

A CONTENT ANALYSIS OF THE COUNSELING SESSIONS OF DYADS WITH
BREAST AND PROSTATE CANCER: LINGUISTIC PREDICTORS OF
PSYCHOSOCIAL ADJUSTMENT AND THEMATIC ANALYSIS OF KEY
CONCERNS

by

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A Dissertation Submitted to the Faculty of the
DEPARTMENT OF COMMUNICATION

In Partial Fulfillment of the Requirements

For the Degree of

DOCTOR OF PHILOSOPHY

In the Graduate College

THE UNIVERSITY OF ARIZONA

2010

THE UNIVERSITY OF ARIZONA
GRADUATE COLLEGE

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Acknowledgements

Research for this study was funded by: The National Institute of Nursing Research (NINR) (1R15NR008001), and The National Cancer Institute (NCI) (R21CA113409) to Terry Badger, PI on both grants. The author would like to acknowledge the University of Arizona's College of Social and Behavioral Sciences (SBS) for the award of the Dissertation Research Grant. Special thanks to the Department of Communication for the bestowment of the 2008 Dissertation Award for Excellence in Progress and Promise in the Area of the Dissertation; and to my advisor, Chris Segrin, for all the years of invaluable help, advice, and guidance. Finally, to my family and friends, and especially my parents, thank you so much for everything, I couldn't have done it without you guys. I love you Mom and Dad. This is dedicated to you.

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ABSTRACT

The purpose of this investigation was to explore how participants' language use during counseling (overall emotional expression, positive emotional expression, and communal coping, or "we-talk") was associated with superior adjustment, as measured by four psychosocial outcome variables (depression, positive affect, negative affect, and relationship satisfaction); as well as to identify the key concerns of dyads with cancer, how concerns differed by role and sex, and if they were associated with participants' well-being. The present study was a content analysis of the counseling sessions of 43 dyads ($N = 86$) with breast and prostate cancer. Using a multi-method approach, the audio recordings of 228 counseling sessions were transcribed and analyzed linguistically (quantitatively) and thematically (qualitatively).

Results of the linguistic analyses revealed that participant's use of "we-talk" had the most consistent and beneficial effect on outcomes; specifically improved depression, negative affect, and relationship satisfaction. These findings suggest that it might not be as important how much a person expresses themselves emotionally, but rather, whether they have a close relational partner that they see as an instrumental part of their coping process and significantly intertwined in their life, which is reflected in their language use of communal coping.

Results of the thematic analyses revealed that survivors' concerns were more focused on cancer and treatment related issues, whereas partners' concerns centered on the well-being of their spouse/partner with cancer, and what they were doing to help their loved one cope with his/her illness. The overarching key concern that was intertwined in

participants' discourse was frequent discussion of relationship maintenance, negotiation, and communication issues. In addition, discussion of these concerns showed greatest benefits for women with breast cancer.

The findings of this study has implications for counselors and clinicians in that language use and topics discussed during counseling have the potential to increase psychosocial adjustment for dyads coping with cancer. The general discourse of survivors mirrored that of their partners, which indicates that helping to modify or change how one person speaks, has the potential to influence how their partner talks as well; which has implications for the well-being of both dyad members.

General Purpose: The purpose of this study is to explore how participants' language use (i.e., overall emotional expression, positive emotional expression, and communal coping, or "we-talk") is associated with superior treatment success, as measured by positive psychosocial adjustment (i.e., depression, positive affect, negative affect, and relationship satisfaction); as well as to identify the major concerns of dyads with cancer that emerge through counseling, and how the concerns most often expressed are associated with psychosocial outcomes.

Specific Aims for Part I: Language Use & Psychosocial Outcomes

Primary Aim: To measure the effect of language use on psychosocial outcomes, by examining overall emotional expression, positive emotional expression, and communal coping as predictor variables.

Secondary Aim: To measure change in language use over time (i.e., overall emotional expression, positive emotional expression, and communal coping) and psychosocial outcomes (to determine what linguistic indicators predict improved outcomes).

Tertiary Aim: To measure potential actor-partner effects of language use on survivors and partners' psychosocial well-being and relationship satisfaction.

Specific Aims for Part II: Thematic Analyses of Counseling Sessions

Primary Aim: To identify the key concerns of dyads with breast and prostate cancer.

Secondary Aim: To examine differences in key concerns by role (patient-partner) and sex.

Tertiary Aim: To assess how the various key concerns predict psychosocial well-being (how those concerns are associated with participant's improved psychosocial outcomes).

CHAPTER I

Introduction and Literature Review

Introduction

Past research has shown that the words people use are significantly indicative of their psychological well-being (Chung & Pennebaker, 2007; Simmons, Gordon, & Chambless, 2005), and examining spoken or written word choices provides a window to an individual's cognition and insights into people's characters (Lee & Peterson, 1997; Pennebaker & King, 1999). Embedded in texts are clues to the regularities in human thought; which once decoded, are useful guides for understanding past and future behavior (Pennebaker & King, 1999). To date, text analyses of language use have provided researchers with considerable insight into people's emotional and physical health states (Chung & Pennebaker, 2007; Mehl, 2005; Pennebaker & Lay, 2002; Simmons et al., 2005). Existing studies on the psychometrics of language use suggest that people's word choice is sufficiently stable over time and consistent across topics to use language as an individual difference measure (Pennebaker, Mehl, & Niederhoffer, 2003).

Within a cancer or other health-related context, researchers have explored different features of language use such as the extent of emotional expression in written narratives and patients' adjustment to cancer (e.g., Low, Stanton, & Danoff-Burg, 2006; Owen et al., 2006); or the prognostic significance of spouse "we-talk" in couples coping with heart failure (e.g., Rohrbaugh, Mehl, Shoham, Reilly, & Ewy, 2008). Others have conducted content analyses of audio-recorded conversations to identify the core concerns and the cancer-related threats most frequently discussed by dyads with cancer (e.g.,

Shands, Lewis, Sinsheimer, & Cochrane, 2006; Ullrich, Rothrock, Lutgendorf, Jochimsen, & Williams, 2008). However, researchers have yet to confirm which aspects of language use are most predictive of positive psychological adjustment during counseling, and how the overarching concerns of people with cancer and their partners are associated with psychosocial outcomes.

Therefore, the purpose of this study is to explore how participants' language use (i.e., emotional expression and "we-talk") is associated with superior treatment success, as measured by positive psychosocial adjustment; as well as to identify the major concerns of dyads with cancer that emerge through counseling, and how the concerns most often expressed are associated with psychosocial outcomes. In this study, psychosocial adjustment is operationalized as four variables: depression, positive affect, negative affect, and relationship satisfaction. Specifically, this investigation seeks to: (1) analyze specific features of participants' language use during counseling (i.e., overall emotional expression, positive emotional expression, and communal coping or "we-talk") and its association with treatment success, as indicated by measures of psychosocial well-being; and how change in language use over time suggests improvement or deterioration in outcomes; and (2) conduct a thematic analysis to identify the topics most frequently discussed by participants during counseling, explore differences in key concerns by role and sex; and how the key concerns are associated with psychosocial outcomes after the counseling intervention ended.

Background of the Cancer Experience

Epidemiology

Breast cancer and prostate cancer are the most frequently diagnosed cancers in men and women; they account for 25% and 27%, respectively, of all new cases diagnosed per sex every year (American Cancer Society, 2010). In 2009, it is estimated that 192,370 women will be diagnosed with breast cancer, and 192,280 men will be diagnosed with prostate cancer. Both breast and prostate cancer are the second leading cause of cancer-related deaths in men and women; approximately 40,170 women and 27,360 men are expected to die from breast and prostate cancer this year (American Cancer Society, 2010).

However, breast and prostate cancer are highly treatable diseases with early diagnosis. The most recent data indicate that the survival rate at five years after diagnosis is 88.7% for women diagnosed with breast cancer, and 98.9% for men diagnosed with prostate cancer (American Cancer Society, 2010). The death rates from breast cancer have steadily decreased in women since 1990 (from 2-3.2% per year), which can be attributed to progress in both earlier detection and improved treatments for breast cancer (American Cancer Society, 2010). Further, the incidence rate of prostate cancer has been decreasing 4.4% per year since 2001, which is due mostly to changes in the past two decades that now include prostate cancer screening with the prostate-specific antigen (PSA) blood test (American Cancer Society, 2010).

Given the improvements in early diagnosis and improved routine screenings and treatments for cancer, the number of people living with cancer continues to grow each

year (Chan et al., 2003; Ferrante et al., 2007). The National Cancer Institute (2009) estimated that approximately 2.5 million women with a history of breast cancer were alive in January 2006 (and although most of these individuals were cancer-free, others still may have been undergoing treatment). Therefore, there has been a progressive shift in focus from mortality to quality of life issues such as patients' psychosocial well-being and improving the coping abilities of cancer survivors (Baider et al., 2004).

Quality of Life (QOL)

The diagnosis and treatment of cancer can be exceptionally taxing on patients' emotional and physical well-being, which has negative implications for their overall health and quality of life (Michaelson et al., 2008; Helgeson, Snyder, & Seltman, 2004). Quality of life (QOL) was first described over 60 years ago by the World Health Organization (WHO) in their definition of health as, "a state of complete physical, mental, and social well-being – and not merely the absence of disease or infirmity" (WHO, 1948). More recently, cancer researchers have defined QOL as a constellation of factors which include components of one's physical, social, emotional, and spiritual well-being (Ferrell, Grant, Funk, Otis-Green, & Garcia, 1997a; Ferrell, Grant, Funk, Otis-Green, & Garcia, 1997b; Ferrell, Grant, Dean, Funk, & Ly, 1996). Even though breast cancer and prostate cancer originate in different sites of the body, the side effects experienced as a result of a cancer diagnosis and treatment regimes are similar; such as depression, anxiety, fatigue, and sexual dysfunction (Ullrich et al., 2008). For women with breast cancer, depression and fatigue are two of the most common distressing outcomes (Badger, 2002; Badger, Braden, & Mishel, 2001; Badger, Meek, Verran, &

Effken, 2001; Badger, Segrin, Meek, Lopez, & Bonham, 2004; McDaniel & Nemeroff, 1993; Newport & Nemeroff, 1998; Pasacrete, 1997). Men with prostate cancer typically deal with issues relating to urinary function (i.e., urinary incontinence), bowel function, and issues with sexual functioning (i.e., erectile dysfunction) (Janda et al., 2000; Krongrad, Litwin, Lai, & Lai, 1998; Litwin & Geffen, 2003; Waldron, 2002).

As a psychological outcome, depression affects both men and women with breast and prostate cancer. Approximately 10-25% of women with breast cancer are diagnosed with a major depressive disorder (Fann et al., 2008), and approximately 16% of men with prostate cancer experience clinically significant levels of depression (Sharpley & Christie, 2007). As a whole, psychological or emotional distress, like depression, is problematic for all cancer patients because it can: (1) increase other side effects associated with treatment, (2) reduce patients' ability to manage those effects, and (3) negatively influence patients' QOL (Badger, Braden & Mishel, 2001; Ell, Sanchez, & Vourlekis, 2005; Monahan et al., 2007; Northouse et al., 2007).

Emotional Distress and Health Outcomes

Psychological or emotional distress exists on a continuum from normal and ordinary feelings of sadness and vulnerability, to more acute feelings of panic and social isolation, and clinically significant mental health disorders such as depression, anxiety, or an existential crisis (National Comprehensive Cancer Network, 2008). Research has shown that psychological or emotional distress is a significant problem for cancer patients because it can negatively influence recovery from cancer (Alferi, Carver, Antoni, Weiss & Duran, 2001; Han, Collie, Koopman, Azarow, Classen, & Morrow, 2005), and

has implications for disease progression (Cousson-Giele, Bruchon-Schweitzer, Dilhuydy, & Justand, 2007; Weihs, Enright, & Simmens, 2008).

For example, Weihs, Enright, Simmens, and Reiss (2000) found that negative affect (especially when concurrent with restriction of emotions) predicted shortened survival rate among women with breast cancer. Higher emotional distress predicted a shorter time interval from diagnosis to recurrence, and shortened survival time in women with breast cancer (Gilbar, 1996; Levy et al., 1985). Not only can depression suppress a person's regular or healthy immune functioning (Carlson, Specca, Patel, & Goodey, 2003; Giese-Davis et al., 2006), but it can also negatively affect long-term survival rates if a person's depression is persistent and severe (Cousson-Giele et al., 2007; Giese-Davis & Spiegel, 2003; Spiegel & Giese-Davis, 2003; Weihs et al., 2008). A reasonable explanation for these findings is that an individual's physical health suffers due to an increase activation of stress, which agitates normal physiological processes and creates disturbances in one's physical health (e.g., Sapolsky, 2004). Therefore, positive psychological adjustment to cancer is critical given that it has been linked to cancer recovery and length of survival (Greer, Morris, & Pettingale, 1979).

A "Relationship" Disease

A major life event such as a cancer diagnosis and the ensuing treatment regimes (i.e., chemotherapy, radiation, surgery) often cause dramatic changes in relationships and roles, and affects both the cancer patients and their close family members (Weihs et al., 2000). Patients and their partners consistently report the negative effects that their cancer diagnosis and treatment has had on themselves and their family members; and cite

anxiety, stress, depression, and uncertainty as common problematic outcomes (Grunfeld et al., 2004). Indeed, Mellon and Northouse (2001) found that partners of men with prostate cancer reported a 63% decline in the family's overall QOL after diagnosis of cancer. Given that cancer often affects the psychological and emotional well-being of the patient with cancer and his/her spouse or partner, it is commonly considered to be a relationship disease (Alferi et al., 2001).

Social support, especially from family members or a spouse, is associated with lower psychological distress in patients with breast cancer (Baider, Ever-Hadani, Goldzweig, Wygoda, & Peretz, 2003; Baider et al., 2004; Hoskins, 1995; Hoskins et al., 1996; Northouse, 1988, 1989; Northouse, Templin, & Mood, 2001). However, partners may have difficulty providing social support because of their own distress (Grunfeld et al., 2004; Manne, 1998; Manne et al., 2006, 2007; Northouse, Templin, Mood, & Oberst, 1998); given that approximately 30% of caregivers or partners experience significant emotional distress or some type of mood disturbance (Hagedoorn, Sanderman, Bolks, Tunistra, & Coyne, 2008; Pitceathly & Maguire, 2003). Indeed, Braun, Mikulincer, Rydall, Walsh, and Rodin (2007) found that 40% of cancer patients' spouses scored above the cutoff range for clinically significant levels of depression.

Further, emotional distress and QOL indicators are decidedly interdependent in couples coping with cancer (Hagedoorn et al., 2008; Lewis & Hammond, 1992; Northouse et al., 2007; Northouse & Swain, 1987; Segrin et al., 2005; Segrin et al., 2007). Segrin et al. (2006) illustrated that breast cancer patients' level of anxiety was significantly associated with that of their partners' anxiety over a period of 10 weeks.

Kornblith et al. (2001) found that prostate cancer partners' psychological distress and well-being fluctuated up and down in relation to the patients' physical and psychological well-being over a period of six months. Northouse et al. (2007) reported that prostate cancer patients and their spouses were significantly more alike than dissimilar on measures of physical, social, and emotional well-being. In a recent meta-analysis of the existing literature on interdependence and cancer, Hagedoorn et al. (2008) found a moderate degree ($r = .29$) of interdependence in levels of distress in couples coping with cancer.

Several studies have examined cross-over effects of interdependence on adjustment and well-being in married couples living with breast cancer (e.g., Dehle & Weiss, 2002; Northouse, Templin & Mood, 2001; Whisman et al. 2004). Dehle and Weiss (2002) found that husband's anxiety (but not wife's anxiety) predicted their own and their wife's subsequent marital adjustment. Whisman et al. (2004) showed that individual's self-reported marital satisfaction was predicted by their own, but not their partner's, level of anxiety. Northouse, Templin and Mood (2001) reported that although marital satisfaction was not significantly associated with adjustment among women with breast cancer, it was significantly associated with the adjustment of their husbands. Using structural equation analyses, Segrin et al. (2006) determined that partners' anxiety significantly influenced breast cancer patients' levels of anxiety, depression, fatigue, and symptom management. Further, Dorros, Card, Segrin, and Badger (2010) revealed a pattern of influence whereby the interaction of high levels of depression coupled with high levels of stress in women with breast cancer was associated with lowered physical

health and emotional well-being in their partners. Taken together, these findings suggest that relational interdependence has the potential for cross-over effects in distress and marital well-being in patients and partners living with cancer.

Although members of dyads with cancer experience similar levels of emotional distress (Manne, 1998; Manne et al., 2006; Northouse et al., 2007), some research has found that partners experience even *higher* levels of emotional distress than the patients themselves (Grunfeld et al., 2004; Hagedoorn et al., 2008; Lewis, 2004; Lewis, Cochrane, & Fletcher, 2005; Lewis et al., 2008; Manne et al., 2006; Northouse et al., 1998; Pitceathly & Maguire, 2003; Segrin, Badger, Meek, & Bonham, 2006). Partners often disregard their own needs and overextend themselves to assist their loved ones with cancer, and thus are particularly vulnerable to stress and burnout; and as a consequence, often experience high levels of distress (du Pre, 2010). Indeed, Braun et al. (2007) found that 23% of spouses in their study had higher levels of depression than the patients with cancer. However, recent findings from Hagedoorn et al.'s (2008) meta-analysis revealed that it was gender, not role, that determined the levels of distress in couples coping with cancer. Specifically, women consistently reported higher levels of distress than men, regardless of their role (i.e., patient or partner) (standardized mean difference = .031) (Hagedoorn et al.).

Partners' emotional well-being is important because their distress can hinder effective communication and negatively influence marital adjustment and QOL of both dyad members. For example, partners' emotional distress can contribute to ineffective communication with their spouse about important issues that need to be discussed

(Hilton, 1994; Manne et al., 2003; Manne et al., 2004), which can affect how the dyad members cope with challenges as a couple (Lewis et al., 1989; Walker, 1997). Further, a partner's depressed mood can strain the relationship and affect their ability to provide adequate support to the patient with cancer (Baider et al., 2003, 2004). In sum, a vicious cycle ensues in which partners' distress affects their ability to provide support to their spouse with cancer – and as a result, the patient with cancer is less able to obtain needed support from his/her partner, which has negative consequences for both dyad members. Wooten et al. (2007) found that dyadic adjustment and relationship satisfaction were negatively associated with cancer patients' emotional distress; which underscores the need for a partner's ability to provide support to the person with cancer. As a whole, these findings highlight the importance to focus on the distress experienced by the couple – rather than only the individual – living with cancer (e.g., Cochrane & Lewis, 2005; Dorros et al., 2010; Fang, Manne, & Pape, 2001; Hoskins, 1995, 1997; Hoskins et al., 2001; Lewis et al., 2008; Segrin et al., 2007).

Strengths of Present Data Set and Textual Analysis as Methodological Approach

The Unique Nature of the Present Data for Investigation

The data used in this study comes from two research grants which examined the effectiveness of telephone-counseling interventions for dyads with breast and prostate cancer (Badger et al., 2002; 2004; 2005; Badger & Segrin, 2006). The present data set has a number of features that make it compelling to use for this investigation. In particular, this data set offers: the inclusion of data from both patients and partners (dyadic data); a sample of dyads with two different types of cancer (breast and prostate);

various indicators of psychological distress which have implications for QOL and recovery (i.e., depression, positive/negative affect, relationship satisfaction); the measurement variables span across three time points which gives the ability to track changes in measurement variables over time (which is suggestive of improvement or deterioration); the study participants were involved in an interpersonal counseling intervention (which has implications for treatment success, and/or who benefits from interpersonal counseling); the counseling sessions were audio-recorded (thus providing a sample of private, spontaneous, and natural discussions); the counseling sessions are longitudinal which provide an opportunity to track changes in language use during the intervention and improvement in outcomes (to identify markers of treatment success); the counseling sessions can be transcribed and analyzed for language use/word choice and psychosocial outcomes, the transcripts can be analyzed for thematic content (to identify key concerns of dyads with cancer); the specific concerns can be compared within couples and across cancer type and role while controlling for gender (by role [patient/partner], cancer type [breast/prostate] and sex [male/female]); and the key concerns expressed by participants during counseling can be mapped onto subsequent psychosocial outcomes after counseling ended (to identify if the key concerns were associated with psychosocial adjustment and well-being).

In addition to having dyadic data from two different types of cancer, the measurement variables of distress are arranged longitudinally over three time points (pre- and post counseling); which is a critical component of the data set because, it is change over time that is suggestive of improvement or deterioration after the intervention.

Therefore, these distress variables are good markers of who in the sample responds to counseling and why those people are getting better (i.e., emotional expression, communal coping, key concerns, and by participants' gender/role). Finally, the type of approach used to measure the data, textual analysis, is a powerful methodology to use in research, which will be discussed in detail in the following section.

It should be noted that the majority of psychosocial research on people coping with cancer has been conducted on samples of women with breast cancer (Stanton, 2006); and less than 5% of psychosocial interventions have included men (Jacobson et al., 2006). Therefore, this particular data set provides a unique opportunity to analyze the language use, key concerns, and psychosocial outcomes of dyads with breast and prostate cancer in many various ways that have not yet been addressed in the literature, and represent important variables in furthering linguistic and psychosocial cancer knowledge.

Advantages and Strengths of Textual Analysis

A textual analysis is defined as, “any systematic reduction of a flow of text (or other symbols) to a standard set of statistically manipulable symbols representing the presence, intensity, or the frequency of some characteristics relevant to social science” (Shapiro & Markoff, 1997, p. 14). More specifically, content analyses of texts can be used to measure: (1) cognitive content—what an individual is thinking, (2) cognitive styles—how individuals think, or the interrelationships among specific contents, and (3) cognitive processes—how the individual processes information over time (Lee & Peterson, 1997).

Several strengths unique to quantitative content analyses of texts is that it provides: an unobtrusive assessment technique, data collection is less constrained and analysis provides a flexibility that rivals other methods (data analyses are not limited by predetermined questions and answers), ability to study data in a specific context (to make replicable and valid inferences from data to the context), the ability to handle massive amounts of data (through the use of computers), longitudinal studies can be conducted retrospectively (i.e., useful for studying changes in messages over time), the opportunity to use a multimethod approach (i.e., quantitative and qualitative), and the attainment of rich data (Mehl, 2005).

In addition, textual analysis may be less vulnerable to social desirability bias than traditional self-report methods (Mehl, 2005; Pennebaker et al., 2003). For example, language use and word choice may be a better indicator of psychological distress than individual's self-reports. Pennebaker and King (1999) found that participants' use of negative emotion words was significantly correlated with alcohol and tobacco use, even though their self-reports of neuroticism were not. Their findings indicated that word choice was better able to inform them of an underlying distress, despite what participants reported (Pennebaker & King, 1999). Consistent with these findings, Rohrbaugh et al., (2008) showed that measuring couple's use of "we-talk" (as an implicit marker of communal coping) during conjoint home interviews, had greater prognostic value in predicting the course of heart failure symptoms than did participants' self-reports of the same construct (i.e., communal coping), and other reports of marital quality.

The beauty of naturalistic inquiry is that it is unedited, unvarnished, and represents a real or “naked” view of the content (Mehl, 2005; Pennebaker, 2002). The analysis of natural conversations, where utterances are spontaneous and not planned, provides a valuable insight into the human condition (Groom & Pennebaker, 2002; Pennebaker, Mehl, & Niederhoffer, 2003). Further, analysis of natural language from dialogues recorded for purposes other than linguistic analyses, have an advantage of being externally valid (Chung & Pennebaker, 2007). Therefore, using a textual analysis approach to the linguistic component provided by the audio-recorded counseling interventions in this data set provides an exceptional opportunity to analyze the language use and psychosocial outcomes of dyads with breast and prostate cancer in various ways that have not yet been addressed in the literature, and that can contribute to the body of research in language use and health outcomes and dyadic adjustment to cancer.

Theoretical Rationale

There are several theoretical propositions and assumptions that guide this investigation, namely: (1) language as a cognitive reflection of thought, (2) the disclosure paradigm and general model of inhibition, and (3) the importance of close relationships, marriage, and relational quality on well-being and health. These three theoretical assumptions will now be discussed in more detail.

Language as a Cognitive Reflection of Thought

Language forms the basis of human communication, and is the primary means by which we understand ourselves and others (Pennebaker, 2002). Words are the building blocks of meaning, social interaction, and language itself; and are used to convey

emotions and thought, to tell stories, and understand the world (Chung & Pennebaker, 2007; Groom & Pennebaker, 2002). People use language to engage in symbolic exchanges with others, establish a coherent sense of the self, construct a shared understanding of the world, communicate past and present thoughts and feelings, and achieve interpersonal objectives (Chung & Pennebaker, 2007; Forgas, 1999; Mead, 1934). Therefore, language pervades social life (Krauss & Chiu, 1998) and is the dominant medium of interpersonal behavior (Forgas, 1999). Language is thought to be a reflection of underlying cognitive activity of the speaker (Chung & Pennebaker, 2007), but this was not always the common assumption about the relationship between language use and cognition.

The Sapir-Whorf hypothesis, also known as the linguistic relativity hypothesis, states that the grammar of a language shapes the way individuals mentally represent or think about things (e.g., Sapir, 1944; Whorf, 1956). Thus, the linguistic relativity hypothesis assumes that people who speak vastly different languages will experience the world and reality differently (Whorf, 1956). For example, the Sapir-Whorf hypothesis posits that because of the different structures of the English and Hopi language, time is experienced differently by Hopi natives versus English-speaking natives. Specifically, English has a three-tense system and lexical items to quantify time, therefore English speakers think of time as linear, or as a single point on a linear continuum. Hopi, on the other hand, lacks a tense system altogether, and the duration of events are not expressed in terms of unidimensionally graded temporary units, as they are in English. Because of the vast structural difference of these two languages, Whorf (1956) contends that time is

experienced very differently by English speakers versus Hopi speakers. Essentially, there are two implications or versions of the linguistic relativity hypothesis: (1) the “strong” version states that language *determines* thought; and (2) the “weak” version confers that language *influences* thought (Tohidian, 2009, p. 68). For many years, researchers debated the question of whether language governs and restricts the mind, or if the mind directs our language (Fiedler, 2008).

However, the majority of the research conducted on the relationship between language and cognition in recent decades, has shown little support for the linguistic relativity hypothesis (Krauss & Chiu, 1998). Numerous studies investigated the causal direction of language and thought, and have consistently shown that language use and word choice reflects a person’s underlying cognitive activity (i.e., thoughts and emotions predict one’s language and word use) – not the other way around. In a recent review of the past research on the linguistic relativity hypothesis, Tohidian (2009) concluded that findings suggest that language may influence perceptions of reality and thought, but it does not govern nor determine one’s thoughts or reality. In sum, the findings of language-cognition research have provided sufficiently greater support for a cognitive reflection model of language use, rather than a more Whorfian causal model (Chung & Pennebaker, 2007).

Over the last four decades, research has shown that people’s physical and mental health are associated with the words they use (Gottschalk & Glaser, 1969; Rosenberg & Tucker, 1978; Stiles, 1992). However, the study of language use and emotional well-being is hardly new. Using language as a diagnostic tool of mental health and

psychological distress dates back to Freud's (1901) study of parapraxes—how slips of the tongue and common speech errors betray a person's underlying fears or motives (Pennebaker, 2002). Freud (1901) believed that errors in everyday utterances (i.e., Freudian slips) could reveal details of a person's unconscious mind (Groom & Pennebaker, 2002). But the avid research interest in language use and overall well-being continues today; most likely because both are so fundamental to most socio-psychological research. Language is implicated in most of the phenomena that consist of the core of social psychology: attitude change, social perception, personal identity, social interaction, intergroup bias, stereotyping, attribution, and so on (Krauss & Chiu, 1998); and words are a central feature of social, clinical, personality, and cognitive psychology (Pennebaker et al. 2003).

Further, the way people speak and the words people use can convey a great deal of information about themselves (i.e., social status, age, sex, motives) (Groom & Pennebaker, 2002; Pennebaker et al., 2003); and reveal important aspects of their social worlds and psychological or emotional mood states (Pennebaker et al., 2003). Based on Allport's (1961) notion that human behavior is decisively stylistic and reliably reflects a person's motives, needs, and personality dimensions; Chung and Pennebaker (2007) posit that people communicate with a certain linguistic style. Groom and Pennebaker (2002) found that people's patterns of word use was specific enough to that particular person, and suggested that how people express themselves through words is as identifying as a fingerprint or DNA sample. Past linguistic research suggests that individuals reliably express themselves with their own distinctive style which remains remarkably stable

across time and different contexts; which has been evidenced in dimensions of language such as the use of highly specific articles, positive and negative emotion words, and verb tense (Pennebaker & King, 1999).

In a recent meta-analysis of gender differences in language use, Newman, Groom, Handelman, and Pennebaker (2008) found that gender differences in written and spoken language are subtle but reliable. In general, women tend to use a greater amount of affect or emotion words than men. Specifically, females more often include both positive emotion and negative emotion words (particularly sadness and anxiety) than males (Newman et al.); although prior studies suggest that males are more likely to refer to negative emotions like anger than females (Mehl & Pennebaker, 2003). The results of Newman et al.'s meta-analysis showed strong evidence for a "rapport" style in women, given the greater discussion of social topics and more frequent expression of inner thoughts, feelings, and emotions; and a "report" style in men, in which language is used mainly for the instrumental purpose of conveying information (i.e., greater frequency for men to describe the quantity and location of objects). However, Pillon, Degauquier and Duquense's (1992) earlier meta-analysis of gender differences in conversational behavior showed few differences in the interaction styles of men and women; and concluded that the conversational behavior of males and females were more similar than different (Pillon et al.).

The Disclosure Paradigm: A General Model of Inhibition

Since the mid-1980's, researchers have been exploring the value of writing or talking about emotional experiences; and have widely agreed that disclosure confers

broad benefits to individuals (Pennebaker, 1997). According to Zech (1999) participants who shared details of an upsetting life experience to another reported that self-disclosure of was useful to them in several ways: it helped relieve negative emotions (e.g., made them feel better), it benefited them cognitively (e.g., by putting events in order), and they experienced interpersonal rewards from the disclosure (e.g., from comforting behaviors of the recipient/listener).

Pennebaker (1989, 1997) proposed a general model of inhibition and self-disclosure. Inhibition is the act of not talking about one's experiences, or holding back from discussing private thoughts, feelings, or emotions. The inhibitory model suggests that the act of inhibiting involves cognitive work that, in and of itself, is stressful (Pennebaker, 1989, 1997). This cognitive work is reflected in autonomic and central nervous system activity as stress. Stress exacerbates psychosomatic processes, and increases the risk of illness and other stress-related disturbances (Sapolsky, 2004). Pennebaker (1997) theorizes that emotional expression facilitates cognitive processing of a traumatic memory, which leads to positive affective and physiological changes. Talking with others about an important event may help the person to organize the experience and come to terms with it (Pennebaker, 1997).

Evidence for this inhibition model and stress-related disease outcome has been documented in a number of studies. For example, Kagan, Reznick, and Snidman (1988) reported that inhibited children as young as 2-4 years old had higher resting cortisol and autonomic nervous system levels, and were more prone to colds, ear infections, and allergies, than less inhibited or shy children. In addition, gay men who concealed their

homosexual status were more likely to suffer from major illnesses such as cancer if they were HIV-negative, and to die more quickly from AIDS if they were HIV-positive, than gay men who were more open about their homosexuality (Cole, Kemeny, Taylor, & Visscher, 1996). Many findings have demonstrated that not talking about traumatic experiences is associated with a variety of health problems among college students and adult samples (Pennebaker & Susman, 1988); and if individuals actively inhibit over long periods of time, there is an increased likelihood they will suffer from a variety of psychosomatic diseases (Pennebaker, 1989, 1997).

Although some individuals enjoy communicating with others and engaging in the back-and-forth sharing of feelings, ideas, and needs; some individuals have a general unwillingness to communicate emotions or self-disclose their feelings to others. Alexithymia is communicative phenomenon that is characterized by a difficulty or inability for a person to identify, label, understand, and effectively express his/her emotions and feelings verbally to others (Lesser, Ford, & Friedman, 1979; Nemiah, 1977; O'Connor & Ashley, 2008; Segrin, 2001). It is a general reluctance to self-disclose one's feelings and emotions, and has been defined in the literature as, "the reticence to communicate affect" (Johnston, Stinski, & Myers, 1993, p. 149). People with alexithymia tend to focus on physical symptoms and external events rather than discuss their inner emotions, hopes, and fears; which is why alexithymia is commonly related to somatization (i.e., somatoform disorders), or the expression of emotional distress through manifestation of physical symptoms (Lesser et al., 1979; Nemiah, 1977; Segrin, 2001). For example, psychiatric patients used less positive affect words (relating to optimism

and energy) when compared to a nonclinical control group in a standardized writing assignment (Junghaenel, Smyth, & Santer, 2008).

A wealth of research has shown that writing or talking about deeply emotional experiences is associated with significant improvements in emotional well-being and physical health (e.g., Lepore & Smyth, 2002; Pennebaker, 1997). When individuals write or talk about prior upsetting experiences in the laboratory, consistent improvements are seen in both subjective and objective markers of health and well-being (Lewandowski, 2009; Pennebaker & Chung, 2007). Specifically, expressive writing or talking is associated with improved immune function, t-helper cell growth, antibody response to Epstein-Barr virus, and antibody response to hepatitis B vaccinations (Pennebaker & Chung, 2007) and a significant decrease in symptoms of depression three months after an expressive writing intervention for women with major depression (Nitkin-Kaner, & Cruess, 2008). Few consistent individual difference measures reliably distinguish between who does versus does not benefit from expressive writing. Paez, Velasco, and Gonzalez (1999) found that individuals high in alexithymia benefited more from writing than those low in the trait; and Smyth's (1998) meta-analysis showed that males benefited more from writing about emotional topics than females. The overall pattern that emerged suggests that people who normally do not discuss their emotions or divulge their emotional state to a great degree (e.g., men, alexithymics, people high in negative affect) experience greater benefits from expressive writing than individuals who are generally more open and expressive with their feelings (Pennebaker, Zech, & Rime, 2001).

However, not all studies have shown that men with high restrictive emotionality benefit more from expressive writing (e.g., Wong & Rochlen, 2009).

The Importance of Close Relationships, Marriage, and Relationship Quality on Health

A large body of research illustrates the importance of close relationships in successful coping with illness and positive psychosocial adjustment. For example, there is extensive research on the benefits to one's mental health and well-being conferred from social support (Lu & Argyle, 1992). Even as little as one intimate and confiding relationship is associated with the positive benefits of social support (Belle, 1991); particularly if it is a satisfying one. Social support has a buffering effect on major life stressors (Rook, 1987) and a positive association with general health (Horner, 2001). Specifically, social support has been recognized as an important factor in ameliorating psychological distress (Gotcher, 1992; Koopman, Hermanson, & Diamond, 1998) and aiding in the recovery process for women with breast cancer (Marlow, Cartmill, Cieplucha, & Lowrie, 2003; Neuling & Winefield, 1988). Not only is it a positive factor in psychosocial adjustment to breast cancer (Holland & Holahan, 2003; Holly et al., 2003), but it also acts as a buffer to the stress of the diagnosis and treatment (Cohen & Syme, 1985; Trunzo & Pinto, 2003).

The vitally important role that social support plays in one's physical and psychological well-being is especially associated with support garnered or received from one's spouse, intimate partner, and/or close family members (Baider et al., 2003; Picard, Dumont, Gagnon, & Lessard, 2006; Spiegel, 1997; Turner-Cobb, Sephton, Koopman, Blake-Mortimer, & Spiegel, 2000). Gotcher (1992) found that the most well adjusted

cancer patients were those who had the most frequent communication with, and received the most emotional support from, their family members. Having a network of friends and family members to provide social support or a spouse to confide in while coping with cancer, has been associated with decreased risk of recurrence and mortality rates in women with breast cancer (Ell et al., 1992; Maunsell, Brisson, & Deschenes, 1995; Weihs et al., 2008), and for survival rates in men with prostate cancer (Krongrad, Lai, Burke, & Goodkin, 1996). Social support is thought to have a biological or behavioral adaptation that promotes positive effects on the immune system, and limits stress-related endocrine functioning (Cohen, 1988; Spiegel, 1993). For example, Turner-Cobb et al. (2000) found that among women with metastatic breast cancer, a greater quality of social support was associated with lower cortisol concentrations; the latter of which indicates a healthy (or at least healthier) neuroendocrine functioning. As a whole, these findings suggest that higher social integration and available support from a spouse, intimate partner, or other social network members is associated with positive psychosocial outcomes and increased survivability (e.g., Baider et al., 2003; Ell et al., 1992; Krongrad et al., 1996; Maunsell et al., 1995; Picard et al., 2006; Turner-Cobb et al., 2000; Weihs et al., 2008).

Both marital status and quality of marriage are strongly tied to individual's physical health and emotional well-being (Kiecolt-Glaser & Newton, 2001). In general, married people are healthier than people who are divorced, separated, or widowed (even after controlling for age and income). Marital status is also associated with lower rates of mortality from a number of chronic and acute health conditions (Johnson et al., 2000;

Ross, Mirowsky, & Goldsteen, 1990). Overall, men enjoy more health benefits from marriage than women do; but the negative effect of marital status on mortality (i.e., being single, separated, divorced, or widowed) is also considerably stronger for men (Kiecolt-Glaser & Newton, 2001; Krongrad, Lai, Burke, & Goodkin, 1996). Even though men benefit more from being married, women are more affected by marital quality – especially if it is poor (Kiecolt-Glaser & Newton, 2001). The fact that relational well-being is more strongly linked to emotional well-being in women is most likely due to women's heightened sensitivity to relationship functioning (Segrin, Powell, Givernitz, & Brackin, 2003).

Poor marital quality is associated with physiological changes, deteriorated health outcomes, and increased mortality rates (Kiecolt-Glaser & Newton, 2001). Coyne et al. (2001) found that marital quality predicted 4-year survival rates and illness severity in patients coping with congestive heart failure. Further, observational studies of married couples' interactions showed that hostile behaviors (i.e., interrupting, criticizing) were more predictive of greater physiological responses (i.e., blood pressure, immune changes, and endocrine levels) than were positive interactions (i.e., providing support, general positivity) (Kiecolt-Glaser et al., 1993).

