ***
	M	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***					
Patient	5.18	0.21	5.03	0.23	4.70	0.11	5.10	0.12	5.00	0.09					
Spouse	4.24	0.22	4.76	0.24	4.36	0.11	4.54	0.12	4.47	0.09					
Cancer Type Main Effect Means	4.71	0.17	4.90	0.19	4.53	0.08	4.82	0.09							
Perceived Partner Disclosure	HN		L		B		P		***Role Main Effect Means***		*F*c (df)	*F*r (df)	*F*c*r (df)	Age	ICC
											1.04 (693)	1.98 (703)	49.57 *** (695)	<0.001	0.16 ***
	M	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***					
Patient	5.07	0.22	4.75	0.25	3.63	0.11	4.96	0.13	4.60	0.09					

Table 12. (cont'd)

Spouse	4.42	0.21	4.79	0.24	5.42	0.10	4.43	0.12	4.77	0.09					
Cancer Type Main Effect Means	4.74	0.16	4.77	0.18	4.52	0.08	4.70	0.09							
Intimacy	HN		L		B		P		***Role Main Effect Means***		*F*c (df)	*F*r (df)	*F*c*r (df)	Age	ICC
	M	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	0.69 (689)	22.43*** (689)	9.19*** (685)	0.007**	0.46***
Patient	4.07	0.10	4.11	0.11	3.90	0.05	3.97	0.06	4.01	0.04					
Spouse	3.66	0.10	3.81	0.11	3.99	0.05	3.76	0.06	3.80	0.04					
Cancer Type Main Effect Means	3.86	0.09	3.96	0.09	3.94	0.04	3.87	0.05							
Relationship Quality	HN		L		B		P		***Role Main Effect Means***		*F*c (df)	*F*r (df)	*F*c*r (df)	Age	ICC
	M	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	13.80*** (645)	1.15 (642)	0.28 (640)	0.32***	0.61***
Patient	107.40	1.82	107.55	2.04	117.27	0.98	115.96	1.04	112.04	0.77					
Spouse	106.39	2.10	107.05	2.32	117.02	1.08	114.49	1.15	111.24	0.87					

Table 12. (cont'd)

Cancer Type Main Effect Means	106.89_a	1.74	107.30_a	1.94	117.15_b	0.92	115.23_b	0.98

Note. **p*< .05, ***p*< .01, ****p*< .001. Tabled values are estimated marginal means (*M*) and standard errors (*SE*). *df*= denominator degrees of freedom. Numerator *df* for cancer type and the cancer type by role interaction is 3 and the numerator *df* for role is 1. Subscripts denote significant differences in an outcome by cancer type. Cells that do not share subscripts are significantly different from one another using Bonferroni comparisons.
HN = Head and Neck Cancer.
L = Lung Cancer.
B = Breast Cancer..
P = Prostate Cancer
Psych. = Psychological.
*F*c = The F test for the main effect of cancer type.
*F*r = The F test for the main effect of role.
*F*c*r = The F test for the interaction between cancer type and role.

Table 13.
Multilevel models predicting psychological and relationship outcomes as a function of cancer type, role, and their interaction 6 months later

Psychological Well-being	HN		L		P		***Role Main Effect Means***		*F*c (*df*)	*F*r (*df*)	*F*c*r (*df*)	Age	ICC
	M	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	4.08 * (159)	0.28 (151)	0.74 (151)	0.02 ***	0.25 **
Patient	4.36	0.11	4.28	0.13	4.55	0.09	4.40	0.07					
Spouse	4.17	0.12	4.31	0.14	4.58	0.10	4.35	0.07					
Cancer Type Main Effect Means	4.27_a	0.09	4.29_{ab}	0.11	4.57_b	0.08							
Psychological Distress	HN		L		P		***Role Main Effect Means***		*F*c (*df*)	*F*r (*df*)	*F*c*r (*df*)	Age	ICC
	M	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	7.34 ** (156)	0.13 (157)	0.69 (149)	-0.02 ***	0.20 *
Patient	2.04	0.08	2.10	0.09	1.81	0.07	1.98	0.05					
Spouse	2.16	0.09	2.04	0.10	1.81	0.07	2.01	0.05					
Cancer Type Main Effect Means	2.10_a	0.06	2.07_a	0.08	1.81_b	0.05							
Cancer-specific Distress	HN		L		P		***Role Main Effect Means***		*F*c (*df*)	*F*r (*df*)	*F*c*r (*df*)	Age	ICC
	M	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	14.47 *** (157)	0.41 (156)	1.59 (148)	-0.01	0.31 ***
Patient	0.99	0.12	1.69	0.15	0.65	0.11	1.11	0.07					
Spouse	1.03	0.15	1.37	0.17	0.74	0.12	1.05	0.08					
Cancer Type Main Effect Means	1.01_a	0.11	1.53_b	0.13	0.69_a	0.09							

Table 13. (cont'd)

Self Disclosure	HN		L		P		***Role Main Effect Means***		*F*c (*df*)	*F*r (*df*)	*F*c*r (*df*)	Age	ICC
	M	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	3.14 * (158)	9.08 ** (156)	0.86 (149)	0.01	0.25 **
Patient	4.69	0.25	4.73	0.31	5.13	0.22	4.85	0.15					
Spouse	3.71	0.30	4.34	0.34	4.66	0.24	4.24	0.17					
Cancer Type Main Effect Means	4.20_{a}	0.22	4.53_{ab}	0.25	4.90_{b}	0.18							
Perceived Partner Disclosure	HN		L		P		***Role Main Effect Means***		*F*c (*df*)	*F*r (*df*)	*F*c*r (*df*)	Age	ICC
	M	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	2.08 (157)	5.09 * (160)	1.03 (153)	0.01	0.16
Patient	4.75	0.25	4.73	0.31	5.06	0.22	4.85	0.15					
Spouse	3.88	0.29	4.60	0.32	4.65	0.22	4.38	0.16					
Cancer Type Main Effect Means	4.32	0.20	4.67	0.24	4.85	0.17							
Intimacy	HN		L		P		***Role Main Effect Means***		*F*c (df)	Frole (df)	*F*c*r (df)	Age	ICC
	M	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	0.27 (154)	6.50 * (156)	2.76 (148)	0.01*	0.26 ***
Patient	4.18	0.11	4.02	0.13	4.04	0.10	4.08	0.07					
Spouse	3.68	0.13	3.89	0.15	3.99	0.10	3.85	0.07					
Cancer Type Main Effect Means	3.93	0.09	3.96	0.11	4.02	0.08							
Relationship Quality	HN		L		P		***Role Main Effect Means***		*F*c (*df*)	*F*r (*df*)	*F*c*r (*df*)	Age	ICC

Table 13. (cont'd)

									6.60 ** (160)	0.40 (151)	0.53 (143)	0.39 **	0.45 ***
	M	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***					
Patient	109.76	2.00	107.77	2.46	117.91	1.77	111.81	1.22					
Spouse	107.20	2.88	109.23	3.28	115.95	2.30	110.79	1.64					
Cancer Type Main Effect Means	108.48 [a]	2.05	108.50 [a]	2.42	116.93 [b]	1.72							

Note. **p*< .05, ***p*< .01, ****p*< .001. Tabled values are estimated marginal means (M) and standard errors (SE). *df*= denominator degrees of freedom. Numerator *df* for cancer type and the cancer type by role interaction is 2 and the numerator *df* for role is 1. Subscripts denote significant differences in an outcome by cancer type. Cells that do not share subscripts are significantly different from one another using Bonferroni comparisons.
HN = Head and Neck Cancer.
L = Lung Cancer.
B = Breast Cancer.
P = Prostate Cancer.
*F*c = The F test for the main effect of cancer type.
*F*r = The F test for the main effect of role.
*F*c*r = The F test for the interaction between cancer type and role.

Table 14.
Multilevel models predicting cancer concerns and communication patterns as a function of cancer type, role, and their interaction at baseline

Number of Cancer Concerns	Head and Neck Cancer		Lung Cancer		Prostate Cancer		***Role Main Effect Means***		*F*c (df)	*F*r (df)	*F*c*r (df)	Age
	M	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	14.02 *** (330)	3.75 (330)	1.51 (322)	-0.03 ***
Patient	2.48	0.15	2.81	0.18	3.07	0.07	2.78	0.08				
Spouse	2.42	0.16	3.24	0.18	3.27	0.07	2.98	0.08				
Cancer Type Main Effect Means	2.45_a	0.13	3.02_b	0.14	3.17_b	0.05						
Holding Back Sharing Concerns	**Head and Neck Cancer**		**Lung Cancer**		**Prostate Cancer**		***Role Main Effect Means***		***F*c (df)**	***F*r (df)**	***F*c*r (df)**	**Age**
	M	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	34.25 *** (383)	6.17 * (390)	2.199 (377)	-0.02 ***
Patient	1.65	0.14	1.83	0.16	2.69	0.08	2.06	0.08				
Spouse	2.00	0.13	2.13	0.14	2.70	0.07	2.28	0.07				
Cancer Type Main Effect Means	1.82_a	0.11	1.98_a	0.12	2.70_b	0.06						
Constructive Communication	**Head and Neck Cancer**		**Lung Cancer**		**Prostate Cancer**		***Role Main Effect Means***		***F*c (df)**	**Fr (df)**	**Fc*r (df)**	**Age**
	M	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	1.25 (384)	0.002 (383)	2.12 (367)	0.01 *
Patient	6.43	0.14	6.64	0.16	6.52	0.08	6.53	0.07				
Spouse	6.58	0.16	6.69	0.17	6.32	0.09	6.53	0.08				

Table 14. (cont'd)

Cancer Type Main Effect Means	6.51	0.13	6.66	0.14	6.42	0.07						
Patient Demand/Spouse Withdrawal	Head and Neck Cancer		Lung Cancer		Prostate Cancer		***Role Main Effect Means***		*F*c (df)	*F*r (df)	*F*c*r (df)	Age
	M	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	0.05 (381)	1.48 (387)	0.23 (376)	-0.01
Patient	2.19	0.15	2.19	0.16	2.12	0.08	2.17	0.08				
Spouse	2.33	0.16	2.23	0.18	2.33	0.09	2.30	0.09				
Cancer Type Main Effect Means	2.26	0.12	2.21	0.13	2.23	0.06						
Spouse Demand/Patient Withdrawal	Head and Neck Cancer		Lung Cancer		Prostate Cancer		***Role Main Effect Means***		*F*c (df)	*F*r (df)	*F*c*r (df)	Age
	M	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	1.08 (372)	0.29 (380)	2.72 (367)	-0.01 *
Patient	2.22	0.16	2.24	0.18	2.28	0.09	2.25	0.09				
Spouse	2.17	0.16	2.44	0.17	1.96	0.08	2.19	0.08				
Cancer Type Main Effect Means	2.19	0.12	2.34	0.14	2.12	0.07						

Note. **p*< .05, ***p*< .01, ****p*< .001.
Tabled values are estimated marginal means (M) and standard errors (SE).
df= denominator degrees of freedom.
Numerator *df* for cancer type and the cancer type by role interaction is 2 and the numerator *df* for role is 1.
Subscripts denote significant differences in an outcome by cancer type. Cells that do not share subscripts are significantly different from one another using Bonferroni comparisons.
*F*c = The F test for the main effect of cancer type.
*F*r = The F test for the main effect of role.
*F*c*r = The F test for the interaction between cancer type and role.

Table 15.
Multilevel models predicting cancer concerns and communication patterns as a function of cancer type, role, and their interaction 6 months later

Number of Cancer Concerns	Head and Neck Cancer		Lung Cancer		Prostate Cancer		***Role Main Effect Means***		*F*c (df)	*F*r (df)	*F*c*r (df)	Age
	M	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	1.26 (158)	3.09 (157)	0.19 (149)	-0.02 *
Patient	2.32	0.15	2.65	0.18	2.55	0.13	2.51	0.09				
Spouse	2.57	0.17	2.75	0.20	2.82	0.14	2.71	0.10				
Cancer Type Main Effect Means	2.45	0.13	2.70	0.15	2.69	0.11						
Holding Back Sharing Concerns	Head and Neck Cancer		Lung Cancer		Prostate Cancer		***Role Main Effect Means***		*F*c (df)	*F*r (df)	*F*c*r (df)	Age
	M	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	6.01 ** (153)	7.89 ** (155)	4.07 ** (147)	-0.008
Patient	1.42	0.14	1.83	0.17	2.01	0.12	1.75	0.09				
Spouse	2.10	0.17	1.68	0.19	2.44	0.13	2.07	0.10				
Cancer Type Main Effect Means	1.76_a	0.12	1.75_a	0.14	2.23_b	0.10						
Constructive Communication	Head and Neck Cancer		Lung Cancer		Prostate Cancer		***Role Main Effect Means***		*F*c (df)	Fr (df)	Fc*r (df)	Age
	M	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	0.23 (157)	0.70 (160)	0.90 (152)	0.03 ***
Patient	6.59	0.16	6.59	0.20	6.68	0.14	6.62	0.10				
Spouse	6.63	0.17	6.76	0.19	6.77	0.13	6.72	0.10				
Cancer Type Main Effect Means	6.61	0.13	6.67	0.15	6.72	0.11						

Table 15. (cont'd)

Patient Demand/Spouse Withdrawal	Head and Neck Cancer		Lung Cancer		Prostate Cancer		***Role Main Effect Means***		*F*c (df)	*F*r (df)	*F*c*r (df)	Age
	M	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	0.40 (150)	3.82 (147)	1.67 (141)	-0.007
Patient	1.80	0.16	1.83	0.19	2.21	0.14	1.95	0.09				
Spouse	2.23	0.24	2.28	0.27	2.16	0.19	2.22	0.13				
Cancer Type Main Effect Means	2.01	0.16	2.06	0.18	2.19	0.13						

Spouse Demand/Patient Withdrawal	Head and Neck Cancer		Lung Cancer		Prostate Cancer		***Role Main Effect Means***		*F*c (df)	*F*r (df)	*F*c*r (df)	Age
	M	***SE***	***M***	***SE***	***M***	***SE***	***M***	***SE***	0.91 (153)	0.17 (155)	6.84 ** (147)	-0.003
Patient	1.85	0.17	1.99	0.20	2.26	0.15	2.03	0.10				
Spouse	2.08	0.19	2.48	0.22	1.71	0.15	2.09	0.11				
Cancer Type Main Effect Means	1.96	0.14	2.23	0.17	1.99	0.12						

Note. *p< .05, **p< .01, ***p< .001. Tabled values are estimated marginal means (M) and standard errors (SE). *df*= denominator degrees of freedom. Numerator *df* for cancer type and the cancer type by role interaction is 2 and the numerator *df* for role is 1.

Subscripts denote significant differences in an outcome by cancer type. Cells that do not share subscripts are significantly different from one another using Bonferroni comparisons.

*F*c = The F test for the main effect of cancer type.

*F*r = The F test for the main effect of role.

*F*c*r = The F test for the interaction between cancer type and role.

Table 16.

Bivariate correlations between continuous health stressors

Variable	1	2	3	4
1. Number of Medications (0, 1, 2, 3 or more)				
2. Number of Comorbidites (0, 1, 2, 3 or more)	.398**			
3. Cancer Stage	.096**	.286**		
4. Functional Status	.229**	.141**	.203**	

Note. **$p < .01$.

Bivariate correlations across entire dataset and both time points.

Table 17.
Multilevel models predicting psychological health at baseline as a function of cancer stage, number of medications, and number of comorbidities at baseline

Psychological Well-being						95% CI	
Fixed effects	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	4.104	0.072	662.28	57.14	<0.001	3.96	4.25
Number of Medications	-0.134	0.032	634.61	-4.23	<0.001	-0.20	-0.07
Number of Comorbidities	0.021	0.034	647.00	0.61	0.540	-0.05	0.09
Cancer Stage	-0.024	0.034	644.88	-0.71	0.477	-0.09	0.04
Role	0.035	0.020	637.21	1.78	0.076	0.00	0.07
Num Meds*Role	-0.017	0.022	629.26	-0.79	0.430	-0.06	0.03
Num Comorbids*Role	-0.006	0.021	637.51	-0.29	0.772	-0.05	0.04
Stage*Role	0.025	0.019	638.50	1.31	0.190	-0.01	0.06
Head or Neck Cancer	-0.080	0.050	664.04	-1.62	0.106	-0.18	0.02
Lung Cancer	-0.036	0.053	655.98	-0.68	0.496	-0.14	0.07
Breast Cancer	-0.077	0.039	633.94	-1.98	0.048	-0.15	0.00
Age	0.023	0.003	851.40	8.18	<0.001	0.02	0.03
Psychological Distress						95% CI	
Fixed effects	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	2.272	0.054	664	41.80	<0.001	2.17	2.38
Number of Medications	0.114	0.024	634	4.77	<0.001	0.07	0.16
Number of Comorbidities	0.007	0.026	645	0.26	0.798	-0.04	0.06
Cancer Stage	-0.003	0.025	645	-0.11	0.913	-0.05	0.05
Role	0.002	0.017	639	0.11	0.911	-0.03	0.03
Num Meds*Role	0.023	0.019	631	1.19	0.236	-0.01	0.06
Num Comorbids*Role	-0.023	0.018	640	-1.29	0.197	-0.06	0.01
Stage*Role	-0.047	0.016	640	-2.91	0.004	-0.08	-0.02
Head or Neck Cancer	0.079	0.038	666	2.10	0.036	0.01	0.15
Lung Cancer	0.082	0.040	657	2.03	0.043	0.002	0.16

Table 17. (cont'd)

Breast Cancer	0.037	0.029	633	1.28	0.200	-0.02	0.09
Age	-0.019	0.002	807	-8.77	<0.001	-0.02	-0.01
Cancer-Specific Distress						95% CI	
Fixed effects	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	1.539	0.078	667.39	19.70	0.000	1.39	1.69
Number of Medications	0.066	0.034	635.18	1.91	0.057	0.00	0.13
Number of Comorbidities	-0.037	0.037	647.39	-1.00	0.318	-0.11	0.04
Cancer Stage	-0.041	0.037	646.85	-1.13	0.258	-0.11	0.03
Role	0.090	0.024	640.52	3.75	<0.001	0.04	0.14
Num Meds*Role	0.073	0.027	631.59	2.66	0.008	0.02	0.13
Num Comorbids*Role	-0.061	0.026	642.01	-2.34	0.020	-0.11	-0.01
Stage*Role	-0.079	0.023	640.78	-3.40	0.001	-0.13	-0.03
Head or Neck Cancer	0.031	0.054	671.79	0.58	0.563	-0.07	0.14
Lung Cancer	0.147	0.058	658.87	2.55	0.011	0.03	0.26
Breast Cancer	0.049	0.042	635.10	1.17	0.242	-0.03	0.13
Age	-0.017	0.003	809.54	-5.51	<0.001	-0.02	-0.01

Note. CI = Confidence Interval.
Num Meds = Number of Medications.
Num Comorbids = Number of Comorbidities.

Table 18.
Multilevel models predicting disclosure at baseline as a function of cancer stage, number of medications, and number of comorbidities at baseline

Self-Disclosure						95% CI	
Fixed effects	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	4.613	0.149	666	30.87	<0.001	4.32	4.91
Number of Medications	-0.019	0.066	637	-0.29	0.769	-0.15	0.11
Number of Comorbidities	0.031	0.070	649	0.44	0.662	-0.11	0.17
Cancer Stage	0.048	0.070	648	0.692	0.489	-0.09	0.19
Role	0.224	0.045	640	5.021	<0.001	0.14	0.31
Num Meds*Role	0.040	0.051	632	0.786	0.432	-0.06	0.14
Num Comorbids*Role	0.011	0.048	641	0.22	0.827	-0.08	0.11
Stage*Role	0.046	0.043	641	1.05	0.294	-0.04	0.13
Head or Neck Cancer	-0.080	0.103	668	-0.77	0.441	-0.28	0.12
Lung Cancer	0.021	0.111	660	0.19	0.853	-0.20	0.24
Breast Cancer	-0.102	0.080	637	-1.27	0.203	-0.26	0.06
Age	-0.002	0.006	824	-0.262	0.793	-0.01	0.01
Perceived Partner Disclosure						95% CI	
Fixed effects	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	4.708	0.146	671	32.32	<0.001	4.42	4.99
Number of Medications	-0.048	0.064	638	-0.75	0.454	-0.17	0.08
Number of Comorbidities	0.105	0.069	650	1.53	0.126	-0.03	0.24
Cancer Stage	-0.047	0.068	651	-0.70	0.487	-0.18	0.09
Role	-0.304	0.050	645	-6.12	<0.001	-0.40	-0.21
Num Meds*Role	-0.035	0.056	637	-0.63	0.531	-0.15	0.08
Num Comorbids*Role	0.165	0.054	648	3.06	0.002	0.06	0.27
Stage*Role	0.299	0.048	646	6.18	<0.001	0.20	0.39
Head or Neck Cancer	0.048	0.101	671	0.47	0.636	-0.15	0.25
Lung Cancer	0.075	0.108	666	0.69	0.488	-0.14	0.29

Table 18. (cont'd)

Breast Cancer	-0.026	0.078	636	-0.34	0.738	-0.18	0.13
Age	0.005	0.006	781	0.81	0.418	-0.01	0.02

Note. CI = Confidence Interval.
Num Meds = Number of Medications.
Num Comorbids = Number of Comorbidities.

Table 19.
Multilevel models predicting relationship health as a function of cancer stage, number of medications, and number of comorbidities at baseline

Intimacy						95% CI	
Fixed effects	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	3.969	0.074	665	53.32	<0.001	3.82	4.12
Number of Medications	-0.075	0.033	640	-2.26	0.024	-0.14	-0.01
Number of Comorbidities	0.008	0.035	652	0.23	0.816	-0.06	0.08
Cancer Stage	-0.049	0.035	648	-1.39	0.165	-0.12	0.02
Role	0.051	0.018	639	2.84	0.005	0.02	0.09
Num Meds*Role	-0.021	0.020	630	-1.03	0.303	-0.06	0.02
Num Comorbids*Role	0.029	0.019	638	1.49	0.136	-0.01	0.07
Stage*Role	0.068	0.017	640	3.89	<0.001	0.03	0.10
Head or Neck Cancer	0.004	0.052	668	0.07	0.943	-0.10	0.10
Lung Cancer	0.079	0.055	658	1.42	0.155	-0.03	0.19
Breast Cancer	0.015	0.040	638	0.38	0.705	-0.06	0.09
Age	0.010	0.003	907	3.35	0.001	0.004	0.02
Relationship Quality						95% CI	
Fixed effects	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	108.252	1.533	621	70.63	<0.001	105.24	111.26
Number of Medications	-1.387	0.710	600	-1.96	0.051	-2.78	0.01
Number of Comorbidities	-0.407	0.738	619	-0.55	0.582	-1.86	1.04
Cancer Stage	-0.948	0.737	613	-1.29	0.199	-2.40	0.50
Role	0.377	0.305	602	1.24	0.217	-0.22	0.98
Num Meds*Role	0.371	0.349	595	1.06	0.288	-0.31	1.06
Num Comorbids*Role	-0.138	0.331	598	-0.42	0.677	-0.79	0.51
Stage*Role	0.213	0.297	602	0.72	0.473	-0.37	0.80
Head or Neck Cancer	-4.095	1.051	617	-3.90	<0.001	-6.16	-2.03
Lung Cancer	-3.431	1.130	614	-3.04	0.003	-5.65	-1.21

Table 19. (cont'd)

Breast Cancer	0.127	0.840	605	0.15	0.880	-1.52	1.78
Age	0.369	0.058	972	6.40	0.000	0.26	0.48

Note. CI = Confidence Interval

Num Meds = Number of Medications.

Num Comorbids = Number of Comorbidities.

Table 20.
Multilevel models predicting psychological health 6 months after baseline as a function of cancer stage, number of medications, and number of comorbidities at baseline

Psychological Well-being						95% CI	
Fixed effects	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	4.251	0.091	524	46.85	<0.001	4.07	4.43
Number of Medications	-0.113	0.035	499	-3.23	0.001	-0.18	-0.04
Number of Comorbidities	0.031	0.037	509	0.84	0.402	-0.04	0.10
Cancer Stage	-0.049	0.039	517	-1.27	0.204	-0.13	0.03
Role	0.042	0.021	493	1.99	0.048	<0.001	0.08
Num Meds*Role	0.013	0.024	485	0.52	0.603	-0.04	0.06
Num Comorbids*Role	-0.021	0.023	496	-0.89	0.375	-0.07	0.03
Stage*Role	0.015	0.022	501	0.67	0.506	-0.03	0.06
Head or Neck Cancer	-0.149	0.065	528	-2.29	0.023	-0.28	-0.02
Lung Cancer	-0.110	0.071	512	-1.54	0.125	-0.25	0.03
Breast Cancer	-0.017	0.045	498	-0.38	0.706	-0.11	0.07
Age	0.018	0.003	670	5.79	<0.001	0.01	0.02
Intervention	-0.023	0.051	490	-0.46	0.648	-0.12	0.08
Psychological Distress						95% CI	
Fixed effects	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	2.111	0.065	522	32.53	<0.001	1.98	2.24
Number of Medications	0.090	0.025	493	3.57	<0.001	0.04	0.14
Number of Comorbidities	-0.007	0.027	503	-0.28	0.783	-0.06	0.04
Cancer Stage	-0.009	0.028	513	-0.34	0.735	-0.06	0.05
Role	0.005	0.017	493	0.30	0.765	-0.03	0.04
Num Meds*Role	0.008	0.020	485	0.40	0.690	-0.03	0.05
Num Comorbids*Role	-0.026	0.019	497	-1.37	0.172	-0.06	0.01
Stage*Role	-0.024	0.017	502	-1.35	0.179	-0.06	0.01
Head or Neck Cancer	0.152	0.047	526	3.26	0.001	0.06	0.24

Table 20. (cont'd)

Lung Cancer	0.121	0.051	508	2.38	0.018	0.021	0.22
Breast Cancer	-0.015	0.032	493	-0.47	0.641	-0.08	0.05
Age	-0.014	0.002	632	-6.07	<0.001	-0.02	-0.01
Intervention	0.019	0.036	485	0.53	0.597	-0.05	0.09
Cancer-Specific Distress						95% CI	
Fixed effects	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	1.403	0.095	530	14.76	<0.001	1.22	1.59
Number of Medications	0.080	0.037	505	2.17	0.031	0.01	0.15
Number of Comorbidities	-0.059	0.039	515	-1.51	0.131	-0.14	0.02
Cancer Stage	0.030	0.041	524	0.74	0.459	-0.05	0.11
Role	0.084	0.023	500	3.68	<0.001	0.04	0.13
Num Meds*Role	0.050	0.026	491	1.90	0.058	-0.002	0.10
Num Comorbids*Role	-0.052	0.025	503	-2.06	0.040	-0.10	-0.002
Stage*Role	-0.004	0.024	509	-0.15	0.879	-0.05	0.04
Head or Neck Cancer	0.143	0.068	535	2.10	0.036	0.01	0.28
Lung Cancer	0.414	0.075	517	5.54	<0.001	0.27	0.56
Breast Cancer	0.098	0.047	504	2.08	0.038	0.01	0.19
Age	-0.015	0.003	662	-4.46	<0.001	-0.02	-0.01
Intervention	0.010	0.053	494	0.18	0.855	-0.09	0.11

Note. CI = Confidence Interval.
Num Meds = Number of Medications.
Num Comorbids = Number of Comorbidities.
Intervention = Whether or not a participant received an intervention between baseline and 6 months later.

Table 21.
Multilevel models predicting disclosure 6 months after baseline as a function of cancer stage, number of medications, and number of comorbidities at baseline

Self-Disclosure						95% CI	
Fixed effects	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	3.556	0.204	522	17.42	<0.001	3.15	3.96
Number of Medications	0.065	0.079	494	0.82	0.412	-0.09	0.22
Number of Comorbidities	0.037	0.083	505	0.44	0.662	-0.13	0.20
Cancer Stage	0.117	0.087	511	1.343	0.180	-0.05	0.29
Role	0.101	0.055	496	1.819	0.069	-0.01	0.21
Num Meds*Role	0.044	0.064	487	0.683	0.495	-0.08	0.17
Num Comorbids*Role	-0.030	0.062	500	-0.49	0.626	-0.15	0.09
Stage*Role	0.070	0.057	504	1.23	0.221	-0.04	0.18
Head or Neck Cancer	-0.348	0.147	528	-2.37	0.018	-0.64	-0.06
Lung Cancer	-0.218	0.160	506	-1.36	0.175	-0.53	0.10
Breast Cancer	-0.840	0.101	493	-8.32	<0.001	-1.04	-0.64
Age	-0.004	0.007	620	-0.529	0.597	-0.02	0.01
Intervention	0.131	0.113	483	1.159	0.247	-0.09	0.35
Perceived Partner Disclosure						95% CI	
Fixed effects	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	3.687	0.203	519	18.16	<0.001	3.29	4.09
Number of Medications	0.084	0.078	487	1.07	0.284	-0.07	0.24
Number of Comorbidities	0.017	0.083	500	0.21	0.837	-0.15	0.18
Cancer Stage	0.100	0.087	508	1.16	0.248	-0.07	0.27
Role	-0.167	0.059	493	-2.83	0.005	-0.28	-0.05
Num Meds*Role	-0.025	0.068	485	-0.36	0.716	-0.16	0.11
Num Comorbids*Role	0.082	0.065	498	1.26	0.210	-0.05	0.21
Stage*Role	0.209	0.061	501	3.44	0.001	0.09	0.33
Head or Neck Cancer	-0.272	0.146	523	-1.86	0.063	-0.56	0.01

Table 21. (cont'd)

Lung Cancer	-0.143	0.159	504	-0.90	0.369	-0.45	0.17
Breast Cancer	-0.776	0.100	490	-7.75	<0.001	-0.97	-0.58
Age	<0.001	0.007	606	0.07	0.948	-0.01	0.01
Intervention	0.060	0.112	481	0.534	0.594	-0.16	0.28

Note. CI = Confidence Interval.

Num Meds = Number of Medications.

Num Comorbids = Number of Comorbidities.

Intervention = Whether or not a participant received an intervention between baseline and 6 months later.

Table 22.
Multilevel models predicting relationship health 6 months after baseline as a function of cancer stage, number of medications, and number of comorbidities at baseline

Intimacy						95% CI	
Fixed effects	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	3.969	0.088	533	45.09	<0.001	3.80	4.14
Number of Medications	-0.103	0.034	508	-3.03	0.003	-0.17	-0.04
Number of Comorbidities	0.038	0.036	517	1.05	0.296	-0.03	0.11
Cancer Stage	-0.038	0.038	526	-1.01	0.311	-0.11	0.04
Role	0.039	0.022	503	1.81	0.071	0.00	0.08
Head or Neck Cancer	-0.049	0.063	536	-0.77	0.441	-0.17	0.08
Lung Cancer	-0.016	0.069	518	-0.23	0.820	-0.15	0.12
Breast Cancer	0.080	0.044	505	1.83	0.068	-0.01	0.17
Age	0.012	0.003	661	4.06	<0.001	0.006	0.02
Intervention	-0.060	0.049	495	-1.23	0.218	-0.16	0.04
Num Meds*Role	0.029	0.025	495	1.15	0.249	-0.02	0.08
Num Comorbids*Role	0.003	0.024	506	0.11	0.915	-0.04	0.05
Stage*Role	0.074	0.022	512	3.34	0.001	0.03	0.12
Relationship Quality						95% CI	
Fixed effects	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	110.198	1.920	531	57.38	<0.001	106.43	113.97
Number of Medications	-1.612	0.758	510	-2.13	0.034	-3.10	-0.12
Number of Comorbidities	0.017	0.796	526	0.02	0.983	-1.55	1.58
Cancer Stage	-1.634	0.830	532	-1.97	0.050	-3.27	0.00
Role	0.481	0.365	488	1.32	0.188	-0.24	1.20
Num Meds*Role	0.669	0.423	482	1.58	0.114	-0.16	1.50
Num Comorbids*Role	-0.469	0.406	489	-1.16	0.248	-1.27	0.33
Stage*Role	0.276	0.380	493	0.73	0.467	-0.47	1.02
Head or Neck Cancer	-3.672	1.371	527	-2.68	0.008	-6.37	-0.98

Table 22. (cont'd)

Lung Cancer	-3.796	1.517	520	-2.50	0.013	-6.78	-0.82
Breast Cancer	0.480	0.962	512	0.50	0.618	-1.41	2.37
Age	0.364	0.064	766	5.65	<0.001	0.24	0.49
Intervention	-0.170	1.082	506	-0.16	0.875	-2.29	1.96

Note. CI = Confidence Interval.

Num Meds = Number of Medications.

Num Comorbids = Number of Comorbidities.

Intervention = Whether or not a participant received an intervention between baseline and 6 months later.

Table 23.
Multilevel models predicting cancer concerns at baseline as a function of cancer stage, number of medications, and number of comorbidities at baseline

Number of Cancer Concerns						95% CI	
Fixed effects	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	2.698	0.126	317	21.37	< 0.001	2.45	2.95
Number of Medications	-0.004	0.058	282	-0.07	0.944	-0.12	0.11
Number of Comorbidities	0.014	0.053	285	0.26	0.797	-0.09	0.12
Cancer Stage	0.106	0.068	301	1.56	0.119	-0.03	0.24
Role	-0.078	0.045	306	-1.72	0.087	-0.17	0.01
Num Meds*Role	0.097	0.042	279	2.33	0.020	0.02	0.18
Num Comorbids*Role	-0.042	0.039	282	-1.09	0.277	-0.12	0.03
Stage*Role	-0.013	0.046	288	-0.27	0.785	-0.10	0.08
Head or Neck Cancer	-0.349	0.076	314	-4.59	< 0.001	-0.50	-0.20
Lung Cancer	-0.130	0.084	303	-1.55	0.122	-0.29	0.03
Age	-0.028	0.006	410	-5.10	< 0.001	-0.04	-0.02
Holding Back Sharing Concerns						95% CI	
Fixed effects	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	1.871	0.111	368	16.89	< 0.001	1.65	2.09
Number of Medications	-0.075	0.059	345	-1.27	0.206	-0.19	0.04
Number of Comorbidities	0.054	0.054	353	1.00	0.316	-0.05	0.16
Cancer Stage	0.036	0.062	358	0.58	0.564	-0.09	0.16
Role	-0.044	0.050	365	-0.88	0.380	-0.14	0.05
Num Meds*Role	0.034	0.046	343	0.74	0.463	-0.06	0.12
Num Comorbids*Role	-0.023	0.041	346	-0.57	0.568	-0.10	0.06
Stage*Role	-0.040	0.046	352	-0.88	0.377	-0.13	0.05
Head or Neck Cancer	-0.448	0.067	364	-6.70	< 0.001	-0.58	-0.32
Lung Cancer	-0.378	0.072	357	-5.22	< 0.001	-0.52	-0.24
Age	-0.017	0.005	460	-3.18	0.002	-0.03	-0.01

Note. CI = Confidence Interval.

Table 23. (cont'd)
Num Meds = Number of Medications.
Num Comorbids = Number of Comorbidities.

Table 24.
Multilevel models predicting communication patterns at baseline as a function of cancer stage, number of medications, and number of comorbidities at baseline

Constructive Communication						95% CI	
Fixed effects	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	6.537	0.130	372	50.44	<0.001	6.28	6.79
Number of Medications	0.037	0.070	349	0.53	0.595	-0.10	0.17
Number of Comorbidities	-0.013	0.064	356	-0.20	0.844	-0.14	0.11
Cancer Stage	0.030	0.073	362	0.41	0.679	-0.11	0.17
Role	0.075	0.049	365	1.53	0.128	-0.02	0.17
Num Meds*Role	0.036	0.044	339	0.83	0.410	-0.05	0.12
Num Comorbids*Role	-0.049	0.039	342	-1.24	0.218	-0.13	0.03
Stage*Role	-0.015	0.044	345	-0.34	0.731	-0.10	0.07
Head or Neck Cancer	0.035	0.078	364	0.45	0.651	-0.12	0.19
Lung Cancer	0.123	0.085	360	1.45	0.148	-0.04	0.29
Age	0.013	0.006	512	2.07	0.039	0.001	0.03
Patient Demand/Spouse Withdrawal						95% CI	
Fixed effects	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	2.215	0.121	373	18.33	<0.001	1.98	2.45
Number of Medications	0.050	0.064	343	0.77	0.440	-0.08	0.18
Number of Comorbidities	0.060	0.059	351	1.01	0.313	-0.06	0.18
Cancer Stage	0.015	0.068	359	0.22	0.827	-0.12	0.15
Role	-0.128	0.061	362	-2.11	0.036	-0.25	-0.01
Num Meds*Role	0.021	0.055	342	0.38	0.707	-0.09	0.13
Num Comorbids*Role	0.028	0.049	345	0.57	0.567	-0.07	0.13
Stage*Role	0.056	0.055	350	1.02	0.311	-0.05	0.16
Head or Neck Cancer	0.022	0.073	364	0.30	0.763	-0.12	0.17
Lung Cancer	-0.040	0.079	358	-0.51	0.612	-0.195	0.12
Age	-0.014	0.006	449	-2.31	0.021	-0.03	-0.002
Spouse Demand/Patient Withdrawal						95% CI	

Table 24. (cont'd)

Fixed effects	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	2.252	0.129	357	17.46	<0.001	2.00	2.51
Number of Medications	0.076	0.069	335	1.10	0.271	-0.06	0.21
Number of Comorbidities	0.030	0.063	342	0.48	0.629	-0.09	0.15
Cancer Stage	0.014	0.072	348	0.20	0.841	-0.13	0.16
Role	0.093	0.059	356	1.57	0.118	-0.02	0.21
Num Meds*Role	0.064	0.053	333	1.20	0.231	-0.04	0.17
Num Comorbids*Role	-0.010	0.048	337	-0.20	0.842	-0.10	0.08
Stage*Role	0.013	0.053	342	0.25	0.805	-0.09	0.12
Head or Neck Cancer	0.039	0.078	353	0.50	0.620	-0.11	0.19
Lung Cancer	0.082	0.084	347	0.98	0.330	-0.08	0.25
Age	-0.016	0.006	448	-2.46	0.014	-0.03	-0.003

Note. CI = Confidence Interval.

Num Meds = Number of Medications.

Num Comorbids = Number of Comorbidities.

Table 25.
Multilevel models predicting cancer concerns as a function of cancer stage, number of medications, and number of comorbidities 6 months later

Number of Cancer Concerns						95% CI	
Fixed effects	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	2.587	0.141	283	18.40	<0.001	2.31	2.86
Number of Medications	0.065	0.063	270	1.04	0.299	-0.06	0.19
Number of Comorbidities	-0.092	0.058	278	-1.58	0.116	-0.21	0.02
Cancer Stage	0.117	0.071	283	1.65	0.099	-0.02	0.26
Role	-0.119	0.048	273	-2.49	0.013	-0.21	-0.02
Num Meds*Role	-0.001	0.044	259	-0.02	0.982	-0.09	0.0851
Num Comorbids*Role	0.024	0.040	265	0.59	0.553	-0.05	0.10
Stage*Role	-0.052	0.048	269	-1.09	0.275	-0.15	0.04
Head or Neck Cancer	-0.128	0.083	284	-1.54	0.125	-0.29	0.04
Lung Cancer	-0.008	0.092	276	-0.09	0.930	-0.19	0.17
Age	-0.017	0.006	379	-2.92	0.004	-0.03	-0.01
Intervention	0.011	0.064	264	0.17	0.868	-0.11	0.14
Holding Back Sharing Concerns						95% CI	
Fixed effects	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	1.825	0.143	282	12.72	<0.001	1.54	2.11
Number of Medications	-0.059	0.064	265	-0.92	0.361	-0.19	0.07
Number of Comorbidities	-0.006	0.060	274	-0.10	0.922	-0.12	0.11
Cancer Stage	-0.007	0.073	280	-0.09	0.926	-0.15	0.14
Role	-0.206	0.052	271	-3.95	0.000	-0.31	-0.10
Num Meds*Role	0.039	0.048	258	0.82	0.412	-0.06	0.13
Num Comorbids*Role	0.031	0.044	264	0.71	0.479	-0.05	0.12
Stage*Role	0.007	0.052	268	0.13	0.896	-0.10	0.11
Head or Neck Cancer	-0.267	0.085	282	-3.15	0.002	-0.43	-0.10
Lung Cancer	-0.201	0.094	274	-2.15	0.033	-0.39	-0.02
Age	-0.012	0.006	365	-1.94	0.053	-0.02	<0.001

Table 25. (cont'd)

Intervention	0.015	0.065	262	0.23	0.816	-0.11	0.14

Note. CI = Confidence Interval.
Num Meds = Number of Medications.
Num Comorbids = Number of Comorbidities.
Intervention = Whether or not person received an intervention.

Table 26.
Multilevel models predicting communication patterns 6 months post-baseline as a function of cancer stage, number of medications, and number of comorbidities at baseline

Constructive Communication						95% CI	
Fixed effects	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	6.516	0.167	286	39.12	<0.001	6.19	6.84
Number of Medications	0.061	0.073	272	0.84	0.404	-0.08	0.21
Number of Comorbidities	0.045	0.068	281	0.66	0.511	-0.09	0.18
Cancer Stage	-0.048	0.083	288	-0.58	0.565	-0.21	0.12
Role	-0.054	0.057	277	-0.95	0.343	-0.17	0.06
Num Meds*Role	-0.035	0.052	262	-0.68	0.497	-0.14	0.07
Num Comorbids*Role	-0.031	0.048	269	-0.65	0.518	-0.12	0.06
Stage*Role	0.082	0.057	276	1.44	0.152	-0.03	0.19
Head or Neck Cancer	-0.058	0.098	286	-0.59	0.559	-0.25	0.14
Lung Cancer	-0.054	0.108	282	-0.50	0.618	-0.27	0.16
Age	0.028	0.007	372	4.04	<0.001	0.01	0.04
Intervention	-0.070	0.074	265	-0.94	0.349	-0.22	0.08
Patient Demand/Spouse Withdrawal						95% CI	
Fixed effects	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	1.923	0.161	286	11.91	<0.001	1.60	2.24
Number of Medications	0.067	0.073	256	0.92	0.360	-0.08	0.21
Number of Comorbidities	-0.086	0.068	266	-1.27	0.205	-0.22	0.05
Cancer Stage	0.008	0.083	278	0.10	0.920	-0.16	0.17
Role	-0.104	0.061	264	-1.70	0.090	-0.22	0.02
Num Meds*Role	-0.106	0.056	252	-1.89	0.060	-0.22	0.004
Num Comorbids*Role	0.133	0.051	258	2.60	0.010	0.03	0.23
Stage*Role	-0.018	0.062	261	-0.29	0.769	-0.14	0.10
Head or Neck Cancer	-0.120	0.094	277	-1.27	0.204	-0.31	0.07
Lung Cancer	-0.075	0.104	275	-0.72	0.472	-0.280	0.13
Age	-0.012	0.007	354	-1.76	0.079	-0.03	0.001

Table 26. (cont'd)

Intervention	-0.116	0.072	260	-1.61	0.109	-0.26	0.03
Spouse Demand/Patient Withdrawal						95% CI	
Fixed effects	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	2.069	0.155	276	13.33	<0.001	1.76	2.37
Number of Medications	-0.013	0.068	262	-0.20	0.845	-0.15	0.12
Number of Comorbidities	-0.049	0.063	270	-0.76	0.446	-0.17	0.08
Cancer Stage	0.063	0.078	278	0.81	0.420	-0.09	0.22
Role	0.160	0.059	271	2.70	0.007	0.04	0.28
Num Meds*Role	0.025	0.054	258	0.46	0.647	-0.08	0.13
Num Comorbids*Role	0.024	0.049	265	0.48	0.633	-0.07	0.12
Stage*Role	-0.128	0.059	273	-2.17	0.031	-0.24	-0.01
Head or Neck Cancer	-0.007	0.092	276	-0.08	0.939	-0.19	0.17
Lung Cancer	0.157	0.101	272	1.55	0.122	-0.04	0.36
Age	-0.013	0.007	342	-2.01	0.045	-0.03	>-0.001
Intervention	-0.038	0.069	254	-0.55	0.580	-0.17	0.10

Note. CI = Confidence Interval.

Num Meds = Number of Medications.

Num Comorbids = Number of Comorbidities.

Intervention = Whether or not person received an intervention.

Table 27.
Multilevel models predicting psychological health, disclosure, and relationship health at baseline as a function of sex, role, and couples in which the patient was male versus female

Psychological Well-being					
	F(*df*)	M_{male}	SE_{male}	M_{female}	SE_{female}
Sex	0.57 (700)	4.22	0.04	4.19	0.04
	F(*df*)	$M_{patient}$	$SE_{patient}$	M_{spouse}	SE_{spouse}
Role	4.36* (674)	4.24	0.08	4.17	0.08
	F(*df*)	$M_{male\ patient}$	$SE_{male\ patient}$	$M_{female\ patient}$	$SE_{female\ patient}$
Patient Sex in Dyad	0.97 (699)	4.14	0.07	4.27	0.08
Psychological Distress					
	F(*df*)	M_{male}	SE_{male}	M_{female}	SE_{female}
Sex	19.76*** (698)	2.10	0.03	2.24	0.03
	F(*df*)	$M_{patient}$	$SE_{patient}$	M_{spouse}	SE_{spouse}
Role	0.07 (675)	2.16	0.06	2.17	0.06
	F(*df*)	$M_{male\ patient}$	$SE_{male\ patient}$	$M_{female\ patient}$	$SE_{female\ patient}$
Patient Sex in Dyad	2.24 (696)	*2.24*	*0.05*	*2.10*	*0.06*
Cancer-specific distress					
	F(*df*)	M_{male}	SE_{male}	M_{female}	SE_{female}
Sex	23.07*** (701)	1.28	0.05	1.51	0.04
	F(*df*)	$M_{patient}$	$SE_{patient}$	M_{spouse}	SE_{spouse}
Role	12.68*** (679)	1.48	0.08	1.31	0.09
	F(*df*)	$M_{male\ patient}$	$SE_{male\ patient}$	$M_{female\ patient}$	$SE_{female\ patient}$
Patient Sex in Dyad	0.03 (701)	*1.38*	*0.07*	*1.41*	*0.09*
Self Disclosure					
	F(*df*)	M_{male}	SE_{male}	M_{female}	SE_{female}
Sex	0.72 (702)	4.76	0.09	4.69	0.08
	F(*df*)	$M_{patient}$	$SE_{patient}$	M_{spouse}	SE_{spouse}

Table 27. (cont'd)

Role	30.84*** (680)	4.97	0.16	4.48	0.16
	F(*df*)	$M_{male\ patient}$	$SE_{male\ patient}$	$M_{female\ patient}$	$SE_{female\ patient}$
Patient Sex in Dyad	0.66 (704)	*4.83*	*0.14*	*4.62*	*0.16*
Perceived Partner Disclosure					
	F(*df*)	M_{male}	SE_{male}	M_{female}	SE_{female}
Sex	133.13*** (710)	5.24	0.09	4.15	0.08
	F(*df*)	$M_{patient}$	$SE_{patient}$	M_{spouse}	SE_{spouse}
Role	27.23*** (691)	4.45	0.16	4.94	0.16
	F(*df*)	$M_{male\ patient}$	$SE_{male\ patient}$	$M_{female\ patient}$	$SE_{female\ patient}$
Patient Sex in Dyad	0.95 (711)	*4.81*	*0.13*	*4.57*	*0.16*
Intimacy					
	F(*df*)	M_{male}	SE_{male}	M_{female}	SE_{female}
Sex	24.20*** (704)	4.01	0.04	3.83	0.04
	F(*df*)	$M_{patient}$	$SE_{patient}$	M_{spouse}	SE_{spouse}
Role	10.84** (673)	3.98	0.08	3.86	0.08
	F(*df*)	$M_{male\ patient}$	$SE_{male\ patient}$	$M_{female\ patient}$	$SE_{female\ patient}$
Patient Sex in Dyad	0.48 (701)	*3.87*	*0.07*	*3.96*	*0.08*
Relationship Quality					
	F(*df*)	M_{male}	SE_{male}	M_{female}	SE_{female}
Sex	0.99 (668)	111.98	0.81	111.38	0.80
	F(*df*)	$M_{patient}$	$SE_{patient}$	M_{spouse}	SE_{spouse}
Role	2.16 (631)	112.12	1.54	111.24	1.61
	F(*df*)	$M_{male\ patient}$	$SE_{male\ patient}$	$M_{female\ patient}$	$SE_{female\ patient}$

Table 27. (cont'd)

Patient Sex in Dyad	0.18 (657)	*111.11*	*1.39*	*112.25*	*1.64*

Note. *p< .05, **p< .01, ***p< .001. Tabled values are estimated marginal means (M) and standard errors (SE). *df*= denominator degrees of freedom.
Numerator df for sex, role, and patient sex in dyad is 1.

Table 28.

Multilevel models predicting psychological health, disclosure, and relationship health 6 months later as a function of sex, role, and couples in which the patient was male versus female

Psychological Well-being					
	F(*df*)	M_{male}	SE_{male}	M_{female}	SE_{female}
Sex	0.64 (536)	4.37	0.05	4.40	0.05
	F(*df*)	$M_{patient}$	$SE_{patient}$	M_{spouse}	SE_{spouse}
Role	4.96* (515)	4.43	0.09	4.34	0.10
	F(*df*)	$M_{male\ patient}$	$SE_{male\ patient}$	$M_{female\ patient}$	$SE_{female\ patient}$
Patient Sex in Dyad	1.15 (552)	4.30	0.09	4.47	0.10
Psychological Distress					
	F(*df*)	M_{male}	SE_{male}	M_{female}	SE_{female}
Sex	8.43** (535)	1.92	0.04	2.02	0.04
	F(*df*)	$M_{patient}$	$SE_{patient}$	M_{spouse}	SE_{spouse}
Role	0.004 (516)	1.97	0.07	1.97	0.07
	F(*df*)	$M_{male\ patient}$	$SE_{male\ patient}$	$M_{female\ patient}$	$SE_{female\ patient}$
Patient Sex in Dyad	2.20 (548)	2.05	0.06	*1.89*	*0.07*
Cancer-specific distress					
	F(*df*)	M_{male}	SE_{male}	M_{female}	SE_{female}
Sex	4.95* (545)	1.02	0.06	1.12	0.06
	F(*df*)	$M_{patient}$	$SE_{patient}$	M_{spouse}	SE_{spouse}
Role	12.06** (525)	1.15	0.10	0.99	0.10
	F(*df*)	$M_{male\ patient}$	$SE_{male\ patient}$	$M_{female\ patient}$	$SE_{female\ patient}$
Patient Sex in Dyad	0.72 (558)	*1.01*	*0.09*	*1.14*	*0.10*
Self Disclosure					
	F(*df*)	M_{male}	SE_{male}	M_{female}	SE_{female}
Sex	2.35 (541)	4.45	0.13	4.28	0.12
	F(*df*)	$M_{patient}$	$SE_{patient}$	M_{spouse}	SE_{spouse}

Table 28. (cont'd)

Role	4.48 (523)	4.48	0.22	4.25	0.22
	F(*df*)	$M_{male\ patient}$	$SE_{male\ patient}$	$M_{female\ patient}$	$SE_{female\ patient}$
Patient Sex in Dyad	<0.001 (552)	*4.36*	*0.19*	*4.37*	*0.21*
Perceived Partner Disclosure					
	F(*df*)	M_{male}	SE_{male}	M_{female}	SE_{female}
Sex	52.74*** (536)	4.80	0.13	3.98	0.13
	F(*df*)	$M_{patient}$	$SE_{patient}$	M_{spouse}	SE_{spouse}
Role	5.85* (519)	4.25	0.21	4.52	0.22
	F(*df*)	$M_{male\ patient}$	$SE_{male\ patient}$	$M_{female\ patient}$	$SE_{female\ patient}$
Sex*role	0.25 (551)	*4.30*	*0.19*	*4.47*	*0.21*
Intimacy					
	F(*df*)	M_{male}	SE_{male}	M_{female}	SE_{female}
Sex	18.33*** (546)	4.04	0.05	3.86	0.05
	F(*df*)	$M_{patient}$	$SE_{patient}$	M_{spouse}	SE_{spouse}
Role	4.09* (526)	3.99	0.09	3.91	0.09
	F(*df*)	$M_{male\ patient}$	$SE_{male\ patient}$	$M_{female\ patient}$	$SE_{female\ patient}$
Patient Sex in Dyad	0.16 (561)	*3.92*	*0.08*	*3.98*	*0.09*
Relationship Quality					
	F(*df*)	M_{male}	SE_{male}	M_{female}	SE_{female}
Sex	1.78 (537)	113.61	1.14	112.63	1.13
	F(*df*)	$M_{patient}$	$SE_{patient}$	M_{spouse}	SE_{spouse}
Role	1.67 (509)	113.58	1.96	112.65	2.03
	F(*df*)	$M_{male\ patient}$	$SE_{male\ patient}$	$M_{female\ patient}$	$SE_{female\ patient}$
Patient Sex in Dyad	0.51 (559)	*114.26*	*1.81*	*111.97*	*2.04*

Note. *p< .05, **p< .01, ***p< .001. Tabled values are estimated marginal means (M) and standard errors (SE). *df*= denominator degrees of freedom.
Numerator df for sex, role, and their interaction is 1.

Table 29.
Multilevel models predicting cancer concerns and communication patterns at baseline as a function of sex, role, and couples in which the patient was male versus female

Number of Cancer Concerns					
	$F(df)$	M_{male}	SE_{male}	M_{female}	SE_{female}
Sex	1.63 (353)	2.98	0.13	2.80	0.10
	$F(df)$	$M_{patient}$	$SE_{patient}$	M_{spouse}	SE_{spouse}
Role	6.05* (349)	2.72	0.15	3.07	0.17
	$F(df)$	$M_{male\ patient}$	$SE_{male\ patient}$	$M_{female\ patient}$	$SE_{female\ patient}$
Patient Sex in Dyad	0.004 (336)	2.90	0.08	2.88	0.18
Holding Back Sharing Concerns					
	$F(df)$	M_{male}	SE_{male}	M_{female}	SE_{female}
Sex	0.001 (417)	2.18	0.09	2.17	0.09
	$F(df)$	$M_{patient}$	$SE_{patient}$	M_{spouse}	SE_{spouse}
Role	1.29 (413)	2.11	0.13	2.24	0.12
	$F(df)$	$M_{male\ patient}$	$SE_{male\ patient}$	$M_{female\ patient}$	$SE_{female\ patient}$
Patient Sex in Dyad	0.01 (382)	2.17	0.07	2.18	0.13
Constructive Communication					
	$F(df)$	M_{male}	SE_{male}	M_{female}	SE_{female}
Sex	0.48 (384)	6.55	0.10	6.48	0.09
	$F(df)$	$M_{patient}$	$SE_{patient}$	M_{spouse}	SE_{spouse}
Role	0.38 (381)	6.55	0.13	6.48	0.15
	$F(df)$	$M_{male\ patient}$	$SE_{male\ patient}$	$M_{female\ patient}$	$SE_{female\ patient}$
Patient Sex in Dyad	0.005 (388)	6.52	0.08	6.51	0.16
Patient Demand/Spouse Withdrawal					
	$F(df)$	M_{male}	SE_{male}	M_{female}	SE_{female}

Table 29. (cont'd)

Sex	2.70 (407)	2.42	0.11	2.20	0.09
	F(*df*)	$M_{patient}$	$SE_{patient}$	M_{spouse}	SE_{spouse}
Role	6.50* (404)	2.14	0.13	2.48	0.15
	F(*df*)	$M_{male\ patient}$	$SE_{male\ patient}$	$M_{female\ patient}$	$SE_{female\ patient}$
Patient Sex in Dyad	2.12 (386)	2.18	0.08	2.44	0.15
Spouse Demand/Patient Withdrawal					
	F(*df*)	M_{male}	SE_{male}	M_{female}	SE_{female}
Sex	11.89** (402)	2.39	0.10	1.96	0.10
	F(*df*)	$M_{patient}$	$SE_{patient}$	M_{spouse}	SE_{spouse}
Role	1.02 (313)	2.11	0.14	2.24	0.14
	F(*df*)	$M_{male\ patient}$	$SE_{male\ patient}$	$M_{female\ patient}$	$SE_{female\ patient}$
Patient Sex in Dyad	1.28 (369)	2.28	0.08	2.07	0.15

Note. *p< .05, **p< .01, ***p< .001. Tabled values are estimated marginal means (M) and standard errors (SE). *df*= denominator degrees of freedom.
Numerator df for sex, role, and their interaction is 1.

Table 30.
Multilevel models predicting cancer concerns and communication patterns 6 months later as a function of sex, role, and couples in which the patient was male versus female

Number of Cancer Concerns					
	F(*df*)	M_{male}	SE_{male}	M_{female}	SE_{female}
Sex	1.53 (290)	2.76	0.11	2.62	0.09
	F(*df*)	$M_{patient}$	$SE_{patient}$	M_{spouse}	SE_{spouse}
Role	11.85*** (291)	2.49	0.13	2.88	0.15
	F(*df*)	$M_{male\ patient}$	$SE_{male\ patient}$	$M_{female\ patient}$	$SE_{female\ patient}$
Patient Sex in Dyad	1.77 (304)	2.56	0.09	2.81	0.15
Holding Back Sharing Concerns					
	F(*df*)	M_{male}	SE_{male}	M_{female}	SE_{female}
Sex	0.14 (290)	1.99	0.11	2.03	0.10
	F(*df*)	$M_{patient}$	$SE_{patient}$	M_{spouse}	SE_{spouse}
Role	8.00 (290)	1.84	0.14	2.18	0.16
	F(*df*)	$M_{male\ patient}$	$SE_{male\ patient}$	$M_{female\ patient}$	$SE_{female\ patient}$
Patient Sex in Dyad	2.83 (305)	1.85	0.09	2.17	0.16
Constructive Communication					
	F(*df*)	M_{male}	SE_{male}	M_{female}	SE_{female}
Sex	0.13 (300)	6.57	0.12	6.53	0.11
	F(*df*)	$M_{patient}$	$SE_{patient}$	M_{spouse}	SE_{spouse}
Role	0.10 (301)	6.53	0.16	6.57	0.17
	F(*df*)	$M_{male\ patient}$	$SE_{male\ patient}$	$M_{female\ patient}$	$SE_{female\ patient}$
Patient Sex in Dyad	1.79 (305)	6.70	0.10	6.40	0.18
Patient Demand/Spouse Withdrawal					
	F(*df*)	M_{male}	SE_{male}	M_{female}	SE_{female}
Sex	6.10* (283)	2.27	0.14	1.91	0.11
	F(*df*)	$M_{patient}$	$SE_{patient}$	M_{spouse}	SE_{spouse}

Table 30. (cont'd)

Role	7.73** (284)	1.89	0.15	2.29	0.19
	F(*df*)	$M_{male\ patient}$	$SE_{male\ patient}$	$M_{female\ patient}$	$SE_{female\ patient}$
Patient Sex in Dyad	6.32* (305)	1.81	0.10	2.37	0.18
Spouse Demand/Patient Withdrawal					
	F(*df*)	M_{male}	SE_{male}	M_{female}	SE_{female}
Sex	7.66** (302)	2.19	0.12	1.82	0.11
	F(*df*)	$M_{patient}$	$SE_{patient}$	M_{spouse}	SE_{spouse}
Role	0.10 (303)	1.98	0.16	2.03	0.16
	F(*df*)	$M_{male\ patient}$	$SE_{male\ patient}$	$M_{female\ patient}$	$SE_{female\ patient}$
Patient Sex in Dyad	0.02 (295)	2.02	0.10	1.99	0.17

Note. *p< .05, **p< .01, ***p< .001. Tabled values are estimated marginal means (M) and standard errors (SE). *df*= denominator degrees of freedom.
Numerator df for sex, role, and their interaction is 1.

Table 31.

APIMs examining bidirectional associations between psychological well-being and relationship health

Outcome: *Self Disclosure 6 months later*						95% CI	
Main Predictor[a]: *Psych. Well-being*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	4.13	0.07	522	59.15	<0.001	3.99	4.26
Actor Psych. Well-being	0.25	0.07	996	3.42	0.001	0.11	0.39
Partner Psych. Well-being	0.01	0.07	997	0.07	0.941	-0.14	0.15
Actor Role	0.04	0.05	513	0.69	0.491	-0.07	0.14
Actor Psych. Well-being*Actor Role	-0.01	0.08	787	-0.16	0.871	-0.17	0.14
Partner Psych. Well-being*Actor Role	-0.04	0.08	786	-0.45	0.655	-0.19	0.12
Actor Self-disclosure	0.34	0.03	1013	10.03	<0.001	0.28	0.41
Partner Self-disclosure	0.12	0.03	1013	3.46	0.001	0.05	0.18
Actor Self-disclosure*Actor Role	0.08	0.04	866	2.23	0.026	0.01	0.15
Partner Self-disclosure*Actor Role	0.03	0.04	865	0.71	0.476	-0.04	0.10
Outcome: *Psychological Well-being 6 months later*						95% CI	
Main Predictor: *Self-disclosure*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	4.46	0.02	521	214.21	<0.001	4.42	4.50
Actor Self-disclosure	0.01	0.01	1014	1.37	0.170	-0.01	0.03
Partner Self-disclosure	0.01	0.01	1014	0.60	0.546	-0.01	0.03
Actor Role	0.03	0.02	512	1.83	0.069	-0.002	0.06
Actor Self-disclosure*Actor Role	-0.01	0.01	858	-0.87	0.383	-0.03	0.01
Partner Self-disclosure*Actor Role	0.01	0.01	859	1.04	0.299	-0.01	0.03
Actor Psych. Well-being	0.66	0.02	1002	30.78	<0.001	0.62	0.70
Partner Psych. Well-being	0.04	0.02	1005	1.99	0.047	<0.001	0.08
Actor Psych. Well-being*Actor Role	-0.03	0.02	781	-1.09	0.275	-0.07	0.02
Partner Psych. Well-being*Actor Role	0.02	0.02	780	1.03	0.305	-0.02	0.07
Outcome: *Perceived Partner Disclosure*						95% CI	
Main Predictor: *Psych. Well-being*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	4.20	0.07	517	64.24	<0.001	4.07	4.33

Table 31. (cont'd)

Actor Psych. Well-being	0.18	0.07	970	2.50	0.013	0.04	0.32
Partner Psych. Well-being	0.05	0.07	970	0.72	0.472	-0.09	0.19
Actor Role	-0.08	0.06	510	-1.51	0.133	-0.19	0.03
Actor Psych. Well-being*Actor Role	-0.12	0.08	823	-1.58	0.115	-0.27	0.03
Partner Psych. Well-being*Actor Role	0.14	0.08	822	1.85	0.065	-0.01	0.29
Actor Perceived Partner Disclosure	0.39	0.03	989	12.34	<0.001	0.33	0.45
Partner Perceived Partner Disclosure	0.01	0.03	996	0.45	0.650	-0.05	0.08
Actor Per. Part. Disclosure*Actor Role	0.17	0.03	968	5.27	<0.001	0.11	0.23
Partner Per. Part. Disclosure*Actor Role	-0.15	0.03	975	-4.68	<0.001	-0.21	-0.09
Outcome: *Psych. Well-being 6 months later*						95% CI	
Main Predictor: *Perceived Partner Disclosure*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	4.45	0.02	521	215.29	<0.001	4.41	4.49
Actor Perceived Partner Disclosure	-0.01	0.01	962	-0.68	0.497	-0.03	0.01
Partner Perceived Partner Disclosure	0.02	0.01	968	1.93	0.054	0.00	0.04
Actor Role	0.02	0.02	511	1.58	0.116	-0.01	0.06
Actor Per. Part. Disclosure*Actor Role	-0.01	0.01	933	-1.30	0.192	-0.03	0.01
Partner Per. Part. Disclosure*Actor Role	0.01	0.01	937	1.01	0.312	-0.01	0.03
Actor Psych. Well-being	0.67	0.02	1005	31.06	<0.001	0.63	0.71
Partner Psych. Well-being	0.04	0.02	1006	1.86	0.063	-0.002	0.08
Actor Psych. Well-being*Actor Role	-0.02	0.02	780	-0.81	0.417	-0.07	0.03
Partner Psych. Well-being*Actor Role	0.03	0.02	779	1.07	0.284	-0.02	0.07
Outcome: *Intimacy 6 months later*						95% CI	
Main Predictor: *Psych. Well-being*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	3.98	0.02	529	198.04	<0.001	3.94	4.02
Actor Psych. Well-being	0.10	0.03	992	3.75	<0.001	0.05	0.15
Partner Psych. Well-being	0.03	0.03	998	1.01	0.314	-0.03	0.08
Actor Role	0.01	0.02	525	0.73	0.464	-0.02	0.05
Actor Psych. Well-being*Actor Role	-0.04	0.03	922	-1.62	0.105	-0.10	0.01

Table 31. (cont'd)

Partner Psych. Well-being*Actor Role	0.02	0.03	926	0.73	0.465	-0.03	0.07
Actor Intimacy	0.55	0.03	980	19.31	<0.001	0.49	0.60
Partner Intimacy	0.04	0.03	984	1.58	0.114	-0.01	0.10
Actor Intimacy*Actor Role	0.03	0.03	899	1.10	0.271	-0.03	0.09
Partner Intimacy*Actor Role	-0.01	0.03	905	-0.33	0.745	-0.07	0.05
Outcome: *Psych. Well-being 6 months later*						95% CI	
Main Predictor: *Intimacy*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	4.45	0.02	522	217.91	<0.001	4.41	4.49
Actor Intimacy	0.01	0.03	1012	0.28	0.783	-0.04	0.06
Partner Intimacy	0.01	0.03	1018	0.35	0.730	-0.04	0.06
Actor Role	0.03	0.02	512	1.93	0.055	>-0.001	0.06
Actor Intimacy*Actor Role	-0.001	0.03	804	-0.04	0.970	-0.06	0.05
Partner Intimacy*Actor Role	0.02	0.03	812	0.69	0.489	-0.04	0.08
Actor Psych. Well-being	0.66	0.02	1008	26.64	<0.001	0.61	0.71
Partner Psych. Well-being	0.04	0.02	1017	1.63	0.104	-0.01	0.09
Actor Psych. Well-being*Actor Role	-0.03	0.03	829	-1.10	0.272	-0.08	0.02
Partner Psych. Well-being*Actor Role	0.02	0.03	832	0.63	0.532	-0.04	0.07
Outcome: *Relationship satisfaction 6 months later*						95% CI	
Main Predictor: *Psych. Well-being*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	115.70	0.39	502	294.98	<0.001	114.93	116.47
Actor Psych. Well-being	1.05	0.48	913	2.17	0.031	0.10	2.00
Partner Psych. Well-being	-0.29	0.48	975	-0.61	0.541	-1.23	0.64
Actor Role	0.30	0.31	491	0.99	0.323	-0.30	0.90
Actor Psych. Well-being*Actor Role	0.53	0.51	790	1.04	0.299	-0.47	1.54
Partner Psych. Well-being*Actor Role	-0.54	0.50	821	-1.07	0.284	-1.53	0.45
Actor Relationship satisfaction	0.66	0.03	886	24.18	<0.001	0.61	0.72
Partner Relationship satisfaction	0.14	0.03	883	5.27	<0.001	0.09	0.20
Actor Relationship satisfaction*Actor Role	-0.04	0.03	690	-1.26	0.209	-0.10	0.02

Table 31. (cont'd)

Partner Relationship satisfaction*Actor Role	0.01	0.03	689	0.36	0.721	-0.05	0.07
Outcome: *Psych. Well-being 6 months later*						95% CI	
Main Predictor: *Relationship satisfaction*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	4.44	0.02	496	218.35	<0.001	4.40	4.48
Actor Relationship satisfaction	0.01	0.00	895	3.75	<0.001	0.003	0.01
Partner Relationship satisfaction	0.002	0.00	894	1.41	0.158	-0.001	0.00
Actor Role	0.03	0.02	487	1.96	0.051	>-0.001	0.06
Actor Relationship satisfaction*Actor Role	0.003	0.00	684	1.63	0.104	-0.001	0.01
Partner Relationship satisfaction*Actor Role	-0.003	0.00	683	-1.64	0.102	-0.01	0.00
Actor Psych. Well-being	0.62	0.02	944	24.87	<0.001	0.57	0.67
Partner Psych. Well-being	0.002	0.02	955	0.09	0.927	-0.05	0.05
Actor Psych. Well-being*Actor Role	-0.03	0.03	800	-1.32	0.188	-0.09	0.02
Partner Psych. Well-being*Actor Role	0.03	0.03	805	1.12	0.263	-0.02	0.08

Note. [a]all predictors are measurements from baseline.