Evidence has shown that there is a reciprocal nature between marriage and health/illness (Walker & Dickson, 2004); and several bi-directional pathways have been proposed to explain how marriage affects individuals' health (Burman & Margolin, 1992; Kiecolt-Glaser & Newton, 2001). Stress and social support are two important factors known to directly affect marital quality; either in a protective or deleterious function

(Burman & Margolin, 1992). The receipt of emotional support can buffer the effects of stress, while the exposure to marital conflict can exacerbate stress; both via direct physiological pathways (Gallo, Troxel, Matthews, & Kuller, 2003; Kiecolt-Glaser & Newton, 2001; Ryff & Singer, 2000). Conversely, a spouse's poor health or chronic illness can create stress in a marriage and negatively influence marital quality (Halford et al., 1997). Overall, marital distress, depression, and immune function form a triad of mutual influence in marriage, such that: poor marital quality is associated with indicators of poorer immune function, poor marital quality is associated with greater depression, and depression is associated with poorer immune function (Kiecolt-Glaser et al., 1998).

Throughout the mental health literature it is clear that the *quality* of interpersonal relations affects the onset, course, and recovery from psychological problems (Segrin, 2001). Individuals who report greater marital satisfaction experience fewer symptoms of depression and anxiety when adjusting to cancer than those who report low marital quality (Rodrigue & Park, 1996). Northouse et al. (2001) found that marital satisfaction was significantly associated with adjustment among husbands of women with breast cancer. Involvement in a satisfying close relationship provides a sense of positive affect, being valued and understood, along with a feeling of stability. For example, Pistrang and Barker (1992, 1995) found that breast cancer patients most often select their husbands or intimate partners as the most important source of social support during the cancer process. Thus, the fulfillment associated with satisfying relationships can provide a powerful counterbalance to the uncertainty and stress of a major negative life event such as cancer diagnosis and treatment.

In addition, relationship satisfaction has implications for individual's physical health outcomes. People with satisfying personal relationships exhibit better neuroendocrine functioning than people who are single or in distressed relationships (Kiecolt-Glaser, McGuire, Robles, & Glaser, 2002; Turner-Cobb et al., 2000). Rohrbaugh, Shoham, and Coyne (2006) found that a composite measure of marital quality was the best predictor of heart failure patients' survival over the following eight years, above and beyond baseline measures of illness severity. Specifically, the two facets of the composite marital quality measure that most strongly predicted patients' health outcomes were: (1) the observed affective quality of the couple's actual interaction (i.e., positivity–negativity ratio); and (2) the reported frequency of their “useful discussions” about the patient's illness (i.e., indicative of communal coping) (Rohrbaugh et al.).

Part I Linguistic Analysis: Emotional Expression & Communal Coping

Across studies, the data demonstrate that the ways people express themselves in words are remarkably reliable across topics, contexts, and time (Pennebaker & King, 1999; Pennebaker, Mehl, & Niederhoffer, 2003). A large number of studies have examined the effect of language use and word choice on individual's health outcomes (Groom & Pennebaker, 2002; Mehl, 2005; Pennebaker, 2002). For example, longitudinal studies of expressive writing following a traumatic experience show that certain linguistic changes (e.g., flexibility in pronoun use, increases in positive emotion words, and increases in cognitive functional words) predict superior health outcomes (Chung & Pennebaker, 2007; Pennebaker, 2002). Several facets of language use that have interested

researchers because of the psychological and health implications for individuals and couples, is the expression of emotion and communal coping or “we-talk.”

Emotional Expression and Health Outcomes

Past research indicates that emotional expression and avoidant coping have significant influences on individual’s psychological well-being, levels of distress, and health outcomes. Emotional expression refers to the outward, observable displays of emotion (Graves et al., 2005), and people vary both verbally and nonverbally in their overall levels of expressiveness (Floyd, 2009). For example, females tend to use more positive emotion words, and are generally more emotionally expressive overall, than males (Newman et al., 2008). Emotionally expressive coping is defined as a person’s efforts to identify, understand, and express his/her emotions (Stanton, Kirk, Cameron, & Danoff-Burg, 2000a), and is positively related with improved psychological adjustment among patients with breast cancer (Stanton et al., 2000b). For example, Spiegel, Bloom, Kraemer, and Gottheil (1989) found that women with advanced breast cancer who were randomly assigned to a nonspecific group therapy condition lived 1.5 years longer on average, than the women in an information-only control group.

Results of textual analyses of emotional expression and psychological well-being have shown that a greater use of positive emotion words (e.g., happy, joy, optimistic) and a moderate use of negative emotion words (e.g., angry, cried, sad) are associated with positive health outcomes (Chung & Pennebaker, 2007; Pennebaker, 2002; Pennebaker & Chung, 2007). After a traumatic experience or distressing life event, an increase in an individual’s use of positive emotion words predicts superior psychological and physical

health outcomes (Chung & Pennebaker, 2007; Pennebaker, 2002; Pennebaker & Chung, 2007). In a study of the expressive writing narratives of women with advanced breast cancer, Laccetti (2007) found a significant association in greater use of positive to negative words and enhanced emotional well-being in patients at a 3-month follow up. Low et al. (2006) investigated the specific mechanisms underlying these positive health effects from emotional expression in women with breast cancer. Results indicated that the beneficial health outcomes from expressive writing could be explained by a decrease in participants' autonomic arousal (i.e., heart rate) (Low et al). In terms of the expression of negative emotions, research indicates a curvilinear relationship whereby optimal benefits occur when individuals use a moderate number of negative emotion words; because both extremes (very high or low amounts) are associated with poorer health outcomes (Pennebaker & Chung, 2007).

On the other hand, avoidant coping, or an individual's efforts to suppress or avoid intrusive thoughts, is associated with deteriorated psychological outcomes (McCaul et al., 1999). In fact, McCaul et al. found that avoidant coping was the most consistent predictor of psychological distress in women at 1 and 4 months after diagnosis with early stage breast cancer. Owen et al. (2006) also observed a significant interaction between emotional suppression and the use of cognitive words on breast cancer patients' psychological adjustment and mood disturbance. Further, Weihs, Enright, Simmens, and Reiss (2000) found that negative affect (especially when concurrent with restriction of emotions) predicted a shortened survival rate among women with breast cancer. Similar to Weihs et al.'s findings, Owen et al. (2006) found that women with recurrent breast

cancer who exhibited low-grade anxiety coupled with high emotional constraint were at a greater risk of mortality. In general, men are less likely to disclose their feelings or express emotions when coping (Notarius & Johnson, 1982), which has gender implications for positive psychosocial adjustment to cancer and possible health outcomes.

In addition to emotional and physical well-being, emotional expressiveness is associated with relationship satisfaction and stability in romantic couples. For example, Slatcher, Vazire, and Pennebaker (2008) found that men's genuinely expressed positive emotion words, as measured in their daily instant messages (IMs) to their romantic partner, were positively related to their own satisfaction, their *partners'* satisfaction, and whether the relationship was still intact six months later. Simmons, Gordon, and Chambless (2005) found that partner's use of positive emotion words when discussing a problem-solving task was associated with relationship stability. Therefore, they hypothesized that greater expression of positive feelings (or positivity in general) can lead to improved relationship outcomes (Simmons et al.). Further, the degree to which couples discuss emotional reactions to stress and/or stressful events with one another enhances dyad member's perceptions of closeness. Therefore, disclosure of emotions is related to better-perceived partner responsiveness; which in turn, positively influences the couple's feelings of intimacy (Laurenceau et al., 1998).

Yet, partners of people coping with cancer may be less willing and less likely to self-disclose to their spouse. Past research has shown that although partners have many fears and concerns about their loved one's illness, they often hold back from talking about their concerns and obscure their own feelings (Lewis, Cochrane, & Fletcher, 2005).

This makes sense given that partners most likely do not want to burden their spouse with cancer with their own worries and preoccupations, so partners will avoid negative self-disclosure and revealing the depth of their concerns in an effort to protect the cancer survivor. However, this is a problematic interpersonal consequence because a partner's avoidance of open communication about the cancer experience with their spouse is associated with increased distress in the spouse with cancer (Harrison & Maguire, 1994; Nordin, Berglund, Glimelius, & Sjoden, 2001). Research indicates that even additional or outside support is not able to mitigate the negative effects of a distant or emotionally unavailable spouse on a female patient's emotional well-being (Weihs, Enright, Howe, & Simmens, 1999), which highlights the centrality and importance of a viable and emotionally supportive relationship partner.

However, researchers have yet to decisively determine exactly how the expression of emotion affects cancer patients from a dyadic standpoint (i.e., cross-over effect from person A's level or type of emotional expression to person B's well-being); which is an important question to answer because it carries implications for the effect of interdependence in couples and dyad member's health outcomes and positive psychosocial adjustment.

Communal Coping and "We-Talk"

Communication (or talk) between couples creates and shapes how members of a dyad define their health, marriage, and self (Duck, 1994). Further, the words couples use in conversation are associated with their relationship satisfaction and relational outcomes. Past research suggests a paramount role for first-person plural pronouns ("we,"

and “us”), because it is hypothesized to reflect a couple’s cognitive commitment (i.e., “we-ness”). Initially labeled by Lyons, Mickelson, Sullivan, and Coyne (1998) “communal coping” is an instrumental dimension of couple coping that suggests a cooperative problem-solving process whereby dyad members identify problems and address an issue or challenge as “our” issue, rather than “yours” or “mine” (Acitelli & Badr, 2005; Berg & Upchurch, 2007; Bodenmann, 2005; Lewis et al., 2006; Lyons et al., 1998). This cooperative “we-based” coping in couples is a larger reflection of the dyad member’s shared identity, and the couple’s level of interdependence (Agnew, Van Lange, Rusbult, & Langston, 1998; Simmons et al., 2005). Specifically, greater use of first-person plural pronouns (i.e., “we,” “us,” “our”) in a couple’s communication with one another highlights positive relationship aspects such as; relational commitment, a shared identity, and effective problem solving (Agnew, Van Lange, Rusbult, & Langston, 1998; Simmons et al., 2005).

When couples recounted their marital history in laboratory settings, judges’ ratings of couple “we-ness” (based largely on partner’s tendency to use “we,” rather than, “he,” “she,” or “I”) correlated with concurrent positive interaction behavior, marital satisfaction, and predicted whether the couples divorced over the next four years (Gottman & Levenson, 1999). Gottman, Coan, Carrere, and Swanson (1998) also found that “we” talk in the interactions of newlywed couples predicted relationship satisfaction and marital stability. However, this finding has not been supported across all studies. For example, Simmons, Gordon, and Chambless (2005) did not find a significant association between couples’ use of “we-talk” and relationship satisfaction; however results showed

that couples who engaged in more “we-talk” were more effective at generating mutually satisfying problem-solutions. Further, Slatcher et al. (2008) did not find that couple’s use of “we” in their daily instant messages (IMs) was associated with their relationship satisfaction or relationship stability. Finally, Rohrbaugh et al. (2008) found that partner’s “we-talk” during open-ended interviews predicted positive changes in symptoms of patient’s with chronic heart failure over 6 months. However, the positive influence of “we-talk” on health outcomes was only evident in the language use of the spouse/partner, and not the patient with heart failure (Rohrbaugh et al.). Thus, their results provide support for the positive benefits of a communal coping orientation (at least unidirectionally from partner to patient); as well as additional evidence of the occurrence of partner-effects in health outcomes in couples (e.g., Ruiz, Matthews, Scheier, & Schulz, 2006; Rohrbaugh et al., 2004).

Part II Thematic Analysis: Key Concerns of Dyads with Cancer

The diagnosis and treatment of cancer has a number of features that represent substantial stressors for patients, and affects the well-being of the cancer patient’s larger social network (Weihs et al., 2000). There are a multitude of potential concerns associated with cancer diagnosis and treatment, ranging from: adjustments in social and family roles, worries about changes in appearance or attractiveness, anxiety about the spreading or recurrence of cancer, and fear of death (Manne et al., 2004). In an effort to identify the major concerns of dyads with cancer, some researchers have analyzed texts thematically to create an index of core concerns of individuals and couples with breast and prostate cancer (e.g., Shands et al., 2006; Ullrich et al., 2008).

Further investigation into the types of concerns expressed by dyads with cancer is important because previous findings showed an association between the frequency of concerns with depression and decreased QOL in women with breast cancer (Ullrich et al., 2008). However, none of the following content analyses to the present date have sufficiently cross-compared concerns of patients and partners, nor controlled for gender and role (patient-partner x male-female) in the types of concerns most often expressed to determine if gender or role (or cancer type) dictates the type and frequency of concerns expressed (e.g., Hagedoorn et al.'s 2008 distress findings). First, a review of the prior studies identifying the core concerns of dyads with cancer and frequency of cancer-related discussion is needed.

Major Concerns of Dyads with Cancer

Shands et al. (2006) conducted a content analysis from audio-recorded conversations of women with breast cancer and their partners, and identified four core concerns of couples with breast cancer: (1) dealing with tension in the relationship, (2) needing to be together as a couple, (3) wondering about the children, and (4) managing the threat of breast cancer. For example, the first core concern, "dealing with tension in the relationship," was a domain comprised of several subcategories, such as: not knowing how to respond (e.g., the right thing to say/do, how to communicate feelings, not giving information about what he/she wants or needs), wanting him to understand (e.g., indicate understanding, not only through words, but also through behavior), and feeling undesirable (e.g., wanting to know what it feels like for partner to touch, a marked absence of partner touch to surgical site, feeling repulsive to partner). The second core

concern identified, “needing to be together as a couple,” was also comprised of several subcategories, including: needing time together without children (e.g., needing to focus on the relationship, the relationship gets put on the back-burner), needing to do more fun things (e.g., go on vacation, go to a beach/park, relax), and tired of listening to her worries (e.g., wanting to have normal interactions with partner without discussing cancer, worries and concerns are the focus of conversations).

Because Shands et al.’s (2006) sample consisted solely of dyads with breast cancer, gender and role were confounded; thus rendering comparisons of role by sex, or tests for gender/role effects on core concerns, unfeasible. Further, the authors did not discriminate between patients and partners concerns, as the index of core concerns was built on what the dyad, as a unit, expressed most often as their collective concerns. Finally, no outcome data (measures of well-being or distress) was used in the Shands et al. study, therefore the authors were unable to assess how the concerns were associated with the psychological adjustment and well-being of couples with breast cancer.

Ullrich et al. (2008) conducted a content analysis of the cancer-related threats most often discussed by the survivors with breast and prostate cancer by matching 88 breast cancer patients and 88 prostate cancer patients depending on pre-surgery cancer stage and the length of time since undergoing surgery. The authors developed a frequency of cancer discussion scale, which consisted of 10 topics related to cancer. Results of their study showed three of the cancer-related issues were most prevalent: (1) threat to physical health, (2) threat to sexual or romantic relationships, and (3) concerns about other treatments. Further, the types of cancer-related concerns varied by gender: breast

cancer patients were more likely to discuss the threat of further treatment and threats to physical health, and prostate cancer patients were more likely to discuss threats to sexual relationships. Finally, results showed that greater frequency of cancer discussion was associated with higher levels of depression and lower QOL in women with breast cancer, but not in men with prostate cancer (Ullrich et al).

A strength of Ullrich et al.'s (2008) study was the inclusion of participants with two different types of cancer (breast and prostate) in order to compare concerns across cancer type; however they did not include partners in their sample (focused exclusively on patients). Therefore, the authors were unable to examine differences in cancer discussion by role (patient-partner). More importantly, participant's gender was inherently confounded by type of cancer, which rendered any potential comparisons of gender by type of concerns impossible. On another positive note, the authors did include outcome measures to test for effects of cancer-related discussion on psychological distress and QOL indicators; however, the results were based on the frequency of *cancer-related discussion* and distress outcomes, with no variation or range in the types of concerns besides the topic of cancer.

Other descriptive studies have focused on identifying the partner's concerns in couples coping with breast cancer; results showed across studies that partner's concerns mostly revolved around: the woman's symptoms, sexual intimacy, the unpredictable nature of the cancer illness, appropriate responses to their spouse's needs, and personal/household disruptions (Hilton et al., 2000; Lewis & Deal, 1995; Samms, 1999; Walker, 1997; Zahlis & Shands, 1991, 1993). But again, these studies did not include

data from both members of the dyad so there were no cross-comparison tests of patient-partner concerns; and partner's sex was confounded by type of cancer used in the samples (partners of breast cancer patients were all husbands), so any potential analysis to test if partner's concerns were more influenced by gender or role were not possible.

Taken together, the findings from prior content analyses of cancer couple's core concerns highlight several key issues: tensions within the primary relationship (e.g., needing to be together as a couple, threats to sexual or romantic relationships), and concerns regarding treatment and physical health (e.g., threats to physical health, concerns about other treatments). However it remains unclear as to which of these concerns are most important or salient to patients versus partners, or in dyads with breast and prostate cancer.

Although Shands et al.'s (2006) study included both patients and partners (i.e., dyads with breast cancer); and Ullrich et al.'s (2008) study included patients with two different types of cancer (i.e., breast and prostate cancer); there has been no study to date that has included both members of a dyad with different cancers in their sample to conduct a cross-comparison of concerns within dyads (patient-partner), while considering the effect of role by gender (male-female) with both types of cancer (breast and prostate). Further, how the specific concerns (a range of all potential types or a variety of concerns) are related to outcomes is currently missing from the relevant literature. Therefore, a thematic analysis of the counseling sessions of dyads with breast and prostate cancer will be conducted to: (1) identify the topics and key concerns most frequently discussed by dyads with cancer during counseling, (2) how key concerns differ by role (patient-

partner) and gender (male-female) across cancer type (breast-prostate), and (3) if the key concerns are associated with improved psychosocial well-being outcomes.

The Present Study

There are two major areas of analyses in this paper: (1) language use (emotional expression and “we-talk”), and (2) the key concerns of dyads with breast and prostate cancer. The audio recordings of 228 counseling sessions of dyads with breast and prostate cancer were transcribed and content analyzed using a multi-method approach. First, a quantitative assessment of the data was conducted using Pennebaker et al.’s (2001) Linguistic Inquiry Word Count (LIWC) software to analyze participants’ language use during counseling for overall emotional expression, positive emotional expression, and communal coping, such as “we-talk” words (i.e., first-person plural pronouns). This was followed by a qualitative-based approach to analyzing the data through a manual coding of the counseling sessions to identify the major themes of key concerns expressed by dyads with cancer during counseling. For all analyses, psychosocial adjustment was operationalized as: (1) depression, (2) positive affect, (3) negative affect, and (4) relationship satisfaction. The specific aims, hypotheses, and research questions that guide this investigation are separated into the two major methodological approaches of this investigation.

It is important to note that positive and negative emotions are not always perfectly negatively correlated; meaning that a decrease in emotional distress do not necessarily imply a linear increase in positivity or well-being. For example, Badger et al., (2007) observed that levels of depression decreased in women with breast cancer, although

measures of positive affect did not significantly increase in tandem (along-side the marked improvements in distress); which is similar to other findings (e.g., Stommel et al., 2004). The incongruity of the relationship between positive and negative affect suggests it prudent to use multiple measures to assess emotional well-being and distress. Therefore in this study, psychosocial outcomes were measured using depression, positive and negative affect, and relationship satisfaction; given that a combination of measures captures both positive and negative aspects of psychosocial well-being and distress.

Part I: Specific Aims and Hypotheses for Language Use & Psychosocial Outcomes

The primary aim of this section was to measure the effect of language use on psychosocial outcomes, by examining emotional expression and communal coping as predictor variables. This first aim will be served by the following hypotheses:

H1: The expression of emotion (i.e., the overall use of emotion words) in participants' counseling sessions will be positively associated with psychosocial adjustment.

H1a: The expression of positive emotion (i.e., the use of positive emotion words) in participants' counseling sessions will be positively associated with psychosocial adjustment.

H2: Communal coping as operationalized by "we-talk" (i.e., patient and partner's use of first person plural pronouns) in participants' counseling sessions will be positively associated with psychosocial adjustment.

The secondary aim was to measure change in language use over time and subsequent psychosocial outcomes (to determine which features of language suggest improved outcomes). This second aim will be tested by the following hypotheses:

H3: Over time, increases in the expression of emotion (i.e., the overall use of emotion words) in participants' counseling sessions will be positively associated with improved psychosocial adjustment.

H3a: Over time, increases in the expression of positive emotion (i.e., the use of positive emotion words) in participants' counseling sessions will be positively associated with improved psychosocial adjustment.

H4: Over time, increases in the expression of communal coping as operationalized by "we-talk" (i.e., patient and partner's use of first person plural pronouns) in participants' counseling sessions will be positively associated with improved psychosocial adjustment.

The tertiary aim was to measure the effect of language use on partner's psychosocial well-being and relationship satisfaction. This third aim will be achieved by answering the following research questions:

RQ1: Will the expression of emotion (i.e., the overall use of emotion words) in participant's counseling sessions be associated with his/her partner's psychosocial adjustment?

RQ1a: Will the expression of positive emotion (i.e., the use of positive emotion words) in participant's counseling sessions be associated with his/her partner's psychosocial adjustment?

RQ2: Will the expression of communal coping as operationalized by “we-talk” (i.e., patient and partner’s use of first person plural pronouns) in participant’s counseling sessions be associated with his/her partner’s psychosocial adjustment?

Part II: Specific Aims and Hypotheses for Thematic Analyses of Counseling Sessions

The primary aim of this section was to identify the key concerns of dyads with breast and prostate cancer. Therefore, this first aim seeks to answer the following research question:

RQ1: What are the key concerns of dyads with breast and prostate cancer during counseling?

The secondary aim was to examine differences in the key concerns between disparate groups (role, and sex). This second aim will be answered by the following research question:

RQ2: Are there significant differences in the types of concerns most often discussed during counseling depending on participants’ role or sex (i.e., cancer-type)?

The tertiary aim was to assess how the various key concerns map onto psychosocial outcomes. This third aim will be achieved by answering the following research question:

RQ3: How are the various concerns of dyads with cancer associated with improved or deteriorated psychosocial outcomes?

CHAPTER II

Method

The Original Study

Study Procedure

Participants were part of a larger investigation of interpersonal counseling interventions for dyads with breast and prostate cancer. Descriptions and analyses of these interventions have been presented elsewhere (see Badger et al., 2002; 2004; 2005; Badger & Segrin, 2006); therefore, only those details relevant to the current investigation are presented here. Eligibility criteria included diagnosis of Stages I-III breast cancer in a primary episode; or diagnosis of Stage I-IV prostate cancer; the ability to speak English and talk on the telephone, and availability of a partner who was also willing to participate in the investigation. In both studies, the cancer survivors were asked to nominate a partner for participation in the study; this could be any person whom they felt was a significant partner in their coping and recovery. The inclusion of members of the social network other than spouses was allowed; consistent with related investigations of women's recovery from or coping with breast cancer (Donnelly et al., 2000; Grunfeld et al., 2004; Neuling & Weinfield, 1988). Both of these studies consisted of a randomized experimental design (Shadish, Cook, & Campbell, 2002) with repeated measures at three data assessment points to test the effectiveness of the telephone interpersonal counseling intervention (TIP-C) compared to an attention-only, exercise, or health education condition on a variety of cancer survivors' and their partners' psychosocial adjustment (physical, psychological, social and spiritual well-being). The participants in the breast

cancer and prostate cancer studies were followed for 10-16 weeks, respectively; which according to past research (e.g., Given et al., 2004; Penedo et al., 2006) is a sufficient length of time to allow for observation of changes in well-being as a result of a psychosocial intervention.

Breast Cancer Support Project

Upon recruitment, participants were randomly assigned to one of three treatment groups: (1) telephone interpersonal counseling (TIP-C), (2) self-managed exercise intervention (SEP), or (3) an attentional usual care (UC) control group (i.e., attention-only condition). First, all dyads were contacted by a member of the research team to complete a baseline (Time 1) data assessment over the telephone (i.e., QOL measures for psychological, social, and physical well-being). The women with breast cancer received a total of six calls (1 call per week) from a trained nurse counselor. Those assigned to the telephone interpersonal counseling intervention (TIP-C) discussed various topics, such as: cancer education, role transitions/conflict, interpersonal relationships, and social skills. Likewise, the woman's partner (e.g., spouse, significant other, sister, friend), was also called by the same nurse counselor to discuss similar topics; however the partners received 3 calls (1 call every other week) over the course of the six-week intervention. At the conclusion of the telephone counseling intervention, participants were contacted by another research team member to collect another set of QOL measures for Time 2 (T1 + 6 weeks), and again one month later for Time 3 (T2 + 4 weeks). Therefore, from the time of the initial data assessment until completion of the study, dyads in the breast cancer study were involved in the telephone support project for a period of 10 weeks (T1-T3).

Prostate Cancer Support Project

Upon recruitment, participants were randomly assigned to one of two treatment groups: (1) telephone interpersonal counseling (TIP-C), or (2) an attention health education control (AHEC) condition. First, all dyads were contacted by a member of the research team to complete a baseline (Time 1) data assessment over the telephone (i.e., QOL measures for psychological, social, and physical well-being). The men with prostate cancer received a total of eight calls (1 call per week) from a trained nurse counselor. Those assigned to the telephone interpersonal counseling intervention (TIP-C) discussed topics, such as: cancer education, role transitions/conflict, interpersonal relationships, and social skills. Likewise, the man's partner (e.g., spouse, significant other, brother, friend), was called by the same nurse counselor to discuss similar topics; however the partners received 4 calls (1 call every other week) over the course of the eight-week intervention. At the conclusion of the telephone intervention, participants were contacted by another research team member to collect another set of QOL measures for Time 2 (T1 + 8 weeks), and again and two months later for Time 3 (T2 + 8 weeks). Therefore, from the time of the initial data assessment until completion of the study, dyads in the prostate cancer protocol were involved in the study for a total of 16 weeks (T1-T3).

Telephone Interpersonal Counseling (TIP-C) Intervention

The Telephone Interpersonal Counseling Intervention (TIP-C) employed in these investigations is based on interpersonal psychotherapy (IPT), known broadly as interpersonal counseling (IPC) (Weissman & Markowitz, 1998); which was developed in the mid-1970's as a short-term treatment for depression (Weissman, Markowitz, &

Klerman, 2000). Interpersonal counseling (IPC) has proven to be an effective intervention in diverse populations, and for women with breast cancer (Morse & Fife 1998; Segrin et al., 2005; Weihs, Enright, Simmens & Reiss, 2000). Further, the inclusion of significant others and family members in counseling interventions has shown positive psychological outcomes and decreased levels of depression and anxiety for the partners of people with cancer (Martire, Lustig, Schultz, Miller, & Helgeson, 2004).

The primary focus of the TIP-C intervention is interpersonal functioning, and the role interpersonal functioning plays in precipitating or maintaining depressive symptoms and negative mood states (see Badger et al., 2001; 2002; 2004; 2005). Therefore, the initial counseling sessions focus on explaining symptoms, including how depression and fatigue and relationship issues/problems may be linked, and providing information about cancer and managing the side effects of treatment. Second, TIP-C focuses on interpersonal influences, and the role of interpersonal relationships in creating and/or alleviating psychological distress. Counselors assist the participants by providing social support, encouraging emotional expression, suggesting techniques for effective interpersonal communication, and facilitating mood management for those who are distressed. During the counseling intervention, counselors gather information about four key interpersonal areas (role transitions, role disputes, grief, and interpersonal deficits), but focus on what survivors and their partners determine are the topics or issues most relevant to them. This allows subjects to determine the topics and issues relevant for them (e.g., asking for more information about urinary incontinence, or discuss various relationship or communication issues with their spouse/partner). Therefore, practitioners

use an exploratory stance to tailor sessions to focus on participants' most immediate and salient problems and concerns, and suggest methods to resolve them (Badger et al., 2001; 2002; 2004; 2005; 2007; Badger & Segrin, 2006).

Although interventions must be standardized and replicable, the complexity of the cancer experience (and individuality of the experience) suggests that a flexible approach be taken so the intervention is relevant, helpful, and useful for all of the participants receiving counseling. Past research has shown tailored interventions to be more effective than standardized ones (Christopher & Morrow, 2003), and the TIP-C intervention was tailored to the participant's specific needs and interests while still adhering to a structured protocol (i.e., adhering to the "generic" TIP-C topics such as physical symptoms, role transitions, and family relationships, while also discussing matters that are unique to each person's situation). Therefore, the nurse counselors were able to individualize the counseling sessions to the survivors and partners (i.e., discuss physical symptoms or relationship issues), depending on its relevance to the participant. The effectiveness of the TIP-C intervention in improving quality of life for cancer survivors and their partners has been documented in previous studies (Badger et al., 2001; 2002; 2004; 2005; 2007).

Advanced practice nurses with psychiatric-mental health plus oncology expertise or a Master's in social work were trained in the TIP-C method, and delivered the counseling intervention to participants. The average length of TIP-C counseling sessions in both studies was 30 minutes. All telephone counseling sessions were tape recorded after obtaining participants' permission. Please see Appendix A for a detailed TIP-C protocol schedule.

The Present Study

Study Participants

Due to the goals of the present investigation, only those dyads who were randomly assigned to the telephone counseling intervention (TIP-C) are included in the analyses for this paper. Therefore, the present sample included 22 dyads with breast cancer ($N = 44$) and 21 dyads with prostate cancer ($N = 42$); for a total of 43 dyads or 86 participants. As a whole, the study participants were mostly white, well educated, married, and have been involved in that committed relationship for an average of 30 years. The majority of women with breast cancer were diagnosed with Stage II cancer, had undergone surgery for breast cancer (i.e., complete or radical mastectomy), and were currently receiving chemotherapy. Men with prostate cancer, on the other hand, were mostly diagnosed with Stage III-IV cancer, and over half of the sample had undergone surgery (i.e., prostatectomy) and radiation for prostate cancer. A detailed description of the study sample demographic characteristics is presented on Table 1 (please note: all tables are located in Appendix G).

Measures

The same set of scales were used to assess psychosocial well-being and quality of life indicators over three time points and in both cancer samples. Please note that these measures were assessed at three different time points for each study participant. The first data assessment (T1) was gathered several days prior to the start of the counseling intervention. The second data assessment (T2) was conducted at the conclusion of the six/eight-week counseling intervention, (immediately following the last intervention call),

and the third and final data assessment (T3) was conducted one/two month(s) later. Scale reliabilities, means, and standard deviations are presented in Tables 2 and 3.

Depression was measured using the 20-item Center for Epidemiological Studies-Depression Scale (CES-D; Radloff, 1977). Scores range from 0-60 with higher scores indicating greater depressive symptoms. Scores above 16 are considered positive for depression. Respondents answer to items depending on how frequently they experienced a symptom within the past week. Responses vary from “rarely or none of the time” (less than 1 day), “some or a little of the time” (1-2 days), “occasionally or a moderate amount of time” (3-4 days), or “most or all of the time” (5-7 days). The CES-D has proven to have satisfactory reliability and validity in previous studies with general and cancer populations (Badger et al., 2001). This scale was internally consistent for women with breast cancer and their partners ($\alpha = .84-.94$), as well as men with prostate cancer and their partners ($\alpha = .84-.95$).

Positive and Negative Affect was measured using the 20-item Positive and Negative Affect Scale (PANAS; Watson, Clark, & Tellegen, 1988). Responses were measured on a 5-point Likert type scale and includes items for positive affect (e.g., proud, attentive, inspired, determined) and negative affect (e.g., nervous, scared, jittery, afraid). Scores are summed separately for positive and negative affect items. Higher scores on each item indicate greater amount of positive or negative affect. This scale was internally consistent for women with breast cancer and their partners ($\alpha = .80-.89$), as well as men with prostate cancer and their partners ($\alpha = .79-.93$).

Relationship Satisfaction was measured by the 7-item Relationship Assessment Scale (RAS-Hendrick, 1988). This instrument is used to identify how satisfied people are in their current relationship. The RAS is comprised of seven items, and is measured on a 5-point scale. Items measured on this scale consist of relationship expectations, relationship problems, and love. Scores can range from 7-35, with higher scores indicating higher relationship satisfaction. This scale was internally consistent for women with breast cancer and their partners ($\alpha = .52-.93$), as well as men with prostate cancer and their partners ($\alpha = .87-.96$).

Procedure

Transcribing Telephone Counseling Sessions

For all cases, three counseling sessions from the cancer patient and three sessions from his/her partner were selected to include in the analyses in order to achieve an equal ratio of data per dyad (i.e., patient-partner comparisons). Thus, the transcriptions comprise a total of six counseling sessions per dyad. When selecting which of the particular audio-recordings to transcribe (given that for breast cancer and prostate cancer dyads, there were six/three and eight/four counseling sessions respectively, per patient/partner), sessions were chosen by matching the dates of the partner's TIP-C calls with the dates of the subject's TIP-C calls. Therefore, patient and partner's transcripts used for analysis reflect those counseling sessions that were conducted either on the same day, or within a few days of each other. Finally, it should be noted that a total of 30 counseling sessions were missing for transcription and data analyses because they had not been tape-recorded at the time the counseling session occurred. In total, 228 audio-

recorded counseling sessions were transcribed for 22 dyads with breast cancer and 21 dyads with prostate cancer (i.e., 122 sessions from breast cancer dyads, and 106 sessions from prostate cancer dyads).

Before transcribing began, three research assistants transcribed six counseling sessions from the same breast cancer dyad (a total of 180 minutes of recorded audio) to establish and calculate inter-coder reliability. The transcripts were cross-checked using computer analysis for: (1) word count per counseling session, (2) number of conversational turns per session, and (3) total word count and number of turns for all six sessions combined. Results showed a satisfactory level of reliability among transcribers using an intra-class correlation coefficient analysis (ICC = .77, ICC = .71, ICC = .77, respectively). In addition, reliability checks were performed on the content transcribed using the various categories of LIWC as checkpoints. Results showed that transcribers achieved satisfactory levels of reliability on the dimensions of pronoun use (ICC = .74), affect (ICC = .78), cognitive mechanisms (ICC = .74), social processes (ICC = .74), and time orientation (ICC = .71), so they were allowed to proceed with transcribing.

Linguistic Inquiry Word Count (LIWC)

Pennebaker, Francis, and Booth (2001) developed a text analysis software named the Linguistic Inquiry and Word Count (LIWC). LIWC is a broadly validated computer software program which compares all words from an inputted text to an internal dictionary containing over 2,300 words. LIWC has been applied to a wide spectrum of research questions in social and clinical psychology, including: coping with trauma, depression, suicidality, gender differences, personality expression, and aging (Groom &

Pennebaker, 2002; Pennebaker et al., 2003). LIWC can calculate the percentage of words and categorize words into different dimensions, such as; standard linguistic categories (i.e., articles, prepositions, pronouns), psychological processes (positive/negative emotion words, cognitive or social process words), social related words (i.e., friends, family), and traditional content dimensions (i.e., sex, death, job) (Mehl, 2005; Pennebaker, 2002). Most dimensions are hierarchically organized. For example, the word “cried” falls into four categories, sadness, negative emotion, overall affect, and past-tense verb (Mehl, 2005). The validity of the LIWC for measuring verbal expression of emotion was recently confirmed in three experimental studies (e.g., Kahn, Tobin, Massey, & Anderson, 2007), and for accurate identification of emotional expression a textual analysis of written narratives of women with breast cancer (e.g., Bantum & Owen, 2009). However, some suggest caution that genuine positive affect may be more related to voice tone than content when emotional expression was compared between online and face-to-face interactions (Liess, Simon, Yutsis, Owen, Piemme, Golant, & Giese-Davis, 2008). Please see Appendix B for a description of the LIWC dimensions.

Word count strategies have an advantage in that they can be performed reliably and efficiently with the use of computers. Although word count approaches can miss elementary information like identifying sarcasm and double-meaning words, it provides linguistic information from a distance, that human readers are incapable of seeing and calculating effectively (Pennebaker, Mehl, & Niederhoffer, 2003). Thus, researchers should be aware of the “bigger is better” fallacy; because as crude, fuzzy, and error-prone

simple word-count approaches are, they can often go a long way in providing valuable information not otherwise attainable (Mehl, 2005).

Before running the transcribed counseling sessions through LIWC, they had to be “cleaned up” per the program manual. The 228 transcripts were combed through for spelling errors, proper use of abbreviations, contractions, hyphens, nonfluencies, fillers, and proper names. For example, we had to make sure that one word fillers such as “like” and “well” were changed to “rrlike” and “rrwell.” In addition, the counselor’s statements were removed from the word documents so that the only text that remained belonged to the cancer patient or his/her partner. Finally, the original word document files were saved as a text document files and inputted into the LIWC program which produced an SPSS data set of the survivors’ and partners’ language use for each counseling session on all the dimensions of LIWC.

Planned Analyses

Using a multi-method approach, a total of 228 counseling sessions were analyzed linguistically for emotional expression and communal coping, and then thematically to identify the key concerns of dyads with cancer. First, the text files were analyzed using LIWC for words associated with emotional expression, such as positive emotion words (e.g., happy, joy), negative emotion words (e.g., angry, cried), and words indicative of communal coping, such as we-talk (i.e., first person plural pronouns). Frequency distributions and descriptive statistics were computed on all variables. The outcome measures for psychosocial well-being include: depression, positive and negative affect, and relationship satisfaction at Time 2 and Time 3.

Part I: Language Use & Psychosocial Outcomes

Primary Aim: To measure the effect of language use on psychosocial outcomes, by examining emotional expression and communal coping as predictor variables. A series of multiple regressions were conducted to analyze the effect of language use (e.g., emotional expression and communal coping) on psychosocial outcomes. Specifically, participants' well-being at Time 1 (i.e., depression at baseline) was entered in the 1st step, followed by participants' emotional expression (e.g., positive emotion words) in the 2nd step. Then, the Time 2 measures for participants' well-being (i.e., depression at Time 2) was entered as the dependent variable. This process was conducted for all independent variables under investigation (i.e., overall emotion words, positive emotion words, and we-talk), repeated for each of the outcome measures (i.e., depression, positive/negative affect, relationship satisfaction) at Time 2 and Time 3, and conducted separately for survivors and partners.