Psych. = Psychological.

Per. Part. Disclosure = Perceived Partner Disclosure.

Table 32.

APIMs examining bidirectional associations between psychological distress and relationship health

Outcome: *Self Disclosure 6 months later*						95% CI	
Main Predictor[a]: *Psych. Distress*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	4.13	0.07	523	59.31	<0.001	3.99	4.27
Actor Psych. Distress	-0.22	0.09	1002	-2.47	0.014	-0.39	-0.04
Partner Psych. Distress	0.02	0.09	1009	0.22	0.825	-0.15	0.19
Actor Role	0.04	0.05	514	0.80	0.424	-0.06	0.15
Actor Psych. Distress*Actor Role	-0.15	0.09	830	-1.59	0.112	-0.33	0.03
Partner Psych. Distress*Actor Role	0.19	0.09	832	2.07	0.039	0.01	0.38
Actor Self-disclosure	0.36	0.03	1013	10.80	<0.001	0.30	0.43
Partner Self-disclosure	0.13	0.03	1013	3.79	<0.001	0.06	0.19
Actor Self-disclosure*Actor Role	0.08	0.04	854	2.19	0.029	0.01	0.15
Partner Self-disclosure*Actor Role	0.02	0.04	853	0.60	0.547	-0.05	0.09
Outcome*: Psychological Distress 6 months later*						95% CI	
Main Predictor: *Self-disclosure*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	1.90	0.02	522	121.96	<0.001	1.87	1.93
Actor Self-disclosure	-0.01	0.01	1014	-1.04	0.300	-0.02	0.01
Partner Self-disclosure	-0.001	0.01	1015	-0.09	0.925	-0.02	0.01
Actor Role	-0.003	0.01	516	-0.24	0.813	-0.03	0.02
Actor Self-disclosure*Actor Role	-0.003	0.01	880	-0.41	0.682	-0.02	0.01
Partner Self-disclosure*Actor Role	-0.004	0.01	881	-0.55	0.582	-0.02	0.01
Actor Psych. Distress	0.61	0.02	1007	30.44	<0.001	0.57	0.65
Partner Psych. Distress	0.03	0.02	997	1.35	0.178	-0.01	0.07
Actor Psych. Distress*Actor Role	-0.05	0.02	859	-2.59	0.010	-0.10	-0.01
Partner Psych. Distress*Actor Role	0.04	0.02	854	1.69	0.091	-0.01	0.08
Outcome: *Perceived Partner Disclosure*						95% CI	

Table 32. (cont'd)

Main Predictor: *Psych. Distress*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	4.19	0.07	518	63.97	<0.001	4.06	4.32
Actor Psych. Distress	-0.16	0.09	988	-1.78	0.075	-0.33	0.02
Partner Psych. Distress	0.01	0.09	997	0.14	0.892	-0.16	0.18
Actor Role	-0.08	0.05	511	-1.51	0.132	-0.19	0.02
Actor Psych. Distress*Actor Role	-0.08	0.09	854	-0.90	0.368	-0.26	0.10
Partner Psych. Distress*Actor Role	-0.02	0.09	859	-0.25	0.804	-0.20	0.16
Actor Perceived Partner Disclosure	0.41	0.03	988	12.98	<0.001	0.34	0.47
Partner Perceived Partner Disclosure	0.03	0.03	1000	1.00	0.319	-0.03	0.09
Actor Per. Part. Disclosure*Actor Role	0.16	0.03	948	5.01	<0.001	0.10	0.22
Partner Per. Part. Disclosure*Actor Role	-0.14	0.03	958	-4.53	<0.001	-0.20	-0.08
Outcome: Psych. Distress 6 months later						95% CI	
Main Predictor: *Perceived Partner Disclosure*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	1.90	0.02	521	123.85	<0.001	1.87	1.93
Actor Perceived Partner Disclosure	-0.002	0.01	1000	-0.23	0.817	-0.02	0.01
Partner Perceived Partner Disclosure	-0.01	0.01	992	-1.24	0.216	-0.02	0.01
Actor Role	-0.003	0.01	514	-0.28	0.782	-0.03	0.02
Actor Per. Part. Disclosure*Actor Role	-0.002	0.01	955	-0.30	0.763	-0.02	0.01
Partner Per. Part. Disclosure*Actor Role	-0.01	0.01	947	-1.45	0.147	-0.03	0.004
Actor Psych. Distress	0.61	0.02	1006	30.20	<0.001	0.57	0.65
Partner Psych. Distress	0.02	0.02	999	1.22	0.222	-0.02	0.06
Actor Psych. Distress*Actor Role	-0.05	0.02	852	-2.49	0.013	-0.10	-0.01
Partner Psych. Distress*Actor Role	0.03	0.02	849	1.52	0.128	-0.01	0.08
Outcome: *Intimacy 6 months later*						95% CI	
Main Predictor: *Psych. Distress*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	3.98	0.02	531	196.08	<0.001	3.94	4.02

Table 32. (cont'd)

Actor Psych. Distress	-0.11	0.03	1001	-3.68	<0.001	-0.17	-0.05
Partner Psych. Distress	0.01	0.03	1009	0.31	0.760	-0.05	0.07
Actor Role	0.02	0.02	526	0.94	0.346	-0.02	0.05
Actor Psych. Distress*Actor Role	0.04	0.03	931	1.39	0.165	-0.02	0.10
Partner Psych. Distress*Actor Role	0.002	0.03	937	0.06	0.956	-0.06	0.06
Actor Intimacy	0.57	0.03	955	21.58	<0.001	0.52	0.62
Partner Intimacy	0.07	0.03	957	2.61	0.009	0.02	0.12
Actor Intimacy*Actor Role	0.02	0.03	856	0.72	0.470	-0.03	0.07
Partner Intimacy*Actor Role	<0.001	0.03	861	0.00	0.999	-0.05	0.05
Outcome: *Psych. Distress 6 months later*						95% CI	
Main Predictor: *Intimacy*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	1.90	0.02	523	124.49	<0.001	1.87	1.93
Actor Intimacy	-0.03	0.02	982	-1.68	0.093	-0.07	0.01
Partner Intimacy	0.001	0.02	983	0.05	0.958	-0.04	0.04
Actor Role	-0.003	0.01	516	-0.21	0.833	-0.03	0.02
Actor Intimacy*Actor Role	0.01	0.02	804	0.41	0.683	-0.03	0.05
Partner Intimacy*Actor Role	-0.02	0.02	810	-0.83	0.406	-0.06	0.02
Actor Psych. Distress	0.60	0.02	1015	27.31	<0.001	0.55	0.64
Partner Psych. Distress	0.02	0.02	1005	1.10	0.271	-0.02	0.07
Actor Psych. Distress*Actor Role	-0.05	0.02	889	-2.27	0.023	-0.10	-0.01
Partner Psych. Distress*Actor Role	0.03	0.02	883	1.35	0.177	-0.01	0.08
Outcome: *Relationship satisfaction 6 months later*						95% CI	
Main Predictor: *Psych. Distress*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	115.72	0.39	503	294.80	<0.001	114.95	116.49
Actor Psych. Distress	-1.54	0.55	917	-2.80	0.005	-2.62	-0.46
Partner Psych. Distress	0.69	0.54	972	1.26	0.208	-0.38	1.75
Actor Role	0.37	0.30	491	1.23	0.220	-0.22	0.97

Table 32. (cont'd)

Actor Psych. Distress*Actor Role	0.29	0.58	809	0.49	0.621	-0.85	1.42
Partner Psych. Distress*Actor Role	0.36	0.57	840	0.63	0.530	-0.76	1.48
Actor Relationship satisfaction	0.67	0.03	865	26.15	<0.001	0.62	0.72
Partner Relationship satisfaction	0.15	0.03	842	5.78	<0.001	0.10	0.20
Actor Relationship satisfaction*Actor Role	-0.02	0.03	662	-0.77	0.445	-0.08	0.04
Partner Relationship satisfaction*Actor Role	0.003	0.03	659	0.10	0.920	-0.06	0.06
Outcome: *Psych. Distress 6 months later*						95% CI	
Main Predictor: *Relationship satisfaction*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	1.91	0.02	495	125.02	<0.001	1.88	1.94
Actor Relationship satisfaction	-0.003	0.001	824	-3.08	0.002	-0.01	-0.001
Partner Relationship satisfaction	>-0.001	0.001	827	-0.35	0.728	-0.002	0.002
Actor Role	-0.004	0.01	490	-0.32	0.750	-0.03	0.02
Actor Relationship satisfaction*Actor Role	-0.002	0.001	677	-1.52	0.130	-0.004	0.001
Partner Relationship satisfaction*Actor Role	0.002	0.001	680	1.29	0.197	-0.001	0.004
Actor Psych. Distress	0.60	0.02	958	27.05	<0.001	0.55	0.64
Partner Psych. Distress	0.01	0.02	947	0.37	0.714	-0.04	0.05
Actor Psych. Distress*Actor Role	-0.06	0.02	859	-2.76	0.006	-0.11	-0.02
Partner Psych. Distress*Actor Role	0.04	0.02	853	1.81	0.071	-0.004	0.09

Note. [a]all predictors are measurements from baseline.
Psych. = Psychological.
Per. Part. Disclosure = Perceived Partner Disclosure.

Table 33.

APIMs examining bidirectional associations between cancer-specific distress and relationship health

Outcome: *Self Disclosure 6 months later*						95% CI	
Main Predictor[a]: *Cancer-Specific Distress*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	4.17	0.07	520	59.55	<0.001	4.03	4.31
Actor Cancer-Specific Distress	-0.11	0.06	1007	-1.74	0.082	-0.23	0.01
Partner Cancer-Specific Distress	-0.04	0.06	1008	-0.58	0.560	-0.16	0.09
Actor Role	0.05	0.06	511	0.92	0.358	-0.06	0.16
Actor Cancer-Specific Distress*Actor Role	-0.20	0.07	831	-3.07	0.002	-0.33	-0.07
Partner Cancer-Specific Distress*Actor Role	0.22	0.07	838	3.24	0.001	0.09	0.35
Actor Self-disclosure	0.37	0.03	1010	11.04	<0.001	0.30	0.43
Partner Self-disclosure	0.13	0.03	1010	3.90	<0.001	0.06	0.20
Actor Self-disclosure*Actor Role	0.07	0.04	857	2.07	0.039	0.004	0.14
Partner Self-disclosure*Actor Role	0.02	0.04	857	0.63	0.526	-0.05	0.09
Outcome: *Cancer-Specific Distress 6 months later*						95% CI	
Main Predictor: *Self-disclosure*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	0.91	0.03	515	34.60	<0.001	0.86	0.96
Actor Self-disclosure	-0.01	0.01	1008	-0.97	0.334	-0.04	0.01
Partner Self-disclosure	-0.01	0.01	1009	-0.44	0.659	-0.03	0.02
Actor Role	0.04	0.02	507	2.08	0.038	0.002	0.08
Actor Self-disclosure*Actor Role	0.02	0.01	842	1.87	0.062	-0.001	0.05
Partner Self-disclosure*Actor Role	-0.02	0.01	843	-1.61	0.108	-0.05	0.005
Actor Cancer-Specific Distress	0.51	0.02	1009	21.88	<0.001	0.46	0.55
Partner Cancer-Specific Distress	0.07	0.02	1006	3.15	0.002	0.03	0.12
Actor Cancer-Specific Distress*Actor Role	0.03	0.02	818	1.10	0.273	-0.02	0.08
Partner Cancer-Specific Distress*Actor Role	0.003	0.02	823	0.13	0.895	-0.05	0.05
Outcome: *Perceived Partner Disclosure*						95% CI	

Table 33. (cont'd)

Main Predictor: *Cancer-Specific Distress*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	4.21	0.07	515	63.98	<0.001	4.08	4.34
Actor Cancer-Specific Distress	-0.04	0.06	994	-0.71	0.479	-0.17	0.08
Partner Cancer-Specific Distress	0.03	0.06	994	0.52	0.604	-0.09	0.16
Actor Role	-0.07	0.06	508	-1.32	0.188	-0.18	0.04
Actor Cancer-Specific Distress*Actor Role	-0.17	0.07	859	-2.62	0.009	-0.30	-0.04
Partner Cancer-Specific Distress*Actor Role	0.11	0.07	864	1.66	0.098	-0.02	0.24
Actor Perceived Partner Disclosure	0.41	0.03	985	13.18	<0.001	0.35	0.47
Partner Perceived Partner Disclosure	0.03	0.03	999	1.00	0.316	-0.03	0.09
Actor Per. Part. Disclosure*Actor Role	0.15	0.03	943	4.85	<0.001	0.09	0.22
Partner Per. Part. Disclosure*Actor Role	-0.13	0.03	955	-4.18	<0.001	-0.19	-0.07
Outcome: Cancer-Specific Distress 6 months later						95% CI	
Main Predictor: *Perceived Partner Disclosure*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	0.93	0.03	514	35.82	<0.001	0.88	0.98
Actor Perceived Partner Disclosure	0.00	0.01	973	-0.16	0.876	-0.02	0.02
Partner Perceived Partner Disclosure	-0.01	0.01	969	-1.05	0.293	-0.04	0.01
Actor Role	0.04	0.02	506	2.13	0.033	0.003	0.08
Actor Per. Part. Disclosure*Actor Role	0.01	0.01	911	1.02	0.309	-0.01	0.04
Partner Per. Part. Disclosure*Actor Role	-0.02	0.01	908	-1.60	0.111	-0.04	0.004
Actor Cancer-Specific Distress	0.51	0.02	1008	21.82	0.000	0.46	0.56
Partner Cancer-Specific Distress	0.07	0.02	1008	3.13	0.002	0.03	0.12
Actor Cancer-Specific Distress*Actor Role	0.03	0.03	812	1.33	0.182	-0.02	0.08
Partner Cancer-Specific Distress*Actor Role	-0.001	0.03	818	-0.04	0.970	-0.05	0.05
Outcome: *Intimacy 6 months later*						95% CI	
Main Predictor: *Cancer-Specific Distress*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	3.98	0.02	528	192.38	<0.001	3.94	4.02

Table 33. (cont'd)

Actor Cancer-Specific Distress	-0.06	0.02	998	-3.14	0.002	-0.10	-0.02
Partner Cancer-Specific Distress	-0.001	0.02	999	-0.05	0.962	-0.04	0.04
Actor Role	0.02	0.02	523	1.11	0.268	-0.02	0.06
Actor Cancer-Specific Distress*Actor Role	0.01	0.02	917	0.66	0.509	-0.03	0.06
Partner Cancer-Specific Distress*Actor Role	0.003	0.02	923	0.15	0.883	-0.04	0.05
Actor Intimacy	0.59	0.02	933	23.53	<0.001	0.54	0.64
Partner Intimacy	0.07	0.03	932	2.61	0.009	0.02	0.12
Actor Intimacy*Actor Role	0.01	0.03	835	0.20	0.845	-0.05	0.06
Partner Intimacy*Actor Role	0.002	0.03	841	0.08	0.938	-0.05	0.05
***Outcome**: Cancer-Specific Distress 6 months later*						95% CI	
***Main Predictor:** Intimacy*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	0.92	0.03	516	35.41	<0.001	0.87	0.97
Actor Intimacy	0.01	0.03	984	0.50	0.616	-0.04	0.07
Partner Intimacy	-0.07	0.03	984	-2.45	0.014	-0.13	-0.01
Actor Role	0.04	0.02	507	1.77	0.077	-0.004	0.07
Actor Intimacy*Actor Role	0.02	0.03	747	0.63	0.527	-0.04	0.08
Partner Intimacy*Actor Role	-0.06	0.03	757	-1.81	0.070	-0.12	0.005
Actor Cancer-Specific Distress	0.50	0.02	1011	21.32	<0.001	0.46	0.55
Partner Cancer-Specific Distress	0.06	0.02	1011	2.57	0.010	0.01	0.11
Actor Cancer-Specific Distress*Actor Role	0.02	0.03	825	0.98	0.328	-0.02	0.07
Partner Cancer-Specific Distress*Actor Role	-0.004	0.03	833	-0.15	0.878	-0.05	0.05
***Outcome:** Relationship satisfaction 6 months later*						95% CI	
***Main Predictor:** Cancer-Specific Distress*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	115.72	0.40	499	291.17	<0.001	114.93	116.50
Actor Cancer-Specific Distress	-0.44	0.36	951	-1.22	0.222	-1.15	0.27
Partner Cancer-Specific Distress	0.51	0.37	957	1.38	0.167	-0.21	1.23
Actor Role	0.42	0.31	488	1.36	0.173	-0.19	1.03

Table 33. (cont'd)

Actor Cancer-Specific Distress*Actor Role	-0.08	0.38	794	-0.21	0.833	-0.84	0.67
Partner Cancer-Specific Distress*Actor Role	0.05	0.39	807	0.12	0.905	-0.72	0.81
Actor Relationship satisfaction	0.69	0.02	831	28.37	<0.001	0.64	0.73
Partner Relationship satisfaction	0.14	0.02	793	5.83	<0.001	0.10	0.19
Actor Relationship satisfaction*Actor Role	-0.03	0.03	643	-1.05	0.293	-0.08	0.03
Partner Relationship satisfaction*Actor Role	-0.004	0.03	639	-0.15	0.881	-0.06	0.05
Outcome: *Cancer-Specific Distress 6 months later*						95% CI	
Main Predictor: *Relationship satisfaction*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	0.93	0.03	491	35.06	<0.001	0.88	0.98
Actor Relationship satisfaction	-0.002	0.002	829	-1.34	0.180	-0.01	0.001
Partner Relationship satisfaction	-0.003	0.002	826	-2.00	0.046	-0.01	0.000
Actor Role	0.04	0.02	482	2.16	0.032	0.004	0.08
Actor Relationship satisfaction*Actor Role	0.000	0.002	624	0.09	0.928	-0.004	0.004
Partner Relationship satisfaction*Actor Role	-0.002	0.002	628	-0.99	0.322	-0.01	0.002
Actor Cancer-Specific Distress	0.49	0.02	960	20.69	<0.001	0.45	0.54
Partner Cancer-Specific Distress	0.05	0.02	960	2.16	0.031	0.005	0.10
Actor Cancer-Specific Distress*Actor Role	0.02	0.03	781	0.85	0.398	-0.03	0.07
Partner Cancer-Specific Distress*Actor Role	0.001	0.03	790	0.04	0.969	-0.05	0.05

Note. [a]all predictors are measurements from baseline.
Psych. = Psychological.
Per. Part. Disclosure = Perceived Partner Disclosure.

Table 34.

APIMs examining bidirectional associations between the number of cancer concerns and relationship health

Outcome: *Self Disclosure 6 months later*						95% CI	
Main Predictor[a]: *No. of Cancer Concerns*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	4.92	0.09	234	52.74	<0.001	4.74	5.10
Actor No. of Cancer Concerns	-0.05	0.08	418	-0.56	0.578	-0.21	0.12
Partner No. of Cancer Concerns	0.09	0.08	429	1.05	0.292	-0.07	0.25
Actor Role	0.07	0.08	233	0.80	0.426	-0.10	0.23
Actor No. of Cancer Concerns*Actor Role	-0.03	0.09	376	-0.38	0.702	-0.20	0.14
Partner No. of Cancer Concerns*Actor Role	0.14	0.09	381	1.65	0.100	-0.03	0.31
Actor Self-disclosure	0.32	0.05	453	6.97	<0.001	0.23	0.41
Partner Self-disclosure	0.08	0.05	421	1.63	0.104	-0.02	0.17
Actor Self-disclosure*Actor Role	-0.001	0.05	420	-0.01	0.989	-0.09	0.09
Partner Self-disclosure*Actor Role	0.09	0.05	394	1.99	0.047	0.001	0.19
Outcome: *No. Cancer Concerns 6 months later*						95% CI	
Main Predictor: *Self-disclosure*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	2.68	0.04	240	62.70	<0.001	2.60	2.77
Actor Self-disclosure	-0.06	0.02	463	-3.11	0.002	-0.10	-0.02
Partner Self-disclosure	0.01	0.02	400	0.29	0.770	-0.03	0.05
Actor Role	-0.06	0.04	236	-1.68	0.094	-0.13	0.01
Actor Self-disclosure*Actor Role	0.001	0.02	410	0.07	0.946	-0.04	0.04
Partner Self-disclosure*Actor Role	0.01	0.02	370	0.39	0.697	-0.03	0.05
Actor No. of Cancer Concerns	0.59	0.04	413	16.05	<0.001	0.52	0.66
Partner No. of Cancer Concerns	0.08	0.04	435	2.25	0.025	0.01	0.15
Actor No. of Cancer Concerns*Actor Role	0.05	0.04	358	1.24	0.215	-0.03	0.13
Partner No. of Cancer Concerns*Actor Role	-0.06	0.04	366	-1.64	0.102	-0.14	0.01
Outcome: *Perceived Partner Disclosure*						95% CI	

Table 34. (cont'd)

***Main Predictor**: No. of Cancer Concerns*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	4.79	0.09	231	54.60	<0.001	4.62	4.97
Actor No. of Cancer Concerns	-0.06	0.08	410	-0.75	0.452	-0.22	0.10
Partner No. of Cancer Concerns	0.13	0.08	419	1.68	0.094	-0.02	0.29
Actor Role	0.11	0.08	230	1.38	0.169	-0.05	0.27
Actor No. of Cancer Concerns*Actor Role	-0.01	0.08	379	-0.08	0.937	-0.17	0.16
Partner No. of Cancer Concerns*Actor Role	0.12	0.08	383	1.49	0.136	-0.04	0.29
Actor Perceived Partner Disclosure	0.40	0.04	453	9.19	<0.001	0.31	0.48
Partner Perceived Partner Disclosure	0.06	0.04	437	1.36	0.176	-0.03	0.14
Actor Per. Part. Disclosure*Actor Role	0.01	0.04	433	0.26	0.794	-0.07	0.10
Partner Per. Part. Disclosure*Actor Role	0.02	0.04	418	0.56	0.575	-0.06	0.11
***Outcome:** No. of Cancer Concerns 6 months later*						95% CI	
***Main Predictor:** Perceived Partner Disclosure*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	2.68	0.04	239	63.31	<0.001	2.59	2.76
Actor Perceived Partner Disclosure	-0.06	0.02	455	-2.86	0.004	-0.09	-0.02
Partner Perceived Partner Disclosure	0.01	0.02	422	0.62	0.535	-0.03	0.05
Actor Role	-0.06	0.03	234	-1.84	0.067	-0.13	0.005
Actor Per. Part. Disclosure*Actor Role	0.02	0.02	413	0.78	0.437	-0.02	0.06
Partner Per. Part. Disclosure*Actor Role	0.003	0.02	390	0.13	0.893	-0.04	0.04
Actor No. of Cancer Concerns	0.58	0.04	415	15.75	<0.001	0.51	0.65
Partner No. of Cancer Concerns	0.09	0.04	434	2.60	0.010	0.02	0.16
Actor No. of Cancer Concerns*Actor Role	0.06	0.04	356	1.47	0.142	-0.02	0.14
Partner No. of Cancer Concerns*Actor Role	-0.06	0.04	362	-1.62	0.106	-0.14	0.01
***Outcome:** Intimacy 6 months later*						95% CI	
***Main Predictor:** No. of Cancer Concerns*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	3.94	0.03	238	117.80	<0.001	3.88	4.01

Table 34. (cont'd)

Actor No. of Cancer Concerns	-0.02	0.03	430	-0.67	0.503	-0.08	0.04
Partner No. of Cancer Concerns	-0.04	0.03	443	-1.31	0.190	-0.10	0.02
Actor Role	0.03	0.03	236	1.06	0.288	-0.03	0.09
Actor No. of Cancer Concerns*Actor Role	-0.05	0.03	398	-1.68	0.094	-0.12	0.01
Partner No. of Cancer Concerns*Actor Role	0.05	0.03	406	1.61	0.109	-0.01	0.11
Actor Intimacy	0.63	0.04	415	15.36	<0.001	0.55	0.71
Partner Intimacy	-0.004	0.04	402	-0.10	0.920	-0.09	0.08
Actor Intimacy*Actor Role	0.07	0.04	373	1.60	0.110	-0.02	0.15
Partner Intimacy*Actor Role	-0.05	0.04	365	-1.27	0.206	-0.14	0.03
Outcome: *No. of Cancer Concerns 6 months later*						95% CI	
Main Predictor: *Intimacy*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	2.68	0.04	237	62.98	<0.001	2.60	2.77
Actor Intimacy	-0.05	0.05	425	-0.95	0.344	-0.14	0.05
Partner Intimacy	-0.06	0.05	401	-1.27	0.205	-0.16	0.03
Actor Role	-0.09	0.04	234	-2.53	0.012	-0.16	-0.02
Actor Intimacy*Actor Role	-0.01	0.05	351	-0.19	0.848	-0.11	0.09
Partner Intimacy*Actor Role	0.03	0.05	341	0.57	0.567	-0.07	0.14
Actor No. of Cancer Concerns	0.57	0.04	422	15.15	<0.001	0.50	0.65
Partner No. of Cancer Concerns	0.07	0.04	442	1.88	0.061	-0.003	0.14
Actor No. of Cancer Concerns*Actor Role	0.06	0.04	370	1.43	0.154	-0.02	0.14
Partner No. of Cancer Concerns*Actor Role	-0.05	0.04	381	-1.30	0.193	-0.13	0.03
Outcome: *Relationship satisfaction 6 months later*						95% CI	
Main Predictor: *No. of Cancer Concerns*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	115.08	0.63	243	183.95	<0.001	113.85	116.31
Actor No. of Cancer Concerns	0.11	0.56	437	0.21	0.838	-0.98	1.20
Partner No. of Cancer Concerns	-0.14	0.55	453	-0.25	0.802	-1.22	0.94
Actor Role	0.36	0.50	237	0.73	0.465	-0.62	1.34

Table 34. (cont'd)

Actor No. of Cancer Concerns*Actor Role	-0.61	0.59	370	-1.03	0.306	-1.78	0.56
Partner No. of Cancer Concerns*Actor Role	0.21	0.59	377	0.36	0.720	-0.95	1.37
Actor Relationship satisfaction	0.77	0.04	401	20.74	<0.001	0.70	0.84
Partner Relationship satisfaction	0.11	0.04	370	2.95	0.003	0.04	0.19
Actor Relationship satisfaction*Actor Role	-0.01	0.04	317	-0.14	0.886	-0.09	0.08
Partner Relationship satisfaction*Actor Role	-0.01	0.04	310	-0.29	0.775	-0.10	0.07
Outcome: *No. of Cancer Concerns 6 months later*						95% CI	
Main Predictor: *Relationship satisfaction*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	2.68	0.04	238	65.55	<0.001	2.60	2.76
Actor Relationship satisfaction	-0.001	0.003	386	-0.55	0.584	-0.01	0.004
Partner Relationship satisfaction	-0.004	0.003	354	-1.68	0.094	-0.01	0.001
Actor Role	-0.09	0.03	234	-2.60	0.010	-0.16	-0.02
Actor Relationship satisfaction*Actor Role	-0.002	0.003	318	-0.54	0.587	-0.01	0.004
Partner Relationship satisfaction*Actor Role	0.001	0.003	308	0.42	0.673	-0.004	0.01
Actor No. of Cancer Concerns	0.58	0.04	422	15.45	<0.001	0.50	0.65
Partner No. of Cancer Concerns	0.07	0.04	439	1.89	0.059	-0.003	0.14
Actor No. of Cancer Concerns*Actor Role	0.05	0.04	369	1.19	0.234	-0.03	0.12
Partner No. of Cancer Concerns*Actor Role	-0.05	0.04	378	-1.38	0.168	-0.13	0.02
Outcome: *Constructive Communication 6 months later*						95% CI	
Main Predictor: *No. of Cancer Concerns*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	6.67	0.06	241	120.10	<0.001	6.56	6.78
Actor No. of Cancer Concerns	-0.10	0.05	462	-2.09	0.037	-0.20	-0.01
Partner No. of Cancer Concerns	0.01	0.05	464	0.20	0.844	-0.09	0.11
Actor Role	-0.03	0.04	236	-0.60	0.547	-0.11	0.06
Actor No. of Cancer Concerns*Actor Role	0.02	0.05	380	0.29	0.776	-0.09	0.12
Partner No. of Cancer Concerns*Actor Role	0.01	0.05	378	0.20	0.840	-0.09	0.11
Actor Constructive Communication	0.47	0.04	454	11.74	<0.001	0.39	0.54

Table 34. (cont'd)

Partner Constructive Communication	0.11	0.04	451	2.73	0.007	0.03	0.19
Actor Constructive Communication*Actor Role	0.02	0.04	359	0.50	0.616	-0.06	0.11
Partner Constructive Communication*Actor Role	-0.02	0.04	362	-0.39	0.696	-0.10	0.07
Outcome: *No. of Cancer Concerns 6 months later*						95% CI	
Main Predictor: *Constructive Communication*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	2.68	0.04	238	65.50	<0.001	2.60	2.76
Actor Constructive Communication	-0.04	0.03	441	-1.31	0.190	-0.10	0.02
Partner Constructive Communication	-0.02	0.03	407	-0.73	0.469	-0.08	0.04
Actor Role	-0.08	0.03	234	-2.45	0.015	-0.15	-0.02
Actor Constructive Communication*Actor Role	-0.02	0.03	367	-0.69	0.491	-0.08	0.04
Partner Constructive Communication*Actor Role	0.03	0.03	352	0.78	0.439	-0.04	0.09
Actor No. of Cancer Concerns	0.57	0.04	423	15.03	<0.001	0.50	0.65
Partner No. of Cancer Concerns	0.07	0.04	440	1.95	0.052	-0.001	0.15
Actor No. of Cancer Concerns*Actor Role	0.05	0.04	372	1.26	0.210	-0.03	0.13
Partner No. of Cancer Concerns*Actor Role	-0.05	0.04	379	-1.30	0.196	-0.13	0.03
Outcome: *Patient Demand/Spouse Withdrawal 6 months later*						95% CI	
Main Predictor: *No. of Cancer Concerns*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	2.07	0.06	231	35.46	<0.001	1.96	2.19
Actor No. of Cancer Concerns	0.13	0.05	389	2.32	0.021	0.02	0.24
Partner No. of Cancer Concerns	0.06	0.05	410	1.17	0.243	-0.04	0.17
Actor Role	-0.02	0.05	229	-0.45	0.652	-0.12	0.08
Actor No. of Cancer Concerns*Actor Role	0.04	0.06	352	0.75	0.456	-0.07	0.16
Partner No. of Cancer Concerns*Actor Role	0.06	0.06	363	0.98	0.327	-0.06	0.17
Actor Patient Demand/Spouse Withdrawal	0.45	0.04	434	10.02	<0.001	0.36	0.54
Partner Patient Demand/Spouse Withdrawal	0.03	0.05	380	0.73	0.466	-0.06	0.12
Actor Patient Demand/Spouse Withdrawal*Actor Role	0.05	0.05	416	1.08	0.281	-0.04	0.14

Table 34. (cont'd)

Partner Patient Demand/Spouse Withdrawal*Actor Role	-0.04	0.05	369	-0.83	0.405	-0.13	0.05
Outcome: *No. of Cancer Concerns 6 months later*						95% CI	
Main Predictor: *Patient Demand/Spouse Withdrawal*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	2.68	0.04	238	64.87	<0.001	2.60	2.76
Actor Patient Demand/Spouse Withdrawal	-0.01	0.03	457	-0.19	0.853	-0.07	0.06
Partner Patient Demand/Spouse Withdrawal	-0.01	0.03	411	-0.17	0.863	-0.07	0.06
Actor Role	-0.08	0.03	234	-2.47	0.014	-0.15	-0.02
Actor Patient Demand/Spouse Withdrawal*Actor Role	0.03	0.03	433	0.98	0.329	-0.03	0.09
Partner Patient Demand/Spouse Withdrawal*Actor Role	-0.03	0.03	395	-0.88	0.379	-0.09	0.04
Actor No. of Cancer Concerns	0.59	0.04	422	15.57	<0.001	0.52	0.67
Partner No. of Cancer Concerns	0.09	0.04	440	2.41	0.017	0.02	0.16
Actor No. of Cancer Concerns*Actor Role	0.05	0.04	370	1.20	0.230	-0.03	0.13
Partner No. of Cancer Concerns*Actor Role	-0.05	0.04	378	-1.30	0.194	-0.13	0.03
Outcome: *Spouse Demand/Patient Withdrawal 6 months later*						95% CI	
Main Predictor: *No. of Cancer Concerns*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	1.95	0.05	238	39.94	<0.001	1.86	2.05
Actor No. of Cancer Concerns	0.12	0.05	439	2.58	0.010	0.03	0.21
Partner No. of Cancer Concerns	0.03	0.05	444	0.74	0.458	-0.06	0.13
Actor Role	0.09	0.04	235	2.06	0.041	0.004	0.18
Actor No. of Cancer Concerns*Actor Role	0.04	0.05	401	0.73	0.465	-0.06	0.13
Partner No. of Cancer Concerns*Actor Role	0.05	0.05	402	1.07	0.285	-0.04	0.15
Actor Spouse Demand/Patient Withdrawal	0.48	0.04	456	12.67	<0.001	0.40	0.55
Partner Spouse Demand/Patient Withdrawal	0.05	0.04	454	1.25	0.213	-0.03	0.12
Actor Spouse Demand/Patient Withdrawal*Actor Role	0.11	0.04	427	2.84	0.005	0.03	0.19

Table 34. (cont'd)

Partner Spouse Demand/Patient Withdrawal*Actor Role	-0.07	0.04	427	-1.74	0.083	-0.14	0.01
Outcome: *No. of Cancer Concerns 6 months later*						95% CI	
Main Predictor: *Spouse Demand/Patient Withdrawal*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	2.68	0.04	238	64.87	<0.001	2.60	2.76
Actor Spouse Demand/Patient Withdrawal	-0.03	0.03	444	-0.98	0.330	-0.09	0.03
Partner Spouse Demand/Patient Withdrawal	0.09	0.03	440	2.84	0.005	0.03	0.15
Actor Role	-0.07	0.03	233	-2.15	0.033	-0.14	-0.01
Actor Spouse Demand/Patient Withdrawal*Actor Role	0.01	0.03	396	0.18	0.855	-0.06	0.07
Partner Spouse Demand/Patient Withdrawal*Actor Role	-0.01	0.03	396	-0.34	0.733	-0.07	0.05
Actor No. of Cancer Concerns	0.58	0.04	429	15.48	<0.001	0.51	0.66
Partner No. of Cancer Concerns	0.06	0.04	438	1.72	0.087	-0.01	0.14
Actor No. of Cancer Concerns*Actor Role	0.05	0.04	372	1.35	0.178	-0.02	0.13
Partner No. of Cancer Concerns*Actor Role	-0.05	0.04	374	-1.24	0.217	-0.13	0.03

Note. [a]all predictors are measurements from baseline.