Secondary Aim: To measure change in language use over time and subsequent psychosocial outcomes (to determine what linguistic indicators suggest improved outcomes). A series of multiple regressions were conducted to test for changes in participant's language (i.e., overall emotional expression, positive emotional expression, and communal coping) over time (i.e., at three time points). Change scores were calculated for each of the psychosocial outcome variables to capture Time 1-Time 2 and Time 1-Time 3 change scores. Specifically, participants' language use at Time 1 (i.e., overall emotional expression) was entered in the 1st step, followed by participants' language use at Time 2 (i.e., emotional expression) in the 2nd step, and the Time 1-Time 2

change score for participants' well-being (i.e., T2-T1 change score for depression) was entered as the dependent variable. Then, participants' language use at Time 1 (i.e., overall emotional expression) was entered in the 1st step, followed by participants' language use at Time 3 (i.e., emotional expression) in the 2nd step, and the Time 1-Time 3 change score for participants' well-being (i.e., T3-T1 change score for depression) was entered as the dependent variable. This process was conducted for all independent variables under investigation (i.e., change in overall emotion words, positive emotion words, and we-talk), repeated for both of the change scores for all outcome measures (depression, positive/negative affect, relationship satisfaction), and conducted separately for survivors and partners.

Tertiary Aim: To measure the effect of language use on partner's psychosocial well-being and relationship satisfaction. The potential of dyadic interdependence was tested by using Kenny and Cook's (1999) actor-partner interdependence model (APIM) (Cook & Kenny, 2005). The primary concept of the actor-partner interdependence model is that the dyad is treated as the unit of analysis whereby participants' scores on various independent variables are used to predict both their own (actor effects) and their partner's (partner effect) scores on the dependent variable, after taking into account the dyad's interdependence on the independent variable (Kashy & Kenny, 2000; Kenny, 1996; Kenny & Cook, 1999; Kenny, Kashy, & Cook, 2006).

In the present analyses, participants' emotional expression (i.e., overall emotion words, positive emotion words) and communal coping (i.e., "we-talk") were treated as the predictor variables, and measures of psychosocial well-being will serve as the

dependent variables. By using reciprocal and dyadic data from dyads with cancer, we fit a structural equation model (SEM) of the APIM to evaluate interdependence in close relationships by examining the crossover from one person's "we-talk" to the other's psychosocial well-being (i.e., relationship satisfaction). These analyses allow for identification of any partner effects in emotional expressiveness and communal coping (i.e., we-talk) and psychosocial outcomes at Time 2.

Part II: Thematic Analyses of Counseling Sessions

A thematic content analysis of the 228 counseling sessions was conducted to identify key concerns of dyads with breast and prostate cancer. As noted in the *Methods* section, every reference (i.e., one sentence) made by the participant in regards to a certain issue during counseling was coded as 1 unit of observation. For example, reference to conflict with one's spouse was coded as one unit of observation. The data from the three counseling sessions for each participant were initially kept as independent observations, and then collapsed into one average score. This provided an opportunity to cross-compare the key concerns of women with breast cancer, men with prostate cancer and their partners by cancer type, role, and sex. Frequency distributions and descriptive statistics were computed on all variables.

Primary Aim: To identify the key concerns of dyads with breast and prostate cancer. Using SPSS, frequencies and descriptive analyses were used to identify the major themes.

Secondary Aim: To examine differences in the key concerns between disparate groups (cancer type, role, and sex). A series of Mixed Model ANOVAs was conducted to

test for differences in relationship concerns by: (1) role (patient versus partner), and (2) sex (male versus female). In doing so, the various groups were compared to one another, and this analysis was able to identify whether role, sex of the person, or type of cancer determines the key concerns (as indicated by the results of the thematic content analysis).

Tertiary Aim: To assess how the various key concerns map onto psychosocial well-being. A series of multiple regressions was conducted to analyze the effect of key concerns (e.g., difficulty concentrating, role change) on psychosocial outcomes. Specifically, participants' well-being at Time 1 (i.e., depression at baseline) was entered in the 1st step, followed by one of the major concerns (e.g., role change) in the 2nd step. Then, the Time 2 measures for participants' well-being (i.e., depression at T2) was entered as the dependent variable. This process was conducted for all key themes and repeated for each of the outcome measures (i.e., depression, positive/negative affect, relationship satisfaction). Therefore, this statistical analysis will allow tests for significant associations between the types of concern most frequently discussed during counseling and improvements in participant's psychosocial outcomes.

CHAPTER III

Results

Part I: Language Use & Psychosocial Outcomes

First, a correlation matrix of all four psychosocial outcomes (i.e., depression, positive affect, negative affect, and relationship satisfaction) was produced. The results of these correlation analyses are presented on Tables 4 and 5. Please note that the correlations were calculated separately for all cancer survivors (please see Table 4) and their partners (please see Table 5).

Descriptive Results of the Linguistic Dimensions (LIWC)

Using Pennebaker et al.'s (1997) text analysis program (LIWC), 228 transcribed counseling sessions of survivors with breast and prostate cancer and their partners were processed as text files to obtain outcome values for all of the linguistic dimensions under analysis in the present study. The LIWC program calculates summary scores for each language category by dividing the total number of words in a transcript by the number of words that match the particular linguistic dimension (Pennebaker & Francis, 1997).

This investigation focused on two aspects of language use: emotional expression and communal coping. Emotional expression is comprised of eight linguistic dimensions which are organized into a hierarchy. At the highest or broadest level is total affect (a summary of all positive and negative emotional expressions); the second level includes two categories: positive emotion (all positive words) and negative emotion (all negative words). At the third level, the positive emotion category is broken down into two categories: positive feeling (e.g., love, joy), and optimism (e.g., pride, certainty), and

negative emotion category is divided into three categories: anxiety (e.g., afraid, nervous, tense), anger (e.g., mad, angry, hate), and sadness (e.g., cry, grief). Communal coping is operationalized by “we-talk,” which is captured by one linguistic dimension, the use of first-person plural pronouns (i.e., “we”). In addition to first-person plural pronouns, LIWC identifies participants’ total use of pronouns and distinguishes between the use of “I,” “We,” “Self,” “You,” and “Other,” references.

First, descriptive analyses for all the linguistic dimensions were conducted. These results are organized by cancer type (breast-prostate) and role (patient-partner), averaged over time. Please see Table 6.

Second, an independent samples t-test was conducted on the language use of survivors with breast cancer and prostate cancer to test for differences between the two groups. Results showed that breast cancer and prostate cancer survivors differed in the overall word count of their counseling sessions, $t(41) = 2.15, p < .05, r^2 = .102$. Women with breast cancer ($M = 2,194.29, SD = 812.98$) uttered significantly more words than men with prostate cancer ($M = 1,743.27, SD = 521.98$). Please see Table 7.

Third, an independent samples t-test was conducted on the language use of partners of survivors with breast and prostate cancer to test for differences between these two groups. Results showed no significant difference in the overall word count of breast cancer and prostate cancer partners’ counseling sessions, $t(40) = -1.51, ns$. However, results showed that breast cancer and prostate cancer partners differed in their expression of anger, $t(40) = 2.58, p < .05, r^2 = .143$. Partners of women with breast cancer ($M = .32, SD = .23$) used more words indicating anger than partners of men with prostate cancer (M

= .16, $SD = .16$). Results also indicated that breast cancer and prostate cancer partners differed in their use of self-references, $t(40) = 2.08, p < .05, r^2 = .098$. Partners of men with prostate cancer ($M = 8.04, SD = 1.07$) used more “self” pronouns than partners of women with breast cancer ($M = 8.73, SD = 1.07$). Although, results showed no other significant differences in the language use of partners of breast and prostate cancer survivors for the remaining twelve categories of word use. Please see Table 8.

Fourth, a paired samples t-test was conducted to test for differences in language use between breast cancer survivors and their partners. Results showed that breast cancer survivors and their partners differed in the overall word count of their counseling sessions, $t(21) = 3.35, p < .01, r^2 = .145$. Women with breast cancer ($M = 2,194.29, SD = 812.98$) uttered significantly more words than their partners ($M = 1,597.76, SD = 674.24$). Please see Table 9.

Finally, a paired samples t-test was conducted to test for differences in the language use between prostate cancer survivors and their partners. Results showed no significant difference in the overall word count of prostate cancer survivors and their partners’ counseling sessions, $t(19) = -1.13, ns$. However, a significant difference was found between men with prostate cancer and their partners’ expression of anxiety, $t(19) = -2.28, p < .05, r^2 = .037$. Partners ($M = .28, SD = .16$) used significantly more words indicating anxiety than men with prostate cancer ($M = .18, SD = .10$). A significant difference was found between men with prostate cancer and their partners’ total pronoun use, $t(19) = -2.37, p < .05, r^2 = .211$. Partners ($M = 17.75, SD = 1.73$) used more pronouns overall than men with prostate cancer ($M = 16.76, SD = 2.15$). In addition, a

significant difference was found between men with prostate cancer and their partners use of first-person plural pronouns or “we” references, $t(19) = -3.73, p < .001, r^2 = .121$. Partners ($M = 2.06, SD = 1.13$) used significantly more first-person plural pronouns or “we” references than men with prostate cancer ($M = 1.13, SD = .49$). A significant difference was also found between men with prostate cancer and their partners’ use of other-person pronouns or “other” references, $t(19) = -2.68, p < .05, r^2 = .024$. Partners ($M = 4.61, SD = 1.60$) used significantly more other-person plural pronouns or “other” references than men with prostate cancer ($M = 3.49, SD = 1.46$). Results showed no other significant differences in the language use of prostate cancer survivors and their partners for the remaining ten categories of word use. Please see Table 10.

Finally, several repeated measures analysis of variance tests were conducted to test for changes in survivors and partners’ linguistic dimensions over the three transcribed counseling sessions. The results of these repeated measures analysis of variance tests for changes in language use of breast cancer survivors, their partners, and prostate cancer survivors and their partners over time, are presented in Tables 11-14 and are described below.

For women with breast cancer, a significant difference was found between Time 1 ($M = 2,300.36, SD = 967.26$), Time 2 ($M = 2,484.73, SD = 1,006.37$), and Time 3 ($M = 1,797.79, SD = 954.80$) average word count, $F(2, 42) = 6.31, p < .01, \eta^2 = .23$. Post hoc paired t -tests indicated that breast cancer survivors uttered significantly fewer words in Time 3 than Time 2 ($p < .01$). In addition, a significant difference was found between Time 1 ($M = 17.99, SD = 2.07$), Time 2 ($M = 19.07, SD = 2.29$), and Time 3 ($M = 18.03,$

$SD = 2.34$) total pronoun use, $F(2, 42) = 7.60, p < .01, \eta^2 = .27$. Post hoc paired t -tests indicated that breast cancer survivors' total pronoun use increased significantly from Time 1 to Time 2 ($p < .01$), and decreased significantly from Time 2 to Time 3 ($p < .01$). A significant difference was also found between Time 1 ($M = 1.09, SD = .38$), Time 2 ($M = 1.58, SD = .69$), and Time 3 ($M = 1.47, SD = .75$) use of second-person pronouns or "you" references, $F(2, 42) = 5.88, p < .01, \eta^2 = .22$. Post hoc paired t -tests indicated that breast cancer survivors' use of second-person pronouns or "you" references increased significantly from Time 1 to Time 2 ($p < .05$), and also increased significantly from Time 1 to Time 3 ($p < .01$). Further, a significant difference was found between Time 1 ($M = 3.83, SD = 1.82$), Time 2 ($M = 4.39, SD = 1.67$), and Time 3 ($M = 3.42, SD = 1.48$) use of other-person plural pronouns or "other" references, $F(2, 42) = 3.81, p < .05, \eta^2 = .15$. Post hoc paired t -tests indicated that breast cancer survivors' use of other-person plural pronouns or "other" references significantly decreased from Time 2 to Time 3 ($p < .01$). Finally, a significant difference was found between Time 1 ($M = 1.87, SD = .66$), Time 2 ($M = 1.92, SD = .51$), and Time 3 ($M = 2.22, SD = .62$) use of positive emotion words, $F(2, 42) = 3.89, p < .05, \eta^2 = .16$. Post hoc paired t -tests indicated that breast cancer survivors' use of positive emotion words significantly increased from Time 1 to Time 3 ($p < .05$). Results showed no other significant differences in changes over time of the language use of breast cancer survivors for the remaining ten categories of word use (please see Table 11).

For partners of women with breast cancer, a significant difference was found between Time 1 ($M = 1,392.06, SD = 849.28$), Time 2 ($M = 1,869.17, SD = 923.96$), and

Time 3 ($M = 1,719.56$, $SD = 612.27$) average word count, $F(2, 34) = 3.89$, $p < .05$, $\eta^2 = .19$. Post hoc paired t -tests indicated that breast cancer partners uttered significantly more words from Time 1 to Time 2 ($p < .01$). A significant difference was also found between Time 1 ($M = 4.94$, $SD = 2.51$), Time 2 ($M = 6.06$, $SD = 1.91$), and Time 3 ($M = 4.99$, $SD = 1.92$) use of other-person plural pronouns or “other” references, $F(2, 34) = 3.58$, $p < .05$, $\eta^2 = .17$. Post hoc paired t -tests indicated that breast cancer partners’ use of other-person plural pronouns or “other” references decreased significantly from Time 2 to Time 3 ($p < .05$). Finally, a significant difference was found between Time 1 ($M = .38$, $SD = .26$), Time 2 ($M = .23$, $SD = .19$), and Time 3 ($M = .33$, $SD = .21$) expression of sadness, $F(2, 34) = 3.44$, $p < .05$, $\eta^2 = .17$. Post hoc paired t -tests indicated that breast cancer partners’ use of words indicating sadness significantly decreased from Time 1 to Time 2 ($p < .05$). Results showed no other significant differences in the language use of breast cancer partners over time for the remaining twelve categories of word use (please see Table 12).

For men with prostate cancer, a significant difference was found between Time 1 ($M = 3.07$, $SD = .95$), Time 2 ($M = 2.79$, $SD = .62$), and Time 3 ($M = 3.47$, $SD = .83$) overall expression of affect, $F(2, 34) = 5.37$, $p < .01$, $\eta^2 = .24$. Post hoc paired t -tests indicated that prostate cancer survivors’ use of total affect words increased significantly from Time 2 to Time 3 ($p < .05$). A significant difference was also found between Time 1 ($M = 1.96$, $SD = .82$), Time 2 ($M = 1.89$, $SD = .55$), and Time 3 ($M = 2.43$, $SD = .87$) expression of positive emotion, $F(2, 34) = 5.16$, $p < .05$, $\eta^2 = .23$. Post hoc paired t -tests indicated that prostate cancer survivors’ use of positive emotion words significantly

increased from Time 2 to Time 3 ($p < .05$). However, results showed no other significant differences in the language use of prostate cancer survivors over time for the remaining thirteen categories of word use (please see Table 13).

For partners of men with prostate cancer, a significant difference was found between Time 1 ($M = 1.34$, $SD = .57$), Time 2 ($M = .89$, $SD = .65$), and Time 3 ($M = .96$, $SD = .48$) expression of negative emotion, $F(2, 20) = 3.88$, $p < .05$, $\eta^2 = .49$. Post hoc paired t -tests indicated that prostate cancer partners' use of negative emotion words significantly decreased from Time 1 to Time 3 ($p < .05$). In addition, a significant difference was also found between Time 1 ($M = .44$, $SD = .31$), Time 2 ($M = .14$, $SD = .14$), and Time 3 ($M = .23$, $SD = .22$) expression of anxiety, $F(2, 20) = 9.70$, $p < .001$, $\eta^2 = .59$. Post hoc paired t -tests indicated that prostate cancer partners' use of words indicating anxiety significantly decreased from Time 1 to Time 2 ($p < .05$). Finally, a significant difference was found between Time 1 ($M = .39$, $SD = .29$), Time 2 ($M = .18$, $SD = .12$), and Time 3 ($M = .26$, $SD = .17$) expression of sadness, $F(1.3, 13.3) = 4.57$, $p < .05$, $\eta^2 = .31$. (Please note that the decimals on the degrees of freedom associated with the F test reflect the Geiser-Greenhouse correction that was used due to the violation of the sphericity assumption). Post hoc paired t -tests indicated that prostate cancer partners' use of words indicating sadness significantly decreased from Time 1 to Time 2 ($p < .05$), and also significantly decreased from Time 1 to Time 3 ($p < .05$). Results showed no other significant differences in the language use of prostate cancer partners over time for the remaining twelve categories of word use (please see Table 14).

Descriptive Results of the Psychosocial Outcome Measures

Descriptive results for the means and standard deviations of the four psychosocial outcome measures were discussed earlier in the *Measures* section (please refer to Tables 2 and 3). However, a set of repeated measures analysis of variance tests were conducted to test for changes over time in the psychosocial outcome measures (over the three time points). Results of these repeated measures analysis of variance tests are presented in Tables 15-18 and are described below.

For women with breast cancer, a significant difference was found between Time 1 ($M = 22.19, SD = 7.87$), Time 2 ($M = 18.29, SD = 5.83$), and Time 3 ($M = 18.10, SD = 6.62$) negative affect scores, $F(2, 40) = 5.85, p < .01, \eta^2 = .23$. Post hoc paired t -tests indicated that breast cancer survivors' negative affect significantly decreased from Time 1 to Time 2 ($p < .05$), and also significantly decreased from Time 1 to Time 3 ($p < .05$). Results showed no other significant differences in breast cancer survivors' outcomes over time for the remaining three psychosocial variables (please see Table 15).

For partners of women with breast cancer, a significant difference was found between Time 1 ($M = 14.45, SD = 8.43$), Time 2 ($M = 4.80, SD = 5.29$), and Time 3 ($M = 5.40, SD = 6.15$) depression scores, $F(2, 38) = 24.43, p < .001, \eta^2 = .56$. Post hoc paired t -tests indicated that breast cancer partners' depression significantly decreased from Time 1 to Time 2 ($p < .001$), and also significantly decreased from Time 1 to Time 3 ($p < .001$). A significant difference was found between Time 1 ($M = 21.50, SD = 7.39$), Time 2 ($M = 19.65, SD = 7.34$), and Time 3 ($M = 16.90, SD = 6.73$) negative affect scores, $F(2, 38) = 3.72, p < .05, \eta^2 = .16$. Post hoc paired t -tests indicated that breast cancer partners' negative affect significantly decreased from Time 1 to Time 3 ($p < .05$).

Results showed no other significant differences in breast cancer partners' outcomes over time for the remaining two psychosocial variables (please see Table 16).

For men with prostate cancer and their partners, results showed no significant changes over time for any of the four psychosocial outcome variables, for either prostate cancer survivors or their partners (please see Table 17 and 18, respectively).

Results for Hypotheses 1: Expression of Emotion (Overall Use of Emotion Words)

To measure the effect of emotional expression (i.e., overall use of emotion words) on psychosocial outcomes, a series of hierarchical regressions were conducted. For example, to test the effect of emotional expressiveness on depression, depression at Time 1 was entered in the first step of the regression, and the language dimension (averaged from T1-T3) that comprises overall expression of affect (i.e., total affect) was entered in the second step. Finally, depression at Time 2 was entered as the dependent variable. Then, the same hierarchical regression was conducted again, this time depression at Time 3 was entered as the dependent variable. This entire process was completed for each of the psychosocial outcome measures (i.e., depression, negative affect, positive affect, and relationship satisfaction) at Time 2 and Time 3, and conducted separately for survivors and their partners.

H1: Survivors' overall use of emotion words.

Given that previous analyses showed no major differences between breast cancer and prostate cancer survivors' overall use of emotion words (please refer to Tables 5 and 6), the data for all survivors with cancer were used for these regression analyses, regardless of cancer type. Results for cancer survivors' expression of emotion (use of

emotion words) in predicting depression, negative affect, positive affect, and relationship satisfaction are presented in Tables 19-22 and are described below.

In the first set of hierarchical regressions, cancer survivors' depression at Time 1 was entered in the first step, the language dimension "total affect" was entered in the second step, and depression at Time 2 was entered as the outcome variable. Results showed that the first model significantly predicted survivors' depression, $R = .759$, $F(1, 41) = 55.60$, $p < .001$. Survivors' depression at Time 1 significantly predicted their depression at Time 2, $\beta = .759$, $t = 7.46$, $p < .001$, $R^2 = .576$. However, survivors' use of total affect words did not significantly predict depression at Time 2, above and beyond depression at Time 1, $R = .759$, $F(1, 40) = .002$, *ns*, R^2 change = .000 (please see Table 19).

The same regression was conducted again, but this time survivors' depression at Time 3 was entered as the outcome variable. Results showed that the first model significantly predicted survivors' depression, $R = .706$, $F(1, 38) = 37.73$, $p < .001$. Survivors' depression at Time 1 significantly predicted their depression at Time 3, $\beta = .706$, $t = 6.14$, $p < .001$, $R^2 = .498$. However, survivors' use of total affect words did not significantly predict their depression at Time 3, $R = .709$, $F(1, 37) = .282$, *ns*, R^2 change = .004 (please see Table 19).

In the second set hierarchical regressions, cancer survivors' negative affect at Time 1 was entered in the first step, the language dimension "total affect" was entered in the second step, and negative affect at Time 2 was entered as the outcome variable. Results showed that the first model significantly predicted survivors' negative affect, $R =$

.782, $F(1, 41) = 64.74, p < .001$. Survivors' negative affect at Time 1 significantly predicted their negative affect at Time 2, $\beta = .782, t = 8.05, p < .001, R^2 = .612$. However, survivors' use of total affect words did not significantly predict negative affect at Time 2, above and beyond negative affect at Time 1, $R = .784, F(1, 40) = .201, ns, R^2 \text{ change} = .002$ (please see Table 20).

The same regression was conducted again, but this time survivors' negative affect at Time 3 was entered as the outcome variable. Results showed that the first model significantly predicted survivors' negative affect, $R = .576, F(1, 38) = 18.89, p < .001$. Survivors' negative affect at Time 1 significantly predicted their negative affect at Time 3, $\beta = .576, t = 4.35, p < .001, R^2 = .332$. However, cancer survivors' use of total affect words did not significantly predict their negative affect at Time 3, $R = .576, F(1, 37) = .001, ns, R^2 \text{ change} = .000$ (please see Table 20).

In the third set of hierarchical regressions, cancer survivors' positive affect at Time 1 was entered in the first step, the language dimension "total affect" was entered in the second step, and positive affect at Time 2 was entered as the outcome variable. Results showed that the first model significantly predicted survivors' positive affect, $R = .633, F(1, 41) = 27.46, p < .001$. Survivors' positive affect at Time 1 significantly predicted their positive affect at Time 2, $\beta = .633, t = 5.24, p < .001, R^2 = .401$. However, survivors' use of total affect words did not significantly predict positive affect at Time 2, above and beyond positive affect at Time 1, $R = .648, F(1, 40) = 1.30, ns, R^2 \text{ change} = .019$ (please see Table 21).

The same regression was conducted again, but this time survivors' positive affect at Time 3 was entered as the outcome variable. Results showed that the first model significantly predicted survivors' positive affect, $R = .677$, $F(1, 38) = 32.08$, $p < .001$. Survivors' positive affect at Time 1 significantly predicted their positive affect at Time 3, $\beta = .677$, $t = 5.66$, $p < .001$, $R^2 = .458$. However, results showed that cancer survivors' use of total affect words did not significantly predict positive affect at Time 3, $R = .680$, $F(1, 37) = .323$, *ns*, R^2 change = .005 (please see Table 21).

In the fourth set of hierarchical regressions, cancer survivors' relationship satisfaction at Time 1 was entered in the first step, the language dimension "total affect" was entered in the second step, and relationship satisfaction at Time 2 was entered as the outcome variable. Results showed that the first model significantly predicted survivors' relationship satisfaction, $R = .767$, $F(1, 40) = 56.99$, $p < .001$. Survivors' relationship satisfaction at Time 1 significantly predicted their relationship satisfaction at Time 2, $\beta = .767$, $t = 7.55$, $p < .001$, $R^2 = .588$. However, survivors' use of total affect words did not significantly predict relationship satisfaction at Time 2, above and beyond relationship satisfaction at Time 1, $R = .774$, $F(1, 39) = 1.10$, *ns*, R^2 change = .011 (please see Table 22).

The same regression was conducted again, but this time survivors' relationship satisfaction at Time 3 was entered as the outcome variable. Results showed that the first model significantly predicted survivors' relationship satisfaction, $R = .747$, $F(1, 38) = 48.06$, $p < .001$. Survivors' relationship satisfaction at Time 1 significantly predicted their relationship satisfaction at Time 3, $\beta = .747$, $t = 6.93$, $p < .001$, $R^2 = .558$. However,

results showed that cancer survivors' use of total affect words did not significantly predict relationship satisfaction at Time 3, $R = .747$, $F(1, 37) = .018$, ns , R^2 change = .000 (please see Table 22).

H1: Partners' overall use of emotion words.

Given that previous analyses showed no major differences between breast and prostate cancer partners' overall use of emotion words (please refer to Tables 7 and 8), the data for all partners were used for these regression analyses, regardless of cancer type. Results for partners' overall expression of emotion (total affect words) in predicting depression, negative affect, positive affect, and relationship satisfaction are presented in Tables 23-26 and are described below.

In the first set of hierarchical regressions, partners' depression at Time 1 was entered in the first step of the regression, the language dimension "total affect" was entered in the second step, and depression at Time 2 was entered as the outcome variable. Results showed that the first model significantly predicted partners' depression, $R = .635$, $F(1, 39) = 26.36$, $p < .001$. Partners' depression at Time 1 significantly predicted their depression at Time 2, $\beta = .635$, $t = 5.13$, $p < .001$, $R^2 = .403$. Although approaching significance, partners' use of total affect words did not significantly predict depression at Time 2, above and beyond depression at Time 1, $R = .678$, $F(1, 38) = 3.96$, $p < .054$, R^2 change = .056 (please see Table 23).

The same regression was conducted again, but this time partners' depression at Time 3 was entered as the outcome variable. Results showed that the first model significantly predicted partners' depression, $R = .561$, $F(1, 37) = 16.96$, $p < .001$.

Partners' depression at Time 1 significantly predicted their depression at Time 3, $\beta = .561$, $t = 4.12$, $p < .001$, $R^2 = .314$. However, results showed that partners' use of total affect words did not significantly predict their depression at Time 3, $R = .580$, $F(1, 36) = 1.22$, *ns*, R^2 change = .022 (please see Table 23).

In the second set of hierarchical regressions, partners' negative affect at Time 1 was entered in the first step, the language dimension "total affect" was entered in the second step, and negative affect at Time 2 was entered as the outcome variable. Results showed that the first model significantly predicted partners' negative affect, $R = .668$, $F(1, 39) = 31.40$, $p < .001$. Partners' negative affect at Time 1 significantly predicted their negative affect at Time 2, $\beta = .668$, $t = 5.60$, $p < .001$, $R^2 = .446$. However, partners' use of total affect words did not significantly predict negative affect at Time 2, above and beyond negative affect at Time 1, $R = .668$, $F(1, 38) = .010$, *ns*, R^2 change = .000 (please see Table 24).

The same regression was conducted again, but this time partners' negative affect at Time 3 was entered as the outcome variable. Results showed that the first model significantly predicted partners' negative affect, $R = .373$, $F(1, 37) = 5.98$, $p < .05$. Partners' negative affect at Time 1 significantly predicted their negative affect at Time 3, $\beta = .373$, $t = 2.45$, $p < .05$, $R^2 = .139$. However, partners' use of total affect words did not significantly predict their negative affect at Time 3, $R = .375$, $F(1, 36) = .045$, *ns*, R^2 change = .001 (please see Table 24).

In the third set of hierarchical regressions, partners' positive affect at Time 1 was entered in the first step, the language dimension "total affect" was entered in the second

step, and positive affect at Time 2 was entered as the outcome variable. Results showed that the first model significantly predicted partners' positive affect, $R = .483$, $F(1, 39) = 11.86$, $p < .001$. Partners' positive affect at Time 1 significantly predicted their positive affect at Time 2, $\beta = .483$, $t = 3.44$, $p < .001$, $R^2 = .233$. However, partners' use of total affect words did not significantly predict positive affect at Time 2, above and beyond positive affect at Time 1, $R = .487$, $F(1, 38) = .185$, ns , R^2 change = .004 (please see Table 25).

The same regression was conducted again, but this time partners' positive affect at Time 3 was entered as the outcome variable. Results showed that the first model significantly predicted partners' positive affect, $R = .423$, $F(1, 37) = 8.08$, $p < .01$. Partners' positive affect at Time 1 significantly predicted their positive affect at Time 3, $\beta = .423$, $t = 2.84$, $p < .01$, $R^2 = .179$. However, partners' use of total affect words did not significantly predict their positive affect at Time 3, $R = .423$, $F(1, 36) = .001$, ns , R^2 change = .000 (please see Table 25).

In the fourth set of hierarchical regressions, partners' relationship satisfaction at Time 1 was entered in the first step, the language dimension "total affect" was entered in the second step, and relationship satisfaction at Time 2 was entered as the outcome variable. Results showed that the first model significantly predicted partners' relationship satisfaction, $R = .937$, $F(1, 38) = 275.59$, $p < .001$. Partners' relationship satisfaction at Time 1 significantly predicted their relationship satisfaction at Time 2, $\beta = .937$, $t = 16.60$, $p < .001$, $R^2 = .878$. However, partners' use of total affect words did not significantly predict relationship satisfaction at Time 2, above and beyond relationship

satisfaction at Time 1, $R = .937$, $F(1, 37) = .001$, *ns*, R^2 change = .000 (please see Table 26).

The same regression was conducted again, but this time partners' relationship satisfaction at Time 3 was entered as the outcome variable. Results showed that the first model significantly predicted partners' relationship satisfaction, $R = .842$, $F(1, 36) = 87.68$, $p < .001$. Partners' relationship satisfaction at Time 1 significantly predicted their relationship satisfaction at Time 3, $\beta = .842$, $t = 9.36$, $p < .001$, $R^2 = .709$. However, partners' use of total affect words did not significantly predict their relationship satisfaction at Time 3, $R = .843$, $F(1, 35) = .186$, *ns*, R^2 change = .002 (please see Table 26).

Overall, the results for H1 were largely not supported. Results indicated that neither survivors' nor their partners' expression of emotion (the overall use of positive and negative emotion words during counseling) showed any significant effects on their Time 2 or Time 3 psychosocial outcomes (i.e., depression, negative affect, positive affect, and relationship satisfaction). Survivors' and partners' psychosocial measures at Time 1 were better predictors of their future psychosocial well-being at Time 2 and Time 3, than was their overall expression of emotion during the telephone counseling intervention.

Results for Hypotheses 1a: Expression of Positive Emotion (Use of Positive Emotion Words)

To measure the effect of positive emotional expression (i.e., use of positive emotion words) on psychosocial outcomes, a series of hierarchical regressions were conducted. For example, to test the effect of positive emotion words on depression,

depression at Time 1 was entered in the first step of the regression, and the language dimension (averaged from T1-T3) that comprises positive emotional expression (i.e., positive emotion words) was entered as a block in the second step. Finally, depression at Time 2 was entered as the dependent variable. Then, the same hierarchical regression was conducted again, this time with depression at Time 3 as the dependent variable. This entire process was completed for each of the psychosocial outcome measures (i.e., depression, negative affect, positive affect, and relationship satisfaction) at Time 2 and Time 3, and conducted separately for survivors and their partners. Given that the results for the independent predictor psychosocial variables (i.e., depression at Time 1 predicting depression at Time 2; depression at Time 1 predicting depression at Time 3) were reported in the regression analyses above, all results reported hereafter will include only the results for the associations of the independent linguistic variables (i.e., overall emotional expression, positive affect words, and “we-talk” words) on psychosocial outcomes at Time 2 and Time 3. Please see Tables 19-26 for the recorded results of the psychosocial variables at Time 1 (depression, positive affect, negative affect, and relationship satisfaction) predicting the psychosocial outcomes at Time 2 and Time 3.

H1a: Survivors' use of positive emotion words.

In the first set of hierarchical regressions, cancer survivors' depression at Time 1 was entered in the first step of the regression, the language dimension “positive emotion” was entered in the second step, and depression at Time 2 was entered as the outcome variable. Survivors' use of positive emotion words did not significantly predict depression at Time 2, above and beyond depression at Time 1, $R = .761$, $F(1, 40) = .282$,

ns, R^2 change = .003. The same regression was conducted again, but this time survivors' depression at Time 3 was entered as the outcome variable. Survivors' use of positive emotion words did not significantly predict depression at Time 3, above and beyond depression at Time 1, $R = .706$, $F(1, 37) = .049$, *ns*, R^2 change = .001 (please see Table 27).

In the second set of hierarchical regressions, cancer survivors' negative affect at Time 1 was entered in the first step, the language dimension "positive emotion" was entered in the second step, and negative affect at Time 2 was entered as the outcome variable. Survivors' use of positive emotion words did not significantly predict negative affect at Time 2, above and beyond negative affect at Time 1, $R = .789$, $F(1, 40) = 1.08$, *ns*, R^2 change = .010. The same regression was conducted again, but this time survivors' negative affect at Time 3 was entered as the outcome variable. Survivors' use of emotion words did not significantly predict their negative affect at Time 3, above and beyond negative affect at Time 1, $R = .580$, $F(1, 37) = .227$, *ns*, R^2 change = .004 (please see Table 28).

In the third set of hierarchical regressions, cancer survivors' positive affect at Time 1 was entered in the first step, the language dimension "positive emotion" was entered in the second step, and positive affect at Time 2 was entered as the outcome variable. Survivors' positive affect at Time 1 significantly predicted their positive affect at Time 2. However, survivors' use of positive emotion words did not significantly predict positive affect at Time 2, above and beyond positive affect at Time 1, $R = .654$, $F(1, 40) = 1.87$, *ns*, R^2 change = .027. The same regression was conducted again, but this

time survivors' positive affect at Time 3 was entered as the outcome variable. Survivors' use of positive emotion words did not significantly predict positive affect at Time 3, above and beyond positive affect at Time 1, $R = .701$, $F(1, 37) = 2.43$, ns , R^2 change = .033 (please see Table 29).

In the fourth set of hierarchical regressions, cancer survivors' relationship satisfaction at Time 1 was entered in the first step, the language dimension "positive emotion" was entered in the second step, and relationship satisfaction at Time 2 was entered as the outcome variable. Survivors' use of positive emotion words did not significantly predict relationship satisfaction at Time 2, above and beyond relationship satisfaction at Time 1, $R = .767$, $F(1, 39) = .002$, ns , R^2 change = .000. The same regression was conducted again, but this time survivors' relationship satisfaction at Time 3 was entered as the outcome variable. Survivors' use of positive emotion words did not significantly predict relationship satisfaction at Time 3, above and beyond relationship satisfaction at Time 1, $R = .748$, $F(1, 37) = .062$, ns , R^2 change = .001 (please see Table 30).

H1a: Partners' use of positive emotion words.

Given that previous analyses showed no significant differences between breast cancer and prostate cancer partners' use of positive emotion words (please refer to Tables 7 and 8), the data for all partners were used for these regression analyses, regardless of cancer type. Results for partners' use of positive emotion words in predicting depression, negative affect, positive affect, and relationship satisfaction are presented in Tables 31-34 and are described below.

Given that the results for the independent predictor psychosocial variables (i.e., depression at Time 1 predicting depression at Time 2; depression at Time 1 predicting depression at Time 3) were reported in the regression analyses above, all results reported hereafter will include only the results for the associations of the independent linguistic variables (i.e., overall emotional expression, positive affect words, and “we-talk” words) on psychosocial outcomes at Time 2 and Time 3. Please see Tables 23-26 for the recorded results of the psychosocial variables at Time 1 (depression, positive affect, negative affect, and relationship satisfaction) predicting the psychosocial outcomes at Time 2 and Time 3.

In the first set of hierarchical regressions, partners’ depression at Time 1 was entered in the first step, the language dimension “positive emotion” was entered in the second step, and depression at Time 2 was entered as the outcome variable. Partners’ use of positive emotion words did not significantly predict depression at Time 2, above and beyond depression at Time 1, $R = .667$, $F(1, 39) = 2.89$, ns , R^2 change = .042. The same regression was conducted again, but this time partners’ depression at Time 3 was entered as the outcome variable. Partners’ use of positive emotion words did not significantly predict their depression at Time 3, above and beyond depression at Time 1, $R = .562$, $F(1, 36) = .087$, ns , R^2 change = .002 (please see Table 31).

In the second set of hierarchical regressions, partners’ negative affect at Time 1 was entered in the first step, the language dimension “positive emotion” was entered in the second step, and negative affect at Time 2 was entered as the outcome variable. Partners’ use of positive emotion words did not significantly predict negative affect at

Time 2, above and beyond negative affect at Time 1, $R = .696$, $F(1, 38) = 2.81$, *ns*, R^2 change = .38. The same regression was conducted again, but this time partners' negative affect at Time 3 was entered as the outcome variable. Partners' use of positive emotion words did not significantly predict their negative affect at Time 3, above and beyond negative affect at Time 1, $R = .375$, $F(1, 36) = .201$, *ns*, R^2 change = .001 (please see table 32).

In the third set of hierarchical regressions, partners' positive affect at Time 1 was entered in the first step, the language dimension "positive emotion" was entered in the second step, and positive affect at Time 2 was entered as the outcome variable. Partners' use of positive emotion words did not significantly predict positive affect at Time 2, above and beyond positive affect at Time 1, $R = .486$, $F(1, 38) = .130$, *ns*, R^2 change = .003. The same regression was conducted again, but this time partners' positive affect at Time 3 was entered as the outcome variable. Partners' use of positive emotion words did not significantly predict their positive affect at Time 3, above and beyond positive affect at Time 1, $R = .425$, $F(1, 36) = .064$, *ns*, R^2 change = .001 (please see Table 33).

In the fourth set of hierarchical regressions, partners' relationship satisfaction at Time 1 was entered in the first step, the language dimension "positive emotion" was entered in the second step, and relationship satisfaction at Time 2 was entered as the outcome variable. Partners' use of positive emotion words did not significantly predict relationship satisfaction at Time 2, above and beyond relationship satisfaction at Time 1, $R = .940$, $F(1, 37) = 1.80$, *ns*, R^2 change = .006. The same regression was conducted again, but this time partners' relationship satisfaction at Time 3 was entered as the

outcome variable. Partners' use of positive emotion words did not significantly predict their relationship satisfaction at Time 3, above and beyond relationship satisfaction at Time 1, $R = .853$, $F(1, 35) = 2.51$, ns , R^2 change = .019 (please see Table 34).