No. = Number.

Per. Part. Disclosure = Perceived Partner Disclosure.

Table 35.

APIMs examining bidirectional associations between holding back sharing cancer concerns and relationship health

Outcome: *Self Disclosure 6 months later*						95% CI	
Main Predictor[a]*: Hold. Back Sharing Concerns*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	4.86	0.08	278	57.44	<0.001	4.70	5.03
Actor Hold. Back Sharing Concerns	-0.14	0.07	502	-2.17	0.031	-0.28	-0.01
Partner Hold. Back Sharing Concerns	0.14	0.07	524	2.08	0.038	0.01	0.27
Actor Role	0.12	0.07	276	1.66	0.097	-0.02	0.26
Actor Hold. Back Sharing Concerns*Actor Role	0.03	0.07	437	0.38	0.707	-0.11	0.16
Partner Hold. Back Sharing Concerns*Actor Role	0.01	0.07	451	0.14	0.889	-0.13	0.15
Actor Self-disclosure	0.28	0.04	537	6.34	<0.001	0.20	0.37
Partner Self-disclosure	0.13	0.05	483	2.79	0.005	0.04	0.22
Actor Self-disclosure*Actor Role	0.02	0.05	493	0.41	0.679	-0.07	0.11
Partner Self-disclosure*Actor Role	0.07	0.05	451	1.53	0.128	-0.02	0.16
Outcome: *Hold. Back Sharing Concerns 6 months later*						95% CI	
Main Predictor: *Self-disclosure*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	2.08	0.04	282	49.22	<0.001	2.00	2.17
Actor Self-disclosure	-0.06	0.02	545	-2.85	0.004	-0.10	-0.02
Partner Self-disclosure	-0.04	0.02	476	-1.91	0.057	-0.09	0.001
Actor Role	-0.15	0.03	278	-4.41	<0.001	-0.22	-0.08
Actor Self-disclosure*Actor Role	0.004	0.02	487	0.19	0.849	-0.04	0.05
Partner Self-disclosure*Actor Role	-0.02	0.02	440	-0.87	0.383	-0.07	0.03
Actor Hold. Back Sharing Concerns	0.48	0.03	505	14.67	<0.001	0.41	0.54
Partner Hold. Back Sharing Concerns	0.02	0.03	533	0.71	0.480	-0.04	0.09
Actor Hold. Back Sharing Concerns*Actor Role	-0.06	0.03	426	-1.67	0.095	-0.13	0.01
Partner Hold. Back Sharing Concerns*Actor Role	-0.02	0.03	443	-0.52	0.604	-0.09	0.05

Table 35. (cont'd)

Outcome: *Perceived Partner Disclosure*						95% CI	
Main Predictor: *Hold. Back Sharing Concerns*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	4.78	0.08	276	61.53	<0.001	4.63	4.94
Actor Hold. Back Sharing Concerns	-0.07	0.06	479	-1.11	0.268	-0.20	0.06
Partner Hold. Back Sharing Concerns	-0.01	0.06	506	-0.11	0.913	-0.13	0.12
Actor Role	0.13	0.07	275	1.86	0.065	-0.01	0.27
Actor Hold. Back Sharing Concerns*Actor Role	0.02	0.07	445	0.23	0.820	-0.12	0.15
Partner Hold. Back Sharing Concerns*Actor Role	0.003	0.07	465	0.05	0.963	-0.13	0.13
Actor Perceived Partner Disclosure	0.40	0.04	539	9.70	<0.001	0.32	0.48
Partner Perceived Partner Disclosure	0.06	0.04	519	1.41	0.160	-0.02	0.14
Actor Per. Part. Disclosure*Actor Role	0.02	0.04	521	0.54	0.589	-0.06	0.10
Partner Per. Part. Disclosure*Actor Role	0.02	0.04	502	0.45	0.654	-0.06	0.10
Outcome: *Hold. Back Sharing Concerns 6 months later*						95% CI	
Main Predictor: *Perceived Partner Disclosure*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	2.09	0.04	280	49.69	<0.001	2.00	2.17
Actor Perceived Partner Disclosure	-0.06	0.02	536	-2.85	0.005	-0.10	-0.02
Partner Perceived Partner Disclosure	-0.03	0.02	503	-1.25	0.211	-0.07	0.01
Actor Role	-0.15	0.03	275	-4.36	<0.001	-0.21	-0.08
Actor Per. Part. Disclosure*Actor Role	-0.03	0.02	492	-1.19	0.234	-0.07	0.02
Partner Per. Part. Disclosure*Actor Role	-0.02	0.02	467	-1.08	0.279	-0.07	0.02
Actor Hold. Back Sharing Concerns	0.48	0.03	489	15.02	<0.001	0.42	0.55
Partner Hold. Back Sharing Concerns	0.03	0.03	535	1.01	0.315	-0.03	0.09
Actor Hold. Back Sharing Concerns*Actor Role	-0.07	0.03	409	-1.92	0.056	-0.13	0.002
Partner Hold. Back Sharing Concerns*Actor Role	-0.02	0.03	433	-0.67	0.505	-0.09	0.04
Outcome: *Intimacy 6 months later*						95% CI	
Main Predictor: Hold. Back Sharing Concerns	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*

Table 35. (cont'd)

Intercept	3.95	0.03	282	129.45	<0.001	3.89	4.01
Actor Hold. Back Sharing Concerns	-0.08	0.03	508	-3.17	0.002	-0.13	-0.03
Partner Hold. Back Sharing Concerns	0.01	0.03	537	0.27	0.788	-0.04	0.06
Actor Role	0.06	0.03	280	2.10	0.037	0.004	0.11
Actor Hold. Back Sharing Concerns*Actor Role	-0.004	0.03	471	-0.16	0.873	-0.06	0.05
Partner Hold. Back Sharing Concerns*Actor Role	-0.05	0.03	495	-1.86	0.063	-0.10	0.003
Actor Intimacy	0.56	0.04	520	14.50	<0.001	0.48	0.63
Partner Intimacy	0.06	0.04	493	1.49	0.136	-0.02	0.13
Actor Intimacy*Actor Role	0.02	0.04	469	0.50	0.617	-0.06	0.10
Partner Intimacy*Actor Role	-0.05	0.04	452	-1.35	0.178	-0.13	0.02
***Outcome**: Hold. Back Sharing Concerns 6 months later*						95% CI	
***Main Predictor:** Intimacy*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	2.09	0.04	280	49.12	<0.001	2.00	2.17
Actor Intimacy	-0.15	0.05	537	-3.04	0.002	-0.25	-0.05
Partner Intimacy	-0.07	0.05	508	-1.30	0.195	-0.17	0.03
Actor Role	-0.15	0.03	276	-4.26	<0.001	-0.22	-0.08
Actor Intimacy*Actor Role	0.03	0.05	440	0.49	0.623	-0.08	0.13
Partner Intimacy*Actor Role	0.03	0.05	428	0.62	0.538	-0.07	0.14
Actor Hold. Back Sharing Concerns	0.47	0.03	517	13.93	<0.001	0.40	0.53
Partner Hold. Back Sharing Concerns	0.01	0.03	546	0.37	0.712	-0.05	0.08
Actor Hold. Back Sharing Concerns*Actor Role	-0.05	0.04	446	-1.40	0.163	-0.12	0.02
Partner Hold. Back Sharing Concerns*Actor Role	0.005	0.04	465	0.13	0.893	-0.06	0.07
***Outcome:** Relationship satisfaction 6 months later*						95% CI	
***Main Predictor**: Hold. Back Sharing Concerns*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	114.98	0.55	288	209.45	<0.001	113.90	116.06
Actor Hold. Back Sharing Concerns	-0.72	0.43	490	-1.66	0.097	-1.58	0.13
Partner Hold. Back Sharing Concerns	1.15	0.43	546	2.70	0.007	0.31	1.98

Table 35. (cont'd)

Actor Role	0.41	0.43	280	0.94	0.347	-0.44	1.26
Actor Hold. Back Sharing Concerns*Actor Role	0.49	0.47	414	1.04	0.297	-0.43	1.41
Partner Hold. Back Sharing Concerns*Actor Role	-0.24	0.46	443	-0.52	0.607	-1.14	0.67
Actor Relationship satisfaction	0.72	0.03	469	20.69	<0.001	0.65	0.79
Partner Relationship satisfaction	0.18	0.04	421	4.79	<0.001	0.10	0.25
Actor Relationship satisfaction*Actor Role	0.01	0.04	367	0.33	0.743	-0.07	0.09
Partner Relationship satisfaction*Actor Role	-0.03	0.04	359	-0.68	0.495	-0.11	0.05
***Outcome**: Hold. Back Sharing Concerns 6 months later*						95% CI	
***Main Predictor:** Relationship satisfaction*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	2.07	0.04	281	50.46	<0.001	1.99	2.15
Actor Relationship satisfaction	-0.01	0.003	455	-2.34	0.020	-0.01	-0.001
Partner Relationship satisfaction	-0.001	0.003	424	-0.27	0.788	-0.01	0.005
Actor Role	-0.15	0.03	277	-4.44	<0.001	-0.21	-0.08
Actor Relationship satisfaction*Actor Role	0.003	0.003	366	0.91	0.363	-0.003	0.01
Partner Relationship satisfaction*Actor Role	-0.003	0.003	359	-0.91	0.364	-0.01	0.00
Actor Hold. Back Sharing Concerns	0.48	0.03	502	14.58	<0.001	0.41	0.54
Partner Hold. Back Sharing Concerns	0.03	0.03	540	0.96	0.340	-0.03	0.10
Actor Hold. Back Sharing Concerns*Actor Role	-0.05	0.04	423	-1.32	0.187	-0.12	0.02
Partner Hold. Back Sharing Concerns*Actor Role	-0.02	0.03	446	-0.60	0.546	-0.09	0.05
***Outcome:** Constructive Communication 6 months later*						95% CI	
***Main Predictor:** Hold. Back Sharing Concerns*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	6.63	0.05	284	135.34	<0.001	6.53	6.73
Actor Hold. Back Sharing Concerns	-0.19	0.04	535	-4.66	<0.001	-0.27	-0.11
Partner Hold. Back Sharing Concerns	0.03	0.04	542	0.74	0.459	-0.05	0.11
Actor Role	-0.03	0.04	278	-0.77	0.441	-0.11	0.05
Actor Hold. Back Sharing Concerns*Actor Role	0.04	0.04	461	0.88	0.377	-0.05	0.12
Partner Hold. Back Sharing Concerns*Actor Role	-0.02	0.04	465	-0.48	0.632	-0.11	0.06

Table 35. (cont'd)

Actor Constructive Communication	0.41	0.04	544	10.13	<0.001	0.33	0.49
Partner Constructive Communication	0.09	0.04	538	2.20	0.028	0.01	0.17
Actor Constructive Communication*Actor Role	0.03	0.04	451	0.75	0.453	-0.05	0.12
Partner Constructive Communication*Actor Role	-0.01	0.04	448	-0.26	0.796	-0.10	0.07
***Outcome**: Hold. Back Sharing Concerns 6 months later*						95% CI	
***Main Predictor:** Constructive Communication*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	2.08	0.04	282	50.57	<0.001	2.00	2.17
Actor Constructive Communication	-0.08	0.03	547	-2.22	0.027	-0.14	-0.01
Partner Constructive Communication	-0.03	0.03	516	-0.94	0.348	-0.10	0.04
Actor Role	-0.15	0.03	277	-4.51	<0.001	-0.22	-0.08
Actor Constructive Communication*Actor Role	0.02	0.04	460	0.47	0.638	-0.05	0.09
Partner Constructive Communication*Actor Role	-0.02	0.04	443	-0.66	0.509	-0.10	0.05
Actor Hold. Back Sharing Concerns	0.47	0.04	511	13.24	<0.001	0.40	0.54
Partner Hold. Back Sharing Concerns	0.02	0.03	550	0.50	0.618	-0.05	0.09
Actor Hold. Back Sharing Concerns*Actor Role	-0.05	0.04	453	-1.38	0.167	-0.12	0.02
Partner Hold. Back Sharing Concerns*Actor Role	-0.02	0.04	477	-0.60	0.550	-0.09	0.05
***Outcome:** Patient Demand/Spouse Withdrawal 6 months later*						95% CI	
***Main Predictor**: Hold. Back Sharing Concerns*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	2.07	0.05	269	39.85	<0.001	1.96	2.17
Actor Hold. Back Sharing Concerns	0.16	0.04	426	3.75	<0.001	0.08	0.24
Partner Hold. Back Sharing Concerns	0.01	0.04	496	0.28	0.783	-0.07	0.09
Actor Role	-0.03	0.04	267	-0.78	0.436	-0.12	0.05
Actor Hold. Back Sharing Concerns*Actor Role	-0.02	0.04	387	-0.52	0.604	-0.11	0.06
Partner Hold. Back Sharing Concerns*Actor Role	0.05	0.04	433	1.16	0.247	-0.03	0.14
Actor Patient Demand/Spouse Withdrawal	0.43	0.04	509	10.80	<0.001	0.35	0.51
Partner Patient Demand/Spouse Withdrawal	0.07	0.04	422	1.73	0.085	-0.01	0.16

Table 35. (cont'd)

Actor Patient Demand/Spouse Withdrawal*Actor Role	0.04	0.04	485	0.95	0.343	-0.04	0.12
Partner Patient Demand/Spouse Withdrawal*Actor Role	-0.01	0.04	409	-0.34	0.736	-0.10	0.07
Outcome: *Hold. Back Sharing Concerns 6 months later*						95% CI	
Main Predictor: *Patient Demand/Spouse Withdrawal*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	2.08	0.04	281	49.67	<0.001	2.00	2.16
Actor Patient Demand/Spouse Withdrawal	0.04	0.03	542	1.28	0.200	-0.02	0.10
Partner Patient Demand/Spouse Withdrawal	0.01	0.03	497	0.18	0.856	-0.06	0.07
Actor Role	-0.15	0.03	276	-4.49	<0.001	-0.22	-0.08
Actor Patient Demand/Spouse Withdrawal*Actor Role	-0.03	0.03	507	-0.90	0.368	-0.09	0.03
Partner Patient Demand/Spouse Withdrawal*Actor Role	0.003	0.03	470	0.10	0.918	-0.06	0.07
Actor Hold. Back Sharing Concerns	0.49	0.03	506	15.01	<0.001	0.43	0.56
Partner Hold. Back Sharing Concerns	0.04	0.03	545	1.21	0.228	-0.02	0.10
Actor Hold. Back Sharing Concerns*Actor Role	-0.05	0.04	429	-1.38	0.168	-0.12	0.02
Partner Hold. Back Sharing Concerns*Actor Role	-0.01	0.03	450	-0.23	0.821	-0.08	0.06
Outcome: *Spouse Demand/Patient Withdrawal 6 months later*						95% CI	
Main Predictor*: Hold. Back Sharing Concerns*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	1.97	0.04	275	45.95	<0.001	1.88	2.05
Actor Hold. Back Sharing Concerns	0.15	0.04	504	4.30	0.000	0.08	0.22
Partner Hold. Back Sharing Concerns	-0.03	0.04	524	-0.72	0.474	-0.10	0.04
Actor Role	0.09	0.04	273	2.35	0.019	0.01	0.16
Actor Hold. Back Sharing Concerns*Actor Role	-0.003	0.04	448	-0.09	0.930	-0.08	0.07
Partner Hold. Back Sharing Concerns*Actor Role	0.04	0.04	463	1.11	0.268	-0.03	0.11
Actor Spouse Demand/Patient Withdrawal	0.47	0.03	535	13.88	<0.001	0.40	0.54
Partner Spouse Demand/Patient Withdrawal	0.08	0.03	519	2.26	0.024	0.01	0.14

Table 35. (cont'd)

Actor Spouse Demand/Patient Withdrawal*Actor Role	0.08	0.03	492	2.17	0.030	0.01	0.14
Partner Spouse Demand/Patient Withdrawal*Actor Role	-0.02	0.03	476	-0.50	0.615	-0.08	0.05
Outcome: *Hold. Back Sharing Concerns 6 months later*						95% CI	
Main Predictor: *Spouse Demand/Patient Withdrawal*	*b*	*se*	*df*	*t*	*p*	*Lower Bound*	*Upper Bound*
Intercept	2.08	0.04	280	51.01	<0.001	2.00	2.16
Actor Spouse Demand/Patient Withdrawal	0.03	0.03	544	0.96	0.340	-0.03	0.09
Partner Spouse Demand/Patient Withdrawal	0.10	0.03	525	3.14	0.002	0.04	0.16
Actor Role	-0.15	0.03	276	-4.55	<0.001	-0.22	-0.09
Actor Spouse Demand/Patient Withdrawal*Actor Role	-0.003	0.03	477	-0.10	0.920	-0.07	0.06
Partner Spouse Demand/Patient Withdrawal*Actor Role	-0.03	0.03	461	-0.98	0.328	-0.09	0.03
Actor Hold. Back Sharing Concerns	0.49	0.03	515	15.15	<0.001	0.43	0.56
Partner Hold. Back Sharing Concerns	0.01	0.03	540	0.28	0.781	-0.05	0.07
Actor Hold. Back Sharing Concerns*Actor Role	-0.06	0.03	433	-1.81	0.071	-0.13	0.01
Partner Hold. Back Sharing Concerns*Actor Role	0.01	0.03	448	0.25	0.804	-0.06	0.08

Note. [a]all predictors are measurements from baseline.

No. = Number.

Per. Part. Disclosure = Perceived Partner Disclosure.

Table 36.

Mediation model: Are individual responses to cancer associated with self-disclosure through communication patterns?

	Estimate	*SE*	*Est./SE*	*p*
Total direct effect	0.391	0.13	2.96	0.003
Total indirect effect	-0.023	0.06	-0.39	0.699
Specific indirect effects	*Estimate*	*SE*	*Est./SE*	*p*
Psychological Well-being > Constructive Communication > Self-Disclosure	-0.054	0.06	-0.96	0.337
Psychological Well-being > PtD/SpW > Self-Disclosure	0.008	0.03	0.29	0.774
Psychological Well-being > SpD/PtW > Self-Disclosure	0.023	0.05	0.48	0.630
	Estimate	*SE*	*Est./SE*	*p*
Total direct effect	0.153	0.16	0.93	0.352
Total indirect effect	-0.015	0.03	-0.45	0.656
Specific indirect effects	*Estimate*	*SE*	*Est./SE*	*p*
Psychological Distress > Constructive Communication > Self-Disclosure	-0.011	0.02	-0.64	0.523
Psychological Distress > PtD/SpW > Self-Disclosure	-0.006	0.03	-0.24	0.809
Psychological Distress > SpD/PtW > Self-Disclosure	0.002	0.02	0.13	0.900
	Estimate	*SE*	*Est./SE*	*p*
Total direct effect	-0.078	0.09	-0.91	0.364
Total indirect effect	-0.004	0.01	-0.35	0.728
Specific indirect effects	*Estimate*	*SE*	*Est./SE*	*p*
Cancer-Specific Distress > Constructive Communication > Self-Disclosure	-0.002	0.01	-0.29	0.774
Cancer-Specific Distress > PtD/SpW > Self-Disclosure	<0.001	0.01	0.04	0.971
Cancer-Specific Distress > SpD/PtW > Self-Disclosure	-0.002	0.01	-0.30	0.767
	Estimate	*SE*	*Est./SE*	*p*
Total direct effect	0.178	0.11	1.69	0.091
Total indirect effect	-0.005	0.01	-0.47	0.638
Specific indirect effects	*Estimate*	*SE*	*Est./SE*	*p*
No. of Cancer Conerns > Constructive Communication > Self-Disclosure	-0.001	0.01	-0.12	0.901

Table 36. (cont'd)

No. of Cancer Conerns > PtD/SpW > Self-Disclosure	-0.002	0.01	-0.23	0.822
No. of Cancer Conerns > SpD/PtW > Self-Disclosure	-0.003	0.01	-0.32	0.749
	Estimate	*SE*	*Est./SE*	*p*
Total direct effect	-0.067	0.09	-0.73	0.465
Total indirect effect	0.017	0.03	0.52	0.600
Specific indirect effects	*Estimate*	*SE*	*Est./SE*	*p*
Hold. Back Sharing Concerns > Constructive Communication > Self-Disclosure	0.032	0.03	0.98	0.327
Hold. Back Sharing Concerns > PtD/SpW > Self-Disclosure	-0.006	0.02	-0.28	0.778
Hold. Back Sharing Concerns > SpD/PtW > Self-Disclosure	-0.009	0.02	-0.47	0.638

Note. No. = Number, Hold. = Holding, PtD = Patient Demand, SpW = Spouse Withdrawal, SpD = Spouse Demand, PtW = Patient Withdrawal.

Table 37.

A and B paths in mediation model predicting self-disclosure

A path: Individual Responses to Cancer > Constructive Communication	*Estimate*	*S.E.*	*Est./S.E.*	*p*
Psychological Well-Being > Constructive Communication	0.575	0.09	6.74	<0.001
Psychological Distress > Constructive Communication	0.116	0.10	1.11	0.267
Cancer-Specific Distress > Constructive Communication	0.021	0.05	0.43	0.668
No. of Cancer Concerns > Constructive Communication	0.009	0.05	0.17	0.865
Hold. Back Concerns > Constructive Communication	-0.336	0.04	-8.04	<0.001
A path: Individual Responses to Cancer > Pt Demand/Sp Withdrawal	*Estimate*	*S.E.*	*Est./S.E.*	*p*
Psychological Well-Being > Pt Demand/Sp Withdrawal	-0.293	0.10	-2.96	0.003
Psychological Distress > Pt Demand/Sp Withdrawal	0.223	0.13	1.71	0.087
Cancer-Specific Distress > Pt Demand/Sp Withdrawal	-0.008	0.06	-0.13	0.893
No. of Cancer Concerns > Pt Demand/Sp Withdrawal	0.074	0.06	1.26	0.207
Hold. Back Concerns > Pt Demand/Sp Withdrawal	0.194	0.05	4.36	<0.001
A path: Individual Responses to Cancer > Sp Demand/Pt Withdrawal	*Estimate*	*S.E.*	*Est./S.E.*	*p*
Psychological Well-Being > Pt Demand/Sp Withdrawal	-0.457	0.10	-4.59	<0.001
Psychological Distress > Pt Demand/Sp Withdrawal	-0.042	0.14	-0.31	0.757
Cancer-Specific Distress > Pt Demand/Sp Withdrawal	0.048	0.06	0.80	0.423
No. of Cancer Concerns > Pt Demand/Sp Withdrawal	0.050	0.06	0.90	0.368
Hold. Back Concerns > Pt Demand/Sp Withdrawal	0.176	0.05	3.59	<0.001
B path: Constructive Communication > Self-Disclosure	*Estimate*	*S.E.*	*Est./S.E.*	*p*
Constructive Communication > Self-Disclosure	-0.095	0.10	-0.98	0.325
B path: Pt Demand/Sp Withdrawal > Self-Disclosure	*Estimate*	*S.E.*	*Est./S.E.*	*p*
Pt Demand/Sp Withdrawal > Self-Disclosure	-0.029	0.10	-0.29	0.769
B path: Sp Demand/Pt Withdrawal > Self-Disclosure	*Estimate*	*S.E.*	*Est./S.E.*	*p*
Pt Demand/Sp Withdrawal > Self-Disclosure	-0.050	0.10	-0.50	0.617

Note. Pt = Patient, Sp = Spouse, No. = Number, Hold. = Holding.

Table 38.

Correlations among the predictors (individual responses to cancer and each relationship health variable at baseline) and mediators (communication patterns) when predicting relationship health (self-disclosure, perceived partner disclosure, intimacy, and relationship health)

Self-Disclosure	1	2	3	4	5	6	7	8
1. Psychological Well-being								
2. Psychological Distress	-0.49*							
3. Cancer-specific Distress	-0.38*	0.39*						
4. Number of Canc. Concerns	-0.35*	0.29*	0.47*					
5. Hold. Back Sharing Concerns	-0.46*	0.29*	0.42*	0.60*				
6. Self-Disclosure (baseline)	0.36*	-0.09*	0.04	0.04	-0.67*			
7. Constructive Communication						0.39		
8. Pt Demand/Sp Withdrawal						0.00	-0.27*	
9. Sp Demand/Pt Withdrawal						-0.10	-0.38*	0.90*
Perceived Partner Disclosure	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1. Psychological Well-being								
2. Psychological Distress	-0.50*							
3. Cancer-specific Distress	-0.38*	0.39*						
4. Number of Canc. Concerns	-0.35*	0.29*	0.46*					
5. Hold. Back Sharing Concerns	-0.47	0.30*	0.44*	0.61*				
6. Self-Disclosure (baseline)	0.40*	-0.19*	-0.16*	-0.11	-0.60			
7. Constructive Communication						0.51*		
8. Pt Demand/Sp Withdrawal						-0.20*	-0.28*	
9. Sp Demand/Pt Withdrawal						-0.03	-0.38*	0.90*
Intimacy	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1. Psychological Well-being								
2. Psychological Distress	-0.50							
3. Cancer-specific Distress	-0.38	0.39						
4. Number of Canc. Concerns	-0.35	0.29	0.46					

Table 38. (cont'd)

5. Hold. Back Sharing Concerns	-0.48	0.31	0.43	0.61				
6. Self-Disclosure (baseline)	0.43	-0.25	-0.19	-0.27	-0.44			
7. Constructive Communication						0.25		
8. Pt Demand/Sp Withdrawal						-0.23	-0.28	
9. Sp Demand/Pt Withdrawal						-0.25	-0.38	0.91
Relationship Satisfaction	1	2	3	4	5	6	7	8
1. Psychological Well-being								
2. Psychological Distress	-0.50							
3. Cancer-specific Distress	-0.38	0.39						
4. Number of Canc. Concerns	-0.35	0.29	0.46					
5. Hold. Back Sharing Concerns	-0.48	0.31	0.44	0.61				
6. Self-Disclosure (baseline)	8.54	-5.09	-3.43	-4.34	-7.16			
7. Constructive Communication						5.90		
8. Pt Demand/Sp Withdrawal						-0.28	-4.95	
9. Sp Demand/Pt Withdrawal						-0.39	0.91	-6.35

Note. Pt = Patient, Sp = Spouse, Canc. = Cancer, Hold. = Holding.

All correlations in the intimacy and relationship satisfaction model were significant.

Table 39.

Mediation model: Are individual responses to cancer associated with Perceived Partner Disclosure through communication patterns?

	Estimate	*SE*	*Est./SE*	*p*
Total direct effect	0.270	0.13	2.04	0.042
Total indirect effect	0.052	0.06	0.90	0.366
Specific indirect effects	*Estimate*	*SE*	*Est./SE*	*p*
Psychological Well-being > Constructive Communication > Perc. Part. Disclosure	0.030	0.06	0.54	0.590
Psychological Well-being > PtD/SpW > Perc. Part. Disclosure	0.040	0.03	1.22	0.221
Psychological Well-being > SpD/PtW > Perc. Part. Disclosure	-0.019	0.05	-0.38	0.705
	Estimate	*SE*	*Est./SE*	*p*
Total direct effect	0.126	0.16	0.79	0.429
Total indirect effect	-0.028	0.03	-0.81	0.420
Specific indirect effects	*Estimate*	*SE*	*Est./SE*	*p*
Psychological Distress > Constructive Communication > Perc. Part. Disclosure	0.005	0.02	0.31	0.754
Psychological Distress > PtD/SpW > Perc. Part. Disclosure	-0.031	0.03	-0.99	0.323
Psychological Distress > SpD/PtW > Perc. Part. Disclosure	-0.001	0.02	-0.08	0.933
	Estimate	*SE*	*Est./SE*	*p*
Total direct effect	-0.035	0.09	-0.40	0.692
Total indirect effect	0.003	0.01	0.23	0.818
Specific indirect effects	*Estimate*	*SE*	*Est./SE*	*p*
Cancer-Specific Distress > Constructive Communication > Perc. Part. Disclosure	<0.001	0.01	0.06	0.956
Cancer-Specific Distress > PtD/SpW > Perc. Part. Disclosure	0.001	0.01	0.06	0.954
Cancer-Specific Distress > SpD/PtW > Perc. Part. Disclosure	0.002	0.01	0.22	0.825
	Estimate	*SE*	*Est./SE*	*p*
Total direct effect	0.120	0.11	1.06	0.290
Total indirect effect	-0.009	0.01	-0.63	0.530
Specific indirect effects	*Estimate*	*SE*	*Est./SE*	*p*
No. of Cancer Conerns > Constructive Communication > Perc. Part. Disclosure	0.001	0.01	0.13	0.896
No. of Cancer Conerns > PtD/SpW > Perc. Part. Disclosure	-0.012	0.01	-0.89	0.376

Table 39. (cont'd)

No. of Cancer Conerns > SpD/PtW > Perc. Part. Disclosure	0.002	0.01	0.27	0.790
	Estimate	*SE*	*Est./SE*	*p*
Total direct effect	-0.001	0.09	-0.02	0.988
Total indirect effect	-0.040	0.04	-1.13	0.258
Specific indirect effects	*Estimate*	*SE*	*Est./SE*	*p*
Hold. Back Sharing Concerns > Constructive Communication > Perc. Part. Disclosure	-0.019	0.04	-0.54	0.589
Hold. Back Sharing Concerns > PtD/SpW > Perc. Part. Disclosure	-0.028	0.02	-1.35	0.177
Hold. Back Sharing Concerns > SpD/PtW > Perc. Part. Disclosure	0.007	0.02	0.35	0.726

Note. No. = Number, Hold. = Holding, PtD = Patient Demand, SpW = Spouse Withdrawal, SpD = Spouse Demand, PtW = Patient Withdrawal.

Table 40.

A and B paths in mediation model predicting Perceived Partner Disclosure

A path: Individual Responses to Cancer > Constructive Communication	*Estimate*	*S.E.*	*Est./S.E.*	*p*
Psychological Well-Being > Constructive Communication	0.534	0.09	6.20	<0.001
Psychological Distress > Constructive Communication	0.082	0.10	0.79	0.428
Cancer-Specific Distress > Constructive Communication	0.006	0.05	0.12	0.909
No. of Cancer Concerns > Constructive Communication	0.015	0.05	0.29	0.775
Hold. Back Concerns > Constructive Communication	-0.343	0.04	-8.12	<0.001
A path: Individual Responses to Cancer > Pt Demand/Sp Withdrawal	*Estimate*	*S.E.*	*Est./S.E.*	*p*
Psychological Well-Being > Pt Demand/Sp Withdrawal	-0.279	0.10	-2.84	0.005
Psychological Distress > Pt Demand/Sp Withdrawal	0.214	0.13	1.64	0.102
Cancer-Specific Distress > Pt Demand/Sp Withdrawal	-0.004	0.06	-0.07	0.945
No. of Cancer Concerns > Pt Demand/Sp Withdrawal	0.080	0.06	1.36	0.173
Hold. Back Concerns > Pt Demand/Sp Withdrawal	0.195	0.04	4.39	<0.001
A path: Individual Responses to Cancer > Sp Demand/Pt Withdrawal	*Estimate*	*S.E.*	*Est./S.E.*	*p*
Psychological Well-Being > Pt Demand/Sp Withdrawal	-0.455	0.10	-4.52	<0.001
Psychological Distress > Pt Demand/Sp Withdrawal	-0.032	0.14	-0.24	0.814
Cancer-Specific Distress > Pt Demand/Sp Withdrawal	0.050	0.06	0.83	0.407
No. of Cancer Concerns > Pt Demand/Sp Withdrawal	0.052	0.06	0.93	0.352
Hold. Back Concerns > Pt Demand/Sp Withdrawal	0.175	0.05	3.56	<0.001
B path: Constructive Communication > Perceived Partner Disclosure	*Estimate*	*S.E.*	*Est./S.E.*	*p*
Constructive Communication > Perceived Partner Disclosure	0.056	0.10	0.55	0.580
B path: Pt Demand/Sp Withdrawal > Perceived Partner Disclosure	*Estimate*	*S.E.*	*Est./S.E.*	*p*
Pt Demand/Sp Withdrawal > Perceived Partner Disclosure	-0.144	0.10	-1.44	0.151
B path: Sp Demand/Pt Withdrawal > Perceived Partner Disclosure	*Estimate*	*S.E.*	*Est./S.E.*	*p*
Pt Demand/Sp Withdrawal > Perceived Partner Disclosure	0.041	0.11	0.38	0.707

Note. Pt = Patient, Sp = Spouse, No. = Number, Hold. = Holding.