Overall, the results for H1a proved to be largely nonsignificant. Results indicated that survivors' and partners' positive emotional expression (the use of positive emotion words during counseling) did not have any significant associations with their Time 2 or Time 3 psychosocial outcomes (i.e., depression, negative affect, positive affect, and relationship satisfaction). Again, survivors' and partners' psychosocial measures at Time 1 were better predictors of their future psychosocial well-being at Time 2 and Time 3, than their use of positive emotion words during the telephone counseling intervention.

Results for Hypotheses H2: Communal Coping ("We-Talk")

To measure the effect of communal coping (i.e., "we-talk") on psychosocial outcomes, a series of hierarchical regressions were conducted. For example, to test the effect of communal coping on depression, depression at Time 1 was entered in the first step. Then, the language dimension that comprises "we-talk" (e.g., first-person plural pronouns) was entered in the second step. Finally, depression at Time 2 was entered as the dependent variable. Then, the same hierarchical regression was conducted again, this time with depression at Time 3 as the dependent variable. This entire process was completed for each of the psychosocial outcome measures (i.e., depression, negative affect, positive affect, and relationship satisfaction) at Time 2 and Time 3, and conducted separately for survivors and their partners.

H2: Survivors' use of communal coping.

Given that previous analyses showed no significant differences between breast cancer and prostate cancer survivors' use of first-person plural pronouns (i.e., "we"), the data for all cancer survivors, regardless of cancer type, were used for these regression analyses. Results for cancer survivors' communal coping ("we-talk") in predicting depression, negative affect, positive affect, and relationship satisfaction are presented in Tables 35-38 and are described below.

In the first set of hierarchical regressions, cancer survivors' depression at Time 1 was entered in the first step, the language dimension for communal coping or "we-talk" (i.e., first-person plural pronouns) was entered in the second step, and depression at Time 2 was entered as the outcome variable. Survivors' use of first-person plural pronouns did not significantly predict depression at Time 2, above and beyond depression at Time 1, $R = .759$, $F(1, 40) = .040$, *ns*, R^2 change = .000. The same regression was conducted again, but this time survivors' depression at Time 3 was entered as the outcome variable. Survivors' use of first-person plural pronouns did not significantly predict their depression at Time 3, above and beyond depression at Time 1, $R = .706$, $F(1, 37) = .007$, *ns*, R^2 change = .000 (please see Table 35).

In the second set of hierarchical regressions, cancer survivors' negative affect at Time 1 was entered in the first step, the language dimension for communal coping or "we-talk" (i.e., first-person plural pronouns) was entered in the second step, and negative affect at Time 2 was entered as the outcome variable. Survivors' use of first-person plural pronouns did not significantly predict negative affect at Time 2, above and beyond negative affect at Time 1, $R = .784$, $F(4, 40) = .281$, *ns*, R^2 change = .003. The same

regression was conducted again, but this time survivors' negative affect at Time 3 was entered as the outcome variable. Survivors' use of first-person plural pronouns did not significantly predict their negative affect at Time 3, above and beyond negative affect at Time 1, $R = .583$, $F(1, 37) = .460$, *ns*, R^2 change = .008 (please see Table 36).

In the third set of hierarchical regressions, cancer survivors' positive affect at Time 1 was entered in the first step, the language dimension for communal coping or "we-talk" (i.e., first-person plural pronouns) was entered in the second step, and positive affect at Time 2 was entered as the outcome variable. Survivors' use of first-person plural pronouns did not significantly predict positive affect at Time 2, above and beyond positive affect at Time 1, $R = .655$, $F(1, 40) = 1.94$, *ns*, R^2 change = .028. The same regression was conducted again, but this time survivors' positive affect at Time 3 was entered as the outcome variable. Survivors' use of first-person plural pronouns did not significantly predict their positive affect at Time 3, above and beyond positive affect at Time 1, $R = .703$, $F(1, 37) = 2.63$, *ns*, R^2 change = .036 (please see Table 37).

In the fourth set of hierarchical regressions, cancer survivors' relationship satisfaction at Time 1 was entered in the first step, the language dimension for communal coping or "we-talk" (i.e., first-person plural pronouns) was entered in the second step, and relationship satisfaction at Time 2 was entered as the outcome variable. Survivors' use of first-person plural pronouns did not significantly predict relationship satisfaction at Time 2, above and beyond relationship satisfaction at Time 1, $R = .772$, $F(1, 39) = .861$, *ns*, R^2 change = .009. The same regression was conducted again, but this time survivors' relationship satisfaction at Time 3 was entered as the outcome variable. Survivors' use of

first-person plural pronouns did not significantly predict their relationship satisfaction at Time 3, above and beyond relationship satisfaction at Time 1, $R = .749$, $F(1, 37) = 1.26$, ns , R^2 change = .002 (please see Table 38).

H2: Partners' use of communal coping.

Given that previous analyses showed no significant differences between breast cancer and prostate cancer partners' use of first-person plural pronouns (i.e., "we"), the data for all partners were used for these regression analyses, regardless of cancer type. Results for cancer partners' communal coping ("we-talk") in predicting depression, negative affect, positive affect, and relationship satisfaction are presented in Tables 39-42 and are described below.

In the first set of hierarchical regression, partners' depression at Time 1 was entered in the first step, the language dimension for communal coping or "we-talk" (i.e., first-person plural pronouns) was entered in the second step, and depression at Time 2 was entered as the outcome variable. Partners' use of first-person plural pronouns did not significantly predict depression at Time 2, above and beyond depression at Time 1, $R = .635$, $F(1, 38) = .000$, ns , R^2 change = .000. The same regression was conducted again, but this time partners' depression at Time 3 was entered as the outcome variable. Partners' use of first-person plural pronouns did not significantly predict their depression at Time 3, above and beyond depression at Time 1, $R = .571$, $F(1, 36) = .626$, ns , R^2 change = .012 (please see Table 39).

In the second set of hierarchical regressions, partners' negative affect at Time 1 was entered in the first step, the language dimension for communal coping or "we-talk"

(i.e., first-person plural pronouns) was entered in the second step, and negative affect at Time 2 was entered as the outcome variable. Results revealed that the second model (that included “we-talk”) significantly predicted partners’ negative affect at Time 2, above and beyond negative affect at Time 1, $R = .738$, $F(1, 38) = 8.28$, $p < .01$, R^2 change = .099. The use of first-person plural pronouns significantly predicted partners’ negative affect at Time 2, $\beta = -.316$, $t = -2.88$, $p < .01$, $R^2 = .099$. Greater use of “we-talk” (first-person plural pronouns) during counseling predicted significantly decreased measures of negative affect at Time 2. The same regression was conducted again, but this time partners’ negative affect at Time 3 was entered as the outcome variable. However, partners’ use of first-person plural pronouns did not significantly predict their negative affect at Time 3, above and beyond negative affect at Time 1, $R = .399$, $F(1, 36) = .871$, ns , R^2 change = .020 (please see Table 40).

In the third set of hierarchical regressions, partners’ positive affect at Time 1 was entered in the first step, the language dimension for communal coping or “we-talk” (i.e., first-person plural pronouns) was entered in the second step, and positive affect at Time 2 was entered as the outcome variable. Partners’ use of first-person plural pronouns did not significantly predict positive affect at Time 2, above and beyond positive affect at Time 1, $R = .497$, $F(1, 38) = .695$, ns , R^2 change = .014. The same regression was conducted again, but this time partners’ positive affect at Time 3 was entered as the outcome variable. Partners’ use of first-person plural pronouns did not significantly predict their positive affect at Time 3, above and beyond positive affect at Time 1, $R = .430$, $F(1, 36) = .264$, ns , R^2 change = .006 (please see Table 41).

In the fourth set of hierarchical regressions, partners' relationship satisfaction at Time 1 was entered in the first step, the language dimension for communal coping or "we-talk" (i.e., first-person plural pronouns) was entered in the second step, and relationship satisfaction at Time 2 was entered as the outcome variable. Partners' use of first-person plural pronouns did not significantly predict relationship satisfaction at Time 2, above and beyond relationship satisfaction at Time 1, $R = .942$, $F(1, 37) = 2.64$, *ns*, R^2 change = .008. The same regression was conducted again, but this time partners' relationship satisfaction at Time 3 was entered as the outcome variable. Partners' use of first-person plural pronouns did not significantly predict their relationship satisfaction at Time 3, above and beyond relationship satisfaction at Time 1, $R = .847$, $F(1, 35) = .954$, *ns*, R^2 change = .008 (please see Table 42).

Overall, the results for H2 were largely nonsignificant, with the exception of one finding. Results showed that a greater use of "we-talk" (first-person plural pronouns) for partners during counseling predicted significantly decreased measures of negative affect at Time 2. However the remainder of the analyses for survivors' and partners' communal coping or "we-talk" (i.e., use of first-person plural pronouns during counseling) did not produce any significant effects on their Time 2 or Time 3 psychosocial outcomes (i.e., depression, negative affect, positive affect, and relationship satisfaction). Again, survivors' and partners' psychosocial measures at Time 1 were better predictors of their future psychosocial well-being at Time 2 and Time 3, than was their use of "we-talk" words during the telephone counseling intervention; with the exception of partners' use of we-talk and their decreased negative affect measures at Time 2.

Results for Hypotheses 3: Change in Overall Emotional Expression (Total Affect Words) and Improved Psychosocial Outcomes.

To measure whether change in overall emotional expression over time is associated with improved psychosocial outcomes, a series of hierarchical regressions were conducted. First, change scores were calculated for Time 1-Time 2 change and Time 1-Time 3 change for all psychosocial outcome variables. To create these change scores, Time 2 and Time 3 scores were subtracted from Time 1 scores (i.e., $T2-T1$), so that a positive change score would indicate an increase in that psychosocial variable, and a negative change score would indicate a decrease in that psychosocial variable. Therefore, to test whether change in overall emotional expressiveness is associated with improved levels of depression, participants' language dimension (from Time 1) that comprises overall affect (i.e., total affect words) was entered in the first step, and the language dimension (from Time 2) that comprises overall affect (i.e., total affect words) was entered in the second step, and the change score for Time 1-Time 2 depression was entered as the dependent variable. Then, another hierarchical regression was conducted, this time participants' language dimension (from Time 1) that comprises overall affect (i.e., total affect words) was entered in the first step, the language dimension (from Time 3) that comprises overall affect (i.e., total affect words) was entered in the second step, and Time 1-Time 3 change score for depression was entered as the dependent variable. This entire process was completed for both change scores for each of the psychosocial outcome measures (i.e., depression, negative affect, positive affect, and relationship

satisfaction) as the dependent variables, and conducted separately for survivors and their partners.

H3: Survivors' change in overall emotional expression.

Given that previous analyses showed no major differences between breast cancer and prostate cancer survivors' overall use of emotion words (please refer to Tables 5 and 6), the data for all cancer survivors, regardless of cancer type, were used for these regression analyses. Results for changes in cancer survivors' overall expression of emotion in predicting improved psychosocial outcomes for depression, negative affect, positive affect, and relationship satisfaction are presented in Tables 43-46 and are described below.

In the first set of hierarchical regressions, cancer survivors' use of total affect words at Time 1 was entered in the first step, total affect words at Time 2 was entered in the second step, and the Time 1-Time 2 change score for depression was entered as the outcome variable. Results showed that survivors' total affect words at Time 1 did not significantly predict Time 1-Time 2 change scores for depression, $R = .047$, $F(1, 41) = .091$, *ns*. Further, survivors' total affect words at Time 2 did not significantly predict their Time 1-Time 2 change score for depression, above and beyond expression of affect at Time 1, $R = .048$, $F(1, 40) = .005$, *ns*, R^2 change = .000 (please see Table 43).

Another regression was conducted, but this time survivors' total affect words at Time 1 was entered in the first step, total affect words at Time 3 was entered in the second step, and the Time 1-Time 3 change score for depression was entered as the outcome variable. Results showed that survivors' total affect words at Time 1 did not

significantly predict Time 1-Time 3 change scores for depression, $R = .012$, $F(1, 35) = .005$, *ns*. Further, survivors' total affect words at Time 3 did not significantly predict their Time 1-Time 3 change score for depression, above and beyond expression of affect at Time 1, $R = .105$, $F(1, 34) = .376$, *ns*, R^2 change = .011 (please see Table 43).

In the second set of hierarchical regressions, cancer survivors' use of total affect words at Time 1 was entered in the first step, total affect words at Time 2 was entered in the second step, and the Time 1-Time 2 change score for negative affect was entered as the outcome variable. Results showed that survivors' total affect words at Time 1 did not significantly predict Time 1-Time 2 change scores for negative affect, $R = .035$, $F(1, 41) = .050$, *ns*. Further, survivors' total affect words at Time 2 did not significantly predict their Time 1-Time 2 change score for negative affect, above and beyond expression of affect at Time 1, $R = .210$, $F(1, 40) = 1.80$, *ns*, R^2 change = .044 (please see Table 44).

Another regression was conducted, but this time survivors' total affect words at Time 1 was entered in the first step, total affect words at Time 3 was entered in the second step, and the Time 1-Time 3 change score for negative affect was entered as the outcome variable. Results showed that survivors' total affect words at Time 1 did not significantly predict Time 1-Time 3 change scores for negative affect, $R = .007$, $F(1, 35) = .005$, *ns*. Further, survivors' total affect words at Time 3 did not significantly predict their Time 1-Time 3 change score for negative affect, above and beyond expression of affect at Time 1, $R = .143$, $F(1, 34) = .712$, *ns*, R^2 change = .021 (please see Table 44).

In the third set of hierarchical regressions, cancer survivors' use of total affect words at Time 1 was entered in the first step, total affect words at Time 2 was entered in

the second step, and the Time 1-Time 2 change score for positive affect was entered as the outcome variable. Results showed that survivors' total affect words at Time 1 did not significantly predict Time 1-Time 2 change scores for positive affect, $R = .153$, $F(1, 41) = .983$, *ns*. Further, survivors' total affect words at Time 2 did not significantly predict their Time 1-Time 2 change score for positive affect, above and beyond expression of affect at Time 1, $R = .156$, $F(1, 40) = .041$, *ns*, R^2 change = .001 (please see Table 45).

Another regression was conducted, but this time survivors' total affect words at Time 1 was entered in the first step, total affect words at Time 3 was entered in the second step, and the Time 1-Time 3 change score for positive affect was entered as the outcome variable. Results showed that survivors' total affect words at Time 1 did not significantly predict Time 1-Time 3 change scores for positive affect, $R = .248$, $F(1, 35) = 2.29$, *ns*. Further, survivors' total affect words at Time 3 did not significantly predict their Time 1-Time 3 change score for positive affect, above and beyond expression of affect at Time 1, $R = .249$, $F(1, 34) = .010$, *ns*, R^2 change = .000 (please see Table 45).

In the fourth set of hierarchical regressions, cancer survivors' use of total affect words at Time 1 was entered in the first step, total affect words at Time 2 was entered in the second step, and the Time 1-Time 2 change score for relationship satisfaction was entered as the outcome variable. Results showed that survivors' total affect words at Time 1 did not significantly predict Time 1-Time 2 change scores for relationship satisfaction, $R = .119$, $F(1, 40) = .576$, *ns*. However, results showed that the second model significantly predicted survivors' Time 1-Time 2 change score for relationship satisfaction, $R = .393$, $F(1, 39) = 6.48$, $p < .05$, R^2 change = .140. Survivors' overall

emotional expression (i.e., total use of affect words) at Time 2 significantly predicted their Time 1-Time 2 change score for relationship satisfaction, above and beyond expression of affect at Time 1, $\beta = -.459$, $t = -2.55$, $p < .05$, $R^2 = .155$ (please see Table 46). An increase in survivors' overall use of negative and positive affect words during counseling predicted a decrease in relationship satisfaction at Time 2.

Another regression was conducted, but this time survivors' total affect words at Time 1 was entered in the first step, total affect words at Time 3 was entered in the second step, and the Time 1-Time 3 change score for relationship satisfaction was entered as the outcome variable. Results showed that survivors' total affect words at Time 1 did not significantly predict Time 1-Time 3 change scores for relationship satisfaction, $R = .014$, $F(1, 35) = .006$, *ns*. Further, survivors' total affect words at Time 3 did not significantly predict their Time 1-Time 3 change score for relationship satisfaction, above and beyond expression of affect at Time 1, $R = .117$, $F(1, 34) = .010$, *ns*, R^2 change = .014 (please see Table 46).

H3: Partners' change in overall emotional expression.

Given that previous analyses showed no major differences between breast cancer and prostate cancer partners' overall use of emotion words (please refer to Table 7), the data for all cancer partners were used for these regression analyses, regardless of cancer type. Results for changes in cancer partners' expression of emotion in predicting improved psychosocial outcomes for depression, negative affect, positive affect, and relationship satisfaction are presented in Tables 47-50 and are described below.

In the first set of hierarchical regressions, partners' use of total affect words at Time 1 was entered in the first step, total affect words at Time 2 was entered in the second step, and the Time 1-Time 2 change score for depression was entered as the outcome variable. Results showed that the first model significantly predicted partners' Time 1-Time 2 change score for depression, $R = .348$, $F(1, 38) = 5.24$, $p < .05$, R^2 change = .121. Partners' overall emotional expression (i.e., total use of affect words) at Time 1 significantly predicted their Time 1-Time 2 change score for depression, $\beta = -.348$, $t = -2.29$, $p < .05$, $R^2 = .121$. An increase in partners' overall use of negative and positive affect words during counseling predicted a decrease in depression at Time 2. However, partners' total affect words at Time 2 did not significantly predict their Time 1-Time 2 change score for depression, above and beyond expression of affect at Time 1, $R = .399$, $F(1, 37) = 1.68$, ns , R^2 change = .038 (please see Table 47).

Another regression was conducted, but this time partners' total affect words at Time 1 was entered in the first step, total affect words at Time 3 was entered in the second step, and the Time 1-Time 3 change score for depression was entered as the outcome variable. Results showed that partners' total affect words at Time 1 did not significantly predict Time 1-Time 3 change scores for depression, $R = .097$, $F(1, 25) = .237$, ns . Further, partners' total affect words at Time 3 did not significantly predict their Time 1-Time 3 change score for depression, above and beyond expression of affect at Time 1, $R = .182$, $F(1, 24) = .588$, ns , R^2 change = .024 (please see Table 47).

In the second set of hierarchical regressions, partners' use of total affect words at Time 1 was entered in the first step, total affect words at Time 2 was entered in the

second step, and the Time 1-Time 2 change score for negative affect was entered as the outcome variable. Results showed that partners' total affect words at Time 1 did not significantly predict Time 1-Time 2 change scores for negative affect, $R = .035$, $F(1, 38) = .047$, *ns*. However, results showed that the second model significantly predicted partners' negative affect, $R = .342$, $F(1, 37) = 4.86$, $p < .05$, R^2 change = .116. Partners' overall emotional expression (i.e., total use of affect words) at Time 2 significantly predicted their Time 1-Time 2 change score for negative affect, above and beyond expression of affect at Time 1, $\beta = .440$, $t = 2.20$, $p < .05$, $R^2 = .117$ (please see Table 48). An increase in partners' overall use of negative and positive affect words during counseling predicted an increase in negative affect scores at Time 2.

Another regression was conducted, but this time partners' total affect words at Time 1 was entered in the first step, total affect words at Time 3 was entered in the second step, and the Time 1-Time 3 change score for negative affect was entered as the outcome variable. Results showed that partners' total affect words at Time 1 did not significantly predict Time 1-Time 3 change scores for negative affect, $R = .188$, $F(1, 25) = .914$, *ns*. Further, partners' total affect words at Time 3 did not significantly predict their Time 1-Time 3 change score for negative affect, above and beyond expression of affect at Time 1, $R = .328$, $F(1, 24) = 1.94$, *ns*, R^2 change = .072 (please see Table 48).

In the third set of hierarchical regressions, partners' use of total affect words at Time 1 was entered in the first step, total affect words at Time 2 was entered in the second step, and the Time 1-Time 2 change score for positive affect was entered as the outcome variable. Results showed that partners' total affect words at Time 1 did not

significantly predict Time 1-Time 2 change scores for positive affect, $R = .118$, $F(1, 38) = .534$, *ns*. Further, partners' total affect words at Time 2 did not significantly predict their Time 1-Time 2 change score for positive affect, above and beyond expression of affect at Time 1, $R = .125$, $F(1, 37) = .065$, *ns*, R^2 change = .002 (please see Table 49).

Another regression was conducted, but this time partners' total affect words at Time 1 was entered in the first step, total affect words at Time 3 was entered in the second step, and the Time 1-Time 3 change score for positive affect was entered as the outcome variable. Results showed that partners' total affect words at Time 1 did not significantly predict Time 1-Time 3 change scores for positive affect, $R = .138$, $F(1, 25) = .483$, *ns*. Further, partners' total affect words at Time 3 did not significantly predict their Time 1-Time 3 change score for positive affect, above and beyond expression of affect at Time 1, $R = .303$, $F(1, 24) = 1.93$, *ns*, R^2 change = .073 (please see Table 49).

In the fourth set of hierarchical regressions, partners' use of total affect words at Time 1 was entered in the first step, total affect words at Time 2 was entered in the second step, and the Time 1-Time 2 change score for relationship satisfaction was entered as the outcome variable. Results showed that partners' total affect words at Time 1 did not significantly predict Time 1-Time 2 change scores for relationship satisfaction, $R = .042$, $F(1, 37) = .065$, *ns*. Further, partners' total affect words at Time 3 did not significantly predict their Time 1-Time 3 change score for relationship satisfaction, above and beyond expression of affect at Time 1, $R = .225$, $F(1, 36) = 1.85$, *ns*, R^2 change = .049 (please see Table 50).

Another regression was conducted, but this time partners' total affect words at Time 1 was entered in the first step, total affect words at Time 3 was entered in the second step, and the Time 1-Time 3 change score for relationship satisfaction was entered as the outcome variable. Results showed that partners' total affect words at Time 1 did not significantly predict Time 1-Time 3 change scores for relationship satisfaction, $R = .224$, $F(1, 24) = 1.26$, *ns*. Further, partners' total affect words at Time 3 did not significantly predict their Time 1-Time 3 change score for relationship satisfaction, above and beyond expression of affect at Time 1, $R = .331$, $F(1, 23) = 1.53$, *ns*, R^2 change = .059 (please see Table 50).

Overall, there were three significant findings in the analyses for H3. Results indicated that survivors' overall emotional expression (i.e., total use of affect words) at Time 2 significantly predicted their Time 1-Time 2 change score for relationship satisfaction, above and beyond survivors' overall expression of emotion at Time 1; thus an increase in survivors' overall use of negative and positive affect words during counseling predicted a decrease in relationship satisfaction at Time 2. Further, partners' overall emotional expression (i.e., total use of affect words) at Time 1 significantly predicted their Time 1-Time 2 change score for depression. Therefore, the greater the use of partners' overall use of negative and positive affect words during counseling predicted a decrease in their depression at Time 2. Finally, partners' overall emotional expression (i.e., total use of affect words) at Time 2 significantly predicted their Time 1-Time 2 change score for negative affect, above and beyond partners' overall expression at Time

1; therefore, an increase in partners' overall use of negative and positive affect words during counseling predicted an increase in negative affect scores at Time 2.

Results for Hypotheses 3a: Change in Positive Emotional Expression (Positive Affect Words) and Improved Psychosocial Outcomes.

To measure whether change in positive emotional expression over time is associated with improved psychosocial outcomes, a series of hierarchical regressions were conducted. First, change scores were calculated for Time 1-Time 2 change and Time 1-Time 3 change for all psychosocial outcome variables. To create these change scores, Time 2 and Time 3 scores were subtracted from Time 1 scores, so that a positive change score would indicate an increase in that psychosocial variable, and a negative change score would indicate a decrease in that psychosocial variable. Therefore, to test whether change in positive emotional expressiveness is associated with improved levels of depression, participants' language dimension (from Time 1) that comprise positive affect words (i.e., positive emotion) was entered in the first step, and the same language dimension (from Time 2) that comprise positive affect words (i.e., positive emotion) was entered in the second step, and the change score for Time 1-Time 2 depression was entered as the dependent variable. Then, another hierarchical regression was conducted, this time participants' language dimension (from Time 1) that comprise positive affect words (i.e., positive emotion) was entered in the first step, and the same language dimension (from Time 3) that comprise positive affect words (i.e., positive emotion) was entered in the second step, and Time 1-Time 3 change score for depression was entered as the dependent variable. This entire process was completed for both change scores for

each of the psychosocial outcome measures (i.e., depression, negative affect, positive affect, and relationship satisfaction) as the dependent variables, and conducted separately for survivors and their partners.

H3a: Change in survivors' positive affect words.

Given that previous analyses showed no major differences between breast cancer and prostate cancer survivors' use of positive emotion words (please refer to Tables 5 and 6), the data for all cancer survivors, regardless of cancer type, were used for these regression analyses. Results for changes in cancer survivors' expression of positive emotion words in predicting improved psychosocial outcomes for depression, negative affect, positive affect, and relationship satisfaction are presented in Tables 51-54 and are described below.

In the first set of hierarchical regressions, cancer survivors' use of positive emotion words at Time 1 was entered in the first step, positive emotion words at Time 2 was entered in the second step, and the Time 1-Time 2 change score for depression was entered as the outcome variable. Results showed that survivors' use of positive emotion words at Time 1 did not significantly predict Time 1-Time 2 change scores for depression, $R = .026$, $F(1, 41) = .028$, *ns*. Further, survivors' use of positive emotion words at Time 2 did not significantly predict their Time 1-Time 2 change score for depression, above and beyond survivors' use of positive emotion words at Time 1, $R = .078$, $F(1, 40) = .214$, *ns*, R^2 change = .005 (please see Table 51).

Another regression was conducted, but this time survivors' use of positive emotion words at Time 1 was entered in the first step, positive emotion words at Time 3

was entered in the second step, and the Time 1-Time 3 change score for depression was entered as the outcome variable. Results showed that survivors' use of positive emotion words at Time 1 did not significantly predict Time 1-Time 3 change scores for depression, $R = .111$, $F(1, 35) = .440$, *ns*. Further, survivors' use of positive emotion words at Time 3 did not significantly predict their Time 1-Time 3 change score for depression, above and beyond survivors' use of positive emotion words at Time 1, $R = .114$, $F(1, 34) = .021$, *ns*, R^2 change = .001 (please see Table 51).

In the second set of hierarchical regressions, cancer survivors' use of positive emotion words at Time 1 was entered in the first step, positive emotion words at Time 2 was entered in the second step, and the Time 1-Time 2 change score for negative affect was entered as the outcome variable. Results showed that survivors' use of positive emotion words at Time 1 did not significantly predict Time 1-Time 2 change scores for negative affect, $R = .115$, $F(1, 41) = .548$, *ns*. Further, survivors' use of positive emotion words at Time 2 did not significantly predict their Time 1-Time 2 change score for negative affect, above and beyond survivors' use of positive emotion words at Time 1, $R = .208$, $F(1, 40) = 1.26$, *ns*, R^2 change = .030 (please see Table 52).

Another regression was conducted, but this time survivors' use of positive emotion words at Time 1 was entered in the first step, positive emotion words at Time 3 was entered in the second step, and the Time 1-Time 3 change score for negative affect was entered as the outcome variable. Results showed that survivors' use of positive emotion words at Time 1 did not significantly predict Time 1-Time 3 change scores for negative affect, $R = .072$, $F(1, 35) = .181$, *ns*. Further, survivors' use of positive emotion

words at Time 3 did not significantly predict their Time 1-Time 3 change score for negative affect, above and beyond survivors' use of positive emotion words at Time 1, $R = .073$, $F(1, 34) = .009$, *ns*, R^2 change = .000 (please see Table 52).

In the third set of hierarchical regressions, cancer survivors' use of positive emotion words at Time 1 was entered in the first step, positive emotion words at Time 2 was entered in the second step, and the Time 1-Time 2 change score for positive affect was entered as the outcome variable. Results showed that survivors' use of positive emotion words at Time 1 did not significantly predict Time 1-Time 2 change scores for positive affect, $R = .231$, $F(1, 41) = 2.31$, *ns*. Further, survivors' use of positive emotion words at Time 2 did not significantly predict their Time 1-Time 2 change score for positive affect, above and beyond survivors' use of positive emotion words at Time 1, $R = .232$, $F(1, 40) = .028$, *ns*, R^2 change = .001 (please see Table 53).

Another regression was conducted, but this time survivors' use of positive emotion words at Time 1 was entered in the first step, positive emotion words at Time 3 was entered in the second step, and the Time 1-Time 3 change score for positive affect was entered as the outcome variable. Results showed that survivors' use of positive emotion words at Time 1 did not significantly predict Time 1-Time 3 change scores for positive affect, $R = .273$, $F(1, 35) = 2.83$, *ns*. Further, survivors' use of positive emotion words at Time 3 did not significantly predict their Time 1-Time 3 change score for positive affect, above and beyond survivors' use of positive emotion words at Time 1, $R = .276$, $F(1, 34) = .045$, *ns*, R^2 change = .001 (please see Table 53).

In the fourth set of hierarchical regressions, cancer survivors' use of positive emotion words at Time 1 was entered in the first step, positive emotion words at Time 2 was entered in the second step, and the Time 1-Time 2 change score for relationship satisfaction was entered as the outcome variable. Results showed that survivors' use of positive emotion words at Time 1 did not significantly predict Time 1-Time 2 change scores for relationship satisfaction, $R = .002$, $F(1, 40) = .000$, *ns*. However, results showed that the second model significantly predicted survivors' Time 1-Time 2 change score for relationship satisfaction, $R = .385$, $F(1, 39) = 6.79$, $p < .05$, R^2 change = .148. Survivors' use of positive emotion words at Time 2 significantly predicted their Time 1-Time 2 change scores for relationship satisfaction, above and beyond their use of positive emotion words at Time 1, $\beta = -.455$, $t = -2.61$, $p < .05$, $R^2 = .148$ (please see Table 54). An increase in survivors' use of positive affect words during counseling predicted a decrease in relationship satisfaction at Time 2.

Another regression was conducted, but this time survivors' use of positive emotion words at Time 1 was entered in the first step, positive emotion words at Time 3 was entered in the second step, and the Time 1-Time 3 change score for relationship satisfaction was entered as the outcome variable. Results showed that survivors' use of positive emotion words at Time 1 did not significantly predict Time 1-Time 3 change scores for relationship satisfaction, $R = .127$, $F(1, 35) = .573$, *ns*. Further, survivors' use of positive emotion words at Time 3 did not significantly predict their Time 1-Time 3 change score for relationship satisfaction, above and beyond survivors' use of positive

emotion words at Time 1, $R = .238$, $F(1, 34) = 1.47$, ns , R^2 change = .041 (please see Table 54).

H3a: Change in partners' positive affect words.

Given that previous analyses showed no major differences between breast cancer and prostate cancer partners' use of positive emotion words (please refer to Table 7), the data for all cancer partners were used for these regression analyses, regardless of cancer type. Results for changes in cancer partners' expression of positive emotion in predicting improved psychosocial outcomes for depression, negative affect, positive affect, and relationship satisfaction are presented in Tables 55-58 and are described below.

In the first set of hierarchical regressions, partners' use of positive emotion words at Time 1 was entered in the first step, positive emotion words at Time 2 was entered in the second step, and the Time 1-Time 2 change score for depression was entered as the outcome variable. Results showed that partners' use of positive emotion words at Time 1 did not significantly predict Time 1-Time 2 change scores for depression, $R = .290$, $F(1, 38) = 3.50$, ns . Further, partners' use of positive emotion words at Time 2 did not significantly predict their Time 1-Time 2 change score for depression, above and beyond partners' use of positive emotion words at Time 1, $R = .301$, $F(1, 37) = .247$, ns , R^2 change = .006 (please see Table 55).

Another regression was conducted, but this time partners' use of positive emotion words at Time 1 was entered in the first step, positive emotion words at Time 3 was entered in the second step, and the Time 1-Time 3 change score for depression was entered as the outcome variable. Results showed that partners' use of positive emotion

words at Time 1 did not significantly predict Time 1-Time 3 change scores for depression, $R = .288$, $F(1, 25) = 2.27$, *ns*. Further, partners' use of positive emotion words at Time 3 did not significantly predict their Time 1-Time 3 change score for depression, above and beyond partners' use of positive emotion words at Time 1, $R = .297$, $F(1, 24) = .124$, *ns*, R^2 change = .005 (please see Table 55).

In the second set of hierarchical regressions, partners' use of positive emotion words at Time 1 was entered in the first step, positive emotion words at Time 2 was entered in the second step, and the Time 1-Time 2 change score for negative affect was entered as the outcome variable. Results showed that partners' use of positive emotion words at Time 1 did not significantly predict Time 1-Time 2 change scores for negative affect, $R = .216$, $F(1, 38) = 1.86$, *ns*. Further, partners' use of positive emotion words at Time 2 did not significantly predict their Time 1-Time 2 change score for negative affect, above and beyond partners' use of positive emotion words at Time 1, $R = .359$, $F(1, 37) = 3.48$, *ns*, R^2 change = .082 (please see Table 56).

Another regression was conducted, but this time partners' use of positive emotion words at Time 1 was entered in the first step, positive emotion words at Time 3 was entered in the second step, and the Time 1-Time 3 change score for negative affect was entered as the outcome variable. Results showed that partners' use of positive emotion words at Time 1 did not significantly predict Time 1-Time 3 change scores for negative affect, $R = .280$, $F(1, 25) = 2.13$, *ns*. Further, partners' use of positive emotion words at Time 3 did not significantly predict their Time 1-Time 3 change score for negative affect,

above and beyond partners' use of positive emotion words at Time 1, $R = .360$, $F(1, 24) = 1.41$, *ns*, R^2 change = .051 (please see Table 56).

In the third set of hierarchical regressions, partners' use of positive emotion words at Time 1 was entered in the first step, positive emotion words at Time 2 was entered in the second step, and the Time 1-Time 2 change score for positive affect was entered as the outcome variable. Results showed that partners' use of positive emotion words at Time 1 did not significantly predict Time 1-Time 2 change scores for positive affect, $R = .047$, $F(1, 38) = .086$, *ns*. Although approaching significance, partners' use of positive emotion words at Time 2 did not significantly predict their Time 1-Time 2 change score for positive affect, above and beyond partners' use of positive emotion words at Time 1, $R = .309$, $F(1, 37) = 3.82$, $p = .058$, R^2 change = .093 (please see Table 57).

Another regression was conducted, but this time partners' use of positive emotion words at Time 1 was entered in the first step, positive emotion words at Time 3 was entered in the second step, and the Time 1-Time 3 change score for positive affect was entered as the outcome variable. Results showed that partners' use of positive emotion words at Time 1 did not significantly predict Time 1-Time 3 change scores for positive affect, $R = .030$, $F(1, 25) = .022$, *ns*. Further, partners' use of positive emotion words at Time 3 did not significantly predict their Time 1-Time 3 change score for positive affect, above and beyond partners' use of positive emotion words at Time 1, $R = .032$, $F(1, 24) = .003$, *ns*, R^2 change = .000 (please see Table 57).

In the fourth set of hierarchical regressions, partners' use of positive emotion words at Time 1 was entered in the first step, positive emotion words at Time 2 was

entered in the second step, and the Time 1-Time 2 change score for relationship satisfaction was entered as the outcome variable. Results showed that partners' use of positive emotion words at Time 1 did not significantly predict Time 1-Time 2 change scores for relationship satisfaction, $R = .199$, $F(1, 37) = 1.52$, *ns*. However, partners' use of positive emotion words at Time 2 significantly predicted their Time 1-Time 2 change score for relationship satisfaction, $R = .441$, $F(1, 36) = 6.92$, $p < .05$, R^2 change = .155. Partners' use of positive emotion words at Time 1 significantly predicted partners' Time 1-Time 2 change score for relationship satisfaction, above and beyond partners' use of positive emotion words at Time 1, $\beta = .474$, $t = 2.63$, $p < .05$, $R^2 = .194$ (please see Table 58). An increase in partners' use of positive affect words during counseling predicted an increase in relationship satisfaction at Time 2.

Another regression was conducted, but this time partners' use of positive emotion words at Time 1 was entered in the first step, positive emotion words at Time 3 was entered in the second step, and the Time 1-Time 3 change score for relationship satisfaction was entered as the outcome variable. Results showed that partners' use of positive emotion words at Time 1 did not significantly predict Time 1-Time 3 change scores for relationship satisfaction, $R = .157$, $F(1, 24) = .603$, *ns*. Further, partners' use of positive emotion words at Time 3 did not significantly predict their Time 1-Time 3 change score for relationship satisfaction, above and beyond partners' use of positive emotion words at Time 1, $R = .158$, $F(1, 23) = .014$, *ns*, R^2 change = .001 (please see Table 58).

Overall, there were two significant findings in the analyses for H3a. Results indicated that survivors' use of positive emotion words at Time 2 significantly predicted their Time 1-Time 2 change scores for relationship satisfaction, above and beyond survivors' use of positive emotion words at Time 1; therefore, an increase in survivors' use of positive affect words during counseling predicted a decrease in relationship satisfaction at Time 2. Also, results showed that partners' use of positive emotion words at Time 2 significantly predicted their Time 1-Time 2 change score for relationship satisfaction. Partners' use of positive emotion words at Time 1 significantly predicted partners' Time 1-Time 2 change score for relationship satisfaction, above and beyond partners' use of positive emotion words at Time 1; therefore, an increase in partners' use of positive affect words during counseling predicted an increase in relationship satisfaction at Time 2.

Results for Hypotheses 4: Change in Communal Coping (“We-Talk”) and Improved Psychosocial Outcomes.