Table 41.

Mediation model: Are individual responses to cancer associated with Intimacy through communication patterns?

	Estimate	*SE*	*Est./SE*	*p*
Total direct effect	0.068	0.05	1.46	0.145
Total indirect effect	0.030	0.02	1.67	0.095
Specific indirect effects	*Estimate*	*SE*	*Est./SE*	*p*
Psychological Well-being > Constructive Communication > Intimacy	0.019	0.02	1.27	0.203
Psychological Well-being > PtD/SpW > Intimacy	0.017	0.01	1.81	0.070
Psychological Well-being > SpD/PtW > Intimacy	-0.006	0.01	-0.51	0.611
	Estimate	*SE*	*Est./SE*	*p*
Total direct effect	0.010	0.06	0.17	0.868
Total indirect effect	-0.014	0.01	-1.16	0.247
Specific indirect effects	*Estimate*	*SE*	*Est./SE*	*p*
Psychological Distress > Constructive Communication > Intimacy	0.002	0.01	0.41	0.685
Psychological Distress > PtD/SpW > Intimacy	-0.015	0.01	-1.36	0.173
Psychological Distress > SpD/PtW > Intimacy	<0.001	0.00	-0.04	0.969
	Estimate	*SE*	*Est./SE*	*p*
Total direct effect	-0.022	0.03	-0.85	0.396
Total indirect effect	0.003	0.01	0.62	0.536
Specific indirect effects	*Estimate*	*SE*	*Est./SE*	*p*
Cancer-Specific Distress > Constructive Communication > Intimacy	0.001	0.00	0.44	0.657
Cancer-Specific Distress > PtD/SpW > Intimacy	0.001	0.00	0.32	0.747
Cancer-Specific Distress > SpD/PtW > Intimacy	0.001	0.00	0.23	0.816
	Estimate	*SE*	*Est./SE*	*p*
Total direct effect	0.016	0.03	0.50	0.619
Total indirect effect	-0.004	0.01	-0.84	0.399
Specific indirect effects	*Estimate*	*SE*	*Est./SE*	*p*

Table 41. (cont'd)

No. of Cancer Conerns > Constructive Communication > Intimacy	<0.001	0.00	0.13	0.896
No. of Cancer Conerns > PtD/SpW > Intimacy	-0.005	0.01	-1.15	0.249
No. of Cancer Conerns > SpD/PtW > Intimacy	0.001	0.00	0.35	0.724
	Estimate	*SE*	*Est./SE*	*p*
Total direct effect	-0.040	0.03	-1.43	0.152
Total indirect effect	-0.022	0.01	-2.09	0.036
Specific indirect effects	*Estimate*	*SE*	*Est./SE*	*p*
Hold. Back Sharing Concerns > Constructive Communication > Intimacy	-0.012	0.01	-1.30	0.192
Hold. Back Sharing Concerns > PtD/SpW > Intimacy	-0.012	0.01	-1.99	0.047
Hold. Back Sharing Concerns > SpD/PtW > Intimacy	0.003	0.01	0.48	0.632

Note. No. = Number, Hold. = Holding, PtD = Patient Demand, SpW = Spouse Withdrawal, SpD = Spouse Demand, PtW = Patient Withdrawal.

Table 42.

A and B paths in mediation model predicting Intimacy

A path: Individual Responses to Cancer > Constructive Communication	*Estimate*	*S.E.*	*Est./S.E.*	*p*
Psychological Well-Being > Constructive Communication	0.549	0.08	6.55	<0.001
Psychological Distress > Constructive Communication	0.056	0.10	0.55	0.583
Cancer-Specific Distress > Constructive Communication	0.029	0.05	0.60	0.547
No. of Cancer Concerns > Constructive Communication	0.009	0.05	0.17	0.865
Hold. Back Concerns > Constructive Communication	-0.337	0.04	-8.02	<0.001
A path: Individual Responses to Cancer > Pt Demand/Sp Withdrawal	*Estimate*	*S.E.*	*Est./S.E.*	*p*
Psychological Well-Being > Pt Demand/Sp Withdrawal	-0.268	0.10	-2.81	0.005
Psychological Distress > Pt Demand/Sp Withdrawal	0.239	0.13	1.90	0.058
Cancer-Specific Distress > Pt Demand/Sp Withdrawal	-0.022	0.06	-0.36	0.718
No. of Cancer Concerns > Pt Demand/Sp Withdrawal	0.084	0.06	1.43	0.152
Hold. Back Concerns > Pt Demand/Sp Withdrawal	0.193	0.05	4.33	<0.001
A path: Individual Responses to Cancer > Sp Demand/Pt Withdrawal	*Estimate*	*S.E.*	*Est./S.E.*	*p*
Psychological Well-Being > Pt Demand/Sp Withdrawal	-0.432	0.10	-4.47	<0.001
Psychological Distress > Pt Demand/Sp Withdrawal	-0.011	0.13	-0.09	0.933
Cancer-Specific Distress > Pt Demand/Sp Withdrawal	0.035	0.06	0.60	0.548
No. of Cancer Concerns > Pt Demand/Sp Withdrawal	0.059	0.06	1.05	0.292
Hold. Back Concerns > Pt Demand/Sp Withdrawal	0.175	0.05	3.55	<0.001
B path: Constructive Communication > Intimacy	*Estimate*	*S.E.*	*Est./S.E.*	*p*
Constructive Communication > Intimacy	0.035	0.03	1.33	0.183
B path: Pt Demand/Sp Withdrawal > Intimacy	*Estimate*	*S.E.*	*Est./S.E.*	*p*
Pt Demand/Sp Withdrawal > Intimacy	-0.065	0.03	-2.36	0.018
B path: Sp Demand/Pt Withdrawal > Intimacy	*Estimate*	*S.E.*	*Est./S.E.*	*p*
Pt Demand/Sp Withdrawal > Intimacy	0.015	0.03	0.52	0.606

Note. Pt = Patient, Sp = Spouse, No. = Number, Hold. = Holding.

Table 43.

Mediation model: Are individual responses to cancer associated with Relationship Satisfaction through communication patterns?

	Estimate	*SE*	*Est./SE*	*p*
Total direct effect	0.762	0.76	1.00	0.319
Total indirect effect	-0.296	0.34	-0.88	0.380
Specific indirect effects	*Estimate*	*SE*	*Est./SE*	*p*
Psychological Well-being > Constructive Communication > Relationship Satisfaction	-0.336	0.27	-1.27	0.204
Psychological Well-being > PtD/SpW > Relationship Satisfaction	0.006	0.13	0.04	0.967
Psychological Well-being > SpD/PtW > Relationship Satisfaction	0.034	0.22	0.15	0.879
	Estimate	*SE*	*Est./SE*	*p*
Total direct effect	-0.859	0.88	-0.98	0.327
Total indirect effect	-0.034	0.18	-0.20	0.846
Specific indirect effects	*Estimate*	*SE*	*Est./SE*	*p*
Psychological Distress > Constructive Communication > Relationship Satisfaction	-0.029	0.08	-0.36	0.721
Psychological Distress > PtD/SpW > Relationship Satisfaction	-0.005	0.15	-0.04	0.971
Psychological Distress > SpD/PtW > Relationship Satisfaction	<0.001	0.07	0.00	0.999
	Estimate	*SE*	*Est./SE*	*p*
Total direct effect	0.088	0.44	0.20	0.841
Total indirect effect	-0.016	0.06	-0.27	0.788
Specific indirect effects	*Estimate*	*SE*	*Est./SE*	*p*
Cancer-Specific Distress > Constructive Communication > Relationship Satisfaction	-0.013	0.04	-0.34	0.737
Cancer-Specific Distress > PtD/SpW > Relationship Satisfaction	<0.001	0.03	0.01	0.992
Cancer-Specific Distress > SpD/PtW > Relationship Satisfaction	-0.003	0.04	-0.09	0.932
	Estimate	*SE*	*Est./SE*	*p*
Total direct effect	0.102	0.54	0.19	0.850
Total indirect effect	-0.013	0.07	-0.18	0.854
Specific indirect effects	*Estimate*	*SE*	*Est./SE*	*p*
No. of Cancer Conerns > Constructive Communication > Relationship Satisfaction	-0.006	0.04	-0.15	0.882
No. of Cancer Conerns > PtD/SpW > Relationship Satisfaction	-0.002	0.06	-0.03	0.973

Table 43. (cont'd)

No. of Cancer Conerns > SpD/PtW > Relationship Satisfaction	-0.005	0.05	-0.11	0.914
	Estimate	*SE*	*Est./SE*	*p*
Total direct effect	-0.237	0.45	-0.53	0.596
Total indirect effect	0.197	0.20	0.98	0.327
Specific indirect effects	*Estimate*	*SE*	*Est./SE*	*p*
Hold. Back Sharing Concerns > Constructive Communication > Relationship Satisfaction	0.217	0.17	1.28	0.199
Hold. Back Sharing Concerns > PtD/SpW > Relationship Satisfaction	-0.004	0.11	-0.04	0.968
Hold. Back Sharing Concerns > SpD/PtW > Relationship Satisfaction	-0.015	0.10	-0.15	0.882

Note. No. = Number, Hold. = Holding, PtD = Patient Demand, SpW = Spouse Withdrawal, SpD = Spouse Demand, PtW = Patient Withdrawal.

Table 44.

A and B paths in mediation model predicting Relationship Satisfaction

A path: Individual Responses to Cancer > Constructive Communication	*Estimate*	*S.E.*	*Est./S.E.*	*p*
Psychological Well-Being > Constructive Communication	0.524	0.08	6.32	<0.001
Psychological Distress > Constructive Communication	0.045	0.10	0.45	0.650
Cancer-Specific Distress > Constructive Communication	0.021	0.05	0.43	0.665
No. of Cancer Concerns > Constructive Communication	0.010	0.05	0.18	0.858
Hold. Back Concerns > Constructive Communication	-0.338	0.04	-7.98	<0.001
A path: Individual Responses to Cancer > Pt Demand/Sp Withdrawal	*Estimate*	*S.E.*	*Est./S.E.*	*p*
Psychological Well-Being > Pt Demand/Sp Withdrawal	-0.251	0.09	-2.68	0.007
Psychological Distress > Pt Demand/Sp Withdrawal	0.246	0.13	1.98	0.048
Cancer-Specific Distress > Pt Demand/Sp Withdrawal	-0.015	0.06	-0.25	0.806
No. of Cancer Concerns > Pt Demand/Sp Withdrawal	0.085	0.06	1.44	0.151
Hold. Back Concerns > Pt Demand/Sp Withdrawal	0.194	0.05	4.32	<0.001
A path: Individual Responses to Cancer > Sp Demand/Pt Withdrawal	*Estimate*	*S.E.*	*Est./S.E.*	*p*
Psychological Well-Being > Pt Demand/Sp Withdrawal	-0.403	0.09	-4.33	<0.001
Psychological Distress > Pt Demand/Sp Withdrawal	0.001	0.13	0.01	0.994
Cancer-Specific Distress > Pt Demand/Sp Withdrawal	0.041	0.06	0.69	0.490
No. of Cancer Concerns > Pt Demand/Sp Withdrawal	0.060	0.06	1.06	0.288
Hold. Back Concerns > Pt Demand/Sp Withdrawal	0.176	0.05	3.54	<0.001
B path: Constructive Communication > Relationship Satisfaction	*Estimate*	*S.E.*	*Est./S.E.*	*p*
Constructive Communication > Relationship Satisfaction	-0.641	0.49	-1.31	0.192
B path: Pt Demand/Sp Withdrawal > Relationship Satisfaction	*Estimate*	*S.E.*	*Est./S.E.*	*p*
Pt Demand/Sp Withdrawal > Relationship Satisfaction	-0.022	0.53	-0.04	0.967
B path: Sp Demand/Pt Withdrawal > Relationship Satisfaction	*Estimate*	*S.E.*	*Est./S.E.*	*p*
Pt Demand/Sp Withdrawal > Relationship Satisfaction	-0.085	0.55	-0.15	0.877

Note. Pt = Patient, Sp = Spouse, No. = Number, Hold. = Holding.

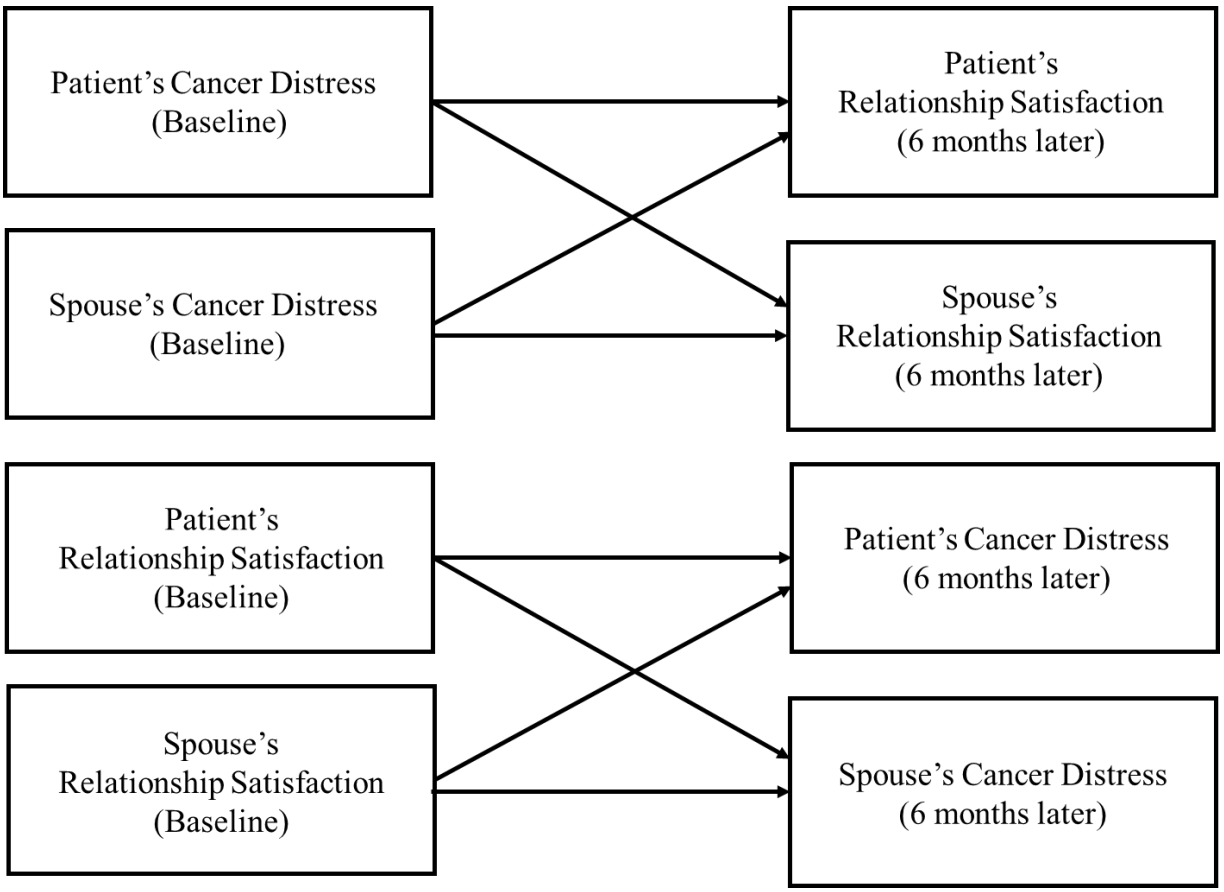

Figure 1. Example of one proposed bidirectional APIM for analysis 4a. Not shown are baseline measures of each outcome which were included in the final model.

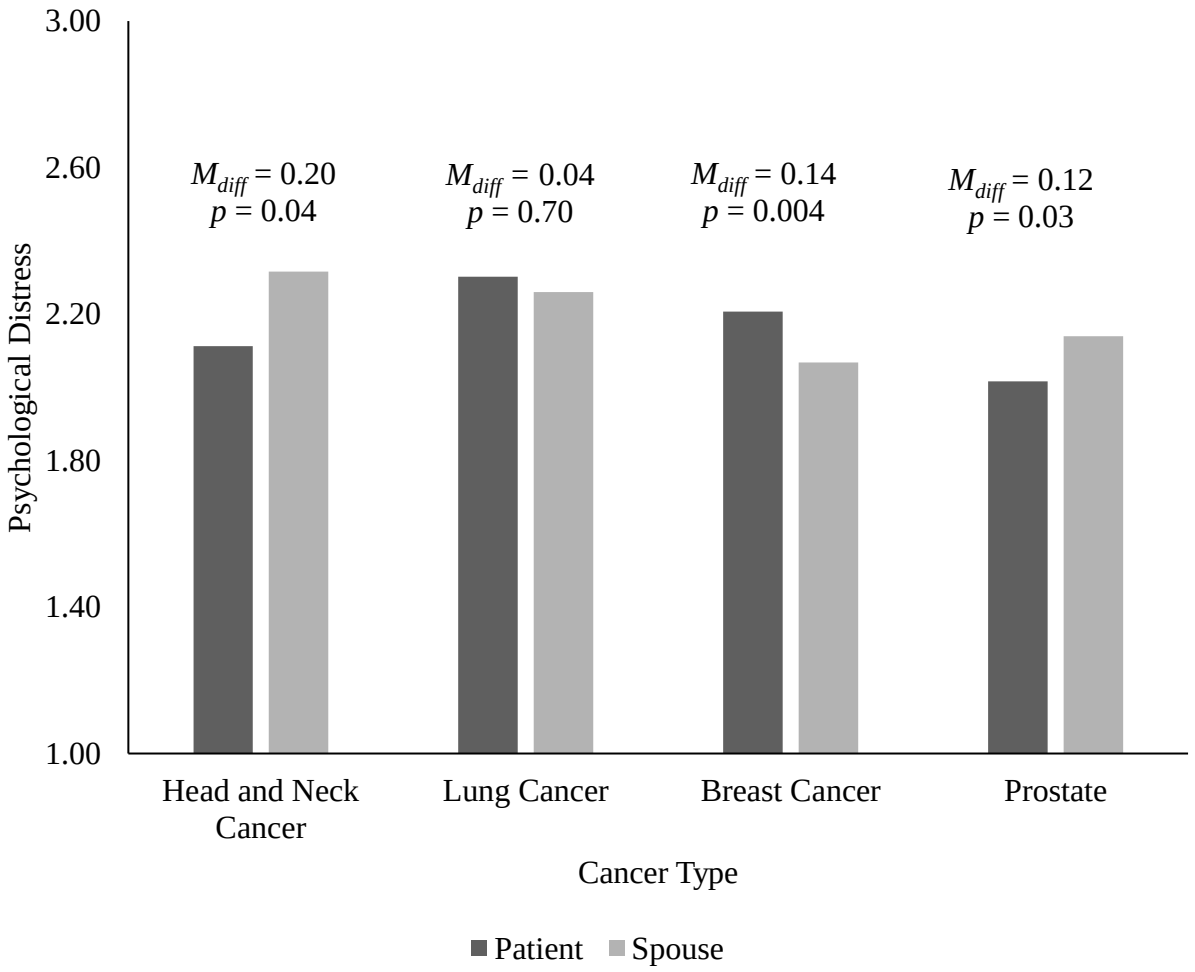

Figure 2. Predicted psychological distress by role (Patient or Spouse) across four different types of cancer (Head and Neck, Lung, Breast, Prostate).

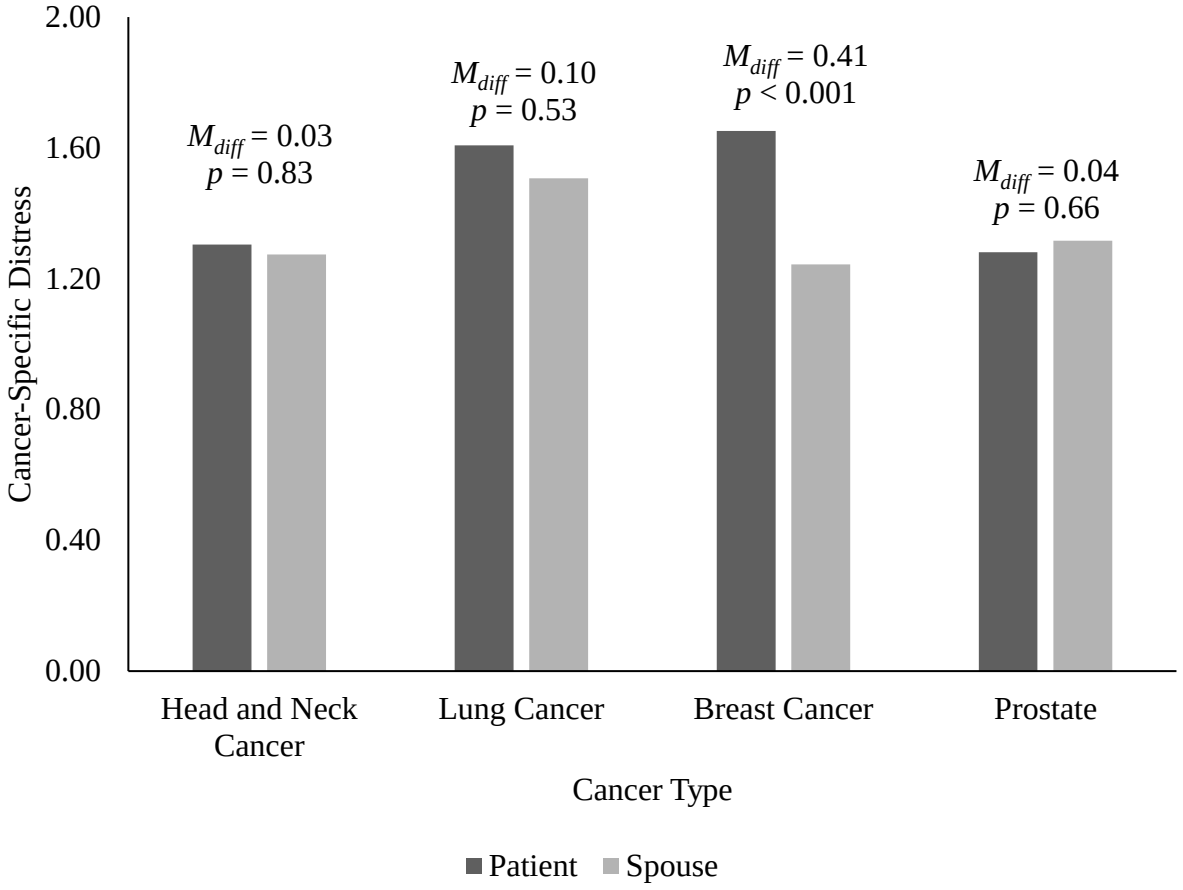

Figure 3. Predicted cancer-specific distress by role (Patient or Spouse) across four different types of cancer (Head and Neck, Lung, Breast, Prostate).

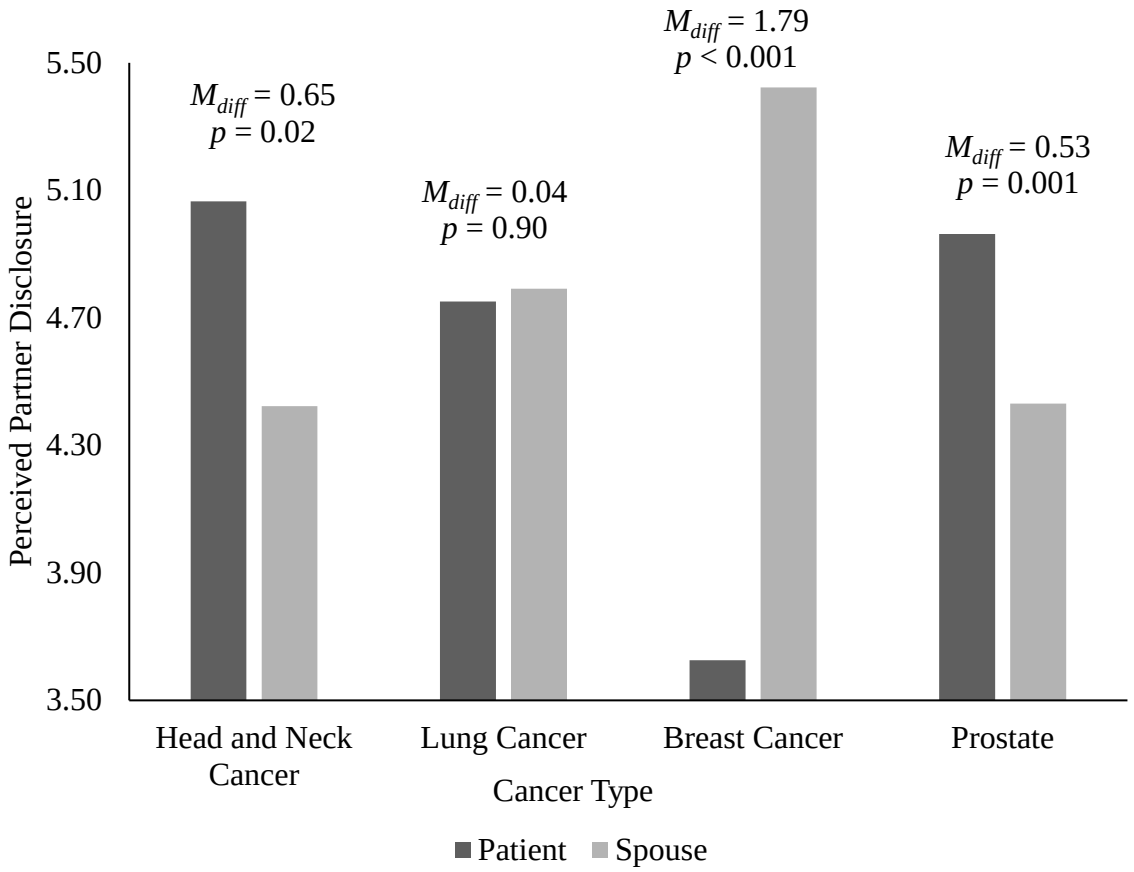

Figure 4. Predicted perceived partner disclosure by role (Patient or Spouse) across four different types of cancer (Head and Neck, Lung, Breast, Prostate).

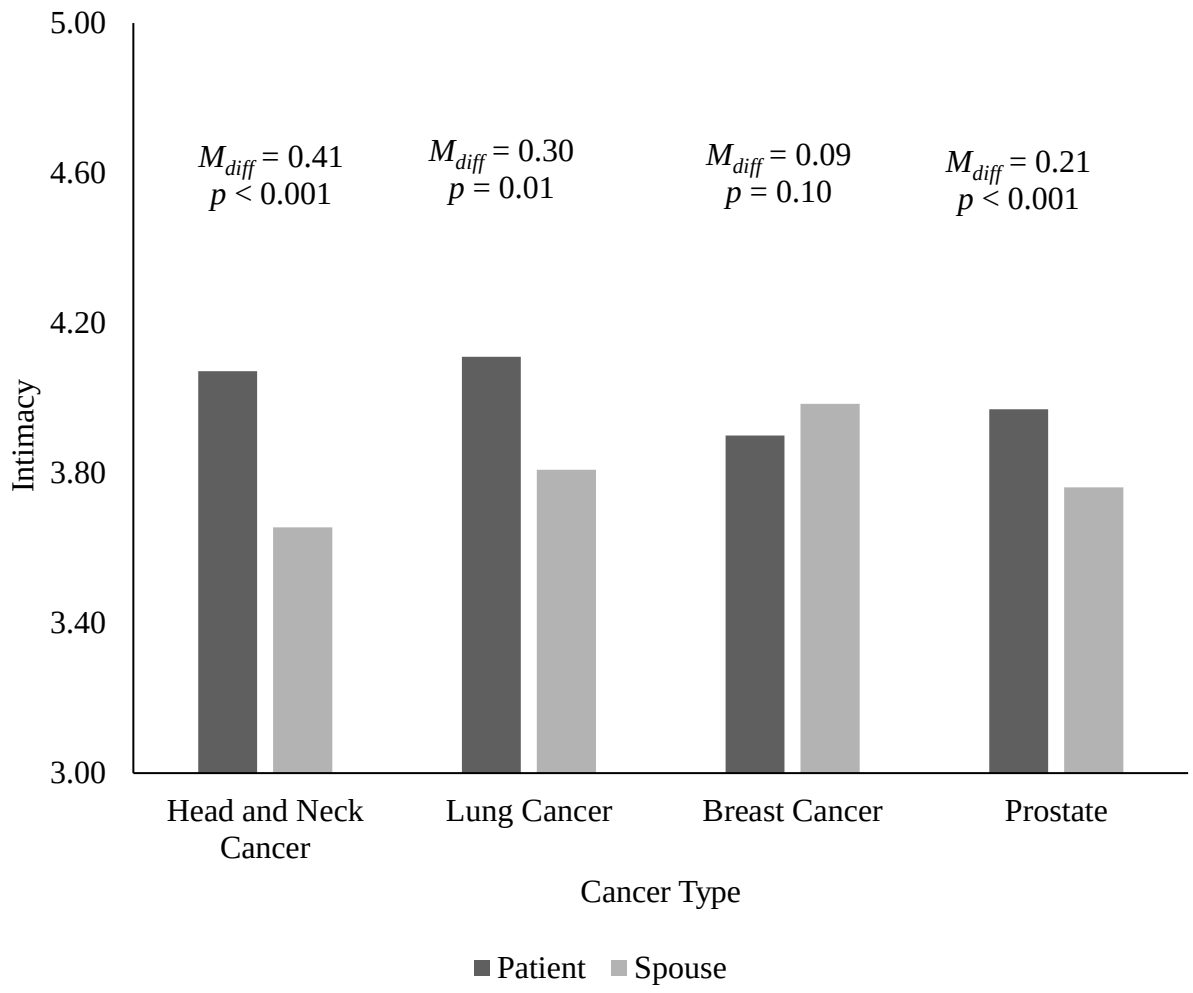

Figure 5. Predicted intimacy by role (Patient or Spouse) across four different types of cancer (Head and Neck, Lung, Breast, Prostate).

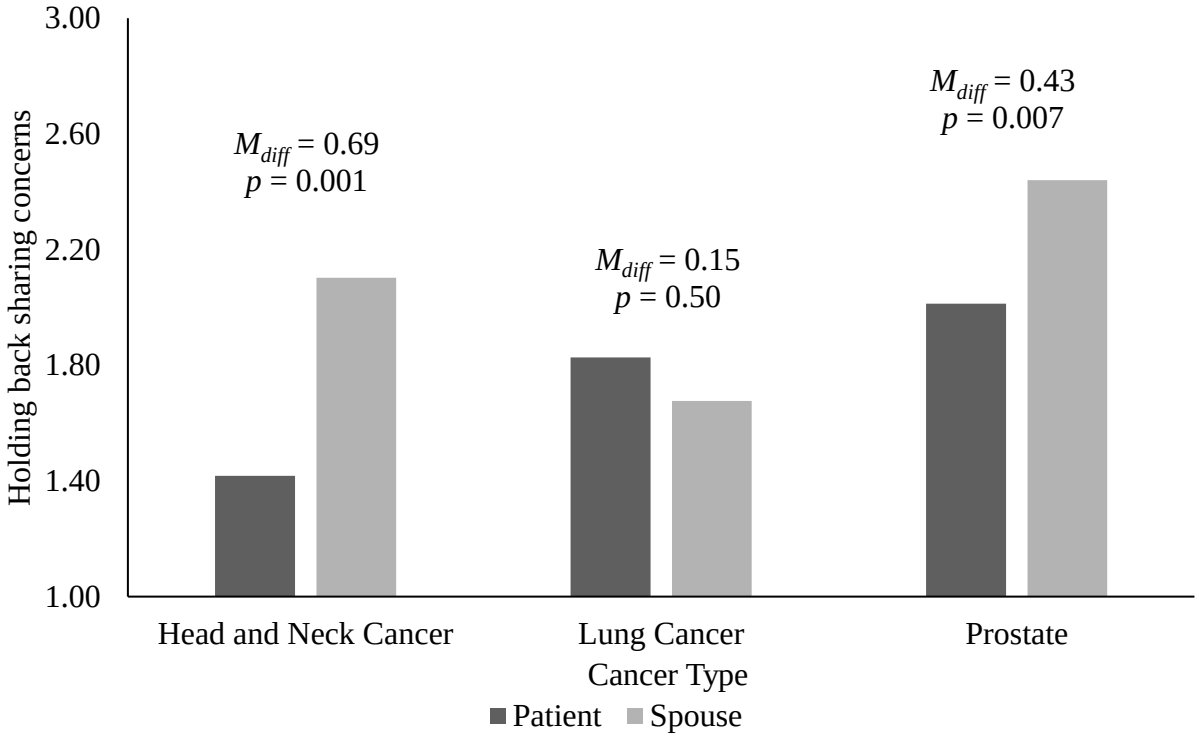

Figure 6. Predicted levels of holding back sharing concerns by role (Patient or Spouse) across four different types of cancer (Head and Neck, Lung, Breast, Prostate).

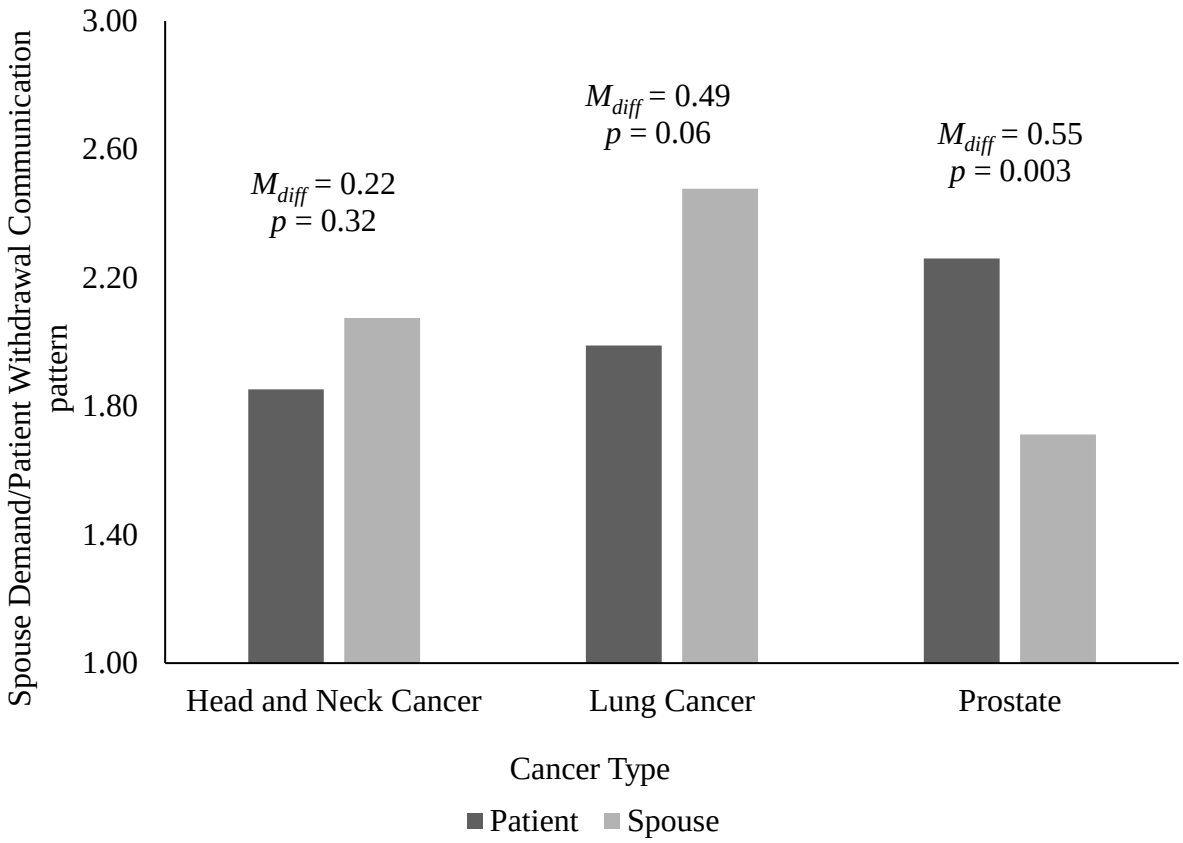

Figure 7. Predicted levels of Spouse Demand/Patient Withdrawal communication patterns by role (Patient or Spouse) across four different types of cancer (Head and Neck, Lung, Breast, Prostate).

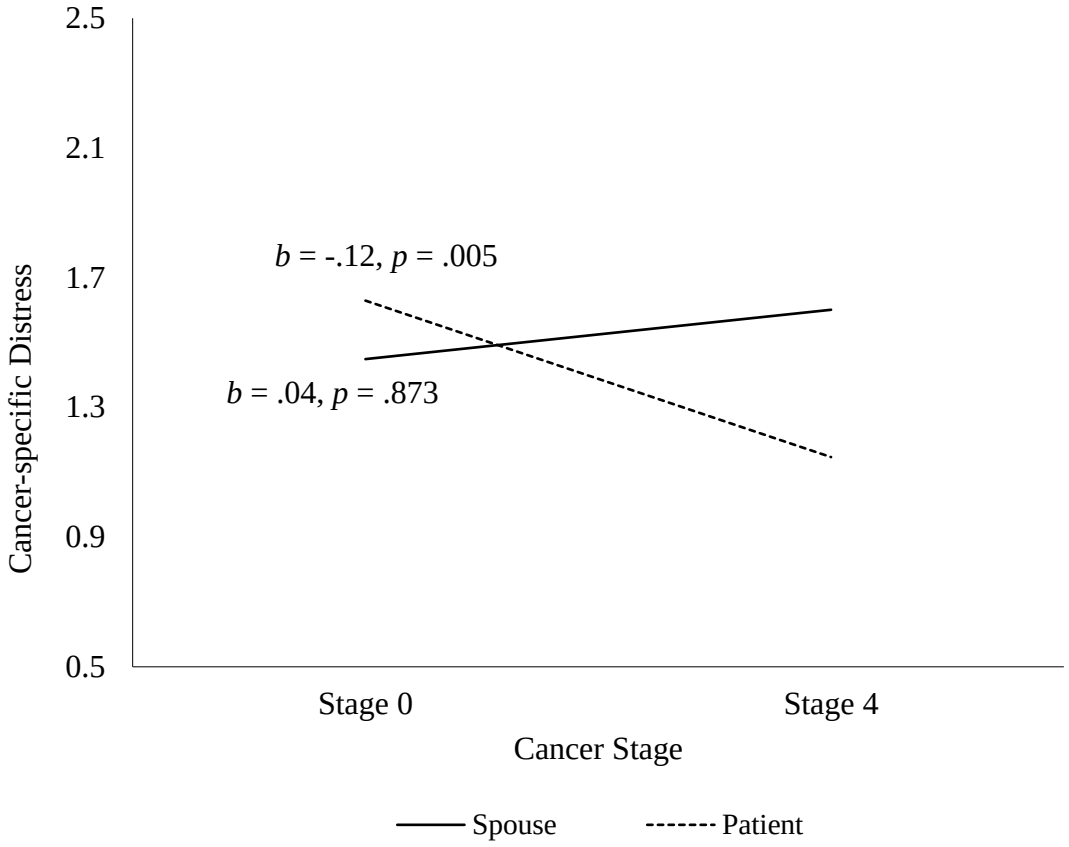

Figure 8. Predicted levels of cancer-specific distress at baseline by role (Patient or Spouse) across stages of cancer (Stages 0-4).

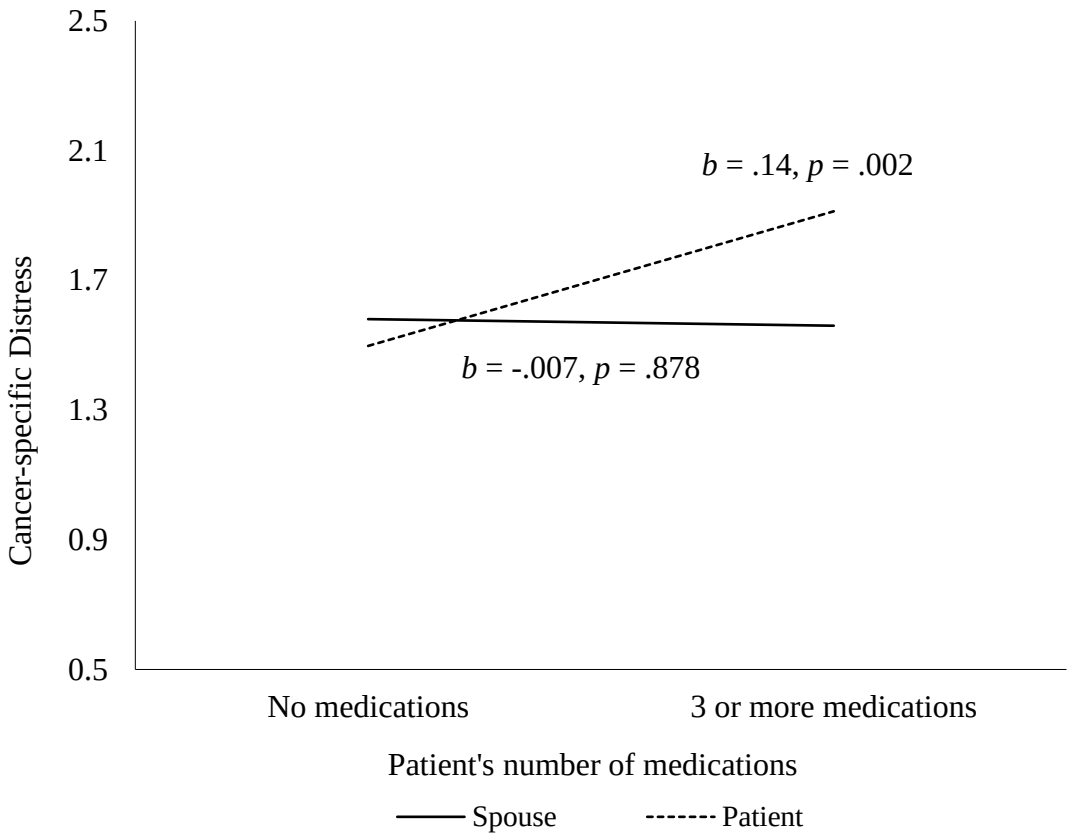

Figure 9. Predicted levels of cancer-specific distress at baseline by role (Patient or Spouse) across the number of medications the patient takes.

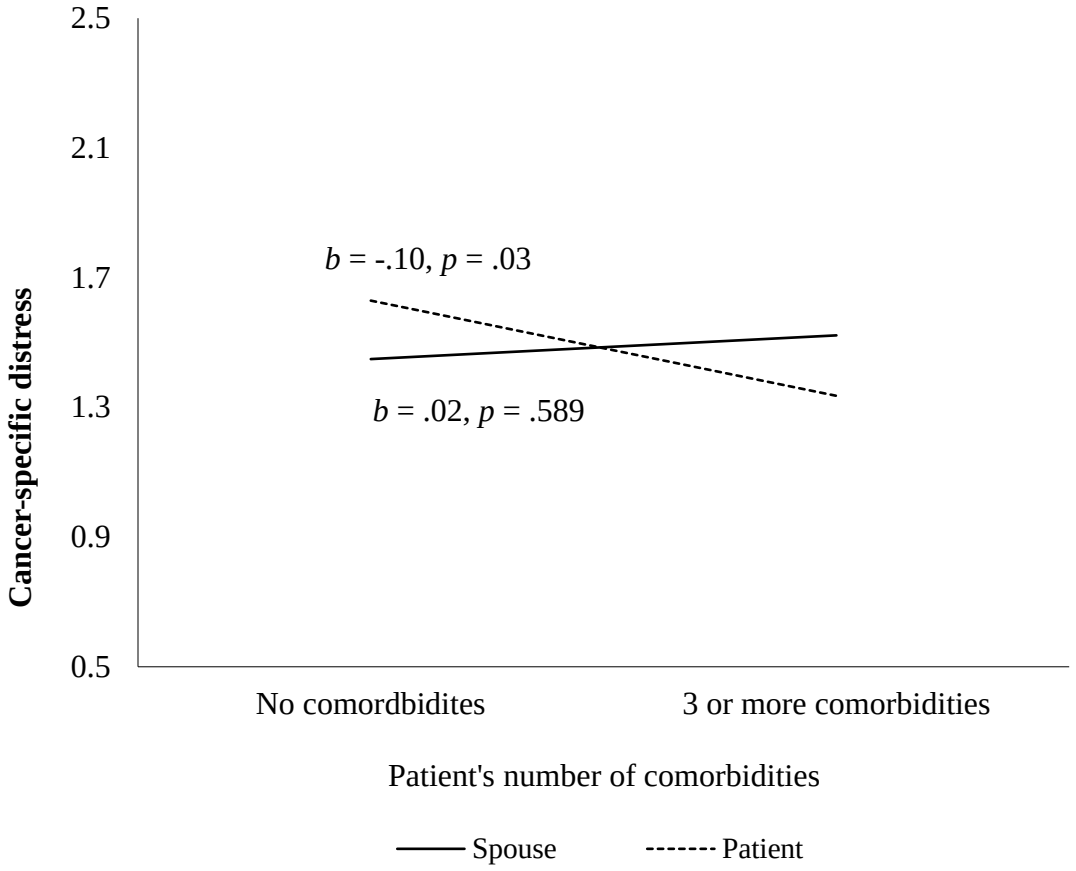

Figure 10. Predicted levels of Cancer-specific distress at baseline by role (Patient or Spouse) across the number of comorbidities the patient has.

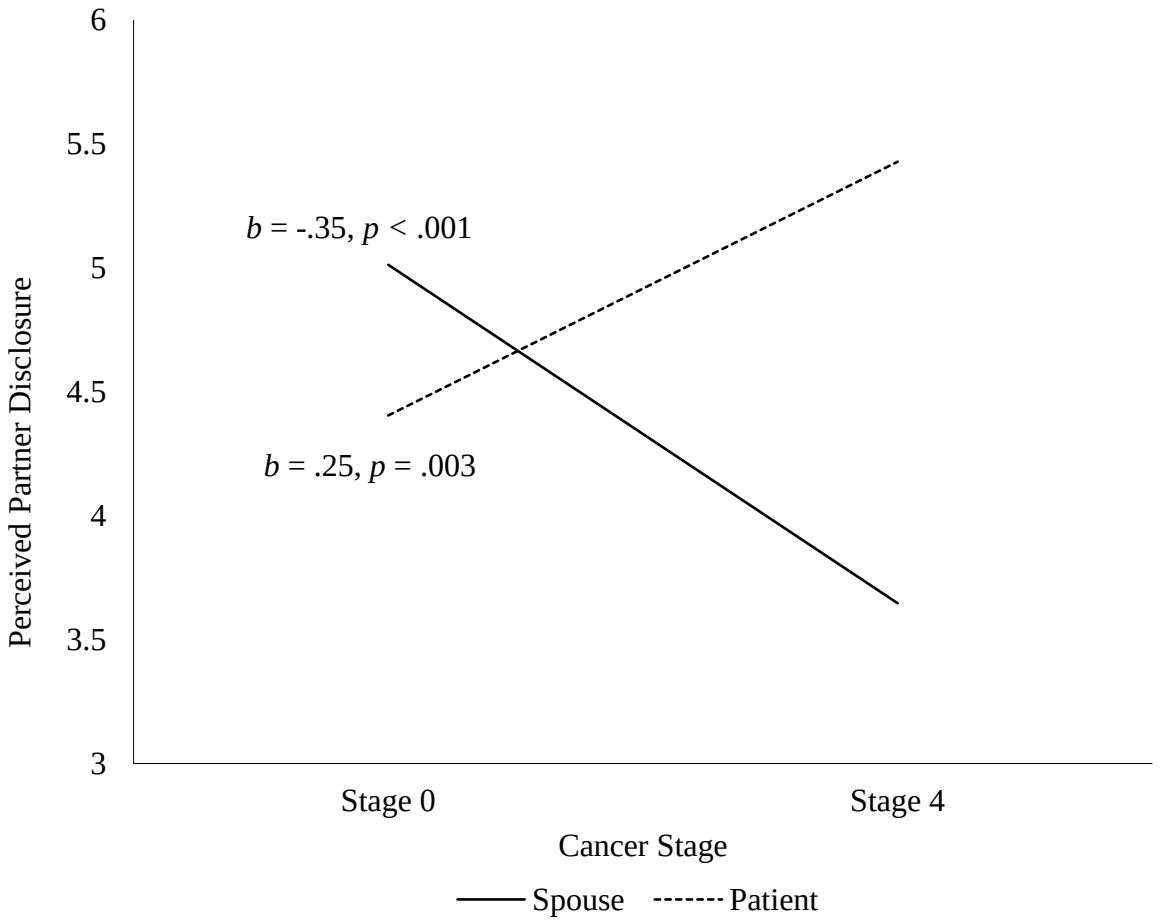

Figure 11. Predicted levels of perceived partner disclosure at baseline by role (Patient or Spouse) across cancer stage (Stage 0-4).

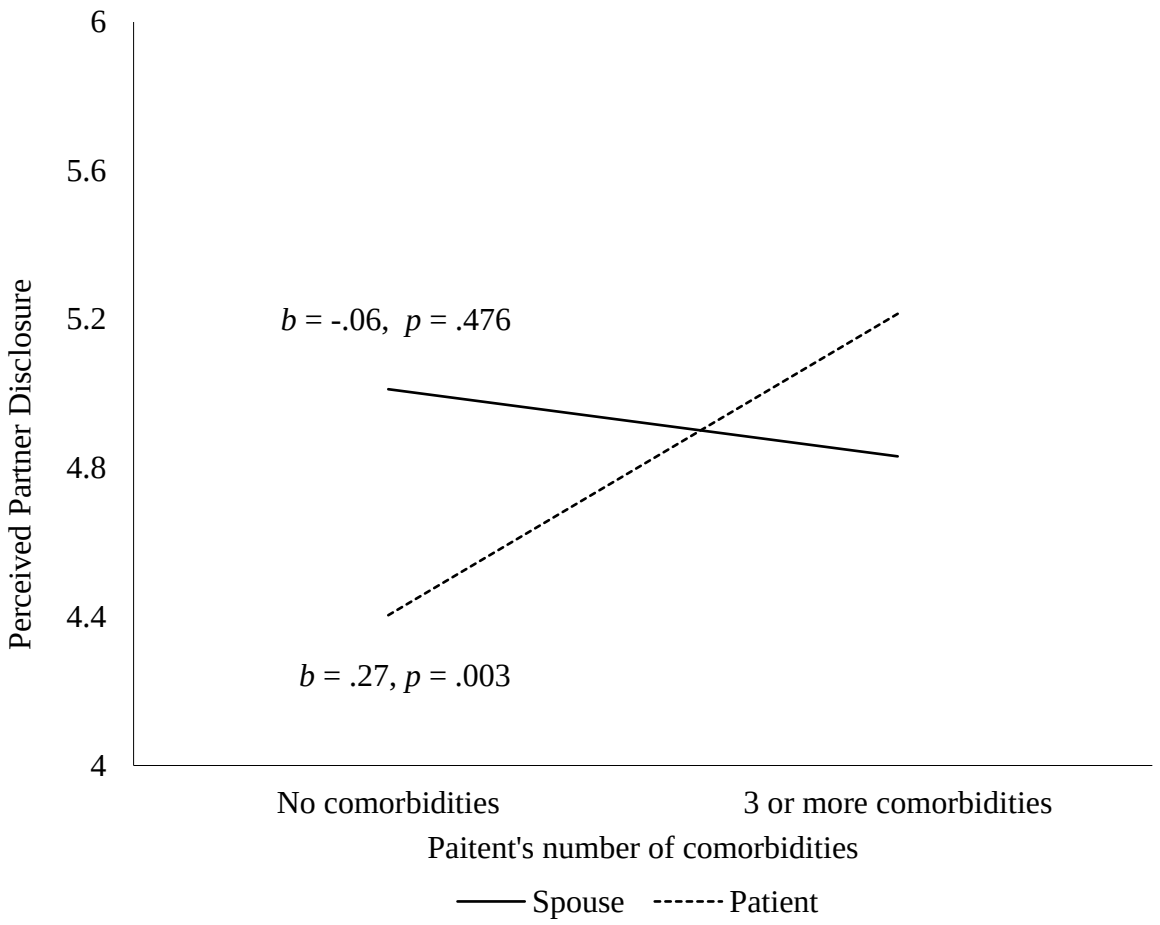

Figure 12. Predicted levels of Perceived partner disclosure at baseline by role (Patient or Spouse) across the number of comorbidities the patient has.

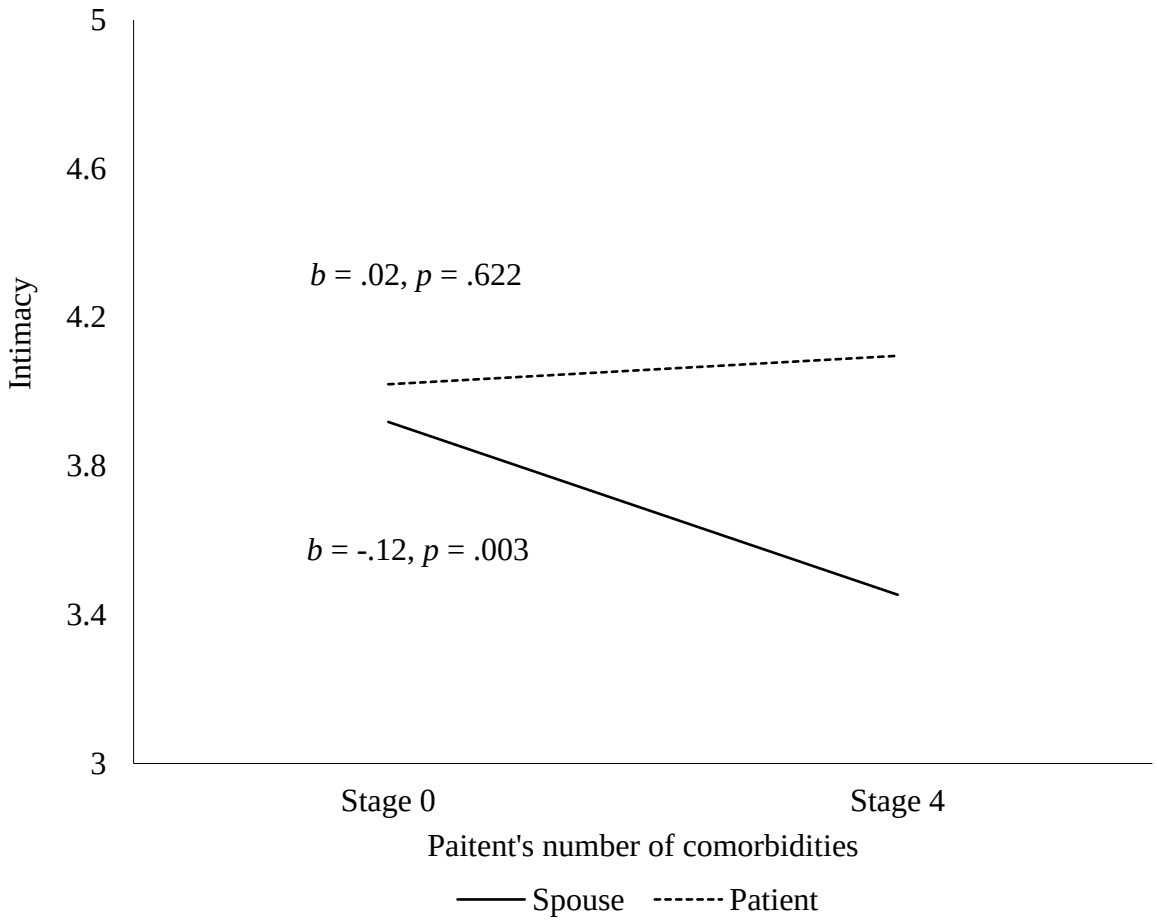

Figure 13. Predicted levels of intimacy at baseline by role (Patient or Spouse) across cancer stage (Stage 0-4).

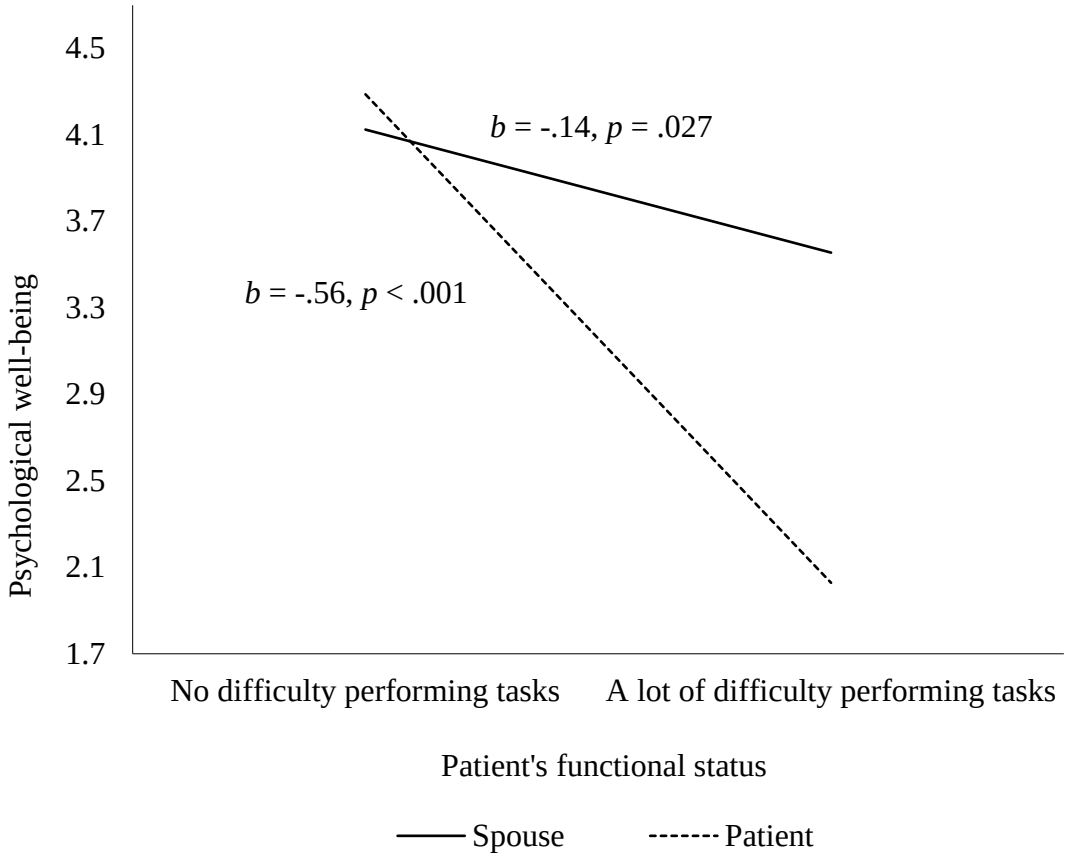

Figure 14. Predicted levels of psychological well-being at baseline by role (Patient or Spouse) across patient's functional status.

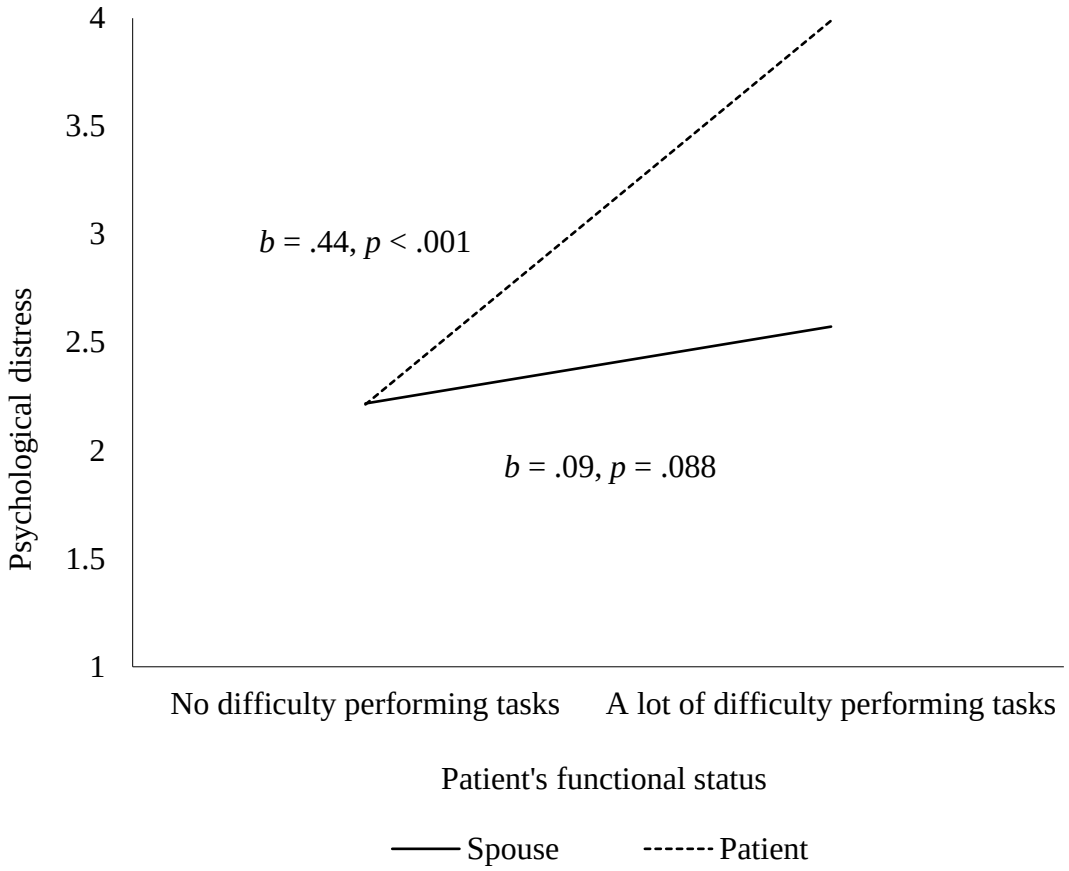

Figure 15. Predicted levels of psychological distress at baseline by role (Patient or Spouse) across patient's functional status at baseline.

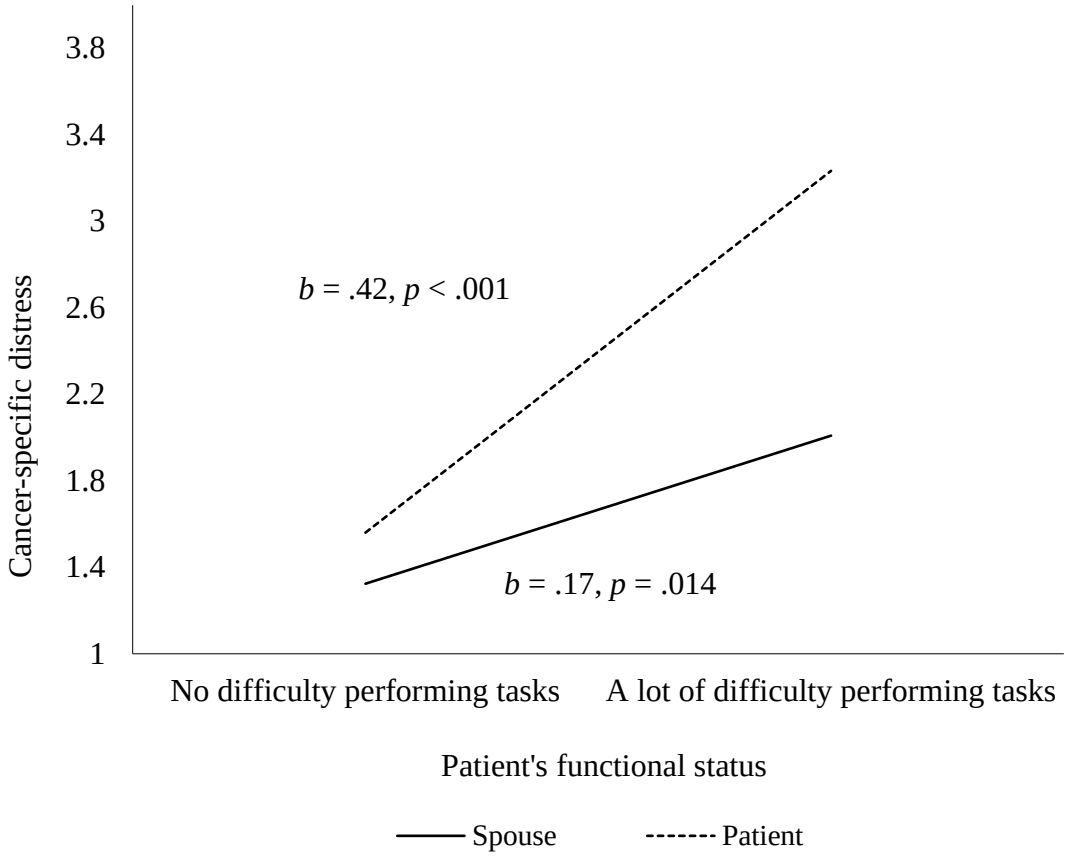

Figure 16. Predicted levels of cancer-specific distress at baseline by role (Patient or Spouse) across patient's functional status.