To measure whether change in communal coping (i.e., “we-talk”) over time is associated with improved psychosocial outcomes, a series of hierarchical regressions were conducted. First, change scores were calculated for Time 1-Time 2 change and Time 1-Time 3 change for all psychosocial outcome variables. To create these change scores, Time 2 and Time 3 scores were subtracted from Time 1 scores, so that a positive change score would indicate an increase in that psychosocial variable, and a negative change score would indicate a decrease in that psychosocial variable. Therefore, to test whether change in communal coping is associated with improved levels of depression,

participants' language dimension (from Time 1) that comprises "we-talk" (i.e., first-person plural pronouns) was entered in the first step, and the language dimension (from Time 2) that comprises "we-talk (i.e., first-person plural pronouns) was entered in the second step, and the change score for Time 1-Time 2 depression was entered as the dependent variable. Then, another hierarchical regression was conducted, this time participants' language dimension (from Time 1) that comprises "we-talk" (i.e., first-person plural pronouns) was entered in the first step, the language dimension (from Time 3) that comprises "we-talk" (i.e., first-person plural pronouns) was entered in the second step, and Time 1-Time 3 change score for depression was entered as the dependent variable. This entire process was completed for both change scores for each of the psychosocial outcome measures (i.e., depression, negative affect, positive affect, and relationship satisfaction) as the dependent variables, and conducted separately for survivors and their partners.

H4: Change in survivors' communal coping words.

Given that previous analyses showed no significant differences between breast cancer and prostate cancer survivors' use of first-person plural pronouns or "we" references (please refer to Tables 5 and 6), the data for all cancer survivors, regardless of cancer type, were used for these regression analyses. Results for cancer survivors' change in communal coping ("we-talk") over time in predicting improved psychosocial outcomes for depression, negative affect, positive affect, and relationship satisfaction are presented in Tables 59-62 and are described below.

In the first set of hierarchical regressions, cancer survivors' "we-talk" (i.e., first-person plural pronouns) at Time 1 was entered in the first step, "we-talk" (i.e., first-person plural pronouns) at Time 2 was entered in the second step, and the Time 1-Time 2 change score for depression was entered as the outcome variable. Results showed that survivors' use of first-person plural pronouns at Time 1 did not significantly predict Time 1-Time 2 change scores for depression, $R = .111$, $F(1, 41) = .513$, *ns*. Further, survivors' use of first-person plural pronouns at Time 2 did not significantly predict their Time 1-Time 2 change score for depression, above and beyond the use of first-person plural pronouns at Time 1, $R = .111$, $F(1, 40) = .002$, *ns*, R^2 change = .000 (please see Table 59).

Another regression was conducted, but this time survivors' "we-talk" (i.e., first-person plural pronouns) at Time 1 was entered in the first step, "we-talk" (i.e., first-person plural pronouns) at Time 3 was entered in the second step, and the Time 1-Time 3 change score for depression was entered as the outcome variable. Results showed that survivors' use of first-person plural pronouns at Time 1 did not significantly predict Time 1-Time 3 change scores for depression, $R = .067$, $F(1, 35) = .158$, *ns*. Further, survivors' use of first-person plural pronouns at Time 3 did not significantly predict their Time 1-Time 3 change score for depression, above and beyond the use of first-person plural pronouns at Time 1, $R = .073$, $F(1, 34) = .026$, *ns*, R^2 change = .001 (please see Table 59).

In the second set of hierarchical regressions, cancer survivors' "we-talk" (i.e., first-person plural pronouns) at Time 1 was entered in the first step, "we-talk" (i.e., first-

person plural pronouns) at Time 2 was entered in the second step, and the Time 1-Time 2 change score for negative affect was entered as the outcome variable. Results showed that survivors' use of first-person plural pronouns at Time 1 did not significantly predict Time 1-Time 2 change scores for negative affect, $R = .030$, $F(1, 41) = .038$, *ns*. Further, survivors' use of first-person plural pronouns at Time 2 did not significantly predict their Time 1-Time 2 change score for negative affect, above and beyond the use of first-person plural pronouns at Time 1, $R = .274$, $F(1, 40) = 3.21$, *ns*, R^2 change = .074 (please see Table 60).

Another regression was conducted, but this time survivors' "we-talk" (i.e., first-person plural pronouns) at Time 1 was entered in the first step, "we-talk" (i.e., first-person plural pronouns) at Time 3 was entered in the second step, and the Time 1-Time 3 change score for negative affect was entered as the outcome variable. Results showed that survivors' use of first-person plural pronouns at Time 1 did not significantly predict Time 1-Time 3 change scores for negative affect, $R = .018$, $F(1, 35) = .011$, *ns*. Further, survivors' use of first-person plural pronouns at Time 3 did not significantly predict their Time 1-Time 3 change score for negative affect, above and beyond the use of first-person plural pronouns at Time 1, $R = .132$, $F(1, 34) = .594$, *ns*, R^2 change = .017 (please see Table 60).

In the third set of hierarchical regressions, cancer survivors' "we-talk" (i.e., first-person plural pronouns) at Time 1 was entered in the first step, "we-talk" (i.e., first-person plural pronouns) at Time 2 was entered in the second step, and the Time 1-Time 2 change score for positive affect was entered as the outcome variable. Results showed that

survivors' use of first-person plural pronouns at Time 1 did not significantly predict Time 1-Time 2 change scores for positive affect, $R = .105$, $F(1, 41) = .459$, *ns*. Further, survivors' use of first-person plural pronouns at Time 2 did not significantly predict their Time 1-Time 2 change score for positive affect, above and beyond the use of first-person plural pronouns at Time 1, $R = .160$, $F(1, 40) = .597$, *ns*, R^2 change = .015 (please see Table 61).

Another regression was conducted, but this time survivors' "we-talk" (i.e., first-person plural pronouns) at Time 1 was entered in the first step, "we-talk" (i.e., first-person plural pronouns) at Time 3 was entered in the second step, and the Time 1-Time 3 change score for positive affect was entered as the outcome variable. Results showed that survivors' use of first-person plural pronouns at Time 1 did not significantly predict Time 1-Time 3 change scores for positive affect, $R = .098$, $F(1, 35) = .339$, *ns*. Further, survivors' use of first-person plural pronouns at Time 3 did not significantly predict their Time 1-Time 3 change score for positive affect, above and beyond the use of first-person plural pronouns at Time 1, $R = .283$, $F(1, 34) = 2.60$, *ns*, R^2 change = .070 (please see Table 61).

In the fourth set of hierarchical regressions, cancer survivors' "we-talk" (i.e., first-person plural pronouns) at Time 1 was entered in the first step, "we-talk" (i.e., first-person plural pronouns) at Time 2 was entered in the second step, and the Time 1-Time 2 change score for relationship satisfaction was entered as the outcome variable. Results showed that survivors' use of first-person plural pronouns at Time 1 did not significantly predict Time 1-Time 2 change scores for relationship satisfaction, $R = .032$, $F(1, 40) =$

.042, *ns*. Further, survivors' use of first-person plural pronouns at Time 2 did not significantly predict their Time 1-Time 2 change score for relationship satisfaction, above and beyond the use of first-person plural pronouns at Time 1, $R = .192$, $F(1, 39) = 1.46$, *ns*, R^2 change = .036 (please see Table 62).

Another regression was conducted, but this time survivors' "we-talk" (i.e., first-person plural pronouns) at Time 1 was entered in the first step, "we-talk" (i.e., first-person plural pronouns) at Time 3 was entered in the second step, and the Time 1-Time 3 change score for relationship satisfaction was entered as the outcome variable. Results showed that survivors' use of first-person plural pronouns at Time 1 did not significantly predict Time 1-Time 3 change scores for relationship satisfaction, $R = .091$, $F(1, 35) = .295$, *ns*. Further, survivors' use of first-person plural pronouns at Time 3 did not significantly predict their Time 1-Time 3 change score for relationship satisfaction, above and beyond the use of first-person plural pronouns at Time 1, $R = .094$, $F(1, 34) = .018$, *ns*, R^2 change = .001 (please see Table 62).

H4: Change in partners' communal coping words.

Given that previous analyses showed no major differences between breast cancer and prostate cancer partners' use of first-person plural pronouns or "we" references (please refer to Table 7), the data for all cancer partners were used for these regression analyses, regardless of cancer type. Results for changes in cancer partners' change in communal coping ("we-talk") over time in predicting improved psychosocial outcomes for depression, negative affect, positive affect, and relationship satisfaction are presented in Tables 63-66 and are described below.

In the first set of hierarchical regressions, partners' "we-talk" (i.e., first-person plural pronouns) at Time 1 was entered in the first step, "we-talk" (i.e., first-person plural pronouns) at Time 2 was entered in the second step, and the Time 1-Time 2 change score for depression was entered as the outcome variable. Results showed that partners' use of first-person plural pronouns at Time 1 did not significantly predict Time 1-Time 2 change scores for depression, $R = .1013$, $F(1, 38) = .006$, *ns*. Further, partners' use of first-person plural pronouns at Time 2 did not significantly predict their Time 1-Time 2 change score for depression, above and beyond the use of first-person plural pronouns at Time 1, $R = .229$, $F(1, 37) = 2.05$, *ns*, R^2 change = .052 (please see Table 63).

Another regression was conducted, but this time partners' "we-talk" (i.e., first-person plural pronouns) at Time 1 was entered in the first step, "we-talk" (i.e., first-person plural pronouns) at Time 3 was entered in the second step, and the Time 1-Time 3 change score for depression was entered as the outcome variable. Results showed that partners' use of first-person plural pronouns at Time 1 did not significantly predict Time 1-Time 3 change scores for depression, $R = .047$, $F(1, 25) = .056$, *ns*. Further, partners' use of first-person plural pronouns at Time 3 did not significantly predict their Time 1-Time 3 change score for depression, above and beyond the use of first-person plural pronouns at Time 1, $R = .092$, $F(1, 24) = .153$, *ns*, R^2 change = .006 (please see Table 63).

In the second set of hierarchical regressions, partners' "we-talk" (i.e., first-person plural pronouns) at Time 1 was entered in the first step, "we-talk" (i.e., first-person plural pronouns) at Time 2 was entered in the second step, and the Time 1-Time 2 change score

for negative affect was entered as the outcome variable. Results showed that partners' use of first-person plural pronouns at Time 1 did not significantly predict Time 1-Time 2 change scores for negative affect, $R = .094$, $F(1, 38) = .335$, *ns*. However, the second model significantly predicted partners' negative affect, $R = .439$, $F(1, 37) = 8.45$, *ns*, R^2 change = .184. Partners' use of first-person plural pronouns at Time 2 significantly predicted their Time 1-Time 2 change score for negative affect, above and beyond the use of first-person plural pronouns at Time 1, $\beta = -.504$, $t = -2.91$, $p < .01$, $R^2 = .193$ (please see Table 64). An increase in partners' use of "we-talk" (first-person plural pronouns) during counseling predicted a decrease in negative affect scores at Time 2.

Another regression was conducted, but this time partners' "we-talk" (i.e., first-person plural pronouns) at Time 1 was entered in the first step, "we-talk" (i.e., first-person plural pronouns) at Time 3 was entered in the second step, and the Time 1-Time 3 change score for negative affect was entered as the outcome variable. Results showed that partners' use of first-person plural pronouns at Time 1 did not significantly predict Time 1-Time 3 change scores for negative affect, $R = .145$, $F(1, 25) = .535$, *ns*. Further, partners' use of first-person plural pronouns at Time 3 did not significantly predict their Time 1-Time 3 change score for negative affect, above and beyond the use of first-person plural pronouns at Time 1, $R = .267$, $F(1, 24) = 1.30$, *ns*, R^2 change = .050 (please see Table 64).

In the third set of hierarchical regressions, partners' "we-talk" (i.e., first-person plural pronouns) at Time 1 was entered in the first step, "we-talk" (i.e., first-person plural pronouns) at Time 2 was entered in the second step, and the Time 1-Time 2 change score

for positive affect was entered as the outcome variable. Results showed that partners' use of first-person plural pronouns at Time 1 did not significantly predict Time 1-Time 2 change scores for positive affect, $R = .064$, $F(1, 38) = .154$, *ns*. Further, partners' use of first-person plural pronouns at Time 2 did not significantly predict their Time 1-Time 2 change score for positive affect, above and beyond the use of first-person plural pronouns at Time 1, $R = .145$, $F(1, 37) = .637$, *ns*, R^2 change = .017 (please see Table 65).

Another regression was conducted, but this time partners' "we-talk" (i.e., first-person plural pronouns) at Time 1 was entered in the first step, "we-talk" (i.e., first-person plural pronouns) at Time 3 was entered in the second step, and the Time 1-Time 3 change score for positive affect was entered as the outcome variable. Results showed that partners' use of first-person plural pronouns at Time 1 did not significantly predict Time 1-Time 3 change scores for positive affect, $R = .102$, $F(1, 25) = .265$, *ns*. Further, partners' use of first-person plural pronouns at Time 3 did not significantly predict their Time 1-Time 3 change score for positive affect, above and beyond the use of first-person plural pronouns at Time 1, $R = .161$, $F(1, 24) = .378$, *ns*, R^2 change = .015 (please see Table 65).

In the fourth set of hierarchical regressions, partners' "we-talk" (i.e., first-person plural pronouns) at Time 1 was entered in the first step, "we-talk" (i.e., first-person plural pronouns) at Time 2 was entered in the second step, and the Time 1-Time 2 change score for relationship satisfaction was entered as the outcome variable. Results showed that the first model significantly predicted partners' relationship satisfaction, $R = .356$, $F(1, 37) = 5.38$, $p < .05$, R^2 change = .127. Partners' use of first-person plural pronouns at Time 1

significantly predicted Time 1-Time 2 change scores for relationship satisfaction, $\beta = .356$, $t = 2.32$, $p < .05$, $R^2 = .127$. Further, the second model also significantly predicted partners' relationship satisfaction, $R = .439$, $F(1, 36) = 5.50$, $p < .05$, R^2 change = .116. Partners' use of first-person plural pronouns at Time 2 significantly predicted their Time 1-Time 2 change score for relationship satisfaction, above and beyond the use of first-person plural pronouns at Time 1, $\beta = .391$, $t = 2.35$, $p < .05$, $R^2 = .243$ (please see Table 66). Therefore, an increase in partners' use of "we-talk" (first-person plural pronouns) during counseling predicted an increase in relationship satisfaction at Time 2.

Another regression was conducted, but this time partners' "we-talk" (i.e., first-person plural pronouns) at Time 1 was entered in the first step, "we-talk" (i.e., first-person plural pronouns) at Time 3 was entered in the second step, and the Time 1-Time 3 change score for relationship satisfaction was entered as the outcome variable. Results showed that partners' use of first-person plural pronouns at Time 1 did not significantly predict Time 1-Time 3 change scores for relationship satisfaction, $R = .337$, $F(1, 24) = 3.08$, *ns*. Further, partners' use of first-person plural pronouns at Time 3 did not significantly predict their Time 1-Time 3 change score for relationship satisfaction, above and beyond the use of first-person plural pronouns at Time 1, $R = .347$, $F(1, 23) = .173$, *ns*, R^2 change = .007 (please see Table 66).

Overall, there were two significant findings in the analyses for H4. Results indicated that partners' use of first-person plural pronouns at Time 2 significantly predicted their Time 1-Time 2 change score for negative affect, above and beyond partners' use of first-person plural pronouns at Time 1; which indicates that an increase in

partners' use of "we-talk" (i.e., first-person plural pronouns) during counseling predicted a decrease in negative affect scores at Time 2. Results also showed that partners' use of first-person plural pronouns at Time 1 significantly predicted Time 1-Time 2 change scores for relationship satisfaction; therefore the greater the use of partners' "we-talk" at Time 1 predicted an increase in relationship satisfaction scores. Further, partners' use of first-person plural pronouns at Time 2 significantly predicted their Time 1-Time 2 change score for relationship satisfaction, above and beyond the use of first-person plural pronouns at Time 1. Therefore, an increase in partners' use of "we-talk" (first-person plural pronouns) during counseling predicted an increase in their relationship satisfaction at Time 2.

Results for Research Question 1: Will the expression of emotion (i.e., the overall use of emotion words) in participants' counseling sessions be associated with his/her partners' psychosocial outcomes?

To measure the relationship between cancer survivors and their partners' language use and psychosocial outcomes, several analyses using Kenny and Cook's (1999) actor-partner interdependence model (APIM) were conducted. The primary concept of the actor-partner interdependence model is that the dyad is treated as the unit of analysis whereby participants' scores on various independent variables are used to predict both their own (actor effects) and their partners' (partner effect) scores on the dependent variable, after taking into account the dyad's interdependence on the independent variable (Kashy & Kenny, 2000; Kenny, 1996; Kenny & Cook, 1999; Kenny, Kashy, & Cook, 2006). By using reciprocal and dyadic data from the dyads with cancer, we fit a structural

equation model (SEM) of the APIM to evaluate interdependence in patient-partner relationships by examining the crossover from one person's language use to the other's psychosocial outcomes at Time 2 (i.e., depression at Time 2). These analyses allow identification of any partner effects in language use (i.e., overall emotional expressiveness, use of positive emotion words, and communal coping) and psychosocial outcomes at Time 2.

In the present analyses, both the survivors and their partners' overall emotional expression (i.e., total affect words) were entered in the model as predictor variables, and both survivors and their partners' psychosocial well-being at Time 2 (i.e., depression at Time 2) were entered in the model as the dependent variables. These analyses were conducted for all of the survivors and partners' psychosocial outcomes at Time 2 (i.e., depression, negative affect, positive affect, relationship satisfaction) as the dependent variables in the model. Results of these APIM analyses are presented in Table 67.

The APIM for total affect words and depression at Time 2 revealed significant interdependence in overall emotional expressiveness (i.e., use of total affect words) of survivors with cancer and their partners, $\beta = .35, p < .001$. However, there were no significant actor effects for survivors' or partners' use of total affect words and their depression at Time 2, $\beta_s = .14$ and $-.23$, both *ns*. Further, there were no significant partner effects for cancer survivors' use of total affect words and their partners' depression at Time 2, or for partners' use of total affect words and survivors' depression at Time 2, $\beta_s = .09$ and $-.01$, both *ns*.

The APIM for total affect words and negative affect at Time 2 revealed significant interdependence in overall emotional expressiveness (i.e., use of total affect words) of survivors with cancer and their partners, $\beta = .35, p < .01$. However, there were no significant actor effects for survivors' or partners' use of total affect words and their depression at Time 2, β s = $-.02$ and $-.03$, both *ns*. Further, there were no significant partner effects for cancer survivors' use of total affect words and their partners' depression at Time 2, or for partners' use of total affect words and survivors' depression at Time 2, β s = $.01$ and $-.10$, both *ns*.

The APIM for total affect words and positive affect at Time 2 revealed significant interdependence in overall emotional expressiveness (i.e., use of total affect words) of survivors with cancer and their partners, $\beta = .35, p < .01$. However, there were no significant actor effects for survivors' or partners' use of total affect words and their depression at Time 2, β s = $.11$ and $.02$, both *ns*. Further, there were no significant partner effects for cancer survivors' use of total affect words and their partners' depression at Time 2, or for partners' use of total affect words and survivors' depression at Time 2, β s = $.05$ and $-.13$, both *ns*.

The APIM for total affect words and relationship satisfaction at Time 2 revealed significant interdependence in overall emotional expressiveness (i.e., use of total affect words) of survivors with cancer and their partners, $\beta = .36, p < .001$. There was no significant actor effects for survivors' use of total affect words and their depression at Time 2, $\beta = -.01, ns$. However, results showed a significant actor effect for partners' of cancer survivors emotional expressiveness (i.e., use of total affect words) and their own

relationship satisfaction at Time 2, $\beta = .60, p < .001$. Partners' use of positive and negative affect words predicted an increase in their own relationship satisfaction scores at Time 2. Finally, there were no significant partner effects for cancer survivors' use of total affect words and their partners' depression at Time 2, or for partners' use of total affect words and survivors' depression at Time 2, β s = .03 and .06, both *ns*.

The results for RQ1 using APIM analyses showed significant interdependence in overall emotional expressiveness (i.e., use of total affect words) of survivors with cancer and their partners. Overall, the actor-partner results were largely nonsignificant, with the exception of one finding. Results revealed a significant actor effect for cancer partners' emotional expressiveness (i.e., use of total affect words) and their own relationship satisfaction at Time 2; which indicates that partners' use of positive and negative affect words predicted an increase in their own relationship satisfaction at Time 2.

Results for Research Question 1a: Will the expression of positive emotion (i.e., the use of positive emotion words) in participants' counseling sessions be associated with his/her partners' psychosocial outcomes?

To measure the relationship between cancer survivors and their partners' positive expression of emotion (i.e., use of positive emotion words) and psychosocial outcomes, several analyses using Kenny and Cook's (1999) actor-partner interdependence model (APIM) were conducted. In the present analyses, both the survivors and their partners' positive emotional expression (i.e., the use of positive emotion words) were entered in the model as predictor variables, and both the survivors and their partners' psychosocial well-being at Time 2 (i.e., depression at Time 2) were entered in the model as the

dependent variables. These analyses were conducted for each of the survivors and partners' psychosocial outcomes at Time 2 (i.e., depression, negative affect, positive affect, relationship satisfaction) as the dependent variables in the model. Results of these APIM analyses are presented in Table 68.

The APIM for positive emotion words and depression at Time 2 revealed significant interdependence in the positive emotional expressiveness (i.e., use of positive emotion words) of survivors with cancer and their partners, $\beta = .27, p < .05$. However, there were no significant actor effects for survivors' or partners' use of positive emotion words and their depression at Time 2, $\beta_s = -.16$ and $-.24$, both *ns*. Further, there were no significant partner effects for cancer survivors' use of positive emotion words and their partners' depression at Time 2, or for partners' use of positive emotion words and survivors' depression at Time 2, $\beta_s = .13$ and $.16$, both *ns*.

The APIM for positive emotion words and negative affect at Time 2 revealed significant interdependence in the positive emotional expressiveness (i.e., use of positive emotion words) of survivors with cancer and their partners, $\beta = .27, p < .05$. Results showed a significant actor effect for cancer survivors' use of positive emotion words and their own negative affect at Time 2, $\beta = -.35, p < .05$. Survivors' use of positive emotion words predicted a decrease in their negative affect at Time 2. However, there was no significant actor effects for partners' use of positive emotion words and their negative affect at Time 2, $\beta = -.19, ns$. Further, there were no significant partner effects for cancer survivors' use of positive emotion words and their partners' negative affect at Time 2, or

for partners' use of positive emotion words and survivors' negative affect at Time 2, β s = -.02 and .01, both *ns*.

The APIM for positive emotion words and positive affect at Time 2 revealed significant interdependence in the positive emotional expressiveness (i.e., use of positive emotion words) of survivors with cancer and their partners, $\beta = .27, p < .05$. However, there were no significant actor effects for survivors' or partners' use of positive emotion words and their positive affect at Time 2, β s = .16 and -.05, both *ns*. Further, there were no significant partner effects for cancer survivors' use of positive emotion words and their partners' positive affect at Time 2, or for partners' use of positive emotion words and survivors' positive affect at Time 2, β s = .11 and -.23, both *ns*.

The APIM for positive emotion words and relationship satisfaction at Time 2 revealed significant interdependence in the positive emotional expressiveness (i.e., use of positive emotion words) of survivors with cancer and their partners, $\beta = .28, p < .05$. There was no significant actor effects for cancer survivors' use of positive emotion words and their relationship satisfaction at Time 2, $\beta = .27, ns$. However, results showed a significant actor effect for cancer partners' use of positive emotion words and their own relationship satisfaction at Time 2, $\beta = .67, p < .001$. Partners' use of positive emotion words predicted an increase in their own relationship satisfaction at Time 2. Finally, there were no significant partner effects for survivors' use of positive emotion words and their partners' relationship satisfaction at Time 2, or for partners' use of positive emotion words and survivors' relationship satisfaction at Time 2, β s = .16 and -.13, both *ns*.

The results for RQ1a using APIM analyses showed significant interdependence in the positive emotional expressiveness (i.e., use of positive emotion words) of survivors with cancer and their partners. Overall, the results for the actor and partner effects for positive emotion words were nonsignificant, with the exception of two findings. Results revealed a significant actor effect for cancer survivors' use of positive emotion words and their own negative affect at Time 2; which indicates that survivors' use of positive emotion words predicted a decrease in their negative affect at Time 2. In addition, results showed a significant actor effect for cancer partners' use of positive emotion words and their own relationship satisfaction at Time 2; which indicates that partners' use of positive emotion words predicted an increase in their own relationship satisfaction at Time 2.

Results for Research Question 2: Will the expression of communal coping as operationalized by “we-talk” (i.e., patient and partners’ use of first-person plural pronouns) in participants’ counseling sessions be associated with his/her partners’ psychosocial outcomes?

To measure the relationship between cancer survivors and their partners' communal coping or “we-talk” (i.e., first-person plural pronouns) and psychosocial outcomes, several analyses using Kenny and Cook's (1999) actor-partner interdependence model (APIM) were conducted. In the present analyses, both the survivors and their partners' “we-talk” (i.e., first-person plural pronouns) were entered in the model as predictor variables, and both the survivors and their partners' psychosocial well-being at Time 2 (i.e., depression at Time 2) were entered in the model as the

dependent variables. These analyses were conducted for each of the survivors and partners' psychosocial outcomes at Time 2 (i.e., depression, negative affect, positive affect, relationship satisfaction) as the dependent variables in the model. Results of these APIM analyses are presented in Table 69.

The APIM for "we-talk" and depression at Time 2 revealed significant interdependence in the use of first-person plural pronouns of survivors with cancer and their partners, $\beta = .40, p < .001$. Results showed a significant actor effect for cancer survivors' use of first-person plural pronouns and their depression at Time 2, $\beta = -.45, p < .01$. Survivors' use of first-person plural pronouns (i.e., "we-talk) predicted a decrease in their own depression at Time 2. However, there was no significant actor effects for partners' use of first-person plural pronouns and their depression at Time 2, $\beta = -.18, ns$. Further, there were no significant partner effects for cancer survivors' use of first-person plural pronouns and their partners' depression at Time 2, or for partners' use of first-person plural pronouns and survivors' depression at Time 2, $\beta_s = .32$ and $-.05$, both *ns*.

The APIM for "we-talk" and negative affect at Time 2 revealed significant interdependence in the use of first-person plural pronouns of survivors with cancer and their partners, $\beta = .38, p < .001$. Results showed a significant actor effect for cancer survivors' use of first-person plural pronouns and their negative affect at Time 2, $\beta = -.41, p < .01$. Survivors' use of first-person plural pronouns (i.e., "we-talk) predicted a decrease in their own negative affect at Time 2. However, there was no significant actor effects for partners' use of first-person plural pronouns and their negative affect at Time 2, $\beta = -.24, ns$. Further, there were no significant partner effects for cancer survivors' use

of first-person plural pronouns and their partners' negative affect at Time 2, or for partners' use of first-person plural pronouns and survivors' negative affect at Time 2, β s = .06 and -.03, both *ns*.

The APIM for "we-talk" and positive affect at Time 2 revealed significant interdependence in the use of first-person plural pronouns of survivors with cancer and their partners, $\beta = .38, p < .001$. However, there were no significant actor effects survivors' or partners' use of first-person plural pronouns and their positive affect at Time 2, β s = .11 and .24, both *ns*. Further, there were no significant partner effects for cancer survivors' use of first-person plural pronouns and their partners' positive affect at Time 2, or for partners' use of first-person plural pronouns and survivors' positive affect at Time 2, β s = -.16 and -.09, both *ns*.

The APIM for "we-talk" and relationship satisfaction at Time 2 revealed significant interdependence in the use of first-person plural pronouns of survivors with cancer and their partners, $\beta = .37, p < .001$. There were no significant actor effects survivors' or partners' use of first-person plural pronouns and their relationship satisfaction at Time 2, β s = .20 and .24, both *ns*. Results revealed a significant partner effect for cancer survivors' use of first-person plural pronouns and their partners' relationship satisfaction at Time 2, $\beta = .44, p < .05$. Survivors' use of first-person plural pronouns (i.e., "we-talk") predicted an increase in their *partners'* relationship satisfaction at Time 2. However, there were no significant partner effects for partners' use of first-person plural pronouns and survivors' relationship satisfaction at Time 2, $\beta = .10, ns$.

The results for RQ2 using APIM analyses showed significant interdependence in the use of first-person plural pronouns of survivors with cancer and their partners. Results revealed three actor effects and one partner effect. First, results showed a significant actor effect for cancer survivors' use of first-person plural pronouns and their depression at Time 2; which indicates that survivors' use of first-person plural pronouns (i.e., "we-talk") predicted a decrease in their own depression at Time 2. In addition, results showed a significant actor effect for cancer survivors' use of first-person plural pronouns and their negative affect at Time 2; which indicates that survivors' use of first-person plural pronouns (i.e., "we-talk") predicted a decrease in their own negative affect at Time 2. Finally, results revealed a significant partner effect for cancer survivors' use of first-person plural pronouns and their partners' relationship satisfaction at Time 2. This finding indicated that survivors' use of first-person plural pronouns (i.e., "we-talk") predicted an increase in their *partners'* relationship satisfaction at Time 2.

Results

Part II: Thematic Analyses of Counseling Sessions

Thematic Coding of Counseling Sessions: Procedure

The following procedure was conducted for the thematic coding of all counseling session transcripts. First, the author and three research assistants independently read through a set of 12 transcripts and listed all the concerns/topics (e.g., treatment concerns, difficulty concentrating) that had emerged from the counseling sessions on a separate piece of paper. Then, the research assistants were asked to re-read through the transcripts again carefully with their list of themes in hand, and count up each time a statement was

made pertaining to that specific concern/theme. In so doing, any other minor themes that had not been noticed on the first read-through were added to the list of themes with the appropriate number of statements for that category. The coding was performed sentence by sentence, so that every statement made in regards to a particular category/theme received one point. Then, the coders were asked to tally up all the checkmarks for each category/theme (i.e., the raw number of sentences), and sum them for a total score for that category (e.g., treatment concerns = 32 statements; difficulty concentrating = 25 statements). The coders recorded their results in a word document with the dyad ID number, TIP-C session, the list of categories, and the corresponding number of statements for each category. The counseling transcripts the research assistants were given to code contained both the subject and nurse counselor's statements for purposes of providing them with a context for the speech while coding. However, the actual coding of the themes that emerged from the counseling transcripts was conducted only for the cancer survivor's and their partner's speech, not for the statements made by the nurse counselor.

This entire procedure was completed by all four persons independently, and repeated across 12 counseling sessions (two dyads) in order to establish inter-coder reliability. The independent observations for all of the category scores were entered into SPSS for analysis, and a satisfactory level of reliability, as indicated by intra-class correlation, was achieved among the coders (ICC = .70-.99). Please see Table 70 for a list of all the reliability scores of the subcategories obtained from the research assistants' coding results. These alphas represent the consistency among the coders (i.e., three

research assistants plus the author) in the number of statements made for each category type identified in the 12 survivors and partners' transcripts. Given that there were more than two coders, the alphas presented in Table 70 are the average pairwise reliability scores for the categories using of intra-class correlation coefficient analyses.

It is important to note that the author had the research assistants code for two additional categories in every transcript: (1) a category for "scheduling" (when the participant and nurse counselor discuss dates/times for their next counseling session), and (2) a category for "other" (miscellaneous, small talk, weather...etc.). The decision to code for these two categories in every transcript was two-fold: first, to ensure coders were thorough in coding all content of a discussion (even if that content might seem irrelevant or minor); and second, so that the final score of a particular category/theme in the counseling sessions (e.g., difficulty concentrating) would not be falsely over-inflated when taking the entire transcript into consideration as a whole. Finally, the coders also included new/unique themes as they emerged from subsequent transcripts, so that a truly grounded theory approach to the data was taken.

Once all the transcripts were coded, all of the single-item issues and subcategories from the coders' word documents were assembled together, so that every single category that had emerged and was coded for could be viewed and organized into larger categories. Please see Appendix C, D, E, and F for a detailed description of all the single-item categories from all cancer survivors' and partners' counseling sessions.

Next, single-item coding issues and subcategories were organized into larger categories. Therefore, single-item statements that were similar (e.g., dealing with

depression, coping with depression) were placed together into the subcategory for depression. Single-item issues that seemed arguable (i.e., they could possibly belong in two different subcategories) were brought up for discussion by the author and two independent observers, and placed into the subcategory agreed upon by the three researchers. For example, one single-item issue was labeled, “grieving loss of relationship with mother with Alzheimer’s.” This subcategory could arguably belong in the death/dying category or the stress and coping category. The author went back to the text of the transcript and verified that the patient’s mother was still alive, but suffering from Alzheimer’s; thus the patient was struggling with the loss of that important relationship with her mother because of her mother’s illness (not that she died). After discussion with the two independent observers, this single-item issue was placed in the stress and coping category given that (1) the mother was still alive, and (2) the patient was technically coping with the stress of her mother’s illness.

Thus, several coding rules were implemented in organizing the single-item statements into their respective subcategories. Specifically, depression and social support were identified as the two major (or theoretically important) categories into which every smaller category or single-item issue would be placed into when plausible. For example, any time depression was mentioned (even if it was a two-pronged statement such as fatigue and depression, or stress and depression), the item was placed in the category for depression. In addition, any time social support was mentioned (even if it was social support and relationships, or communication and social support), the item was placed in the category for social support. Therefore, it must be noted that these two categories

could be over-inflated in frequency as an artifact of being given priority for coding purposes. All of the coders' responses from their word files were organized in this manner, and this resulted in approximately 40 subcategories (see Table 70).

After discussion with the same two independent observers, these subcategories were further refined and combined to create a condensed and shorter list of categories. For example, the subcategory for treatment concerns (i.e., chemotherapy, radiation) was combined with subcategory for surgery to create a larger "chemotherapy/radiation/surgery" category. The subcategory for appointments with doctors was condensed with the subcategory for information about cancer to create a "doctors/information and resources" subcategory. The subcategory for anxiety was combined with the subcategory for depression to create an "anxiety/depression" category. Concern for family (e.g., children, grandchildren) was combined with concern for friends to create a larger "concern for other social network members" category. The subcategory for communication with spouse/partner was combined with the subcategory for relationship with spouse/partner to create a larger "relationship maintenance and negotiation" category. Lack of social support (e.g., isolation) was combined with conflict to create a larger "isolation/conflict" category. Finally, the subcategory for sources of stress was combined with the subcategory for coping with stress to create a "stress and coping" category. In so doing, the original list of 40 subcategories was eventually reduced down to 23 mid-level categories (please refer to Table 70).

Finally, this revised set of 23 categories was organized thematically by type into six overarching supercategories: 1. Cancer & Health-Related Issues (treatment

concerns/surgery, additional health concerns, and doctors/information and resources), 2. Emotions & Psychological Processes (anxiety/depression, negative emotions, positive emotions, and control/expression of emotions), 3. Social Processes (relationship maintenance/negotiation, concern for spouse/partner, concern for other social network members, available social support, partner's supportive behavior, and isolation/conflict), 4. Intrapersonal Processes (role change/role transition, stress and coping, self-appraisal/personal goals, recall of past experiences, and death/dying), 5. External Processes (activities/events, work/finances, and living conditions), and 6. Study-Related Items/Other (study-related items, and miscellaneous/other). Please see Table 71 for a breakdown of themes from supercategories to subcategories to single-item statements.

Using the final set of categories, the coders' results were modified appropriately for all of the transcripts (by adding the numbers for the original subcategories together for those that were combined into larger categories) and the results were entered into SPSS for analyses. The data were entered into SPSS separately by cancer type, role, and TIP-C session, and the 12 files were merged into one data set. When entering the data into SPSS, the sum score (i.e., raw score) of all three counseling sessions was combined to create each subcategory (sum T1-T3), and the subcategories were summed and averaged to calculate each of the supercategory variables. Therefore, means presented in these results reflect the average number of statements over all three counseling sessions sampled. The reason why the mean score of the subcategories was used when creating the supercategory scores was due to the different number of categories contained within each of the supercategories (some have 2 subcategories, others have 4 or 5). Therefore, in

order to control for the difference in the number of subcategories in each of the supercategories, the mean score of the various categories was used to calculate the supercategory scores.

Results for RQ1: What are the key concerns of dyads with cancer during counseling?

Descriptive analyses were conducted on the thematic categories to achieve frequency distributions for each of the subcategories. The top three most frequently discussed subcategories for breast cancer survivors were concern for social network members ($M = 49.14$, $SD = 75.73$), available social support ($M = 44.14$, $SD = 31.62$), and chemotherapy/radiation/surgery ($M = 42.09$, $SD = 31.51$). The most frequently discussed subcategories for breast cancer partners were concern for spouse/partner ($M = 41.33$, $SD = 22.79$), relationship maintenance and negotiation ($M = 38.06$, $SD = 59.61$), and partner's own supportive behavior ($M = 30.17$, $SD = 27.11$). The top three most frequently discussed subcategories for prostate cancer survivors were available social support ($M = 43.35$, $SD = 39.92$), chemotherapy/radiation/surgery ($M = 33.41$, $SD = 47.04$), and additional health issues and concerns ($M = 31.82$, $SD = 33.21$). The most frequently discussed subcategories for prostate cancer partners were partners' own supportive behavior ($M = 38.89$, $SD = 41.53$), concern for spouse/partner ($M = 35.67$, $SD = 29.35$), and relationship maintenance and negotiation ($M = 29.22$, $SD = 32.77$). Overall, the cancer survivors' key concerns consisted of chemotherapy/radiation/surgery, and available social support (not including concern for social network members for breast cancer survivors, and additional health issues and concerns for prostate cancer survivors). Partners' key concerns included the same three topics: concern for spouse/partner,

relationship maintenance and negotiation, and partner's own supportive behavior. Please see table 72 for a detailed list of the mean frequencies for all subcategories.

In addition, frequency distributions were conducted for the supercategories. The most frequently discussed supercategory for all study participants was the "social processes" supercategory. The following include the means and standard deviations for the social processes supercategory results: breast cancer survivors ($M = 129.15$, $SD = 90.73$), breast cancer partners ($M = 147.96$, $SD = 101.55$), prostate cancer survivors ($M = 91.84$, $SD = 42.69$), and prostate cancer partners ($M = 145.11$, $SD = 88.66$). The second most frequent supercategory discussed was "cancer and health related issues" for breast cancer survivors ($M = 77.77$, $SD = 42.84$), prostate cancer survivors ($M = 68.42$, $SD = 39.75$), and prostate cancer partners ($M = 26.48$, $SD = 42.37$); however "intrapersonal processes" emerged as the second most frequent supercategory discussed by breast cancer partners ($M = 42.63$, $SD = 28.41$). Please see Table 73 for a complete list of the mean frequencies for all of the supercategories.

Results for RQ2: Are there significant differences in the types of concerns most often discussed during counseling depending on participants' sex or role?

A series of Mixed Model ANOVAs were conducted whereby role (patient-partner) was the within subjects variable, and sex (male-female) was the between subjects variable, and the dyad was the unit of analyses. One such Mixed Model ANOVA was conducted for each of the six supercategories. The results of these Mixed Model ANOVAs are documented in Table 74. Keep in mind that sex is entirely confounded with disease type for subjects. Please refer back to Table 73 for the frequency means of the

supercategories for all survivors and partners. Results revealed two main effects by role (within subject) and the supercategories most frequently discussed. First, results revealed a significant mean effect for the “cancer and health related issues” supercategory and the within subjects factor, role (patient-partner): $F(1, 24) = 25.88, p < .001$, partial $\eta^2 = .52$. A paired sample t -test revealed that cancer survivors ($M = 67.06, SD = 36.84$) discussed cancer and health related issues significantly more often during counseling than their partners ($M = 17.88, SD = 27.12$) talked about cancer and health related issues. Second, results revealed a significant mean effect for the “social processes” supercategory and the within subjects factor, role (patient-partner): $F(1, 24) = 5.61, p < .05$, partial $\eta^2 = .19$. A paired sample t -test revealed that partners ($M = 149.90, SD = 96.41$) discussed social process issues significantly more often during counseling than cancer survivors ($M = 117.25, SD = 81.05$) talked about social process issues (please see Table 74).

Overall, results of the Mixed Model ANOVAs showed that participants did not significantly differ in the types of concerns discussed most frequently during counseling by role or sex. The only two significant differences between the groups were differences in key concerns by role (patient-partner). Survivors were significantly more likely to discuss cancer and health related issues than were their partners, and partners were significantly more likely to discuss social process issues more frequently than survivors.

Results for RQ3: How are the key topics of concerns associated with psychosocial outcomes?

A correlation matrix was calculated to document the relationship between the six supercategories and the psychosocial outcomes. Please see Table 75 for the results for survivors and Table 76 for partners. Results of the bivariate correlations indicated a significant and negative association between the “social processes” supercategory and depression at Time 2 for cancer survivors ($r = -.32, p < .05$); which suggests that more frequent discussions of social process issues category was associated with lower depression at Time 2 for survivors. In addition, results revealed a significant and negative correlation between the “intrapersonal process” supercategory and depression for partners ($r = -.42, p < .05$); which suggests that more frequent discussions of intrapersonal process issues was associated with decreases in depression at Time 2 for partners. Because the supercategories are abstract and represent an organizational tool for the subcategories, the correlation results are unable to distinguish which aspects of the supercategories are contributing to the psychosocial outcomes. In addition, the research question posed at the outset of this investigation was framed around the impact of the key concerns of participants and their subsequent psychosocial outcomes. Therefore, the top 5 key concerns (i.e., the subcategories with the highest frequency means) of cancer survivors and their partners were used in the subsequent set of analyses to determine which of these were most salient to subjects and partners predict psychosocial outcomes. Five separate regression analyses were conducted in which the psychosocial outcome at Time 1 (i.e., depression at Time 1) was entered in Step 1 of the regression, and a key concern (i.e., chemotherapy/radiation/surgery) was entered in Step 2, and the psychosocial outcome at Time 2 (i.e., depression at Time 1) was entered as the dependent variable. Therefore,

these analyses effectively predict changes in psychosocial outcomes with the themes. These regressions were conducted separately for breast cancer survivors, partners, prostate cancer survivors, and their partners given that all four groups of people had a different set of key concerns.

Breast cancer survivors' key concerns & psychosocial outcomes.

To measure the effect of breast cancer survivors' top 5 key concerns (i.e., Chemotherapy/Radiation/Surgery, Additional Health Issues & Concerns, Relationship Maintenance & Negotiation, Concern for Social Network Members, and Available Social Support) on psychosocial outcomes, a series of hierarchical regressions were conducted. One of the major key concerns (averaged over the three sessions) was entered in the second step, and a psychosocial outcome measure (at Time 2) was entered as the dependent variable, while controlling for psychosocial well-being at Time 1. This entire process was repeated for each key concern, and completed for each of the psychosocial outcome measures (i.e., depression, negative affect, positive affect, and relationship satisfaction) at Time 2 while controlling for the Time 1 psychosocial measure.

Results of the bivariate associations between breast cancer survivors' key concerns and psychosocial outcomes are displayed in Table 77. Relationship maintenance and negotiation was significantly and positively associated with positive affect at Time 2, while controlling for positive affect at Time 1, $\beta .619$, $t = 5.29$, $p < .001$, R^2 change = .383. Therefore, discussion of relationship maintenance and negotiation issues was significant and associated with increases in positive affect at Time 2, after the counseling intervention was completed. However, the remainder of breast cancer survivors' key

concerns did not reveal significant associations with psychosocial well-being at Time 2, while controlling for Time 1 psychosocial well-being. Overall, the results for how breast cancer survivors' key concerns mapped onto their psychosocial outcomes showed that greater discussion of relationship maintenance and negotiation issues during counseling was significantly associated with increased measures of positive affect at Time 2.

Breast cancer partners' key concerns & psychosocial outcomes.

To measure the effect of breast cancer partners' top 5 key concerns (i.e., Relationship Maintenance & Negotiation, Concern for Spouse/Partner, Concern for Social Network Members, Partners' Own Supportive Behavior, and Stress & Coping) on psychosocial outcomes, a series of hierarchical regressions were conducted. One of the major key concerns (averaged over the three sessions) was entered in the second step, and a psychosocial outcome measure (at Time 2) was entered as the dependent variable, while controlling for psychosocial well-being at Time 1. This entire process was repeated for each key concern, and completed for each of the psychosocial outcome measures (i.e., depression, negative affect, positive affect, and relationship satisfaction) at Time 2 while controlling for the Time 1 psychosocial measure.

Results of the bivariate associations between breast cancer partners' key concerns and psychosocial outcomes are displayed in Table 78. Stress and coping was approaching significance for predicting depression at Time 2, while controlling for depression at Time 1, β .243, $t = 2.12$, $p = .053$, R^2 change = .053. Discussion of stress and coping issues was associated with increases in depression at Time 2; however this association was not significant below the standard .05 p value for significance testing. The remainder of

breast cancer partners' key concerns did not reveal significant associations with psychosocial well-being at Time 2, while controlling for Time 1 psychosocial well-being.

Prostate cancer survivors' key concerns & psychosocial outcomes.

To measure the effect of prostate cancer survivors' top 5 key concerns (i.e., Chemotherapy/Radiation/Surgery, Additional Health Issues & Concerns, Relationship Maintenance & Negotiation, Available Social Support, and Activities/Events) on psychosocial outcomes, a series of hierarchical regressions were conducted. The structure of these regression analyses was identical to those previously described for the breast cancer survivors and partners.

Results of the bivariate associations between prostate cancer survivors' key concerns and psychosocial outcomes are displayed in Table 79. Overall, the results for how prostate cancer survivors' key concerns mapped onto their psychosocial outcomes were largely nonsignificant. Unlike the results for breast cancer survivors, prostate cancer survivors' discussion of their top five key concerns showed little association with their psychosocial outcomes at Time 2. The psychosocial outcome measures at Time 1 were better predictors of Time 2 psychosocial outcomes, than were the top five key concerns discussed most frequently by prostate cancer survivors. As a note to the reader, although this association was not significant, prostate cancer survivors' discussion of their own activities and events was trending towards a negative association with relationship satisfaction at Time 2, β -.263, $t = -2.00$, $p = .067$, R^2 change = .069; indicating that a greater degree of survivors' outside activities and events was approaching significance for decreased relationship satisfaction outcomes with their partner.

Prostate cancer partners' key concerns & psychosocial outcomes.

To measure the effect of prostate cancer partners' top 5 key concerns (i.e., Anxiety/Depression, Relationship Maintenance & Negotiation, Concern for Spouse/Partner, Available Social Support, and Partners' Own Supportive Behavior) on psychosocial outcomes, a series of hierarchical regressions were conducted. The structure of these regression analyses was identical to those previously described in the results above.

Results of the bivariate associations between prostate cancer partners' key concerns and psychosocial outcomes are displayed in Table 80. Concern for social network members was approaching significance for predicting positive affect at Time 2, while controlling for positive affect at Time 1, $\beta .699, t = 2.41, p = .053, R^2 \text{ change} = .387$. Discussion of issues concerning social network members was associated with increases in positive affect at Time 2; however this association was not significant below the standard .05 p value for significance testing. As a note to the reader, although this association was not significant, partners' own supportive behavior was trending towards a positive association with negative affect at Time 2, $\beta .270, t = 2.21, p = .07, R^2 \text{ change} = .073$; indicating that partners' discussion of their own supportive behaviors for the patient with prostate cancer was approaching significance for increased negative affect outcomes. The remainder of breast cancer partners' key concerns did not reveal significant associations with psychosocial well-being at Time 2, while controlling for Time 1 psychosocial well-being.

Overall, the results were largely nonsignificant for whether prostate cancer partners' key concerns mapped onto their psychosocial outcomes, with the exception of partners' discussion of social network members and increases in positive affect outcomes (and the slight trend from partners' own supportive behavior to negative affect outcomes). Similar to the results for prostate cancer survivors, prostate cancer partners' discussion of their top five key concerns showed little association with their psychosocial outcomes at Time 2. The psychosocial outcome measures at Time 1 were better predictors of Time 2 psychosocial outcomes, than were the top five key concerns discussed most frequently by partners of prostate cancer survivors.

It should be noted that it is completely possible that some of the other themes that emerged during counseling could be consequential to participants' psychosocial outcomes; not just those top 5 key concerns that were most frequently discussed by survivors and partners. Further, these thematic analyses as a whole were limited due to (1) a relatively low statistical power due to a small n , and (2) there was virtually no residual variance left to be predicted in Time 2 psychosocial outcomes, after the Time 1 psychosocial outcome was partialled out. For these reasons, it is likely that the significant results found in these thematic analyses (i.e., relationship maintenance and negotiation predicting positive affect for survivors with breast cancer) are most likely not overstated.

Given that there was such a high level of construct stability for depression, negative affect, and positive affect from Time 1 to Time 2, there was little ability for the key themes to explain change over time in participants' psychosocial outcomes. However, it is reasonable to assume that the themes discussed during counseling could be

associated with psychosocial outcomes, even if they do not explain a significant *change* in the outcome variables over time. Therefore, in order to further explore possible associations between participants' key themes and psychological well-being, a series of bivariate correlations were conducted (between the top 5 key themes and psychosocial outcomes at Time 1 and Time 2), as a post-hoc analysis. These correlations essentially replicate the previous regression analyses for RQ3, except without partialling out Time 1 well-being from Time 2 psychosocial outcomes. Keep in mind that the Time 1 psychosocial well-being measures were assessed the week prior to the start of counseling, the key themes are an average of the topics most frequently discussed during the 6 to 8-week telephone counseling intervention (sampled at three time points), and the Time 2 psychosocial outcome measures were taken the week after successful completion of the counseling intervention.

Post-Hoc Bivariate Correlation Results of Key Themes and Psychosocial Well-being

The results of the bivariate correlations for women with breast cancer revealed several significant associations between the key themes and psychosocial outcomes (please see Table 81). First, breast cancer survivors' discussion of relationship maintenance and negotiation was significantly and negatively correlated with depression at Time 1 ($r = -.45, p < .05$), depression at Time 2 ($r = -.59, p < .01$); negative affect at Time 1 ($r = -.53, p < .05$), and negative affect at Time 2 ($r = -.46, p < .05$); which indicates that discussion of relationship and communication issues was associated with decreased depression and negative affect for women with breast cancer at Time 1 and Time 2. Further, breast cancer survivors' discussion of relationship maintenance and

negotiation issues was significantly and positively correlated with their positive affect at Time 2 ($r = .60, p < .01$), but not at Time 1 ($r = -.04, p > .05$). This finding supports the previous regression analysis which showed that discussion of relationship issues significantly explained a positive change in positive affect at Time 2 for women with breast cancer, above and beyond positive affect at Time 1.

Second, breast cancer survivors' discussion of available social support was significantly and negatively correlated with negative affect at Time 1 ($r = -.45, p < .05$), but not at Time 2 ($r = -.29, p > .05$). This indicates that more frequent discussion of social support was associated with lower levels negative affect at Time 1; or conversely, higher levels of negative affect at Time 1 was associated with less discussion of available social support. Although this relationship was significant with well-being at Time 1, discussion of available social support was not significantly associated with negative affect at Time 2.

Third, breast cancer survivors' discussion of additional health issues and concerns (i.e., fatigue, problems sleeping) was significantly and negatively correlated with relationship satisfaction at Time 1 ($r = -.47, p < .05$), but not at Time 2 ($r = -.16, p > .05$). This indicates that more frequent discussion of additional health issues and concerns was associated with lower levels relationship satisfaction at Time 1; or conversely, higher levels of relationship satisfaction at Time 1 was associated with less discussion of additional health issues and concerns. Although this relationship was significant with well-being at Time 1, breast cancer survivors' discussion of additional health issues and concerns was not significantly associated with relationship satisfaction at Time 2.

Finally, breast cancer survivors' discussion relating to their concern for social network members was significantly and negatively correlated with relationship satisfaction at Time 1 ($r = -.49, p < .05$), but not at Time 2 ($r = -.27, p > .05$). This indicates that greater discussion of concern for social network members was associated with lower levels relationship satisfaction at Time 1; or conversely, higher levels of relationship satisfaction at Time 1 was associated with less discussion of concern for social network members. Although this relationship was significant with well-being at Time 1, breast cancer survivors' discussion of concern for social network members was not significantly associated with relationship satisfaction at Time 2.

The results of the bivariate correlations for breast cancer partners revealed one significant association between the key themes and psychosocial outcomes (please see Table 82). Breast cancer partners' discussion of relationship maintenance and negotiation issues was significantly and negatively correlated with relationship satisfaction at Time 1 ($r = -.49, p < .05$), but not at Time 2 ($r = -.15, p > .05$). This indicates that more frequent discussion of relationship maintenance and negotiation issues was associated with lower levels relationship satisfaction at Time 1; or conversely, higher levels of relationship satisfaction at Time 1 was associated with less discussion of relationship maintenance and negotiation issues. Although this relationship was significant with well-being at Time 1, breast cancer partners' discussion of relationship maintenance and negotiation issues was not significantly associated with relationship satisfaction at Time 2. This suggests that if partners were very satisfied with their current relationship, there was less relationship maintenance, negotiation, and communication issues to talk about during

counseling, or that they only talked about relationship and communication issues if it was a problem for them.

The results of the bivariate correlations for prostate cancer survivors revealed no significant associations between the key themes discussed during counseling and their psychosocial outcomes at Time 1 or Time 2 (please see Table 83). These nonsignificant results mirror those of the regression analyses conducted to test whether the key themes predicted change over time in psychosocial outcomes earlier. This lack of significant associations between the themes discussed during counseling and survivors well-being could be due either to: (1) the sex of the participants – it is possible that one’s emotional well-being and the topics of “talk” have less of a significant or salient association for men than it does for women, or (2) the degree of distress the cancer survivors were experiencing – most of the men with prostate cancer had undergone surgery, chemotherapy or radiation treatment several years before beginning the counseling intervention and were engaging in watchful waiting to monitor disease progress while in the study; whereas most of the women with breast cancer were in the midst of receiving chemotherapy or radiation treatment at the time they enrolled in the study, or had recently completed cancer treatment before the counseling intervention began.

Results of the bivariate correlations for prostate cancer partners revealed several significant associations between the key themes discussed during counseling and their psychosocial outcomes at Time 1 or Time 2 (please see Table 84). First, prostate cancer partners’ discussion of depression and anxiety was significantly and negatively correlated with positive affect at Time 1 ($r = -.67, p < .05$), but not at Time 2 ($r = -.06, p > .05$).

This indicates that more frequent discussion of depression and anxiety was associated with lower levels of positive affect at Time 1; or conversely, higher levels of positive affect at Time 1 was associated with less discussion of depression and anxiety. Although this relationship was significant with well-being at Time 1, prostate cancer partners' discussion of their own depression and anxiety was not significantly associated with positive affect at Time 2.

Second, prostate cancer partners' discussion of relationship maintenance and negotiation issues was significantly and positively correlated with negative affect at Time 1 ($r = .81, p < .01$), but not at Time 2 ($r = .63, p = .07$). This indicates that more frequent discussion of relationship maintenance and negotiation was associated with higher levels of negative affect at Time 1; or conversely, lower levels of negative affect at Time 1 was associated with less frequent discussion of relationship maintenance and negotiation issues. Although this relationship was significant with well-being at Time 1, prostate cancer partners' discussion of relationship maintenance and negotiation was not significantly associated with negative affect at Time 2. It is possible that the nurse counselor was picking up on partners' negative affect and encouraging them to talk about their current relationship and their communication more during the course of the counseling intervention; which would explain the positive relationship between partners' discussion of relationship/communication issues and negative affect.

Finally, prostate cancer partners' concern for social network members was significantly and positively correlated with positive affect at Time 2 ($r = .76, p < .05$), but not at Time 1 ($r = .45, p > .05$). This indicates that more frequent discussion of social

network members was associated with higher levels of positive affect at Time 2; or conversely, higher levels of positive affect at Time 2 was associated with more discussion of social network member issues. Although this relationship was significant with well-being at Time 1, prostate cancer partners' discussion of relationship maintenance and negotiation was not significantly associated with their positive affect at Time 1. This finding supports the previous regression analysis which showed that discussion of social network members significantly explained a positive change in positive affect at Time 2 for partners of men with prostate cancer, above and beyond positive affect at Time 1.

Overall, the results of the bivariate correlations showed significant associations between participants' top 5 key themes and psychosocial outcomes at Time 1 and Time 2. Even though the topics most frequently discussed during counseling by and large did not reveal significant changes in psychosocial outcomes over time (mostly due to low variance given such high construct stability from Time 1 to Time 2 outcomes); the key themes were significantly related to how participants' well-being. Most of the significant associations were found to be for Time 1 psychosocial well-being and the key themes discussed during counseling. This suggests that how the participants' were feeling prior to beginning the counseling intervention influenced the topics they most often talked about. This could either be because they were more (or less) apt to talk about certain issues if they were experiencing high/low depression, negative affect, positive affect, or relationship satisfaction; or because the nurse counselor picked up on the issues that were problematic for the participants (or things that were causing them concern) and

encouraged more discussion about that particular topic (i.e., relationship negotiation and communication issues).

As a final point, the results of the regressions and bivariate correlations overwhelmingly showed the most frequent concurrent associations and changes over time in psychosocial outcomes for the women with breast cancer, and virtually none for the men with prostate cancer. The second group that showed the most significant associations between key themes and psychosocial well-being was for the partners of men with prostate cancer (the majority of whom were women). What these findings imply is that the connection between emotional and relationship well-being is more closely linked to the topics of conversation for women, than it is for men. In addition, these results suggest that counseling interventions have the potential to be more helpful to women overall, or for those people who are experiencing the highest levels of distress (given that most of the women with breast cancer were currently receiving adjuvant treatment for breast cancer, unlike the men with prostate cancer where most had completed treatment some time prior to the counseling intervention).

CHAPTER IV

Discussion

The purpose of this investigation was to explore how participants' language use during counseling (i.e., overall emotional expression, positive emotional expression, and communal coping, or "we-talk") was associated with superior treatment success, as measured by positive psychosocial outcomes (depression, positive affect, negative affect, and relationship satisfaction); as well as to identify the key concerns of dyads with cancer that emerged during counseling, how those concerns differed by role and sex, and whether the concerns were associated with participants' psychosocial outcomes after the counseling intervention had ended. The present study was a content analysis of the counseling sessions of 43 dyads with breast and prostate cancer, who participated in a six-week and eight-week (respectively), telephone-delivered interpersonal counseling intervention. Using a multi-method approach, the audio recordings of 228 counseling sessions of dyads with breast and prostate cancer were transcribed and content analyzed linguistically (quantitatively) and then thematically (qualitatively).

Several theoretical propositions and assumptions that guided this investigation included: (1) language as a cognitive reflection of thought, (2) the disclosure paradigm and general model of inhibition, and (3) the importance of close relationships, marriage, and relational quality on well-being and overall health. The specific aims, hypotheses, and research questions that guided this investigation were separated into the two major methodological approaches and will be discussed separately. Because of the extensive scope and nature of these results, this discussion section will highlight the general and

key findings of the investigation, and discuss the limitations and implications of the study as a whole.

Discussion for Part I Linguistic Analysis: Emotional Expression & Communal Coping

It was hypothesized that participants' discourse during counseling (i.e., expression of emotion and communal coping) would be associated with positive psychosocial outcomes after the counseling ended. Overall, the results for the first set of hypotheses (i.e., how discourse predicted psychosocial outcomes) were largely nonsignificant. Results indicated no significant associations between survivors' nor their partners' expression of emotion, positive emotional expression, or communal coping words, and their Time 2 or Time 3 psychosocial outcome measures (i.e., depression, negative affect, positive affect, and relationship satisfaction). Therefore, it was concluded that survivors' and partners' psychosocial measures at Time 1 were better predictors of their future psychosocial well-being at Time 2 and Time 3, than their overall language use during the telephone counseling intervention.

However, results did indicate that partners' greater use of "we-talk" (first-person plural pronouns) during counseling predicted significantly decreased negative affect at Time 2, above and beyond negative affect at Time 1. Therefore, greater use of "we-talk" (first-person plural pronouns) by partners during counseling was significantly associated with decreased measures of negative affect at Time 2. This suggests that a communal or partnership approach on the part of partners' of survivors with cancer had a positive effect on their emotional well-being, which is consistent with past research (Acitelli &

Badr, 2005; Berg & Upchurch, 2007; Bodenmann, 2005; Duck, 1994; Lewis et al., 2006; Lyons et al., 1998).

The results for the second set of hypotheses (i.e., how change in language use over time was associated with psychosocial outcomes) were also by and large nonsignificant; however several findings emerged that warrant discussion. First, results indicated that survivors' and partners' use of positive emotion words significantly predicted their Time 1-Time 2 change scores for relationship satisfaction, above and beyond relationship satisfaction at Time 1; therefore, an increase in survivors' and partners' use of positive affect words during counseling predicted an increase in relationship satisfaction at Time 2. This indicates that the expression of positive emotions linguistically (or positivity) was associated with how satisfied partners were in their relationship, which is consistent with the cognitive reflection model of language use in that people's mental health and underlying cognitions are associated with the words they use (Gottschalk & Glaser, 1969; Rosenberg & Tucker, 1978; Stiles, 1992).

Second, results indicated that partners' overall emotional expression (i.e., total use of affect words) significantly predicted their Time 1-Time 2 change score for depression; therefore, an increase in partners' use of total affect words during counseling predicted a decrease in their depression at Time 2. This finding is consistent with the disclosure paradigm and general model of inhibition, which says that the more emotions a person expresses rather than restrains, will have a beneficial effect on emotional well-being (Lepore & Smyth, 2002; Pennebaker, 1989, 1997; Pennebaker & Chung, 2007; Zech, 1999).

Third, results indicated that partners' use of "we-talk" (i.e., first-person plural pronouns) significantly predicted their Time 1-Time 2 change score for negative affect and relationship satisfaction; which suggests that an increase in partners' use of first-person plural pronouns (i.e., "we-talk") during counseling predicted a decrease in negative affect and an increase in their relationship satisfaction at Time 2. Like the previous finding, communal coping, or a partnership approach in people's discourse was associated with relationship well-being, which is consistent with the literature on the benefits of communal coping (Agnew et al., 1998; Lyons et al., 1998; Rohrbaugh et al., 2008; Simmons et al., 2005).

Finally, the APIM analyses that were conducted to answer the set of research questions (i.e., would participants' language use during counseling be associated with his/her partners' psychosocial outcomes) revealed some interesting findings. In terms of the participants' overall discourse, the results overwhelmingly showed significant interdependence in overall emotional expressiveness (i.e., use of total affect words), positive emotional expressiveness (i.e., use of positive emotion words), and communal coping (i.e., use of first-person plural pronouns) in the language use of survivors with cancer and their partners. Therefore, the general discourse of survivors mirrored that of their partners, which supports the notion of interdependence in close relationships, and proposes the existence of interactional synchrony in language use of close partners – even when the dyad members were not talking directly to one another.

Further, in regards to the actor-partner analyses, several actor effects were found. First, results revealed a significant actor effect for cancer survivors' use of positive

emotion words and their own negative affect and relationship satisfaction at Time 2; which suggests that survivors' use of positive emotion words predicted a decrease in their negative affect and an increase in their own relationship satisfaction at Time 2. From a cognitive reflection of model of thought and language use (Chung & Pennebaker, 2007; Krauss & Chiu, 1998), a person's positive attitude is reflected in his/her language use; thus it is reasonable to assume that positivity in cognitions and linguistics can have a beneficial effect on emotional and relational well-being. Second, results showed a significant actor effect for cancer survivors' use of first-person plural pronouns and their depression and negative affect at Time 2; which suggests that survivors' use of first-person plural pronouns (i.e., "we-talk) predicted a decrease in their own depression and negative affect scores at Time 2. Similar to the previous findings which showed a positive association between partners' "we-talk" and psychosocial well-being, these results indicate that the beneficial effects of communal coping in language use can also be extended to survivors' psychosocial outcomes. Third, results revealed that partners' emotional expressiveness (i.e., use of total affect words) was positively associated with their own relationship satisfaction at Time 2; which is consistent with the general tenets of the disclosure and inhibition paradigm.

Finally, results revealed a significant "partner" effect for cancer survivors' use of first-person plural pronouns and their partners' relationship satisfaction at Time 2. This finding indicated that survivors' use of first-person plural pronouns (i.e., "we-talk") predicted an increase in their *partners'* relationship satisfaction scores at Time 2; which suggests that the language use of survivors has the potential to affect their partners' well-

being. This was a particularly intriguing finding given that the survivors were not talking directly to their partners, but to an intermediary source, or third party (i.e., the nurse counselor). If we assume that language use is relatively stable across different contexts (Chung & Pennebaker, 2007; Pennebaker & King, 1999), this would indicate that survivors who used more “we-talk” language with the nurse counselor would also be more inclined to use “we-talk” when talking directly to their partner; hence positively increasing their partners’ relationship satisfaction by assuming a partnership-building role in the relationship rather than an individual outlook. As documented in the literature, a communal coping approach is associated with positive relationship outcomes, similar to this finding (Acitelli & Badr, 2005; Berg & Upchurch, 2007; Bodenmann, 2005; Gottman & Levenson, 1999; Lewis et al., 2006; Lyons et al., 1998).

By and large the results mostly disconfirmed the original hypotheses of the study; however there were some exceptions that were discussed above. Overall, the linguistic cue that seemed to have the most consistent and beneficial effect on survivors and partners’ psychosocial well-being outcomes was the use of “we-talk” or communal coping. Participants’ use of “we-talk” during counseling had positive associations with three of the psychosocial outcome measures, namely, depression, negative affect, and relationship satisfaction. Positive emotional expression was associated with decreased negative affect and greater relationship satisfaction (e.g., which supports a cognitive reflection model of language use), and overall emotional expression was associated with decreased depression and increased relationship satisfaction (e.g., which supports the disclosure and inhibition model); the latter of which is consistent with past research on

emotional expressiveness and improved outcomes (e.g., Chung & Pennebaker, 2007; McCaul et al., 1999; Owen et al., 2006; Pennebaker, 2002; Pennebaker & Chung, 2007; Stanton et al., 2000a, 2000b; Weihs et al., 2000). However, the significant findings for emotional expressiveness and psychosocial outcomes were relatively few and far between in comparison to the communal coping or “we-talk” results. What can be taken away from these findings as a whole is that it might not be as important how much a person expresses themselves emotionally, but rather, whether they have a close relational partner that they see as an instrumental part of their coping process and significantly intertwined in their life, which is reflected in their language use of communal coping (e.g., Acitelli & Badr, 2005; Berg & Upchurch, 2007; Bodenmann, 2005; Duck, 1994; Lewis et al., 2006; Lyons et al., 1998).

There could be several reasons why these linguistic cues were not predictive of psychosocial outcomes overall in this study. First, there was some structure to the counseling sessions given the pre-selected themes as part of the counseling intervention protocol, so some of the participants’ discourse may have been influenced by the agenda of the nurse counselor. In addition, the participants’ talk was mostly in response to the nurse counselor’s questions. This is a methodological departure from the previous studies on language use and well-being in which portions of people’s spontaneous and natural discourse was recorded (unknowingly to the participants) throughout the day by using the EAR electronic recording device (i.e., Mehl & Pennebaker, 2003; Newman et al., 2008). In this particular study, participants were in a controlled environment in which their responses were constricted (or at least directed) by the questions asked by the counselor,

rather than their “normal” or “regular” conversation throughout the day with other people.

Further, the sample consisted of a very specialized group of people – the survivors had been diagnosed and treated for cancer, and the partners were either the patient’s spouse, family member, or close friend (whomever the patient believed was instrumental to the his/her coping process, and had selected him/her to participate in the study with them). Given this unique population of dyads coping with cancer, it could be the case that cancer is such a powerful and overwhelming stressor that it washes out any effect for participants’ discourse and talk. Or, perhaps it is possible that those effects had already occurred, and by this point the couple was settling in to a new “normal” so that their mood and psychosocial well-being outcomes were not changing a whole lot (which was evident in the construct stability of Time 1 to Time 2 psychosocial well-being measures). In addition, the sample size was small (given the unique cancer population recruited to be in the intervention portion of the larger study); so, there might not have been enough power to detect small to medium sized effects. Therefore, this particular sample – due to the unique set of participants with cancer and small sample size – could have yielded less significant effects in linguistic cues and well-being than a larger, convenience sample of a relatively healthy population.

Finally, it is possible that a different ordering of the variables in the analyses (instead of language predicting outcomes) could have provided different results. This investigation examined how participant’s language use predicted their outcomes at Time 2 (after counseling ended), while controlling for Time 1 psychosocial well-being (prior to

counseling). The cognitive reflection model of language use posits that people's emotions, cognitions, etc., *precedes* language use, not the other way around (e.g., Gottschalk & Glaser, 1969; Rosenberg & Tucker, 1978; Stiles, 1992). Therefore, it could be the case that Time 1 well-being would have been a strong predictor of participants' language use during counseling, rather than using their discourse during counseling to predict psychosocial outcomes at Time 2, after the counseling intervention had ended.

Discussion for Part II Thematic Analysis: Key Concerns of Dyads with Cancer

The aim of this section was to identify the key concerns of dyads with breast and prostate cancer, how those concerns might differ by group (role and sex), and how the concerns were associated with psychosocial outcomes after the counseling ended. Results for the first research question (i.e., what are the key concerns of survivors and partners during counseling) revealed large similarities among the groups. Overall, breast and prostate cancer survivors' key concerns consisted of the same four topics: chemotherapy/radiation/surgery, additional health issues and concerns, available social support, and relationship maintenance and negotiation (in addition to breast cancer survivors' concern for social network members, and prostate cancer survivors' discussion of activities and events). On the other hand, partners' key concerns included the same three topics: concern for spouse/partner, relationship maintenance and negotiation, and partner's own supportive behavior (in addition to breast cancer partners' concern for social network members and discussion of stress and coping, and prostate cancer partners' available social support and discussion of anxiety/depression).

These results suggest that survivors' concerns were more focused on cancer and treatment related issues, whereas partners' concerns centered on how their spouse/partner with cancer was doing and what they were doing to help their loved one cope with his/her illness. Some of the variation in the participants' key concerns could have been due to sex differences. For example, women with breast cancer were more likely to talk about other social network members, men with prostate cancer frequently discussed outside activities and events, and partners of prostate cancer survivors (the majority of whom were women) more frequently talked about issues relating to anxiety and depression. This finding complements Newman et al.'s (2008) meta-analysis of gender differences in language use. Their results showed a "rapport" style in females: women were more likely to engage in discussion of social topics and exhibited more frequent expression of inner thoughts, feelings, and emotions. Whereas they showed a "report" style in males: men were more likely to use language for the instrumental purpose of conveying information, and more frequently described the quantity and location of objects (Newman et al.). In the present study, the overarching key concern that was intertwined in all of the participants' discourse was frequent discussion of relationship maintenance, negotiation, and communication issues in regards to their relationship partner and intimate others.

The second research question sought to determine whether there were differences in the types of concerns most often discussed during counseling depending on participants' sex or role (keep in mind that the survivors' sex was entirely related to cancer-type). Overall, the results showed that participants did not significantly differ by role or sex in the types of concerns most frequently discussed when comparing the groups

across the six overarching supercategories of themes. The only two significant differences between the groups were differences in key concerns by role (patient-partner). First, survivors were significantly more likely to discuss cancer and health related issues than were their partners. Second, partners were significantly more likely to discuss social process issues more frequently than survivors. Again, this highlights the general tendency of survivors to focus on the cancer experience, and penchant for partners to discuss the health, welfare, and well-being of the patient with cancer.

The third research question asked whether the survivors' and partners' key topics of concern discussed during counseling were associated with improved psychosocial well-being. Overall, results of the bivariate analyses indicated that survivors' and partners' key themes or most frequently discussed concerns did not have a large influence on their psychosocial well-being outcomes at Time 2 (when controlling for psychosocial well-being at Time 1). However, several unique findings did emerge from the results. First, breast cancer survivors' discussion of relationship maintenance and negotiation issues was significantly associated with increases in positive affect after the counseling intervention was completed. Therefore, discussion of the relationship as a whole (maintenance, negotiation, communication issues) had a positive effect on survivors' emotional well-being at Time 2. This finding has implications for clinicians and counselors given that discussion of relationship and communication was associated with positive outcomes for women with breast cancer. Second, breast cancer partners' discussion of stress and coping was associated with increases in depression at Time 2, although this association was slightly above the standard .05 p value for significance

testing ($p = .053$). This is a reasonable finding if partners' discourse was centered more on the various sources of stress, rather than on coping with stress. Therefore, if the participants were experiencing a lot stress, they were probably talking more about stress to the nurse counselor during counseling. Thus, it would be logical to assume that if they were talking about stress it was because they were experiencing higher levels of stress, which would be positively associated with depression (Sapolsky, 2004).

The results of the prostate cancer survivors' key concerns and psychosocial outcomes revealed that unlike the results for breast cancer survivors, prostate cancer survivors' discussion of their top five key concerns showed little association with their psychosocial outcomes. However, it should be noted that prostate cancer survivors' discussion of their own activities and events was trending towards a negative association with their relationship satisfaction at Time 2; which indicates that a greater degree of survivors' outside activities and events was somewhat related to a decrease in relationship satisfaction. Keep in mind that the activities and events category consisted of outside activities that the participant engaged in, or planned to engage in, on their own (or at least with people who were not their spouse/partner). So this trend could be an artifact of the cancer patient taking an independent or separate approach in their lives, or not having a high degree of interdependence or closeness with their relational partner. Overall, the core concerns of prostate cancer survivors' had less of an impact on their psychosocial outcomes after the counseling intervention had ended, than it did for women with breast cancer. Perhaps this could be an expression of a sort of sex difference

whereby men are socialized to take an individualistic approach to problem-solving (i.e., men are instrumental, women are expressive) (e.g., Parsons & Bales, 1955).

The results of prostate cancer partners' key concerns and psychosocial outcomes showed two trends. First, prostate cancer partners' concern for social network members was trending towards a positive association with positive affect at Time 2; although this effect was slightly above the standard .05 p value for significance testing ($p = .053$). This could suggest that partners who spent more time talking about other people in their social network (whether they were concerned about their welfare or not) at least had a significant network of social support members to begin with. Therefore, if they had a larger pool or social support structure due inherently to having more network members to talk about, this social support, or available pool of family and friends outside the relationship with the patient could be contributing to their positive affect (e.g., Picard, Dumont, Gagnon, & Lessard, 2006; Spiegel, 1997). Second, although this association was not significant ($p = .07$), it was a fairly revealing result. Partners' discussion of their own supportive behavior was trending towards a positive association with their negative affect at Time 2; indicating that partners' discussion of their own supportive behaviors for the patient with prostate cancer (i.e., caring for their sick spouse/partner) was somewhat related to increased negative affect. This finding complements the caregiving literature that posits that caregivers are more prone to stress and burnout than the survivors themselves are (Grinfeld et al., 2004; Hagedoorn et al., 2008; Lewis, 2004; Lewis, Cochrane, & Fletcher, 2005; Lewis et al., 2008; Manne et al., 2006; Northouse et al., 1998; Pitceathly & Maguire, 2003; Segrin, Badger, Meek, & Bonham, 2006).

As noted previously in the results section, these thematic analyses as a whole were limited due to a relatively low statistical power given the small sample size. The results showed that there was virtually no residual variance left to be predicted in Time 2 psychosocial outcomes, after the Time 1 psychosocial outcome was partialled out. On a positive note, this means that the significant results that were found in these thematic analyses and well-being outcomes (i.e., relationship maintenance and negotiation predicting positive affect for survivors with breast cancer) are most likely not overstated. However, given the construct stability of psychosocial well-being at Time predicting so much of the variance in Time 2 psychosocial outcome measures, there was limited opportunity for any linguistic cues/thematic topics discussed to predict changes over time in well-being. Therefore, bivariate correlations were conducted as a post-hoc analysis, to test the association between participants' top 5 key themes and psychosocial well-being at Time 1 and Time 2.

Overall, the results of the bivariate correlations showed numerous significant associations between participants' top 5 key themes and psychosocial outcomes at Time 1 and Time 2. Most of the significant associations found were between Time 1 psychosocial well-being and the key themes discussed during counseling. This suggests that how the participants' were feeling prior to starting the counseling intervention influenced the topics they most often talked about during counseling (at least, more so than the amount the topics discussed influenced their Time 2 well-being outcomes). This could be either because participants were more (or less) apt to talk about certain issues if they were experiencing high/low depression, negative affect, positive affect, or

relationship satisfaction; or because the nurse counselor picked up on the issues that were problematic for the participants (or things that were causing them concern) and encouraged more discussion from them about that particular topic (i.e., relationship negotiation and communication issues). Even though the topics most frequently discussed during counseling by and large did not reveal significant changes in psychosocial outcomes over time (mostly due to low variance given such high construct stability from Time 1 to Time 2 outcomes); the key themes were significantly associated with participants' well-being at Time 1 and Time 2.