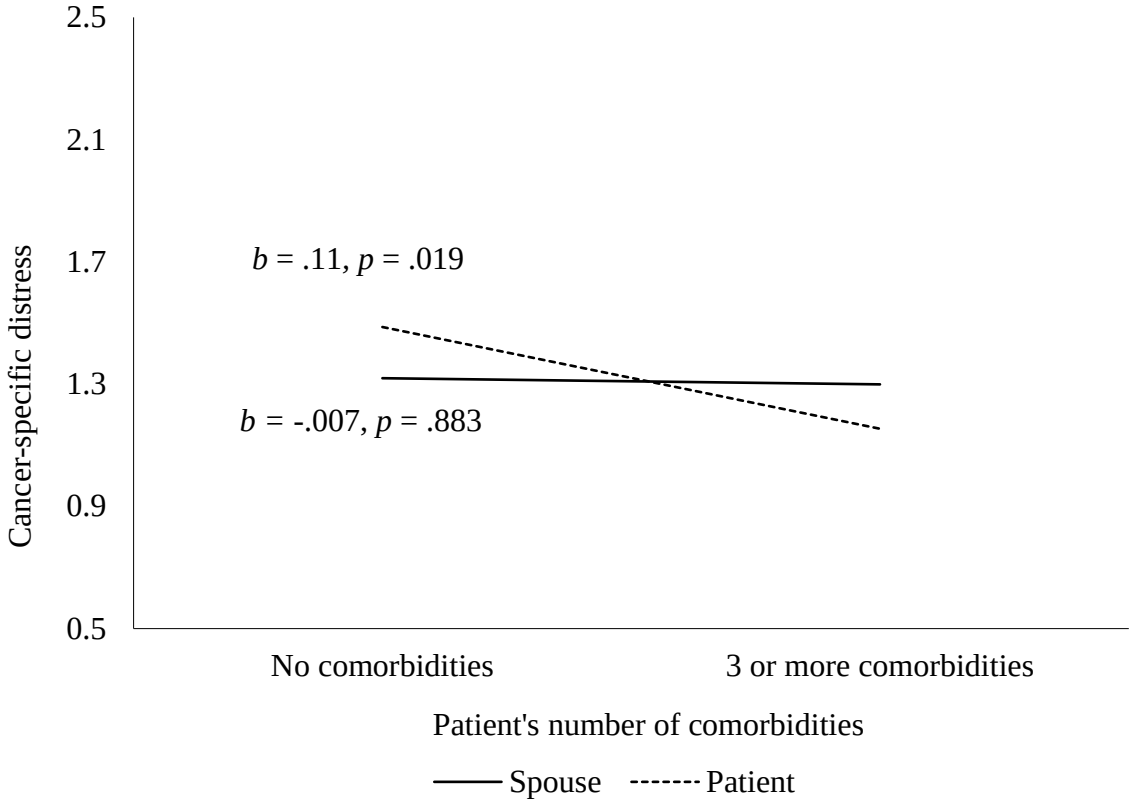

Figure 17. Predicted levels of cancer-specific distress 6 months later by role (Patient or Spouse) across the number of comorbidities the patient has.

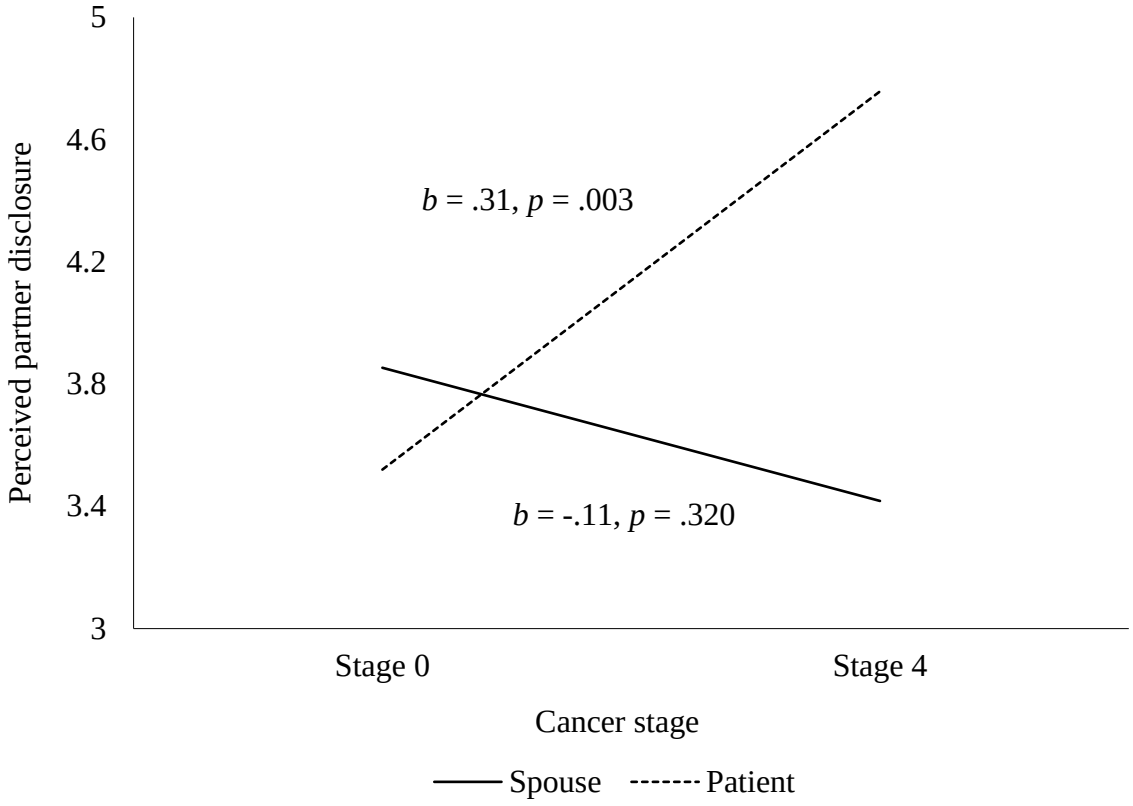

Figure 18. Predicted levels of perceived partner disclosure 6 months later by role (Patient or Spouse) across cancer stage (Stage 0-4).

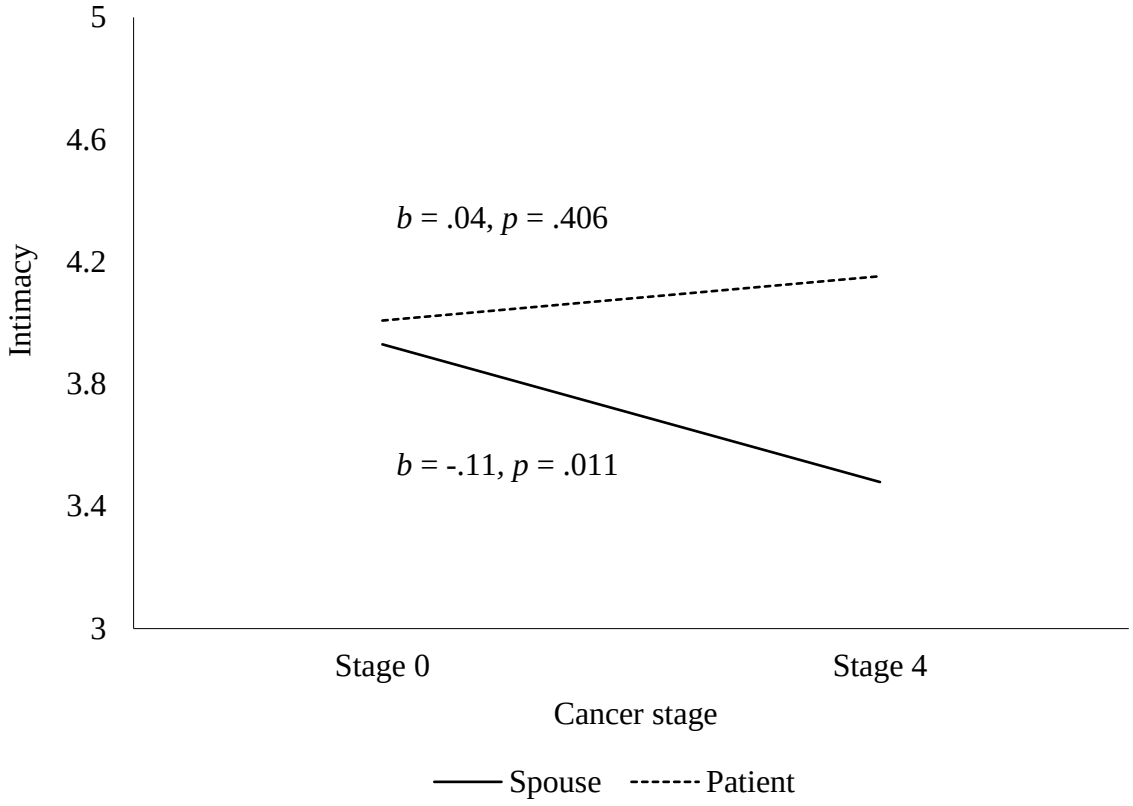

Figure 19. Predicted levels of intimacy 6 months later by role (Patient or Spouse) across cancer stage (Stage 0-4).

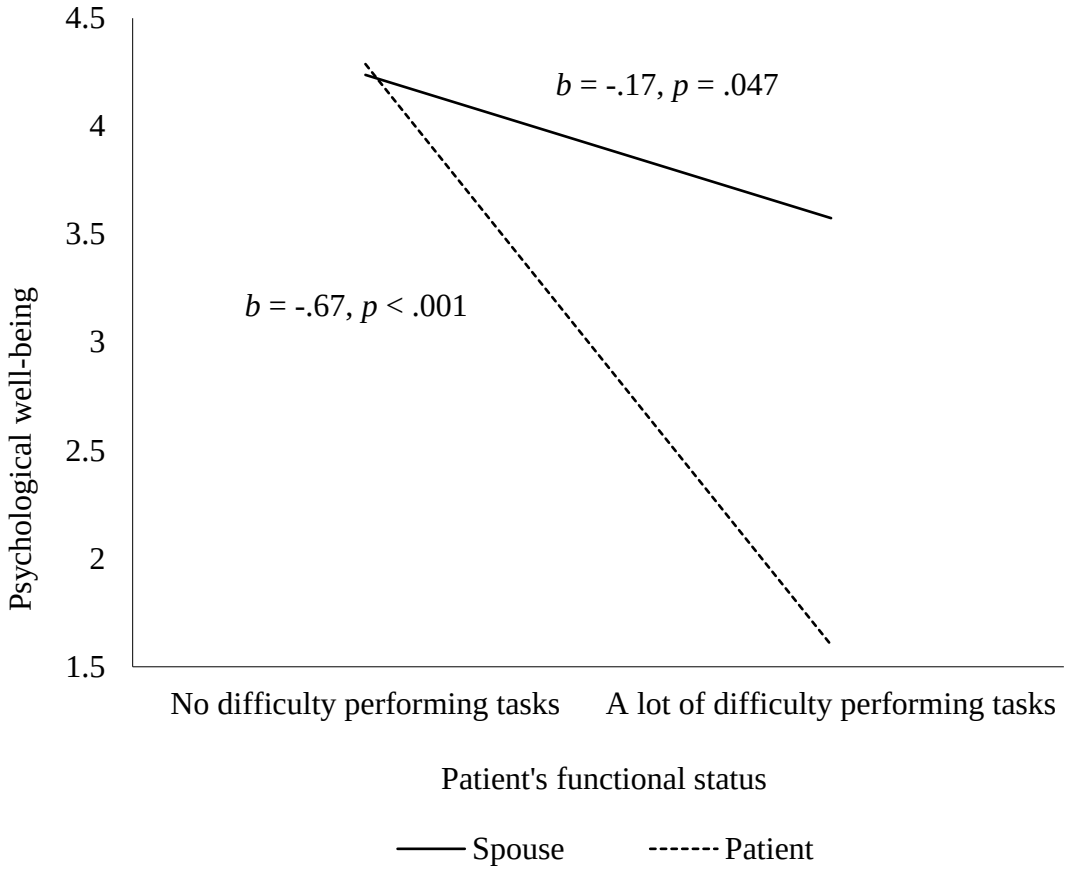

Figure 20. Predicted levels of psychological well-being 6 months later by role (Patient or Spouse) across patient's functional status.

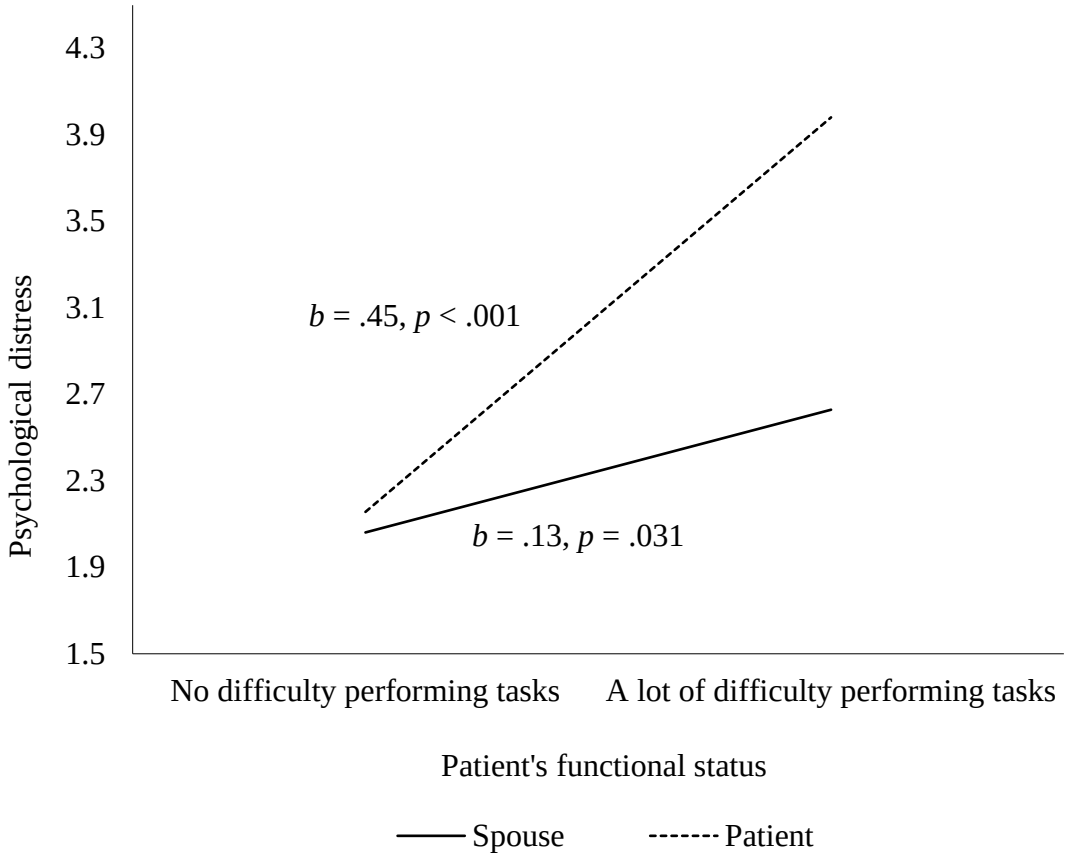

Figure 21. Predicted levels of psychological distress 6 months later by role (Patient or Spouse) across patient's functional status.

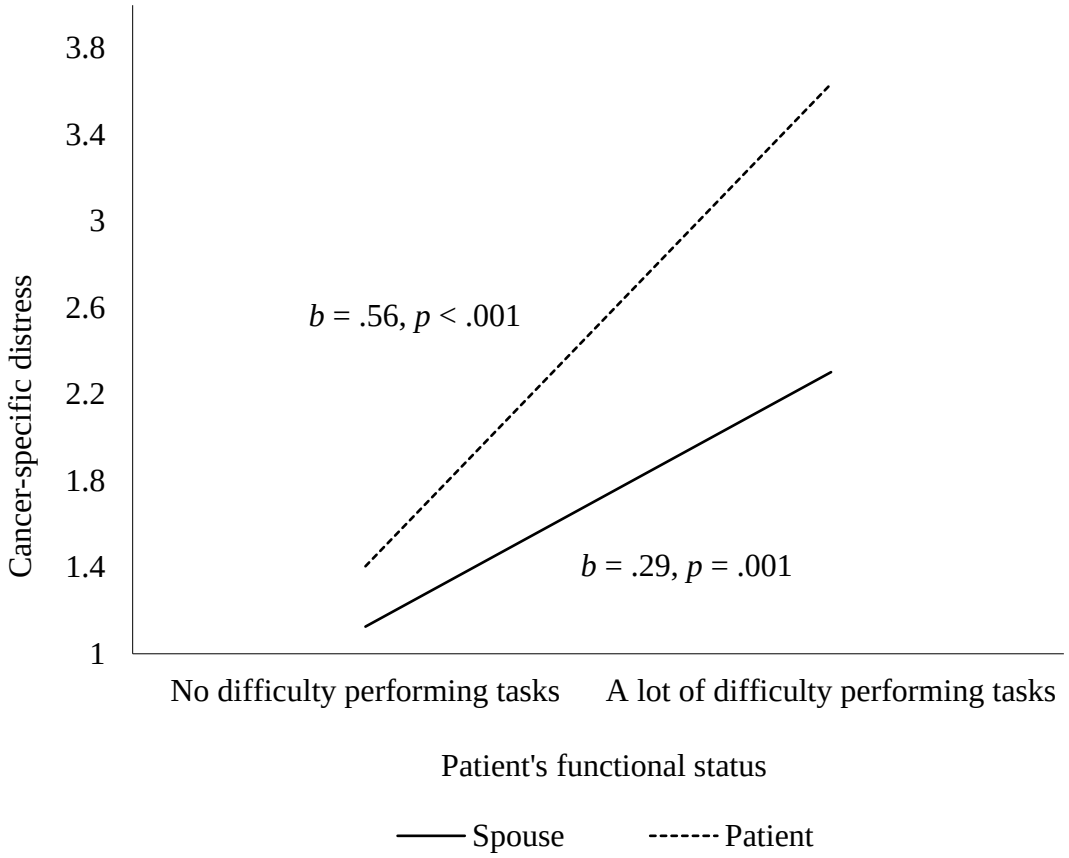

Figure 22. Predicted levels of cancer-specific distress 6 months later by role (Patient or Spouse) across patient's functional status.

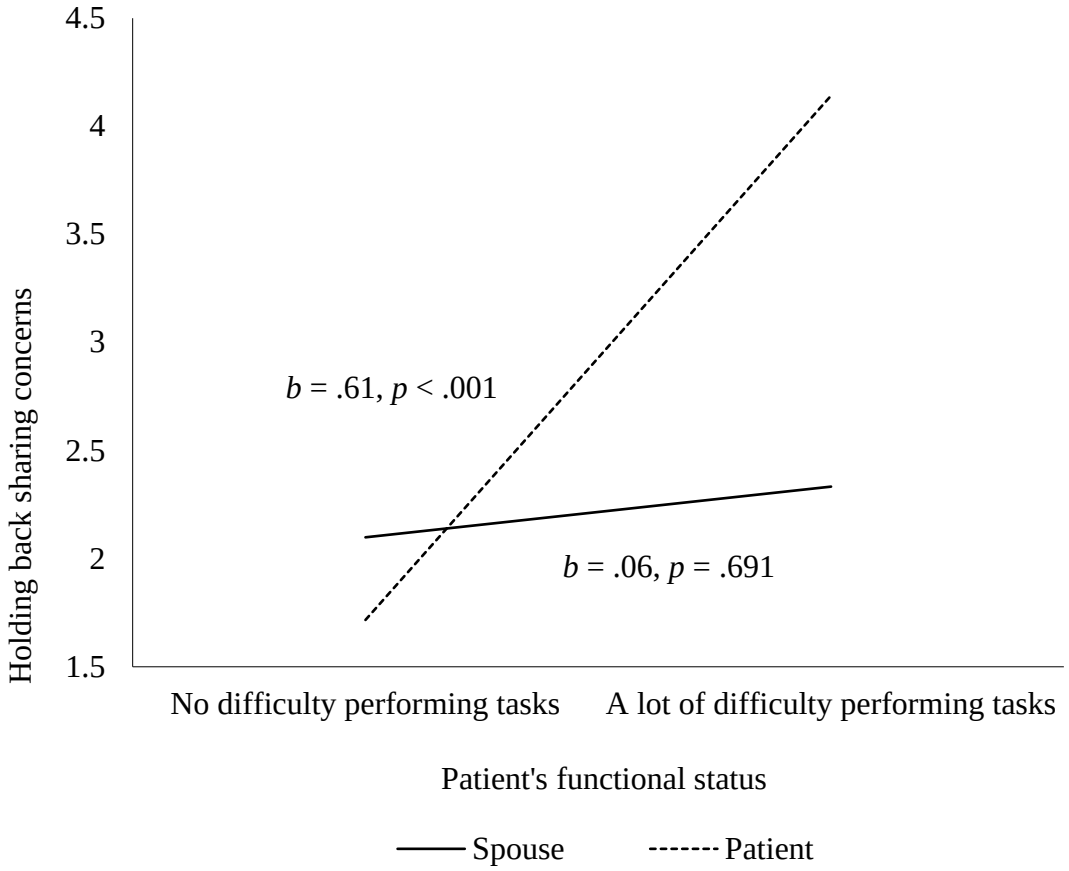

Figure 23. Predicted levels of holding back sharing concerns at baseline by Role (Patient or Spouse) across Patient's functional ability status.

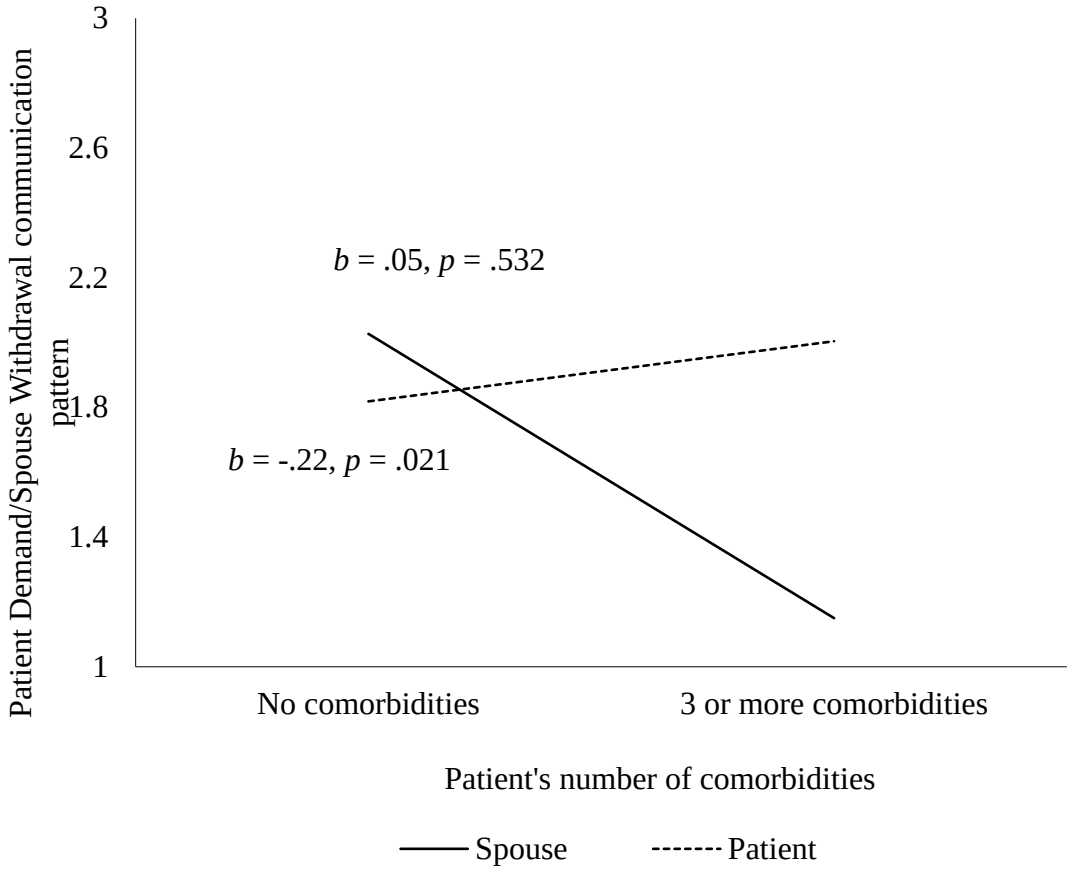

Figure 24. Predicted levels of Patient Demand/Spouse Withdrawal communication 6 months later by Role (Patient or Spouse) across the patient's number of comorbidities.

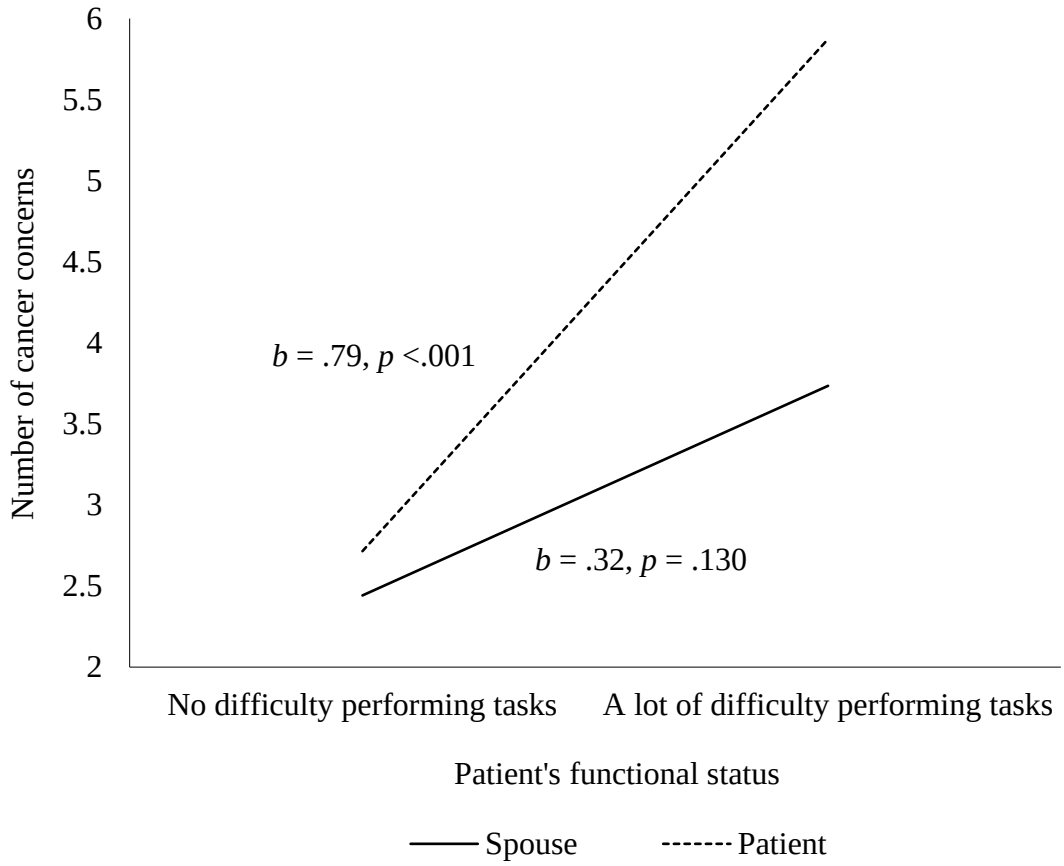

Figure 25. Predicted number of cancer concerns 6 months later by Role (Patient or Spouse) across the patient's functional status.

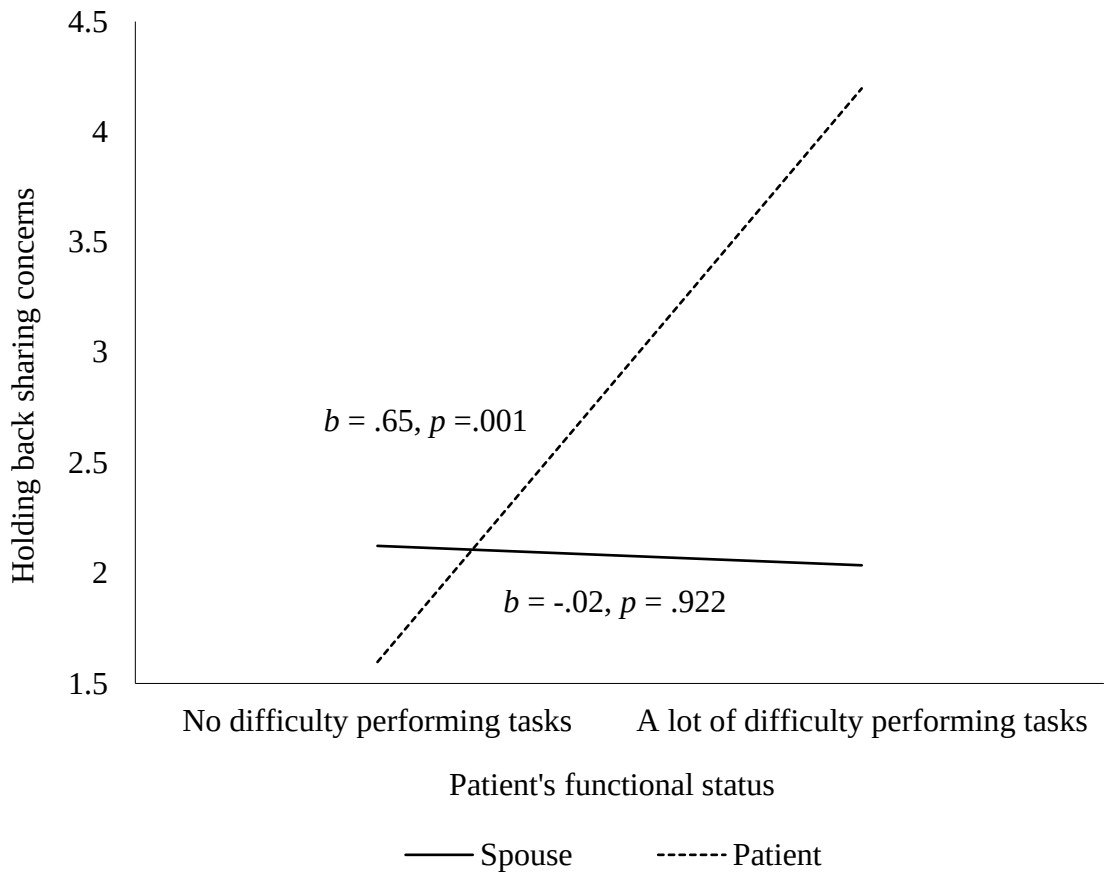

Figure 26. Predicted degree of holding back sharing concerns 6 months later by Role (Patient or Spouse) across the patient's functional status.

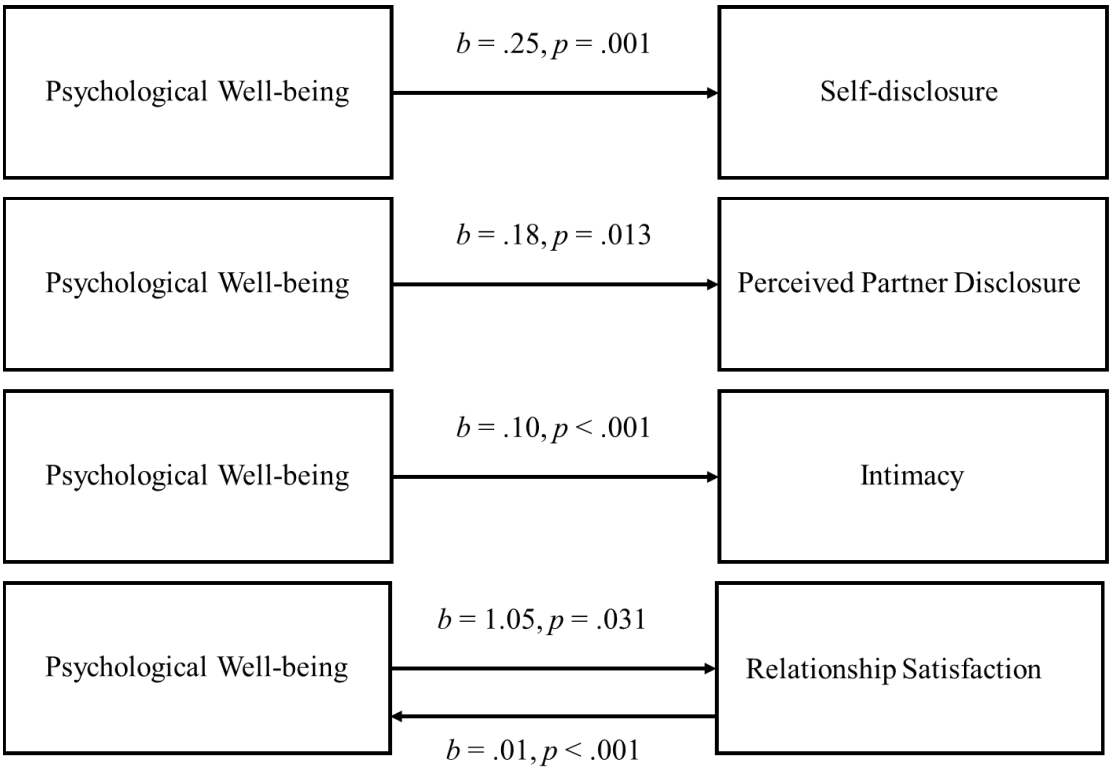

Figure 27. Summary of models examining the association between psychological well-being and relationship health. Arrows pointing toward the relationship health variables depict psychological wellbeing at baseline predicting relationship health 6 months post-baseline, controlling for baseline levels of relationship health. Arrows pointed toward psychological well-being depict relationship health at baseline predicting psychological wellbeing 6 months later, controlling for baseline psychological well-being.

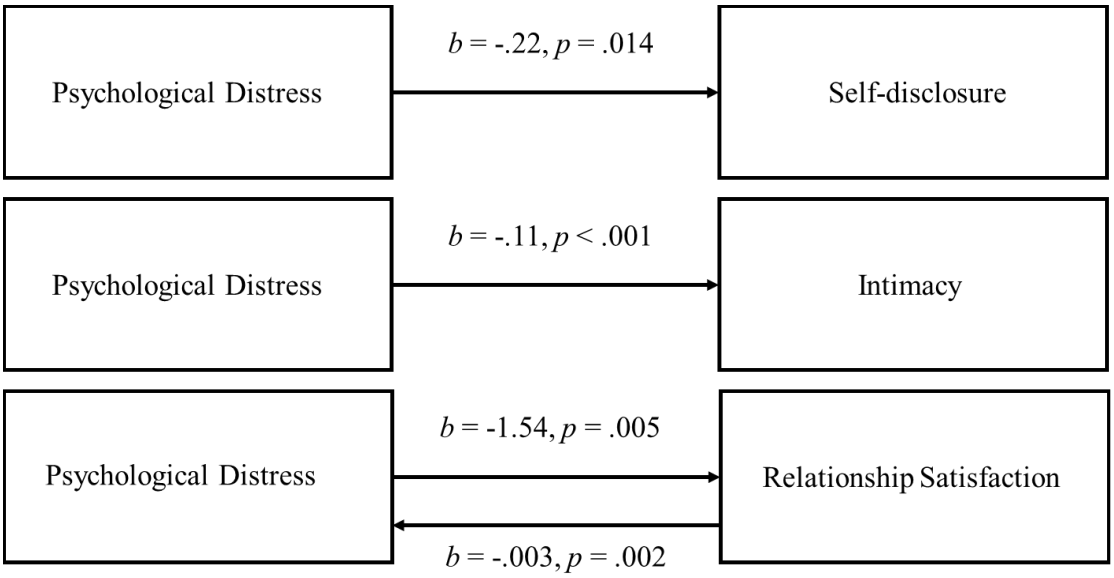

Figure 28. Summary of models examining the association between psychological distress and relationship health. Arrows pointing toward the relationship health variables depict psychological distress at baseline predicting relationship health 6 months post-baseline, controlling for baseline levels of relationship health. Arrows pointed toward psychological distress depict relationship health at baseline predicting psychological distress 6 months later, controlling for baseline psychological distress.