Specifically, the following significant associations were found from the bivariate analyses. First, breast cancer survivors' discussion of relationship maintenance and negotiation issues was significantly and negatively correlated with depression at Time 1, depression at Time 2, negative affect at Time 1, and negative affect at Time 2; which indicates that discussion of relationship and communication issues was associated with decreased depression and negative affect for women with breast cancer. In addition, breast cancer survivors' discussion of relationship maintenance and negotiation issues was significantly and positively correlated with their positive affect at Time 2, but not at Time 1. This finding supports the previous regression analyses which showed that discussion of relationship issues significantly explained an increase in positive affect at Time 2 for women with breast cancer, above and beyond positive affect at Time 1. Second, breast cancer survivors' discussion of available social support was significantly and negatively correlated with negative affect at Time 1 but not at Time 2. This finding indicates that higher levels of negative affect at Time 1 was associated with less frequent

discussion of available social support; or conversely, lower levels negative affect at Time 1 was associated with more frequent discussion of available social support. Third, breast cancer survivors' discussion of additional health issues and concerns (i.e., fatigue, problems sleeping) was significantly and negatively correlated with their relationship satisfaction at Time 1, but not at Time 2. This indicates that higher levels of relationship satisfaction at Time 1 was associated with less frequent discussion of additional health issues and concerns; or conversely, lower levels relationship satisfaction at Time 1 was associated with more frequent discussion of additional health issues and concerns during counseling. Finally, breast cancer survivors' discussion relating to their concern for social network members was significantly and negatively correlated with relationship satisfaction at Time 1, but not at Time 2. This indicates that higher levels of relationship satisfaction at Time 1 was associated with less frequent discussion of concern for social network members; or conversely, lower levels relationship satisfaction at Time 1 was associated with greater discussion of concern for social network members.

The results of the bivariate correlations for breast cancer partners' showed that discussion of relationship maintenance and negotiation issues was significantly and negatively correlated with relationship satisfaction at Time 1, but not at Time 2. This indicates that higher levels of relationship satisfaction at Time 1 was associated with less frequent discussion of relationship maintenance and negotiation issues; or conversely, levels relationship satisfaction at Time 1 was associated with more frequent discussion of relationship maintenance and negotiation issues. This suggests that if partners were very satisfied with their current relationship, there was less relationship maintenance,

negotiation, and communication issues to talk about during counseling, or that they only talked about relationship and communication issues if it was a problem for them.

Next, the results of the bivariate correlations for prostate cancer partners' showed that discussion of depression and anxiety was significantly and negatively correlated with positive affect at Time 1, but not at Time 2. This indicates that higher levels of positive affect at Time 1 was associated with less frequent discussion of depression and anxiety; or conversely, lower levels of positive affect at Time 1 was associated with more frequent discussion of depression and anxiety during counseling. Second, prostate cancer partners' discussion of relationship maintenance and negotiation issues was significantly and positively correlated with negative affect at Time 1, but not at Time 2. This indicates that higher levels of negative affect at Time 1 was associated with more frequent discussion of relationship maintenance and negotiation issues; or conversely, lower levels of negative affect at Time 1 was associated with less discussion of relationship maintenance and negotiation issues during counseling. It is possible that the nurse counselor was picking up on partners' negative affect and encouraging them to talk about their current relationship and their communication more during the counseling intervention; which would explain the positive relationship between the two variables. Finally, prostate cancer partners' concern for social network members was significantly and positively correlated with positive affect at Time 2, but not at Time 1; which supports the previous regression analyses that showed that discussion of social network members significantly explained an increase in positive affect at Time 2 for partners of men with prostate cancer, above and beyond positive affect at Time 1.

Finally the results of the bivariate correlations for prostate cancer survivors revealed no significant associations between the key themes discussed during counseling and their psychosocial well-being at Time 1 or Time 2 (which mirror the results of the regression analyses conducted to test whether the key themes predicted change over time in psychosocial outcomes). The lack of significant associations between the themes discussed during counseling and prostate cancer survivors' well-being could imply several things. First, the sex of the participant could be a factor in who improves from counseling. Overall, the results showed the most frequent associations and changes over time in psychosocial outcomes for the women with breast cancer, next for the partners of men with prostate cancer (the majority of whom were women), least for partners of women with breast cancer (the majority of whom were men), and virtually none for the men with prostate cancer. It is possible that emotional well-being and topics of conversation have less of a significant or salient association for men than for women; or that the connection between emotional and relationship well-being could be more closely linked to the topics of conversation for women, than it is for men. Second, the degree of distress the cancer survivors were experiencing could be a factor in who benefits most from counseling. Most of the men with prostate cancer had undergone surgery, chemotherapy or radiation treatment several years before beginning the counseling intervention, and were engaging in watchful waiting to monitor disease progress while in the study. On the other hand, most of the women with breast cancer were in the midst of receiving chemotherapy or radiation treatment at the time they enrolled in the study, or had completed cancer treatment or surgery (e.g., partial or radical mastectomy) more

recently before being enrolled in the telephone counseling intervention. In sum, these results suggest that counseling interventions have the potential to be more helpful to women overall as a group, and/or for those people who are experiencing the highest levels of distress (i.e., are currently receiving adjuvant treatment for cancer).

To sum up the results of the thematic analyses as a whole, one of the most frequent topics of discussion that played a prominent theme in all participants' counseling was discourse concerning their relationship with their spouse/partner. The relationship maintenance and negotiation category was a hybrid of two subcategories: relationship issues with their spouse/partner and intimate others (satisfaction and dissatisfaction, intimacy, changes in relationship due to illness) and communication issues with their spouse/partner and intimate others (difficulties, opening up communication, reaching out). For women with breast cancer, discussion of communication and relationship issues was related to increased positive affect, although this association was not evident for the men with prostate cancer. This finding could be tapping into a sex and gender issue, given the past literature which suggests that due to women's heightened sensitivity to relationship functioning, relational well-being is more strongly linked to emotional well-being in women (Segrin, Powell, Givernitz, & Brackin, 2003). Further, past research has found that although partners have many fears and concerns about their loved one's illness, they often hold back from talking about their concerns and obscure their own feelings (Lewis, Cochrane, & Fletcher, 2005). However, the results of the thematic analysis showed that partners spent a lot of time discussing concerns about the health and well-being of their sick partner during the counseling sessions; thus when given the

opportunity, it could prove to be beneficial for partners to air their concerns about their loved ones.

Finally, these findings complement the past thematic research on cancer survivors' key concerns (i.e., Shands et al., 2006; Ullrich et al., 2008), and extended the current knowledge on topical themes by incorporating the discourse of survivors with different types of cancer and their partners all into one study. Like Shands et al.'s (2006) findings, these results showed that the core concerns of women with breast cancer revolved around relationship issues and cancer-related concerns. And similar to Ullrich et al.'s (2008) study, these results supported the notion that breast and prostate cancer survivors' most frequently discussed cancer-related health threats as it related to chemotherapy and radiation treatments, as well as additional health concerns above and beyond specific treatments for cancer. In addition, the in-depth content analysis of the transcripts produced a comprehensive myriad of themes that emerged from survivors and partners' discourse during counseling, ranging from cancer-related health issues, interpersonal and social issues, to intrapersonal issues like grief and role change; rather than just focusing specifically on (or only coding for) cancer-related health or relationship issues like past research has done. The prevailing conclusion from the thematic analyses is that some differences exist in the topics most discussed depending on whether the person is the patient with cancer, the partner with cancer, and the sex of the patient/partner. But overall, there were many consistencies among the themes of breast and prostate cancer survivors and partners, which indicates that regardless of who

is receiving counseling, certain issues (like relationship and communication) are vital to the discussion of dyads dealing with breast and prostate cancer.

Limitations

It should be noted that this investigation contained a multitude of analyses which yielded a relatively large amount of null findings. Therefore, the significant effects that were found throughout the analyses could be the result of Type I errors by chance alone. In terms of the study parameters, one of the most severe limitations was due to the sample size. The sample population itself was fairly small ($N = 23$ dyads, $N = 86$ participants), which would restrict the amount of power necessary to detect small to medium-sized effects in participants' language use and psychosocial outcomes. Further, all of the participants were volunteers, so there might have been a self-selection bias given that all of the participants volunteered to be in the study (e.g., cancer survivors with more extreme levels of emotional distress could have been underrepresented). Finally, the majority of participants were White and well-educated, therefore the results of this particular investigation cannot necessarily be generalized to the population as a whole (i.e., Africa-Americans, or low SES groups).

The telephone conversations themselves could have been a limitation to the present study in two ways. First, there was some structure to the counseling intervention given the pre-selected themes as part of the counseling intervention protocol, so some of the participants' discourse may have been influenced by the agenda of the nurse counselor. This is an inherent limitation of this particular investigation given that participants' responses were constricted, or at least directed, by the questions asked by

the counselor, rather than past linguistic studies which examined people's spontaneous and natural discourse (i.e., Mehl & Pennebaker, 2003; Newman et al., 2008). However, although participants knew they were being recorded and there were pre-selected themes for each counseling session, the subjects were still free to talk about what they wanted, and were often encouraged by the counselor to discuss any issues, concerns, or problems they were currently experiencing, so this at least partially mitigates the limitations inherent in the a priori structure that was imposed on each counseling session.

Finally, the fact that the survivors and partners were not talking directly to one another could also be a limitation to the study findings. Presumably, an investigation on the language use of dyads with cancer would be better served by examining how the survivors and partners spoke directly to one another, or their discourse as a dyad (rather than examining each dyad member's discourse individually to an outside party, or third person). However, past linguistic research suggests that language use is relatively stable across time and various contexts (Chung & Pennebaker, 2007; Mehl, 2005; Pennebaker & King, 1999), therefore this might not have been such a significant limitation if the participants' were indeed speaking in the same manner, or using similar linguistic styles with the nurse counselor, as they would have been when they were talking to each other. Furthermore, it is possible that the survivors or partners might have said something diagnostic to the nurse counselor that they would not say to each other. Given that this was an interpersonal counseling session with a trained nurse counselor in which the participants' were asked to be in a private location in their residence away from their partner (in cases where the dyads lived together) at the start of each counseling session; it

is reasonable to assume that the topics discussed or discourse during a private counseling session could have been different than what they might have said directly to each other.

Another limitation to the present study was the type of research methodology used. Although there are several strengths unique to content analyses of texts (i.e., it provides an unobtrusive assessment technique, the data analyses are not limited by predetermined questions and answers, affords the ability to study data in a specific context, and the potential to attain rich data), there are several drawbacks as well. Some of the issues inherent in qualitative research include: inter-coder reliability (test-retest reliability, researcher biases), external validity (generalizability), internal validity (accurate definitions of the phenomenon, using established versus new coding schemes), and coding issues related to reliability and replication (Mehl, 2005). Therefore, these disadvantages in analyzing qualitative texts could have presented methodological limitations to the present study and overall findings.

Although the reliability analyses conducted for the inter-coder reliability checks indicated that there was sufficient reliability ($ICC = .70$ and higher) among the three coders; this was a ground-up approach to coding of the counseling session transcripts. Therefore, it is possible that reliability could have been compromised in later coding of the transcripts given that the research assistants were instructed to code for new and unique data that emerged throughout the transcripts (in order to achieve a comprehensive universe of themes and discourse items). So the assessment of new themes as they emerged throughout the counseling transcripts for which there was no reliability assessment, could have compromised reliability overall. In addition, the organization of

the single-item statements into subcategories, and the categories into supercategories was conducted primarily by the first author. Although the dimensions of the categories themselves (meaning, the single-item statements within each category and condensing the subcategories into larger categories) was discussed in much length and agreed-upon by the author and two independent observers, the process of principled decision making that had to be conducted when defining and organizing the final set of categories could have been approached differently by another researcher.

Conclusions

Past research has shown that the words people use are significantly indicative of their psychological well-being (Chung & Pennebaker, 2007; Simmons, Gordon, & Chambless, 2005), and text analyses of language use have provided researchers with considerable insight into people's emotional and physical health states (Chung & Pennebaker, 2007; Lee & Peterson, 1997; Mehl, 2005; Pennebaker & Lay, 2002; Pennebaker & King, 1999; Simmons et al., 2005). Within a health-related context, researchers have explored different features of language use such as the extent of emotional expression in written narratives and survivors' adjustment to cancer (e.g., Low, Stanton, & Danoff-Burg, 2006; Owen et al., 2006), and the prognostic significance of spousal "we-talk" in couples coping with heart failure (e.g., Rohrbaugh, Mehl, Shoham, Reilly, & Ewy, 2008). Others have conducted content analyses of audio-recorded conversations to identify the core concerns and the cancer-related threats most frequently discussed by dyads with cancer (e.g., Shands, Lewis, Sinsheimer, & Cochrane, 2006; Ullrich, Rothrock, Lutgendorf, Jochimsen, & Williams, 2008). However, researchers had

not yet confirmed which aspects of language use were most predictive of positive psychological adjustment during counseling, and how the overarching concerns of people with cancer and their partners were associated with psychosocial outcomes.

The present investigation showed that when taking everything into account, the linguistic cue that seemed to have the most consistent and beneficial effect on survivors and partners' well-being and psychosocial outcomes was the use of "we-talk" or communal coping. "Communal coping" has been defined in the literature as an instrumental dimension of couple coping which implies a cooperative problem-solving process where dyad members identify problems and address an issue or challenge as "our" issue, rather than "yours" or "mine" (Acitelli & Badr, 2005; Berg & Upchurch, 2007; Bodenmann, 2005; Lewis et al., 2006; Lyons et al., 1998). Past research has indicated a paramount role for 1st person plural pronouns ("we" and "us"), because it is hypothesized to reflect a couple's cognitive commitment and shared relational identity (Agnew, Van Lange, Rusbult, & Langston, 1998; Simmons et al., 2005), and couples' tendency to use "we" in their discourse was significantly associated with relationship satisfaction and marital stability (Gottman et al., 1998; Gottman & Levenson, 1999), and predicted positive changes in symptoms of patient's with chronic heart failure (Rohrbaugh et al., 2008). Indeed, the findings from this study complement past research on the positive effects, beneficial outcomes, and centrality of communal coping in overall well-being and relationship satisfaction in close relationships. Although positive emotional expression was associated with decreased negative affect and greater relationship satisfaction, and overall emotional expression was associated with decreased

depression and increased relationship satisfaction; when taken together, participants' use of "we-talk" during counseling had the most positive associations on participants' psychosocial outcome measures of depression, negative affect, and relationship satisfaction.

The results of the thematic analyses showed that survivors' concerns were more focused on cancer and treatment related health issues, whereas partners concerns centered on how their spouse/partner was coping with cancer and the behaviors they were engaged in to help their loved one cope with his/her illness. However, the overarching key concern or theme among all survivors' and partners' discussion was talk related to relationship maintenance and negotiation and communication issues with their relationship partner and intimate others. In addition, discussion of relationship and communication issues showed significant benefits in emotional well-being for women with breast cancer (specifically decreased depression and negative affect, and increased positive affect). These findings support and extend past research conducted on the core concerns and most frequent topics of discussion in cancer-related contexts (i.e., Shands et al., 2006; Ullrich et al., 2008) by including outcome measures of participants' well-being in addition to themes.

Further, the results revealed significant interdependence in the language use of survivors with cancer and their partners for all of the linguistic dimensions analyzed. Therefore, the general discourse of survivors mirrored that of their partners, which indicates that there is some degree of interactional synchrony in the language use of close partners – even when the dyad members were not speaking directly to each other. This

supports recent research findings which indicated that matching in verbal behaviors predicted cohesiveness in small groups assigned a task (Gonzales, Hancock, & Pennebaker, 2010); although the group members in that study were interacting directly with one another face-to-face or via computer-mediated communication. Thus, in an interpersonal context, helping to modify or change how one person speaks (whether it is being more emotionally expressive or using more communal coping language), has the potential to influence how their partner talks as well. Therefore, if only given the opportunity to counsel one dyad member, any positive improvements in that person's language could positively impact their relational partner's language, which has implications for positive psychosocial outcomes for both dyad members.

Finally, it should be noted that a "partner" effect was discovered for cancer survivors' use of first-person plural pronouns ("we-talk") and their *partners'* relationship satisfaction; which suggests that survivors' language use (specifically, their communal coping or "we-talk") has the potential to affect their partners' well-being and relationship satisfaction. As past research has suggested, the communication between a couple shapes and creates how members of a dyad define their health, marriage, and self (Duck, 1994); thus the more a person uses "we-talk" in their language has implications for their own, and his/her partner's, relationship satisfaction.

This investigation used a multi-method approach to examine the counseling session transcripts of survivors with breast and prostate cancer and their partners, and closely investigated the language use and psychosocial outcomes of dyads with cancer in various ways that had not been previously addressed in the literature. Given that the

majority of psychosocial research on people coping with cancer has been conducted on samples of women with breast cancer and less than 5% of psychosocial intervention studies have included men (Jacobson et al., 2006; Stanton, 2006); this particular study offered a comprehensive analysis of the language use, core concerns, and psychosocial outcomes of dyads with breast and prostate cancer all at once. In addition to having dyadic data from survivors and partners with two different types of cancer, the psychosocial outcome variables were arranged longitudinally pre- and post- counseling, which provided the ability to analyze change in language use and well-being over time.

The findings of this study has implications for counselors and clinicians, in that encouraging emotional expression, attempting to increase communal coping in discourse, and encouraging discussion regarding relationship maintenance, negotiation, and communication issues, as well as providing strategies for effective communication during counseling are important, and have the potential to affect well-being outcomes and positive psychosocial adjustment for dyads with cancer. In conclusion, the language use of survivors with cancer and their partners can positively impact their own, as well as their partners' psychosocial and relationship well-being.

APPENDIX A: TIP-C schedule of topics for dyads with breast and prostate cancer.

1.) TIP-C Schedule for Women with Breast Cancer

TIP-C Session #	Focal Points of TIP-C Sessions
1	Cancer Information Symptoms of Depression Psychoeducation Interpersonal Formulation
2	Symptoms of Depression and Interpersonal Relationships Communication Problems With Key Target Nurse Modeling of Communication Processes
3	Role Transitions Effective Social Skills for Coping Role Playing Interpersonal Interactions
4	Role Disputes Problematic Communication Patterns Homework Assignment
5	Review Homework Assignment Sources of Satisfaction
6	Termination of Counseling Review Successes Framing Successes and Failures

2.) TIP-C Schedule for Partners (of Women with Breast Cancer)

TIP-C Session #	Focal Points of TIP-C Sessions
1	Cancer Information Psychoeducation Interpersonal Formulation
2	Symptoms of Depression and Interpersonal Relationships Communication Problems With Patient Changes and Associated Emotions Role Transitions
3	Conflict & Role Disputes Social Support Calibrate Involvement in Patient's Care

APPENDIX A - *Continued*

3.) TIP-C Schedule for Men with Prostate Cancer

TIP-C Session #	Focal Points of TIP-C Sessions
1	Cancer Information and Symptoms Symptoms of Depression, Anxiety, Stress Psychoeducation Interpersonal Formulation
2	Symptoms and Interpersonal Relationships Communication Problems With Key Target Nurse Modeling of Communication Processes
3	Role Transitions Effective Social Skills for Coping/Adapting to cancer Role Playing Interpersonal Interactions
4	Role Disputes Homework Assignment
5	Review Homework Assignment Problematic Communication Patterns
6	Social Support Barriers to Seeking and Securing Social Support
7	Progress with Cancer Treatment Stress and Coping Strategies Sources of Satisfaction
8	Termination of Counseling Review Successes Review social support, stress and coping strategies Framing Successes and Failures

4.) TIP-C Schedule for Partners (of Men with Prostate Cancer)

TIP-C Session #	Focal Points of TIP-C Sessions
1	Cancer Information and Symptoms Symptoms of Depression, Anxiety, Stress Psychoeducation Interpersonal Formulation
2	Symptoms and Interpersonal Relationships Changes and Associated Emotions Role Transitions
3	Review Symptoms and Stress Management Communication Problems With Patient Social Support
4	Conflict & Role Disputes Calibrate Involvement in Patient's Care Review Social Support, stress and coping

APPENDIX B: The Dimensions of the Linguistic Inquiry Word Count (LIWC).

I. Standard Linguistic Categories

pronouns (self, I, we, you, other) (example: he/she)

II. Psychological Process Words

positive emotion (positive feelings, optimism) (example: happy)

negative emotion (anxiety, anger, sadness) (example: sad)

III. Cognitive Mechanism Words

cognitive processes (cause, insight, certainty) (example: because)

IV. Social Reference Words

communication, other references (friends, family, humans)

V. Traditional Content Dimensions

1. Occupation (school, job, achievement)

2. Leisure (home, sports, TV, music)

3. Money

4. Metaphorical (religion, death)

5. Physical (body, sexual, eating, sleeping, grooming)

APPENDIX C: Coding Categories for Women with Breast Cancer.

I. CANCER & HEALTH-RELATED ISSUES

1. CHEMOTHERAPY/RADIATION/SURGERY

Chemo Side Effects – Changes in Skin (dry)
 Chemo Side Effects – Nausea (vomiting)
 Chemo/ radiation treatments
 Chemotherapy (issues with chemo)
 Chemotherapy (side effects, not what expected)
 Chemotherapy (side effects, treatments)
 Chemotherapy (starting treatments, aware of side effects, etc)
 Chemotherapy (treatment, effects – low white blood count)
 Chemotherapy (treatments, side effects (general)
 Chemotherapy (change in activities due to chemo)
 Chemotherapy effects (dehydration, WBC low)
 Chemotherapy sessions/appointments (socializing, mtg others helps)
 Concerns about chemo/ medications
 Radiation (concerns, treatment locations, questions)
 Radiation (fearful, concerns)
 Radiation (side effects)
 Tamoxifen (hot flashes – bothersome, communication w doc)
 Treatment concerns (appetite, chemo)
 Treatment concerns (chemo effects, feeling okay, “chemo brain”)
 Treatment concerns (chemo, medication, lack of information)
 Treatment concerns (coping, fatigue, affects of medicine)
 Treatment concerns (doses, scheduling, affects of medication)
 Treatment concerns (ending chemo, scheduling, medication)
 Treatment concerns (fatigue, doses, scheduling, transportation)
 Treatment concerns (fear, scheduling)
 Treatment concerns (medication, administration of chemo, side effects)
 Treatment concerns (medication, losing hair, doctors)
 Treatment concerns (medicine types, doses, physical pain, appearance, scheduling)
 Treatment concerns (menopause, hormones)
 Treatment concerns (physical, scheduling)
 Treatment concerns (radiation, diagnosis, past experiences)
 Treatment concerns (self image, reconstruction, radiation)
 Treatment concerns (side effects from chemo, ability to work, fatigue)
 Treatment concerns (side effects, chemo, medication)
 Treatment concerns/Reflecting on treatment
 Treatment routines
 Treatment/health concerns (self image, diet, medication)

2. ADDITIONAL MEDICAL/HEALTH ISSUES & CONCERNS

Aches/ pains
 Appetite (good, cooking)
 Blood (biggest concern)
 Blood pressure (levels)
 Blood pressure, weigh gain/loss
 Change in recent accomplishments/ activities
 Changes in health/ effects
 Concern for heart (effected by chemo, cardiac catheterization)
 Concern for heart (heart monitor)
 Concern of prognosis (wanting clearer answers)
 Concerns about implants/ chest tightness
 Decrease in regular activities/rituals
 Decreased appetite
 Diabetes
 Difficulties sleeping (improving)
 Difficulty concentrating (forgetful, flight, negative consequences)
 Fatigue (from depression vs. from chemo)
 Fatigue (none)
 Fatigue (symptoms, coping, energy loss)
 Fatigue (work, lack of sleep)
 Fatigue/ lack of sleep
 Flighty memory (concern for safety)
 Future relapse concerns
 General progress
 General well- being (post-surgery)
 General well-being/ effects from treatments
 Hair loss (dry scalp, itchy, wearing hat)
 Hair loss (shaved head, bald)
 Hair loss (went quickly, wearing hats, wig, not bothered)
 Headaches (occurred daily, treating them, currently gone)
 Lack of Sleep
 Losing hair (good attitude)
 Lymphedema (getting better, committed to therapy)
 Medical history
 Medication (doses)/ treatments/ doctors
 Medication to sleep (now sleep throughout night)
 Medication/ treatment issues
 Memory
 Nausea
 Other medical conditions
 Other physical conditions (besides cancer)
 Pain (experiencing pain, pain clinic)
 Physical changes/ reaction to medication

Physical limitations
 Physical well-being
 Problems eating/ weight
 Problems sleeping
 Sleep and work schedule (exhaustion)
 Sleep patterns
 Surgery/ post-surgery treatment
 Weight gain

3. DOCTORS/APPOINTMENTS/ INFORMATION/RESOURCES

Asking questions about cancer (friends and personal)
 Dealing with different doctors (town VS university doctors, friend's experience at UMC)
 Discussion of medical care with counselor
 Doctor (informative, positive remarks)
 Encounters with different doctors (liking and disliking)
 General Understanding of Chemotherapy
 Intending to share resources/information (collected about BC)
 Interest in psychologist
 Literature about cancer
 Phases of cancer/ effects
 Phases of cancer/ treatment
 Plastic surgeon/ blood work
 Psychiatrist appt.
 Results from mammograms
 Well- being/ results from doctors

II. EMOTIONS/PSYCHOLOGICAL PROCESSES

1. ANXIETY/ DEPRESSION

Anticipatory depression
 Anxiety (from husband, father, role reversal)
 Anxiety Disorder (coping, treated)
 Anxiety/ alcohol/ trouble sleeping
 Coping with depression
 Coping with past depression (after son/husband's death -distract self)
 Depression – possible may get worse if changes in personal life
 Depression (discouragement, monitoring symptoms, interactions, sleeping patterns)
 Depression (doctor visit)
 Depression (fatigue, symptoms, coping)
 Depression (former/current, mediations-neg. side effects, doesn't want meds)
 Depression (history, medications –helpful)
 Depression (history, prozac-helping, divorce)
 Depression (history, symptoms, medications, coping, anxiety)
 Depression (history, symptoms, prozac)

Depression (no thoughts of suicide, prozac)
 Depression (none)/ coping strategies
 Depression (symptoms, history)
 Depression (understanding of – most women experience symptoms at some point)
 Depression and anxiety (medication, symptoms, emotions)
 Depression and fatigue (symptoms)
 Depression and frustration (symptoms, coping)
 Depression and weight gain/ coping strategies
 Depression/ anxiety/ fatigue
 Depression/ energy level
 Depression/ sleep patterns
 Depression/ ways to cope
 Depression/fatigue
 Former Depression (symptoms, coping, from son's death)
 Managing anxiety, panic disorder (medication)
 Signs of depression/ ways to cope
 Symptoms of depression (caring about appearance, fatigue)
 Symptoms of depression, anxiety (past and present experiences)

2. OTHER NEGATIVE EMOTIONS

Anger (coping, expressing, reasons for – cancer/treatments)
 Anger (inanimate objects)
 Emotions with family (anger)
 Feeling embarrassed
 Moodiness
 Negative emotions (irritable, anger, discouragement)

3. POSITIVE EMOTIONS

Happiness/ changes with interests/ roles
 Positive attitude towards health & life (lack of depression)
 Positive attitude towards health (lack of depression)
 Positive/ upbeat feelings
 Satisfaction with current state
 Sources of happiness
 Well being (optimistic, limited feelings of depression)
 Well-being (general) – (relationships evolving, positive attitude)
 Well-being (very well, positive)

4. CONTROL VS/. EXPRESSION OF EMOTIONS

Communication (opening up about emotions)
 Controlling Emotions (crying)
 Emotions (controlling – what says to others, becoming more sensitive)
 Expressing emotions (crying, screaming, being direct, bold)
 Expressing emotions (handling situations with information provided)

III. SOCIAL PROCESSES (RELATIONSHIPS/COMMUNICATION/SUPPORT)

1. COMMUNICATION ISSUES/ RELATIONSHIP MAINTENANCE & NEGOTIATION

Aging mother (communication, care, health)
 Change in sexual relationship
 Changes due to illness (communication)
 Children (relationship, handling cancer, being mother)
 Communication (facilitating support group, talking w other patients)
 Communication with doctor/ husband
 Communication with husband (difficulties discussing cancer, other issues in marriage)
 Communication with husband (in general, problems)
 Communication with partner (calling, reaching out)
 Communication/ relationship with husband
 Family (activities, relationships, children)
 Family (parents, death, support, nature of relationships)
 Interpersonal relationships/ role changes
 Intimacy with Partner (continuing to be intimate)
 Mother (relationship with, telling about cancer and former car accident, her reactions)
 Opening up communication
 Prior relationship w mother
 Reflection on interpersonal relationships
 Relationship with daughter (communication)
 Relationship with doctor
 Relationship with husband (activities, his health)
 Relationship with husband (changes)
 Relationship with husband (communication)
 Relationship with husband (good and bad)
 Relationship with husband (satisfaction/ dissatisfaction)
 Relationship/ communication with son

2. CONCERNS FOR SPOUSE/PARTNER

General well-being (her and husband)
 Husband's health concerns
 Partner's current health (since time of heart attack)

3. CONCERNS WITH OTHER SOCIAL NETWORK MEMBERS

Aging mother (approach, assisted care, health, diabetes)
 Aging mother/in-laws (care, health)
 Brother dealing with cancer
 Change in opinion of women with breast cancer
 Concerns about friend undergoing cancer treatment
 Cousins/ sister
 Daughter (characteristics)

Family (background and conflicts)
 Family (daughters, mother in law)
 Family (issues)
 Family (loss and current)
 Family (mother with Alzheimer's, adolescent children)
 Family issues (mother-in-law)
 Family issues (nephew)
 Family, kids (their attitudes towards cancer, role dispute, past experiences)
 Family, kids/grandchildren (concern for, absent, pride, remorse)
 Father (caring for him, concerns, his money, needing help from family members)
 Father (recently moved in, concerned, caring for him, needs help from other family members)
 Friend diagnosed with cancer (help, support, partaking in counseling sessions)
 Friend with angioplasty
 Friend with cancer (concern, sympathy)
 Sister with breast cancer
 Stories of survivor friend

4. SOCIAL SUPPORT

Communication/ support of husband/ others
 Empathy/ support from others
 Family (children, grandchildren, visits, support)
 Family (children, support, proud)
 Family (in general – good relationships with children, supportive)
 Family Support (children)
 Family support (of the cancer)
 Family/ friends support
 Feelings of support
 Friend support (great friends, supportive)
 Friend Support (have disease in common)
 Friend Support (realistic, helpful friends)
 Friend Support (support center, activities, many friends, helpful)
 Friend Support (very, count on them)
 Friend/Partner support (very, helps with kids, appts, emotionally)
 General contentment/feeling support
 Husband (helping more)
 Husband (relationship, his support)
 Husband's support (with cancer and father)
 Mother (support, pos reinforcement, relationship sig changed)
 Partner (changes, supportive, relationship together, roles)
 Partner (husband-activities, relationship, his support)
 Partner's support (great friend)
 Positive/ appreciated support of friends
 Relationship with family (daughters, grandchildren, visits, support)

Relationship with family (support, activities)
 Relationship with husband (activities, support, affection, dealing with issues)
 Relationship with husband (support)
 Relationship with mother (both suffering from cancer, support)
 Relationship with Partner (husband) – (enjoy time together, supportive, intimacy)
 Relationship/ support of husband
 Sister (support, relationship – made amends with)
 Shared activities with husband
 Social Support (Friends, family, very helpful, interacting with)
 Social Support (friends, oncology department)
 Social support (group, family)
 Social support system (dependable)
 Sources of enjoyment/ support
 Sources of support
 Support from church
 Support from friends/ counselor
 Support from group (scheduling, benefits)
 Support from husband/ sons
 Support from nephew/ friends
 Support group (attended, was OK)
 Support groups/ volunteering
 Support system (family)
 Support system (family, friends)
 Support system (group, books, daughter)
 Support system (husband, daughters, neighbors)
 Support system (sister)

5. ISOLATION /LACK OF SOCIAL SUPPORT/ CONFLICTS

Brother (not available for support)
 Conflicts (in early years of marriage or current)
 Daughter (Distant, limited amount of comm, hopes she will visit)
 Daughter (no longer speaks to, accepting of this)
 Divorce from husband (bad relationship, abusive, manipulative)
 Ex-husband (with children, do not speak, bad relationship)
 Family (caretaker for mother, not close with daughter)
 Family (visits, concern with visits, unsupportive)
 Keeping to herself/ being a loner
 Lack of social support (uncomfortable, people stay away)
 Limited social support (friends, lack of contact within community)
 Lost friend/social support (must do things alone, has others to call)
 People not understanding what she's going through
 Problems with daughter (behavior issues)
 Relationship with daughter (personality clashes)
 Relationship with husband (emotions, struggling with family issues, arguing)

Relationship with husband (negative past/present experiences, communication problems, anger)
 Sister's lack of support
 Social Concerns, public opinion, expectations (doesn't like attention because of BC)
 Social workers (problematic, does not like)
 Staying at home/ being a loner

IV. INTRAPERSONAL PROCESSES

1. ROLE CHANGES/ROLE TRANSITIONS

Accepting the "sick role"
 Change in roles
 Changes after diagnosis (role transitions)
 Changes in roles and relationships (from cancer and job)
 Changes in roles/ dealing with illness
 Changes in roles/ positive attitude
 Learning new "sick role"
 Role change (decrease responsibilities, limited in what able to do)
 Role change (limited in what she's able to do, limited by physically)
 Role change (playing the sick role)
 Role reversal (children helping out more around house, emotions with role change)
 Role reversal (daughter responsible for much of household)
 Role transition (accepting sick role)
 Role transition (doing activities again, transition-moved)
 Role transition (going back to work, limited work ability)
 Role transition (limited working ability, frustration, coping)
 Role transition (quit job-unemployed, to focus on self and children)
 Role Transition (sick role, mood, keeping busy)
 Role transition (work, falling back into "old patterns")
 Role transition (work, sick role, mother/children)

2. STRESS & COPING

Becoming stressed/distressed (lose patience easily)
 Coping mechanisms (difficult issues, anxiety)
 Coping mechanisms (reading, more assertive, support system)
 Coping with cancer/illness (open, getting used to)
 Coping with sadness/ cancer in general
 Dealing with effects from chemo
 Dealing with physical changes (using make-up, wig, skin care)
 Energy vs. workload
 Feeling overwhelmed (getting better, staying busy to cope)
 Finding comfort in animals – dog/cat
 Grieving loss of relationship with mother (Alzheimer's)
 Handling Self During Difficult Times (cries, considers self weak)

Image (doesn't feel like woman, negative body image- body, hair)
 Limited dwelling (feels as if denies cancer, unsure if normal emotion)
 Personal crises (death of husband, diagnosis of cancer)
 Problems on her mind
 Sources of stress
 Sources of stress/ ways to cope
 Stress (handling, behaviors when stressed)
 Stress (handling, expressing, coping – cry)

3. SELF-REFLECTION & PERSONAL GOALS

Accepting help/Receiving Compliments (would like to be better at doing)
 Awareness of own body and needs (learning, recognizing emotions & physical symptoms)
 Comfort, Importance of Self (illness/experience – highly personal)
 Goal – to be more focused
 Intrapersonal Growth (with diagnosis)
 Negative changes since diagnosis
 Outlook on Life (simplicity of life)
 Personal characteristics revealed (test, directing friends in problems)
 Personal reflection of self progress
 Positive changes since diagnosis
 Putting self before others (nurturing more to self than before)
 Strong Character (because of background)
 Substance abuse (recovering)
 Taking care of herself (being kind to herself)
 Thinking of Hypothetical Situations in Life (in future)
 Wanting to carry on with normal activities
 Well-being, life with cancer (fine, relaxed, handling well)
 What she'd like to change about herself

4. REFLECTIONS OF PAST EXPERIENCES

Alcohol use
 Former car accident (injuries, comparing to current situation)
 Negative background (abusive childhood, negative issues, history of depression)
 Personal life reflections (memories)
 September the 11th (emotions, shock)
 Smoking in past
 Substance abuse (hers and son's)

5. DEATH/DYING

Dealing with parents' death
 Death of husband (transition, coping, etc)
 Death of son (his illness, attitude, how affects her current situation – positively)
 Death/Funeral of nursing home patient (his death/illness, wife)
 Family history/ health/ deaths in family

Funeral/ burial arrangements
 Grief/ family support/ relationship with sisters
 Husband's death/Funeral (reflecting back)
 Inevitably of dying
 Other (study scheduling, death in family)
 Son (Illness, death, frustrations)

V. EXTERNAL PROCESSES

1. ACTIVITIES

Activities (fishing, swim with friends – fun)
 Activities (keeping busy, errands, family outings)
 Cooking (starting again, save money, having energy to do so)
 Outside activities/responsibilities/involvement
 Plans/ activities in CO

2. WORK/FINANCES

Financial trouble (in debt, denied loans, in need of food stamps, poor credit)
 Insurance/financial strain
 Occupation
 Work (ability during treatments, doctors opinions, wants to return)
 Work (amount of work, accommodating of her illness)
 Work (relocated (different city) retirement)
 Work (stress, difficulty expressing emotions, dislikes confrontation)
 Working – tiresome (schedule changes)
 Working (going back, contact with boss, doctors suggest time off)
 Working (wishes to return, thoughts of retirement)
 Unemployed (affecting financially, emotionally, worries about emp after cancer)
 Retirement

3. LIVING CONDITIONS/MOVING

Burglary of house (important documentation stolen)
 Living conditions (moving/traveling, locations, living alone, help)
 Moving/ friends from home

VI. STUDY-RELATED ITEMS/MISCELLANEOUS

1. STUDY-RELATED ITEMS

Accomplishments (ending study, asking for help, disability)
 Accomplishments during sessions (more trust)
 Accomplishments from session (accepting, take care of self)
 Current mood (during session)
 Miscellaneous (overview of research project/ small talk)
 Miscellaneous (small talk, questions about study schedule)

Miscellaneous (small talk, scheduling)
Other (small talk, explanation of study)
Other (small talk, goals of study)
Other (small talk, scheduling)
Questions about research project
Reflecting on counseling sessions (progress, end of sessions)
Role playing (practicing situations with counselor)
Scheduling (next TIP-C call)
Significance of ending treatment, study/saying good-bye
The study (is thankful)

2. MISCELLANEOUS/OTHER

Miscellaneous (weather, small talk, etc.)
Other (small talk, miscellaneous)
Other (small talk, weather, miscellaneous)

APPENDIX D: Coding Categories for Partners of Women with Breast Cancer.