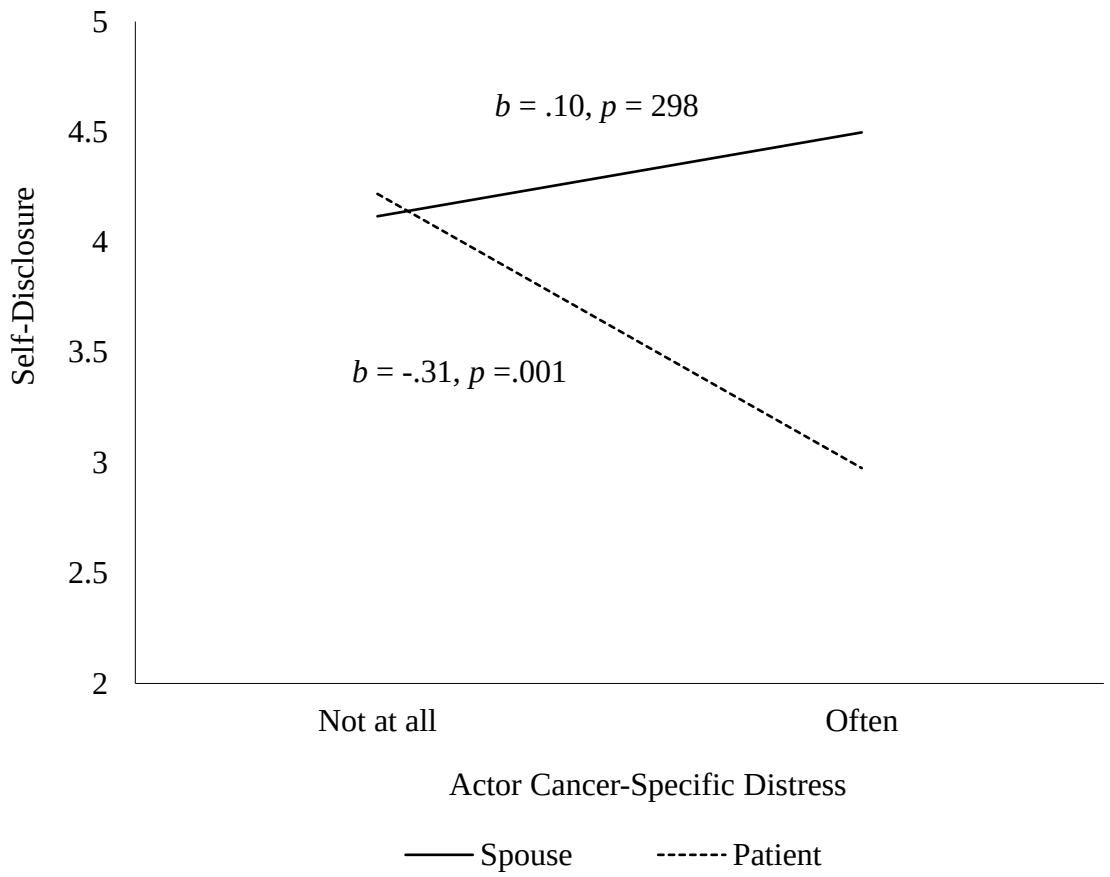

Figure 29. Predicted levels of self-disclosure 6 months later by Role (Patient or Spouse) across the individual's level of cancer specific distress at baseline controlling for the individual's levels of self-disclosure at baseline.

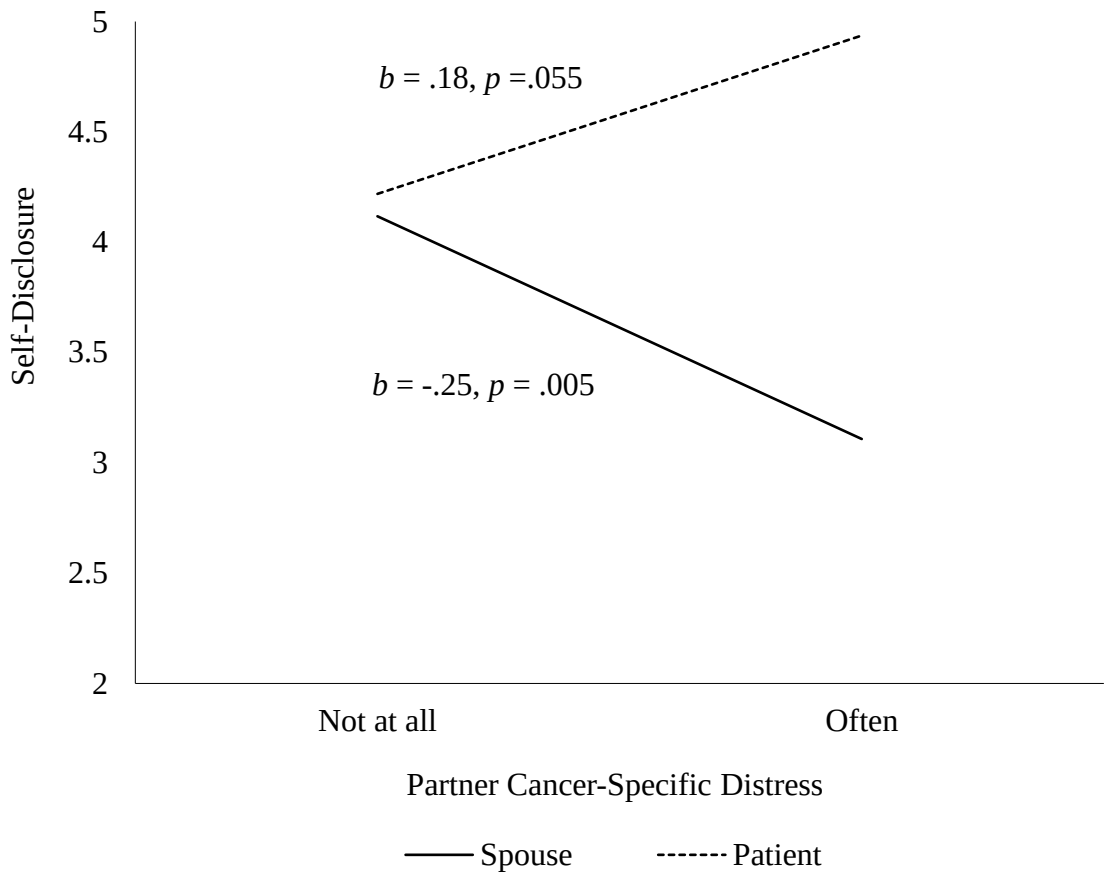

Figure 30. Predicted levels of self-disclosure 6 months later by Role (Patient or Spouse) across the partner's level of cancer specific distress at baseline controlling for the individual's levels of self-disclosure at baseline.

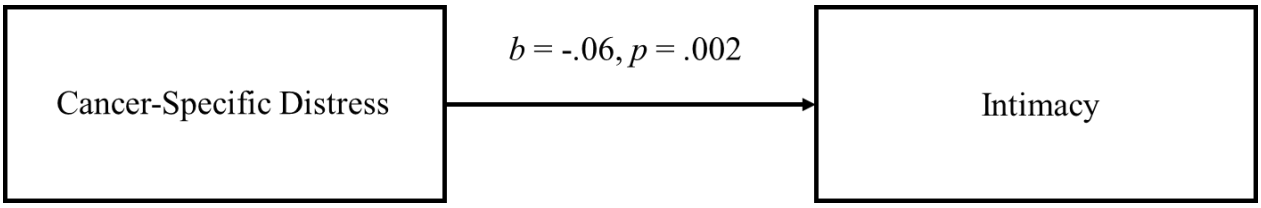

Figure 31. Model examining the association between cancer-specific distress and intimacy. Arrows pointing toward self- intimacy depict cancer-specific distress at baseline predicting self-disclosure 6 months post-baseline, controlling for baseline levels of self-disclosure.

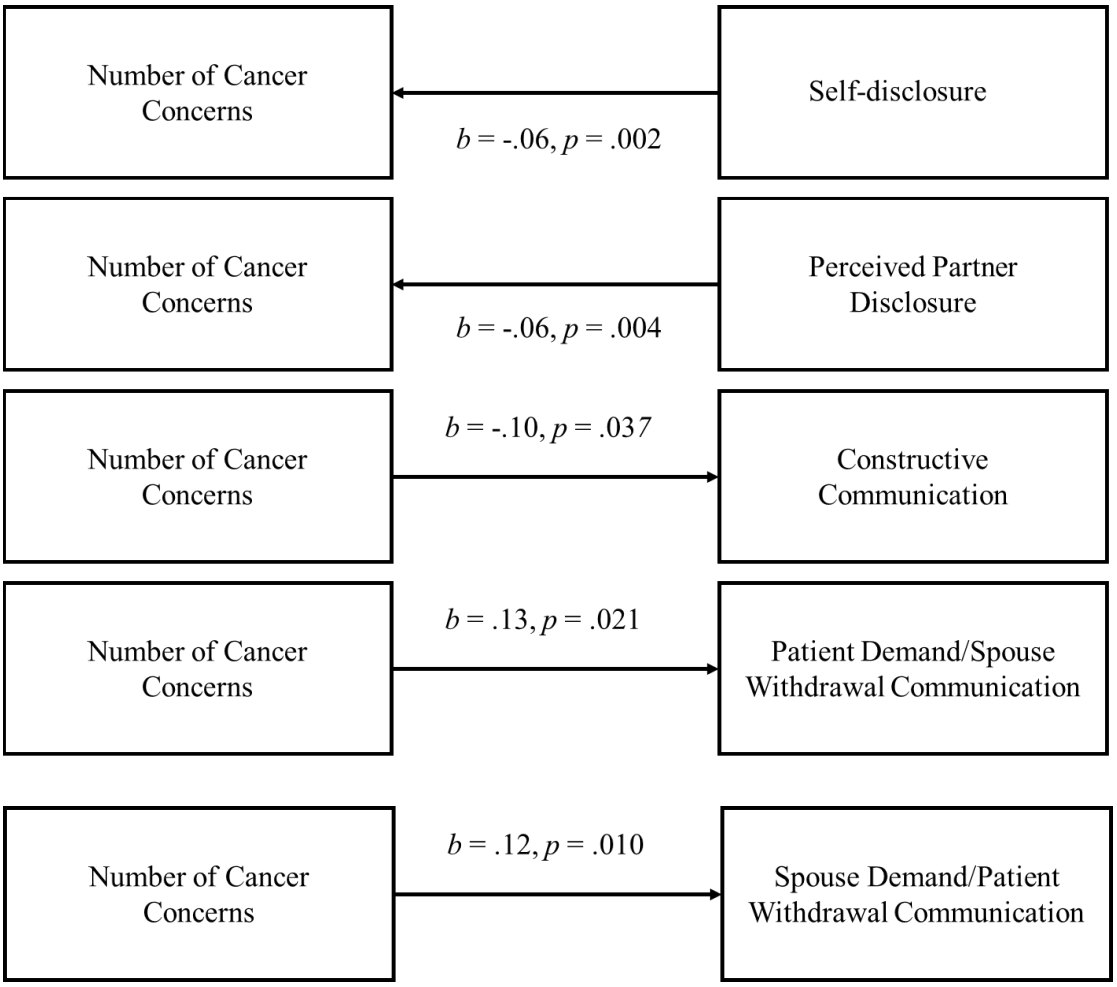

Figure 32. Summary of models examining the association between the number of cancer concerns and relationship health. Arrows pointing toward the relationship health variables depict number of cancer concerns at baseline predicting relationship health 6 months post-baseline, controlling for baseline levels of relationship health. Arrows pointed toward number of cancer concerns depict relationship health at baseline predicting number of cancer concerns 6 months later, controlling for baseline number of cancer concerns.

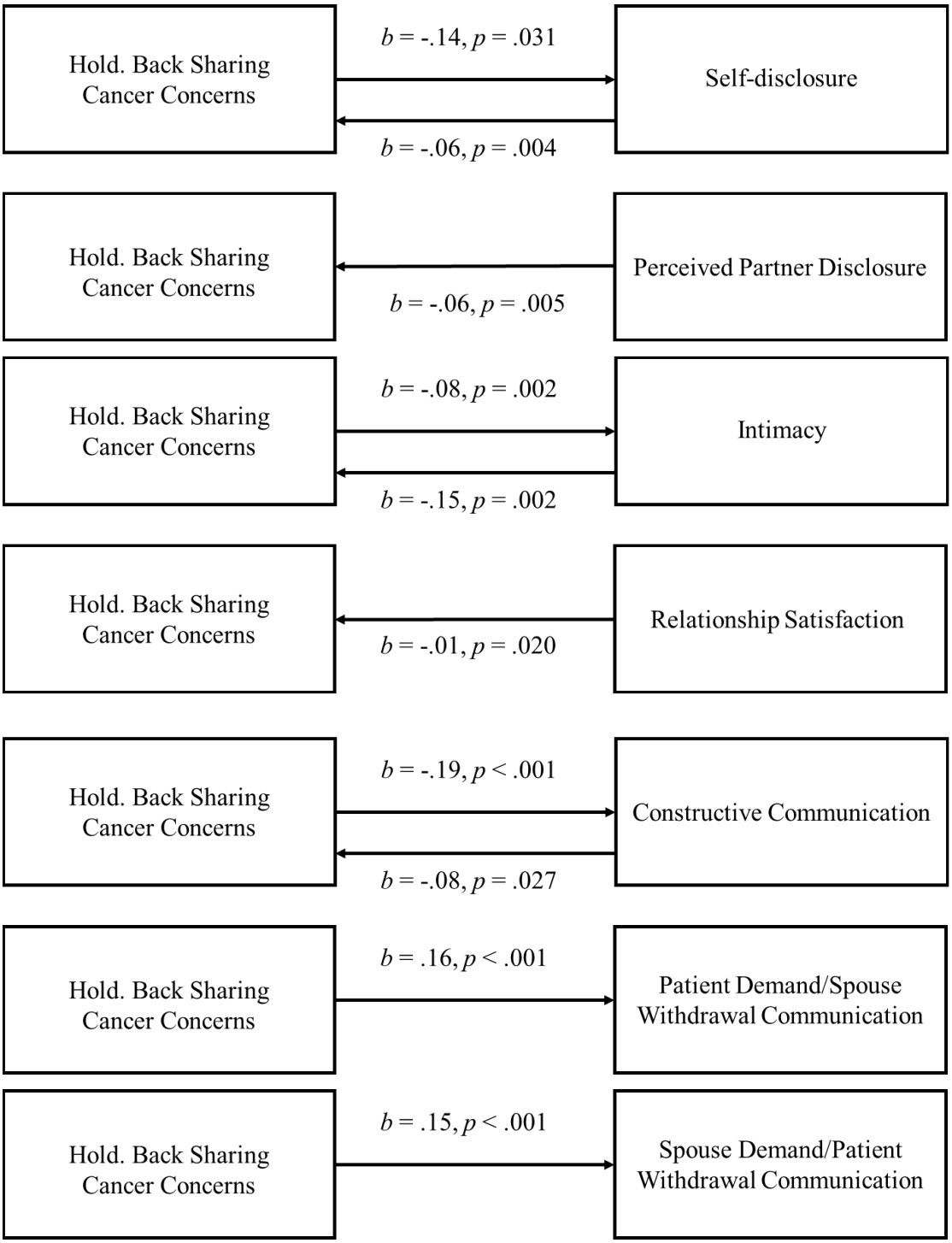

Figure 33. Summary of models examining the association between the degree to which individuals held back sharing cancer concerns and relationship health. Arrows pointing toward the relationship health variables depict the degree to which individuals held back sharing cancer concerns at baseline predicting relationship health 6 months post-baseline, controlling for baseline levels of relationship health. Arrows pointed toward the degree to which individuals held back sharing cancer concerns depict relationship health at baseline predicting number of

Figure 33. (cont'd)
cancer concerns 6 months later, controlling for baseline degree to which individuals held back sharing cancer concerns.

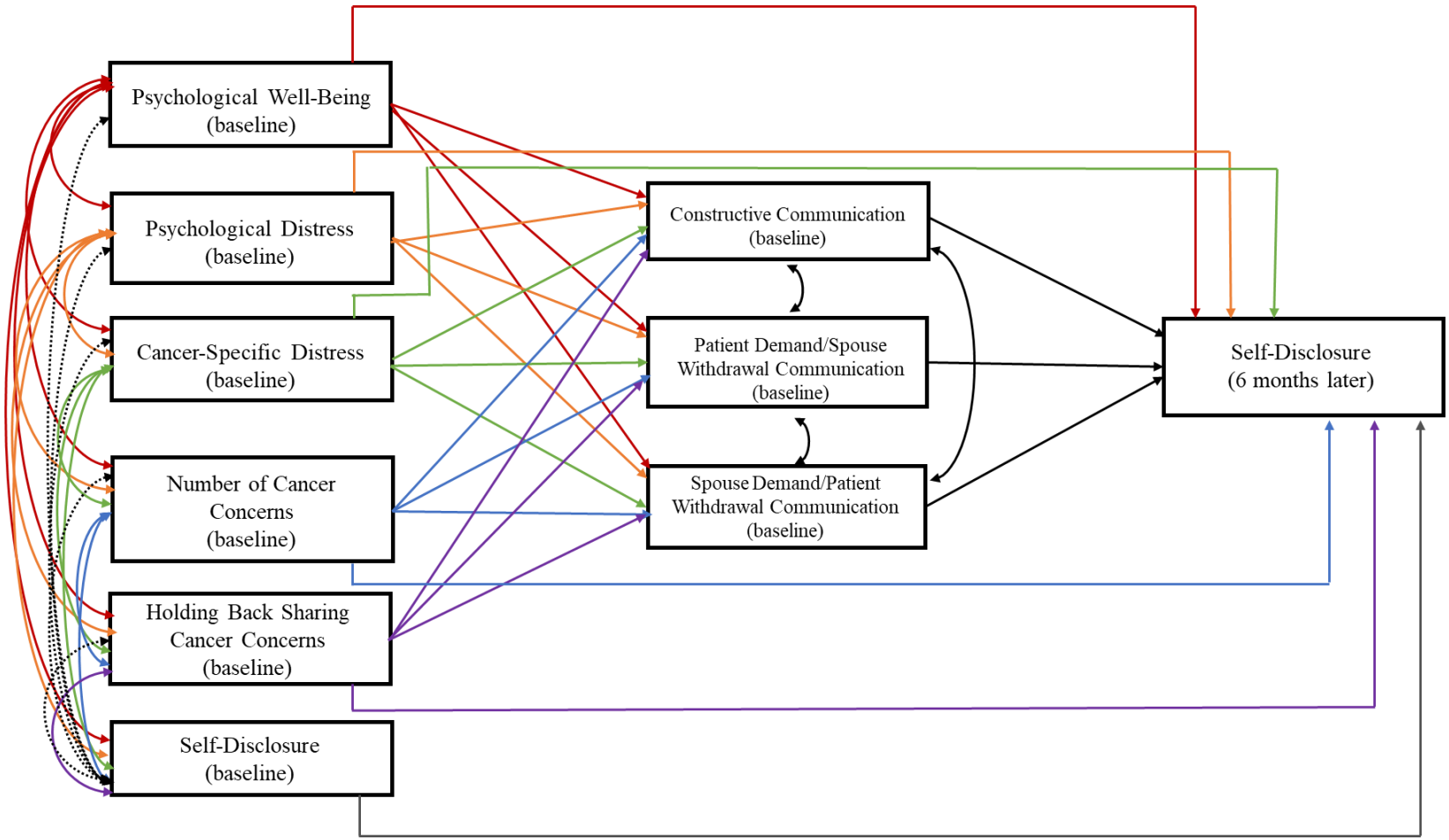

Figure 34. Multi-mediation model predicting the association between individual responses to cancer and self-disclosure through communication patterns. Red paths are for psychological well-being, orange paths are for psychological distress, green paths are for cancer-specific distress, blue paths are for the number of cancer concerns, purple lines are for the degree to which an individual held back sharing concerns, the black dashed paths are for the effect of the outcome at baseline and relationship with the five predictors, and the solid black paths display the b paths and correlations among the mediators.

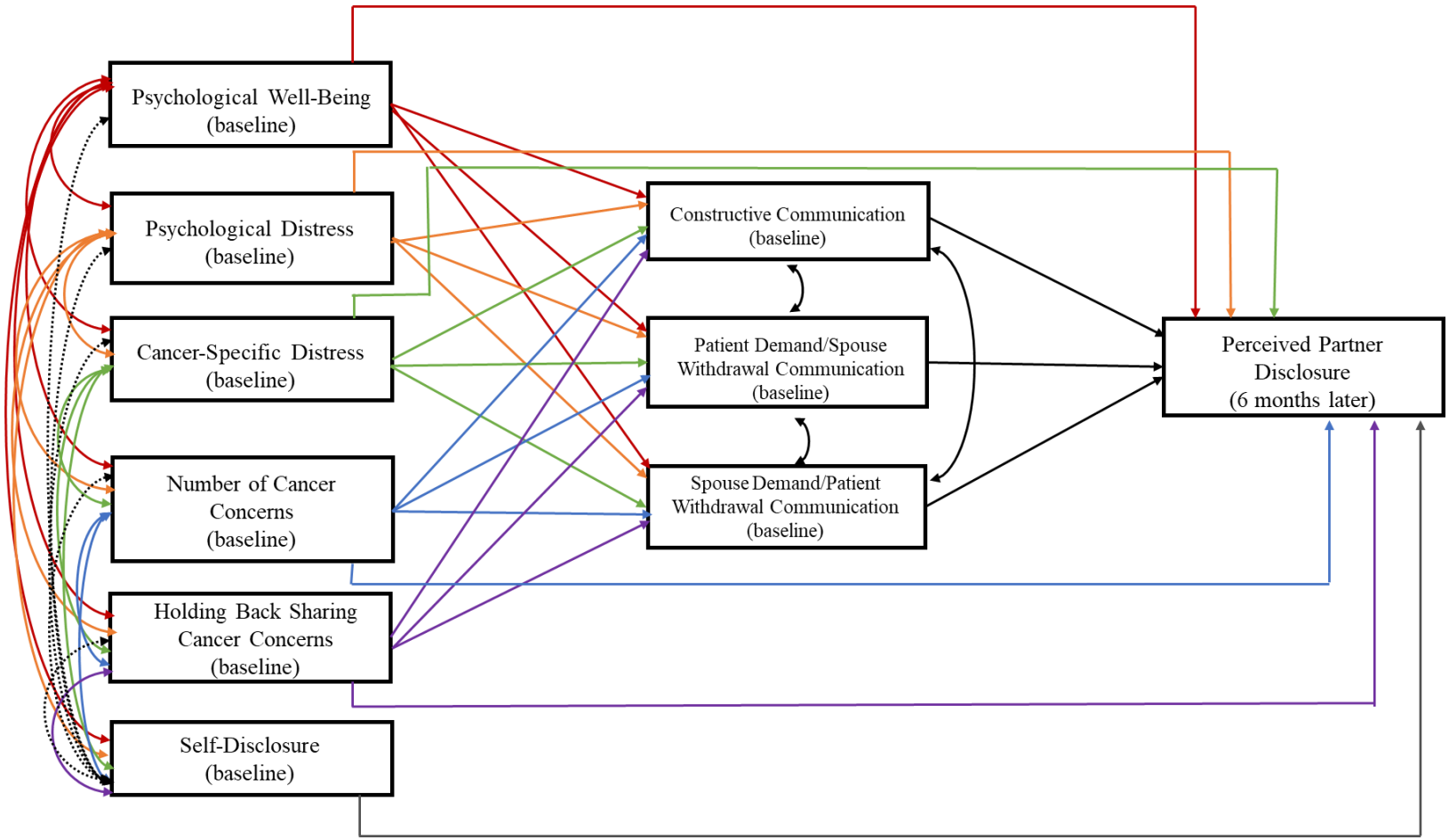

Figure 35. Multi-mediation model predicting the association between individual responses to cancer and perceived partner disclosure through communication patterns. Red paths are for psychological well-being, orange paths are for psychological distress, green paths are for cancer-specific distress, blue paths are for the number of cancer concerns, purple lines are for the degree to which an individual held back sharing concerns, the black dashed paths are for the effect of the outcome at baseline and relationship with the five predictors, and the solid black paths display the b paths and correlations among the mediators.

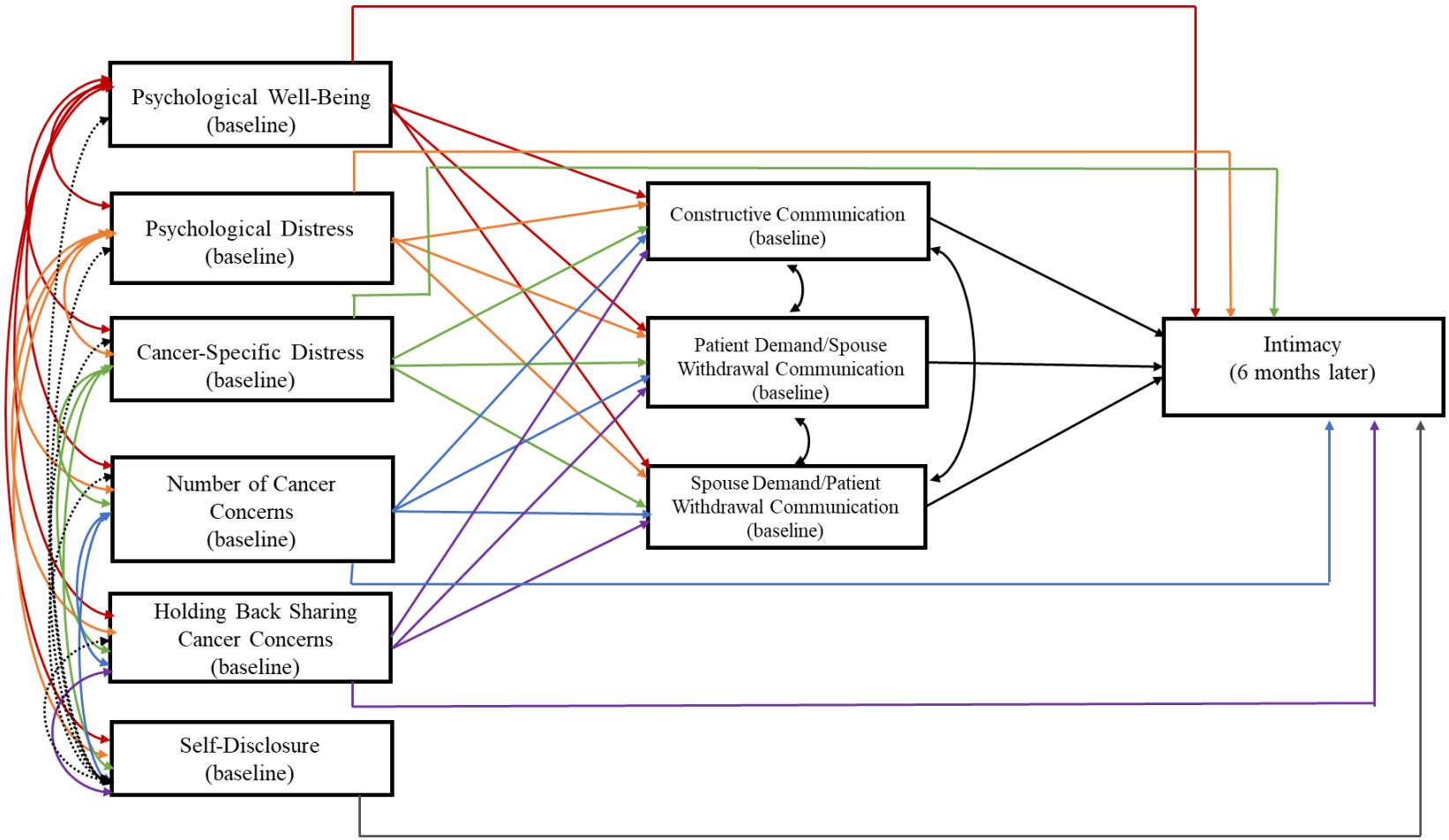

Figure 36. Multi-mediation model predicting the association between individual responses to cancer and intimacy through communication patterns. Red paths are for psychological well-being, orange paths are for psychological distress, green paths are for cancer-specific distress, blue paths are for the number of cancer concerns, purple lines are for the degree to which an individual held back sharing concerns, the black dashed paths are for the effect of the outcome at baseline and relationship with the five predictors, and the solid black paths display the b paths and correlations among the mediators.

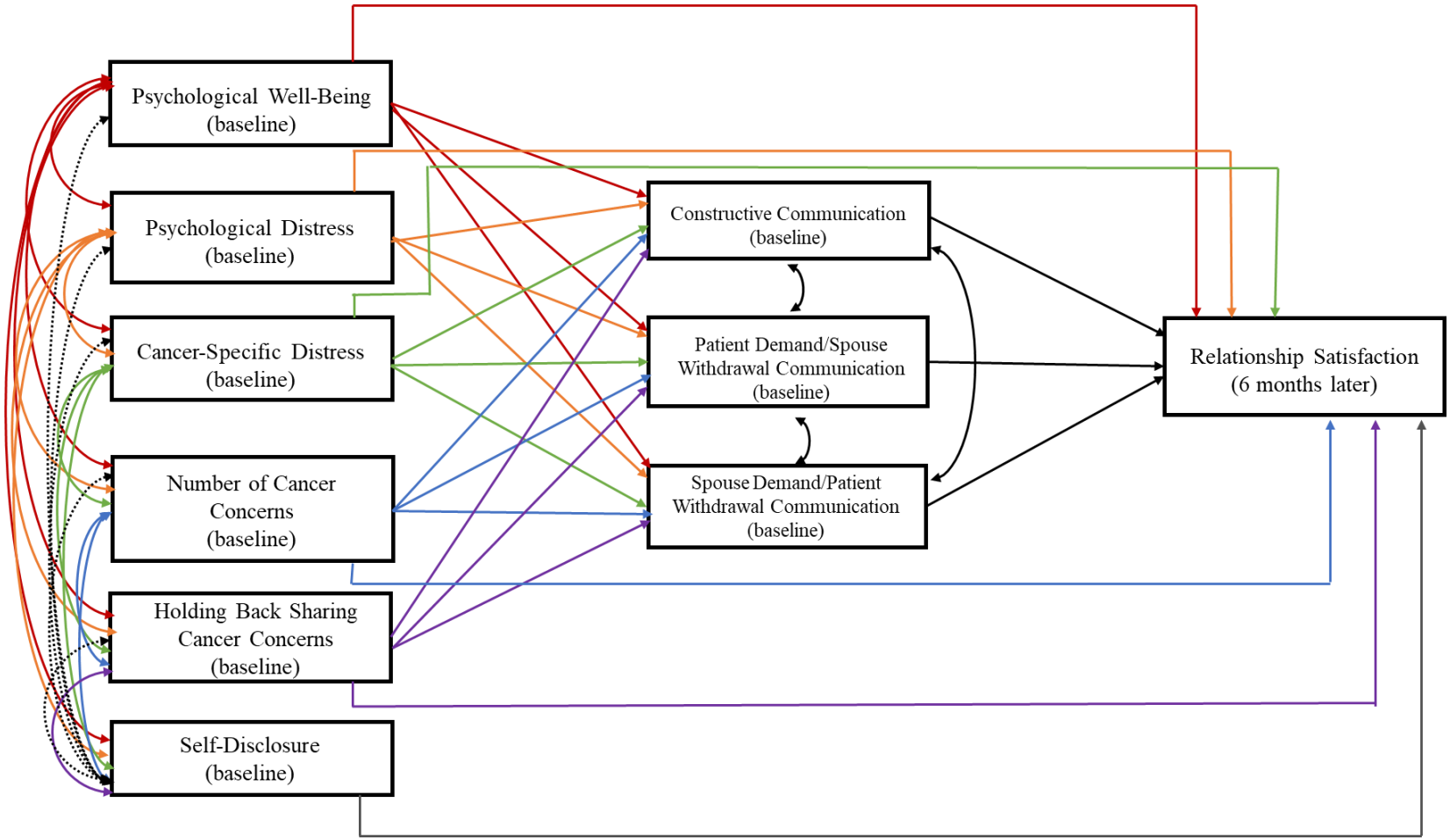

Figure 37. Multi-mediation model predicting the association between individual responses to cancer and relationship satisfaction through communication patterns. Red paths are for psychological well-being, orange paths are for psychological distress, green paths are for cancer-specific distress, blue paths are for the number of cancer concerns, purple lines are for the degree to which an individual held back sharing concerns, the black dashed paths are for the effect of the outcome at baseline and relationship with the five predictors, and the solid black paths display the b paths and correlations among the mediators.