I. CANCER & HEALTH-RELATED ISSUES

1. CHEMOTHERAPY/RADIATION/SURGERY

Chemotherapy (Advanced in past Decade)
 Chemotherapy (issues at hospital during appointment, angered)
 Effects from chemo/ acceptance of disease
 Inconvenience of driving to treatment facilities
 Issues with treatment center (distance)
 Radiation (previous experiences, knowledge of effects)
 Treatment concerns (episode, medication)

2. ADDITIONAL MEDICAL/HEALTH ISSUES & CONCERNS

Blood pressure/ medical history
 Fatigue
 Feeling tired (partner)
 General well- being
 Health history
 His Cardiologist (heart condition)
 His other health/medical conditions
 Personal health (problems with neck, appointments with doctors)
 Personal health and well being
 Physical limitations (leg injury)
 Prosthesis (unlikely to have, but do not care what others think)
 Sleep patterns
 Tired at End of Day (Partner) – (able to regroup, but stops if nothing left to do)
 Weight loss

3. DOCTORS/APPOINTMENTS/ INFORMATION/RESOURCES

Cancer (Ductile Lumps, 90% of time)
 Decisions regarding treatment (made quickly, researched, open communication)
 Frustrations (insurance/pharmacy problem)
 General discussion about cancer (research, progress)
 Knowledge about her cancer, treatments, chemotherapy
 Mother educating self
 Seeking information (online – pamphlets take days to arrive)
 Satisfaction with doctor
 Subject's cancer (spreading, decisions –procedures, doctors)

II. EMOTIONS/PSYCHOLOGICAL PROCESSES

1. ANXIETY/ DEPRESSION

Dealing with anxiety
 Depression (Symptoms, causes by chemo)
 Depression (wife's and own)
 Depression/ fatigue
 Depression/ stress at work
 Partner's own Depression (history, coping, able to relate – positive)

2. OTHER NEGATIVE EMOTIONS

Dealing with anger
 Guilt (partner unconsciously causes subject to feel guilty)
 Personal emotions (stress, anxiety, anger, inadequacy)

3. POSITIVE EMOTIONS

Attitude towards overcoming obstacles
 Optimism towards overcoming obstacles (as a couple, wife)
 Positive Attitude (about illness and life)
 Positive attitude regarding wife's health
 Positive attitude/ going to church
 Remaining Positive – towards future, role transitions
 Satisfaction with wife's current state

4. CONTROL VS/. EXPRESSION OF EMOTIONS

Emotions About Illness (expressing together, grieved at first)
 Venting frustrations

III. SOCIAL PROCESSES (RELATIONSHIPS/COMMUNICATION/SUPPORT)

1. COMMUNICATION ISSUES/ RELATIONSHIP MAINTENANCE & NEGOTIATION

Change in relationship/ communication
 Changes in relationship with wife (intimacy, physical)
 Children (communication about mother's illness, home schooling)
 Communication (analysis)
 Communication (roles, changes)
 Communication between partner and subject (honest)
 Communication between subject and partner (no conflict, straightforward)
 Communication between subject and partner (sub honest, partner – doesn't want to scare/hurt)
 Communication between subject and partner (very open)
 Communication with mother (interaction methods)
 Communication with partner/ others (problems)
 Communication with wife (good and bad)
 Communication with wife (intimacy issues, minor problems)
 Communication with wife (intimacy issues, progress, expressing love)
 Communication with wife/ in general

Dynamics in the family
 Family relationships (growing up, currently)
 Marriage
 Relationship (length)
 Relationship between partner and subject (no changes or conflicts, open)
 Relationship Issues-Positive (commitment, closeness, openness)
 Relationship with family/ church
 Relationship with mother (activities, sources of conflict, involvement)
 Relationship with Subject (get along well, love each other)
 Relationship with wife (activities, children, busy daily life, affection)
 Relationship with wife (activities, children, trips, close nature of relationship)
 Relationship with wife (communication about stressful situations)
 Relationship with wife (communication, roles, activities)
 Relationship with wife (longevity of relationship, humor, sensitivity, affection)
 Relationship with wife (potential conflict)
 Relationship with wife (sexuality, communication patterns)
 Relationship/ dynamic with family
 Relationship/communication (clarify too much, comm. not always satisfying)
 Relationships with sisters
 Repartee (Enjoy, both do to each other)
 Spending time together

2. CONCERNS FOR SPOUSE/PARTNER

Attitude regarding wife (concern for her health, support, scheduling)
 Attitude regarding wife's health/diagnosis (denial, optimistic)
 Attitude regarding wife's health/well being (scared, helpless)
 Attitude/Awareness of mother's depression symptoms
 Change in wife with treatments
 Chemotherapy (Mother had bad day, tx)
 Chemotherapy (treatments, depression)
 Concern for subject's transition/move (stressful time)
 Concern for wife's well-being (being informed/kept out of the loop)
 Concerns regarding mother's treatment/health (chemo, medication, work)
 Concerns regarding mother's treatment/health (describing how mother is feeling)
 Concerns regarding wife's diagnosis/treatment
 Concerns regarding wife's health
 Depression (awareness of symptoms to look for in sub)
 Depression Symptoms (of Subject) – lack of energy
 Differences seen in mom since diagnosis/ worry
 Feelings regarding wife's health/treatment (hopeless, supportive, accepting)
 Hair loss (affecting self-esteem)
 Hair Loss (extremely bothersome to subject – more so than other body changes)
 Mom's depression
 Mother feeling good about self (feeling wanted, needed, made happy)

Mother's chemotherapy effects
 Mother's friendship support
 Mother's Personality (strong, personable, independent)
 Mother's relationships (interpersonal relationships)
 Reflecting on wife's well being (physically mentally, treatment decision making)
 Reflecting on wife's well being (work, finishing study, end of chemo)
 Reflecting on wife's well-being (physically, mentally, acknowledging depression)
 Reflecting on wife's health (support system)
 Reflecting on wife's health (symptoms of depression, fatigue)
 Reflecting on wife's health/well being (symptoms of depression and fatigue, treatment)
 Signs and symptoms of depression in mother
 Sister's isolation (concerned about partner)
 Subject – difficulty caring for self (not playing sick role)
 Subject feeling overwhelmed (easily, cancer-work-moving-all hard)
 Subject not taking care of self (partner's concern, doing too much)
 Subject taking better care of self (bc of lack of support in current relationship w her spouse—he's not her 'partner' in study)
 Subject's anxiety (will cut off comm w/ others)
 Subject's behavior (irritable, grumpy)
 Subject's Body Changes (quick, hair loss, not bothered by)
 Subject's changes (negative to positive attitude)
 Subject's chemotherapy (treatments, had rough time)
 Subject's depression (previous, effect from chemo, partner support, refusal of medication)
 Subject's Depression (signs, emotional, history, stressed)
 Subject's Effects From Chemo (less energy, nausea)
 Subject's feeling depressed/overwhelmed
 Subject's Hair Loss (after one treatment, changes appearance)
 Subject's Negative Background
 Subject's pain (old pain or result from cancer/chemo)
 Subject's positive changes (physically, attitude, sees big difference, more independent)
 Subject's self esteem (issues – body, behaviors, sexuality, woman)
 Tamoxifen (subject hates med – hot flashes)
 Wife – short tempered (demanding, his reactions, feelings)
 Wife making social plans
 Wife socializing (with coworkers/friends)
 Wife's depression (ways to cope)
 Wife's emotions
 Wife's treatments (ending, blood work)
 Wife's well being (feelings towards her health, physical state)
 Wife's outside activities (busy)
 Wife's well-being (energy/fatigue)
 Wife's well-being (stress of operation)
 Wig (wants wife to like it, not worry what others think)

3. CONCERNS FOR OTHER SOCIAL NETWORK MEMBERS

- Family (children, grandchildren, past/present experiences)
- Family issues (mother, children)
- Family issues (nephew, husband)
- Family issues (relationship with sisters, possibility of moving)
- Sister's roommate dealing with issues
- Wife's aging mother/his elderly parents (care, health, direct communication with wife)

4. SOCIAL SUPPORT

- Community/social support
- Daughter's (partner) own personal support system (family, siblings, working)
- Family Support
- Friends/ sources of support
- Other forms of support
- Other sources of support
- Partner having her own support system
- Partner social support (mainly family, keeps to self mostly)
- Partner's own support system
- Partner's support (coworkers, husband – relief, very helpful)
- Partner's support system (husband, friends – talks with)
- Social support (work colleagues, family)
- Social support for himself (friends, hobbies)
- Sources of support
- Sources of support/ family
- Subject's mother (providing more support, helpful)
- Support from community/ other cancer patients
- Support from others
- Support of family
- Support system (friends, colleagues)
- Support system for partner (husband, children, sisters, websites)
- Time with family/ each other

* PARTNER'S SUPPORT FOR PATIENT (HIS/HER OWN SUPPORTIVE BEHAVIOR)

- Being supportive (taking her to treatments)
- Changes in wife's roles/ helping her cope
- Daughter (partner) support, great relationship with mother
- Dealing with the cancer/ being supportive
- Helping sister take care of herself
- Involvement in wife's treatments
- Partner's family support for subject (helpful)
- Partner's role/support (unsure how/what to do, how much to help)
- Partner's Social Support
- Partner's support (feels helpless, there emotionally, worries, encourages)
- Partner's Support (loves, do anything for, very positive)

Partner's support for subject (activities, encouraging, positively)
 Partner's support for subject (activities, very caring)
 Partner's support for subject (activities, visiting, feelings – pulled back)
 Partner's Support for Subject (attending appointments, activities together)
 Partner's support for subject (getting too involved, cut back, needs to take care of self)
 Partner's support for subject (relates, encourages, positive)
 Partner's support for subject (understanding, sole support for both)
 Relationship with mother (activities, support)
 Relationship with wife (activities, support, communication)
 Relationship with wife (communication patterns, supportive behavior)
 Relationship with wife (communication, activities, support)
 Relationship with wife (past experiences, support, activities)
 Relationship with wife (support, activities, coping together)
 Showing support
 Subject's support system
 Support and communication with wife
 Support for wife (himself, friends of wife, colleagues)
 Support for wife (support groups)
 Support groups available/offered for subject (body image)
 Supporting wife
 Supportive behavior (heavy lifting, take in groceries)
 Supportive behavior (of partner and of friends)
 Supportive behavior (take in groceries)

5. ISOLATION/ LACK OF SOCIAL SUPPORT/ CONFLICTS

Attempts to move mother closer to one of her children (refused)
 Conflicts with wife/ how to deal
 Daughter–own family, visiting in future, not great relationship w mother
 Family (absent, long-distance)
 Family relationships/ conflicts
 Friend's dropped out after diagnosis (don't know how to handle)
 Lack of help inside home (unsupportive, roles)
 Mother keeping information private (from children, in past and currently, but getting better)
 Runaway sister (affect on family, thoughts on situation)
 Subject's relationship with her spouse (he's not providing support needed, emotional time)-
 not her "partner" in study
 Subject's son (disorder, not sharing diagnoses, not planning to)
 Tension between Partner and Subject
 Wife's family (does not like how treat wife, are unsupportive, unwilling to help)
 Wife's family (supporting cancer, but really need help with father)
 Wife's father (affecting life/plans, biggest stress, issues with entire family, handful)
 Wife's father (husband's trying to help her stop -she's constantly taking care of, worried,
 may be reason for short temper)
 Wife's father (taking care of, need family help, become ongoing issue)

IV. INTRAPERSONAL PROCESSES

1. ROLE CHANGES/ROLE TRANSITIONS

- Role change in mother (strong, authoritative, weak, dependent)
- Role change in wife (chores, etc.)
- Role disputes and reversal
- Role reversal (between mother and daughters—care, money)
- Role reversal (mom depends on daughter for care, money)
- Role Shifts (also working together more)
- Role transition (husband takes over household duties)
- Roles (Partner's dependability occasionally causes problems)
- Roles (wife takes care of money)
- Roles of father
- Switching roles (husband taking on more responsibilities)
- Subject's role changes (no recognized change, constant)

2. STRESS & COPING

- Additional Problems (aside from cancer, family issues, affecting subject)
- Changes since diagnosis/ ways to cope
- Coping mechanisms (managing feelings of stress, anxiety)
- Coping mechanisms (personal experience, faith)
- Creating easy-going environment (letting things occur as they happen, get past and let go, in life and in conflicts)
- Daughter (partner) managing mother's cancer (coping)
- Dealing with breakup from girlfriend
- Dealing with diagnosis
- Dealing with sister's emotions
- Dealing with stress
- Dealing with stress/ anger
- Dealing with wife's illness
- Distress (ways to cope)
- His stress relievers (driving)
- Managing stress (partner- well, exercise)
- Partner managing stress (activities – stay busy)
- Partner's coping methods (drink, read)
- Partner's managing stress/anxiety (not very well, sees therapist)
- Personal emotions (coping, identifying feelings regarding mom's illness, hard times)
- Personal emotions (monitoring, coping, identifying feelings)
- Outlook on life, wife's illness (coping with faith and work, positive living)

3. SELF-REFLECTION & PERSONAL GOALS

- Changes in himself (more sensitive with age, better communicator)
- Planning for future (trips, Brazil)

Reflection on self (activities, emotions, communication abilities)

4. REFLECTIONS OF PAST EXPERIENCES

Past experiences (army, traveling, beliefs)

Career/ travel/life experiences (army, overseas, wars)

5. DEATH/DYING

Anniversary of parents' death

Dealing with death in the family (brother's death, past experiences)

Dealing with problems/death issues

Deaths within the family (history, experiences, affect on Mother/family)

Dying, Death (Topic in general, hospice)

Future arrangements (discussing death, funeral, with mother)

Hospice (for Mother)

Inevitability of death

V. EXTERNAL PROCESSES

1. ACTIVITIES

Activities (leisure)

Activities with mother (dinner)

Fishing (desire to go, get away)

Involvement in outside activities

Leisure activities (reading)

Miscellaneous (vacation)

Plans to go out (with wife)

Visit to Family (preparation for visit)

2. WORK/FINANCES

Finding work/ Money problems

Money/retirement (financial concerns)

Work (his job, prison)

Working/ distractions from chemo

3. LIVING CONDITIONS/MOVING

Burglary of house

Hometown issues

Moving

VI. MISCELLANEOUS/OTHER

1. STUDY-RELATED ITEMS

Other (explanation of study, small talk)

Other (small talk, scheduling)

Questions about research project

Reflecting on counseling study sessions ending

2. MISCELLANEOUS/OTHER

Miscellaneous (small talk)

Miscellaneous (weather, work, small talk)

Other (small talk, miscellaneous)

APPENDIX E: Coding Categories for Men with Prostate Cancer.

I. CANCER & HEALTH-RELATED ISSUES1. CHEMOTHERAPY/RADIATION/SURGERY

Chemotherapy

Radiation (treatments – affects, irritation)

Symptoms/ side effects (light headed)

Treatment (manageable)

Treatment concerns (appointments, communication with doctors)

Treatment concerns (appointments, tests, side effects)

Treatment concerns (communication with doctor, side effects of medication)

Treatment concerns (communication with doctors, medication)

Treatment concerns (doctors, pain, side effects)

Treatment concerns (incontinence, tests, appointments)

Treatment concerns (issues with treatments/ doctors)

Treatment concerns (medication, appointments, tests, doctors)

Treatment concerns (medication, side effects)

Treatment concerns (metastasizing, doctors, physical health)

Treatment concerns (procedures, chemo)

Treatment concerns (side effects, communication with doctors, appointments)

Treatment concerns (side effects, medication)

Treatment concerns (side effects, procedures)

Treatment concerns (side effects, procedures, appointments)

Treatment concerns (tests, appointments)

Treatment concerns (tests, pain, doctors)

Treatment/ medication

Treatments (no chemo/radiation (yet), concerned – spread to bone)

2. ADDITIONAL MEDICAL/HEALTH ISSUES & CONCERNS

Appetite (eating a lot)

Appetite (good, no problem)

Apprehension about operation (brother in law's experience)

Asthma (reason moved to AZ)

Back problems

Changes in activities since surgery

Concerned with watchful waiting (b/c of friend with prostate cancer and sim. situation)

Constipation (more regular)

Different health habits (smoking, drinking, etc.)

Dry Mouth (better than before)

Endurance and Energy

Energy and endurance (positive attitude)

Energy level

Energy/ mood/ appetite
 Fatigue
 Fatigue/ appetite
 Fatigue/ energy level
 General well-being
 Getting sick (cold)
 Hearing Difficulties (doctor visits)
 Heart surgery (years ago, pacing self now)
 Inability to do certain activities
 Lab work (find out results, call doctors office)
 Lack of energy (can put energy toward certain things, but not others)
 Lifestyle Changes (Diet, constipation, healthier, lose weight, exercise)
 Napping frequently
 Other health problems/ symptoms (catheter, bladder, etc.)
 Other treatments
 Overall health (PSA, B vitamins, hot flashes)
 Physical symptoms since surgery (Fatigue/ guilt/ concentration)
 Physical Therapy (completed sessions, doing well – cont. exercises)
 PSA (biopsies-doesn't trust, doctors, waiting for alternative testing)
 PSA (decided to do biopsy, appointments, doctor)
 PSA (results-happy and future tests)
 PSA (thought of weighing down, waiting for new test, as if he's avoiding biopsy- fear for results)
 Sexual activity (medications – unsuccessful, comm. with doctor)
 Sick with Flu
 Side effects/ symptoms (light headed)
 Sleep (sleeping well)
 Sleep (wake in mid of night to use bathroom)
 Sleep patterns (getting up later)
 Sleeping (difficulties, ringing in ear, sleep better when away)
 Sleeping (not well)
 Sleeping (wake up in mid. of night)
 Trouble sleeping (easily tired, difficulty falling asleep)
 Walking- struggles (walker, cane, difficult getting around, standing – slow)

3. DOCTORS/APPOINTMENTS/ INFORMATION/RESOURCES

Change treatment process, in order to receive more information
 Clinical literature/ trials
 Comm. w/ doctor (treatment options, confronting – questions)
 Doctor appointments
 Doctor/ medications
 Doctors (do not provide enough info, make comm. difficult, would like to know more – frustrated)
 Doctors Appointment (had to cancel due to all currently going on)
 Doctors/ clinical trials

Educating himself/ healthcare
 Health care providers (limited communication, he's the ultimate decider of his health)
 Psychiatrist
 Psychologist (visits, discussions with)
 Rehabilitation Center (physicals, appointments)
 Relationship with doctors
 Sees counselor for support (also AA meetings)
 Thoughts of contacting additional doctor – internal medicine - Cipro
 Treatment results from doctor
 Treatments (comm. with doctors, treatments becoming more advanced in time)
 Treatments (comm. with doctor – conflicts, “watch and wait,”)

II. EMOTIONS/PSYCHOLOGICAL PROCESSES

4. ANXIETY/ DEPRESSION

Anxiety/ depression
 Depression (experiencing no symptoms of depression)
 Depression (had in the past, knows a lot about, not currently experiencing)
 Depression (symptoms, anxiety)
 Depression (symptoms, coping mechanisms)
 Depression (symptoms, coping, fatigue)
 Depression (symptoms, effect on family)
 Depression (symptoms, medication)
 Depression (symptoms, occurrences)
 Depression and anxiety (symptoms)
 Depression and anxiety (symptoms, financial stress, venting)
 Depression and fatigue
 Depression/ eating patterns
 Depression/ psychiatrist
 Depression/ sleeping patterns/ appetite (ways to cope)

2. OTHER NEGATIVE EMOTIONS

Current Mood (down – problems with things have no control over – car issues)
 Fear/concerns (been exposed to many people with prostate cancer)

3. POSITIVE EMOTIONS

Attitude towards life and self (optimism, positive)
 Enjoying Life More (now that he's out of nursing home – happier)
 Mood (good)
 Optimism, live life in present
 Positive attitude

4. CONTROL VS/. EXPRESSION OF EMOTIONS

Anger-disagreements (apologizing, letting go, expressing feelings)

III. SOCIAL PROCESSES (RELATIONSHIPS/COMMUNICATION/SUPPORT)

1. COMMUNICATION ISSUES/ RELATIONSHIP MAINTENANCE & NEGOTIATION

Communication with partner (conflict-compromise, sharing feelings – empathy)
 Daughter's visit (busy life, no disagreements, communication)
 Family (activities, communication)
 Family (communication)
 Family (relationships)
 Family Activities (relationship with sons (good), make subject feel happy)
 Family and friends (communication, concern)
 Relationship with partner (communication, disagreements)
 Relationship with partner (good, close, good comm.)
 Relationship with Partner (more important relationship)
 Relationship with wife (activities, communication)
 Relationship with wife (activities, communication, socializing)
 Relationship with wife (communication)
 Relationship with wife (communication, activities)
 Relationship with wife (satisfactions and dissatisfactions)
 Relationship with wife (wife's illness and treatment, activities)
 Relationship with wife (wife's illness and treatments, communication, activities)
 Spending time with wife

2. CONCERNS FOR SPOUSE/PARTNER

Partner's stress
 Partner's work (traveling for work)
 Relationship with partner (worried about her- doing too much, doesn't listen)
 Wife's illness
 Wife's well-being

3. CONCERNS FOR OTHER SOCIAL NETWORK MEMBERS

Children (current lives)
 Children (live own lives, misses but happy and proud of)
 Children (well being, whereabouts)
 Daughter (talks about)
 Family (care giving, trip back home, grandchildren)
 Family (grandchildren)
 Family (wife, children, health, stress)
 Family (wife, daughter)
 Family issues (ex-wife, daughter, etc.)
 Friend/neighbor (drinks a lot)
 Friends, contacting them (live own lives, but would contact)
 Grandson (planning fishing trip, fixing boat)
 Mother (health issues, concern-taking care of her in future, does not handle son's cancer well)

4. SOCIAL SUPPORT

Daughter (communication with, her support)
 Daughter (visiting, helping)
 Family (communication, support)
 Family (support, communication)
 Family's Support (very supportive, helpful, subject feels lucky – take care of him)
 General well-being/ Support from others
 Partner – son, supportive, takes care of
 Partner (son) support (activities together – often)
 Partner (son) support (depends on, activities together, may move-in with)
 Relationship with family (support, communication)
 Relationship with partner (communication, support)
 Relationship with wife (communication, support)
 Relationship with wife (communication, support, activities)
 Relationship with wife (support, communication)
 Relationship with wife (wife's illness & treatment, communication, support)
 Social support (can talk with son, has counselor)
 Social support (family, support group, old colleagues)
 Social support (fortunate, attends support groups)
 Social support (forum)
 Social support (friends, church, old colleagues)
 Social Support (group, literature, family)
 Social Support (outside of family) – (doesn't want to bother, will call if necessary)
 Social support (relationships with friends, activities)
 Social support (support group, friends)
 Social support/ churches
 Social support/ enjoyable activities (traveling)
 Social support/ sons
 Socializing (church – fun)
 Socializing with others, Social Support
 Son –support and communication– (he's OK, doesn't want to burden)
 Sources of support (family, neighbors)
 Sources of support/ happiness (brother-in-law)
 Support (chaplain, friends, family)
 Support (from wife; social)
 Support system (family, friends, church groups, communication)
 Support system (friends, church)
 Us Too, Support group

5. ISOLATION/ LACK OF SOCIAL SUPPORT/ CONFLICTS

Brother (don't speak, but would if contacted)
 Confronted before realizing behaviors
 Difficult time with Granddaughter (fight, counseling)

Family Concerns (Niece-pregnant – upsets him, but family is excited. Internalizes info)
 Raising daughter's children (she uses drugs, calls her and boyfriend worthless)
 Raising Grandchildren (Mother's not in life –drugs, stressful)
 Sister (out of life for years, now in Hospice, visits, limited time left)

IV. INTRAPERSONAL PROCESSES

1. ROLE CHANGES/ROLE TRANSITIONS

Role change (moving closer to children, aging)
 Role Transition (income contribution, work)
 Role transition (sick role, guilt, anger, acceptance)
 Role transition (work, retirement)

2. STRESS & COPING

Ability to relax
 Coping mechanisms (emotions, medication, distractions)
 Coping mechanisms (medication, activities, exercises)
 Coping with illness & emotions (anxiety, stress, exercises)
 Coping with illnesses and emotions (talking with children, church, exercises)
 Dealing with cancer (side effects, discouragement, doctors)
 Dealing with cancer/ changes
 Exercising/walking – everyday (helping)
 Failed expectations (don't disappoint-moves on)
 General concerns (going back to work, overall coping with illness)
 Music (enjoys playing/listening, relaxing)
 Overwhelmed
 Relax (read)
 Relaxing (napping)
 Relieving stress (water aerobics)
 Sources of stress/ ways to cope
 Stress – factors and coping (PSA, time, distract, physical activities)

3. SELF-REFLECTION & PERSONAL GOALS

Age/ goals (moving, etc.)
 Aims to do more for self, rather than putting others (kids) first – (socializing, hiking, projects)
 Diet (eating, hope to lose weight, exercise)
 Doesn't take care of self (a lot going on, forgets about himself)
 Doesn't take care of self (aware of it, puts others first)
 Sociable, people person (enjoys people, socializing, having people over)

4. REFLECTIONS OF PAST EXPERIENCES

War memories/ friendships

5. DEATH/DYING

Losses in life (brother-in-law, war buddies)
 Losses in life (friends)
 Spouse – passed away (relationship/marriage, health problems, coping with her death)

V. EXTERNAL PROCESSES

1. ACTIVITIES

Active (racket ball, swim laps several days a week)
 Active/exercising (racket ball)
 Activities (family gatherings, hobbies)
 Activities (keeping busy, entertainment, relaxing)
 Activities (keeping busy, physical exercise, distractions)
 Activities (puzzles, cooking, etc)
 Activities (stays busy, many projects)
 Activities (tired –outside heat, yard work)
 Activities (tutoring, cars)
 Activities (yardwork, cooking, charity involvement)
 Activities with partner
 Activities/ exercise
 Dinner plans with friends
 Enjoyable activities
 Exercising and other activities (easily bored)
 Other activities (gym/ retirement)
 Outside activities/ hobbies
 Physical activities/ enjoyment
 Shopping (bought new clothes – weight gain)
 Social outings (upcoming holiday parties)
 Subject's Activities (what he enjoys – puzzles, reading, being out)
 Trip w/mother (needed break, relaxed, able to sleep)
 Weekend – attended event (socializing, meeting others w. cancer, good experience)
 Traveling (in past and future, health concerns for both him and partner)
 Traveling (plans for future, finds traveling stressful)

2. WORK/FINANCES

Work (enjoys, trying to cut back, president of board)
 Working/board meetings (trying to slow down – facilitates support groups)

3. LIVING CONDITIONS/MOVING

Moving
 Nursing home – got out, feeling better

VI. MISCELLANEOUS/OTHER

1. STUDY-RELATED ITEMS

Counselor (sessions, continuing)

Miscellaneous (small talk, questions about research project)
Questions about research project

2. MISCELLANEOUS/OTHER
Other (small talk, miscellaneous)

APPENDIX F: Coding Categories for Partners of Men with Prostate Cancer.

I. CANCER & HEALTH-RELATED ISSUES

1. CHEMOTHERAPY/RADIATION/SURGERY

Subject's cancer (partner's understanding, spreading, treatments)

Subject's cancer (treatments, side effects, surgery, medications)

2. ADDITIONAL MEDICAL/HEALTH ISSUES & CONCERNS

Able to sleep

Appetite (good)

Energy level/ appetite/ sleeping patterns

General well-being/ small talk

Lifestyle change – both Subject and Partner (change in diet due to subject's previous health issues)

Losing weight

Miscellaneous (small talk/ general well-being)

Other health issues (gastric bypass)

Partner's own health (eating habits, must lose weight, exercise, embarrassed)

Previous mastectomy/ coping since

Sleep (frequently wakes mid night, but sleeping)

Sleep (wake up mid night – able to fall back asleep)

Sleeping patterns/ appetite

Sleeping patterns/ general well-being

Trouble sleeping - partner (arthritis- uncomfortable)

3. DOCTORS/APPOINTMENTS/ INFORMATION/RESOURCES

Doctors (partner attends, satisfied, treatments, comm. with)

Partner seeking psychological help (to organize, help control, vent)

Psychologist (saw one, not sure about, not comfortable)

Relationship with doctors/ healthcare

Subject's Doctors appointments (partner attends, getting desired information)

Cancer/treatments (partner feels informed, both satisfied, comm. with doctors)

II. EMOTIONS/PSYCHOLOGICAL PROCESSES

1. ANXIETY/ DEPRESSION

Anxiety/ Depression/ sleeping patterns

Depression (symptoms in self and husband, coping)

Depression (symptoms, coping mechanisms)

Depression (symptoms, coping, lethargic)

Depression (symptoms, stress)

Depression and anxiety (symptoms, sleep, stress)

Depression/ anxiety
 Depression/ fatigue
 Signs of depression/ ways to cope (reading)
 Symptoms of depression (anxiety, fatigue)
 Symptoms of depression and anxiety
 Stress/Depression (partner suffers from both)
 Stress/ depression (ways to cope)

2. OTHER NEGATIVE EMOTIONS

3. POSITIVE EMOTIONS

Positive attitude (energy)

4. CONTROL VS/. EXPRESSION OF EMOTIONS

III. SOCIAL PROCESSES (RELATIONSHIPS/COMMUNICATION/SUPPORT)

1. COMMUNICATION ISSUES/ RELATIONSHIP MAINTENANCE & NEGOTIATION

Change in relationship/marriage over 30 years (better comm, more private before, both grown)
 Communication b/w subject and partner (considerate, listen, compromise)
 Communication with Subject (sub doesn't admit/share when something is wrong at first)
 Interactions with others
 Partner's relationship with subject (began after diagnosed with cancer)
 Partner's relationship with subject (open comm., sensitive to mood changes, intimacy, no sex)
 Relationship between Subject and partner (activities together, respectful)
 Relationship with husband (activities, communication)
 Relationship with husband (activities, issues, disagreements)
 Relationship with husband (changes since diagnosis)
 Relationship with husband (communication, activities)
 Relationship with husband (communication, activities, satisfaction)
 Relationship with husband (communication, activities, socializing)
 Relationship with husband (communication, marriage counseling, activities, frustration)
 Relationship with husband (communication, marriage counseling, activities)
 Relationship with husband (independence/ hobbies together)
 Relationship with husband (role changes)
 Relationship with other family (children, grandchildren)
 Subject and Partner's Relationship (give each other space)
 Subjects communication of feelings with partner (doesn't like to talk about, partner will try)

2. CONCERNS FOR SPOUSE/PARTNER

Changes in husband since diagnosis
 Changes in husband since surgery
 Depression (symptoms in partner)

Erectile Dysfunction (acknowledges, but not discussed a lot)
 Husband's depression/ loss of friend (PTSD)
 Husband's emotions/ mood
 Husband's well-being (dealing with cancer, doctors saying everything's "normal")
 Husband's well-being/ relationship
 Mood (hers and husband's)
 Partner – concerned with subject's health care, comfort (main concern)
 PSA (both subject and partners feelings, open comm., he's nervous)
 Reflecting on husband's health (intimacy issues, treatments, side effects)
 Reflecting on husbands health (mental and physical, emotional reactions)
 Reflecting on husband's health (mental and physical, stress)
 Reflecting on husbands health (side effects, medications, appointments, mood)
 Reflecting on husband's health (side effects, treatment, procedures)
 Reflecting on husbands health (treatment, medication)
 Reflecting on husband's health (treatment, side effects, appointments)
 Reflecting on husband's health (treatment, tests, appointments)
 Reflecting on husband's health (treatments, anxiety)
 Reflecting on husband's health (treatments, medication, depression)
 Reflecting on husband's treatment/health (side effects, procedures)
 Reflecting on partner's health (mental and physical, medications)
 Reflecting on partner's health (side effects, medication)
 Subject/Father's Cancer (current situation, options, wants no stress or pain for subject)
 Subject's Activities (very physical, enjoys working)
 Subject's Diet (unsure how conscious he is of diet)
 Subject's doing/feeling well (self sufficient for short period of time)
 Subject's medicine (forgot to take – caused bad moods)
 Subject's seeing a Psychiatrist (but he ignores most of what she tells him)
 Subject's social support (work has helped get through, support groups, sons)
 Subject's wellbeing (keeping busy, making plans)

3. CONCERNS FOR OTHER SOCIAL NETWORK MEMBERS

Concern for Other (person with cancer other than subject)
 Daughter's car accident
 Issues with family (sister-in-law)

4. SOCIAL SUPPORT

Family (happy, supportive)
 Family and friends (children, support, communication)
 Family and friends (support, visits)
 Other sources of support (nurse)
 Partner's social support (family, work)
 Partner's social support (friends, call)
 Partner's Social support (large support group – community, choir, lunch with friends)
 Partner's Social Support (one good friend he speaks to)

Partner's Social Support (past – assistance/psychologists)
 Social support (family)
 Social support (family, Lord, letters)
 Social Support (friend's husband also has prostate cancer)
 Social support (friends and family)
 Social support (friends, researching support groups)
 Social support/ friends
 Support from others (doctors, family) / sources of enjoyment
 Support system (friends)
 Support system (friends, support group)
 Support system (parents, friends, website)

* PARTNER'S SUPPORT FOR PATIENT (HIS/HER OWN SUPPORTIVE BEHAVIOR)

Being supportive/ relationship with husband
 Relationship with husband (activities, communication, support)
 Relationship with husband (communication, activities, support)
 Relationship with partner (communication, socialization, support)
 Spending time with husband (changes since diagnosis/ ways to cope)
 Support for Father (concerned, wants best outcome, very supportive, closer to him)
 Support for partner (doing chores, encouragement)
 Support for partner (sole source of support for him, chores, appointments)
 Support for Subject (attending tx, very supportive, limited discussion about actual cancer)
 Support for Subject (Partner and Brother – brother helping with stress)
 Support for Subject (seeing each other, is very helpful, limited discussion about cancer)

5. ISOLATION/ LACK OF SOCIAL SUPPORT/ CONFLICTS

Dealing with conflict with husband
 Reaction to communication pattern with partner (bothered)
 Relationship with partner (communication, disagreements)
 Relationship with partner (communication, verbal abuse)
 Subject/patient attending prostate conference (wishes that she-partner-came)

IV. INTRAPERSONAL PROCESSES

1. ROLE CHANGES/ROLE TRANSITIONS

Role change (between children and parents)
 Role change (recognizing sick role in husband)
 Role transition (husband's sick role, self)

2. STRESS & COPING

Able to relax (naps, watches movies, both able to relax)
 Coping (stress relievers)
 Coping mechanisms (mental breaks)
 Coping with emotions (mechanisms)

Dealing with husband's cancer/ support group
 Dealing with stress/ making time for herself (getting nails done)
 Managing stress (partner) – (make lists)
 Managing stress (write things down, walk – try everyday – helps)
 Partner managing stress (coping techniques)
 Partner's reoccurring thoughts
 Personal emotions (outlook on life, anxiety, reactions, coping)
 Personal emotions (stress, responsibility)
 Relaxing (read)
 Stress (ways to cope)

3. SELF-REFLECTION & PERSONAL GOALS

Caring for self (massage, bubble bath, quiet time alone)
 General well- being/ taking time for herself
 Partner taking care of self (activities alone – limited)
 Partner taking care of self (not doing as much as before, has help, current medical conditions)
 Partner's own well-being (fine, pace self during holidays)
 Personal emotions/attitude (having alone time, socializing with others)
 Subject's future, making decisions (retiring)
 Taking care of herself (emotionally, physically)
 Taking care of self (mental and physical breaks, activities, social support)

4. REFLECTIONS OF PAST EXPERIENCES

Partner's past (bad marriages, but in past)
 Self-reflecting (putting herself in her sister-in-law's shoes)

5. DEATH/DYING

Losses in life (family)
 Personal crises (deaths in family, overwhelmed, grieving)

V. EXTERNAL PROCESSES

1. ACTIVITIES

Active, staying busy with activities
 Activities with Subject – dinner (helped with stress)
 Activities with Subject (dinner, movies, walk dogs)
 Activity with Subject (shopping and lunch)
 Cancer center (org/planned fundraising event together, stressful, relieved over now)
 Cancer center involvement (board, meetings, rewarding)
 Date/outing with Subject (enjoyed, will do again)
 Daughter's visit (hiking together-enjoyed)
 Daughters (had lunch with)
 Exercising (relating it to childbirth)
 Family gatherings (Holidays, wedding, all traveling together)

General well-being/ outside activities
 Holiday gatherings
 Holidays (low key)
 Outside activities (volunteering/ church)
 Outside activities/ hobbies (sewing)
 Socializing with others (choir, neighborhood gatherings)
 Traveling together (to visit relatives)
 Traveling-leaving country (Subject feels insecure about leaving US)
 Visiting (traveling to visit friends, or friends traveling to visit)

2. WORK/FINANCES

Busy schedule (partner) – (working, subject complains)
 Current Job (runs cancer studies–helpful to her, ability to translate medical information to father)
 Issues at work
 Occupation (partner's)
 Partner's work (taking time off, enjoys, owner)
 General well-being/ work

3. LIVING CONDITIONS/MOVING

Loss of boat (importance)

VI. STUDY-RELATED ITEMS/MISCELLANEOUS

1. STUDY-RELATED ITEMS

Miscellaneous (small talk, questions about research project)
 Miscellaneous (questions about research project)
 Miscellaneous (questions about study)

2. MISCELLANEOUS/OTHER

Miscellaneous (small talk)
 Other (small talk, miscellaneous)

APPENDIX G: Tables

Table 1. Demographic characteristics of entire sample population by cancer type and role.

Variable	Breast Cancer		Prostate Cancer	
	Survivor	Partner	Survivor	Partner
Sample size (<i>n</i>)	22	22	21	21
Age	$M = 54.05$ ($SD = 10.16$)	$M = 51.45$ ($SD = 12.76$)	$M = 67.67$ ($SD = 9.63$)	$M = 60.62$ ($SD = 12.06$)
Sex of Participant				
Male	---	77.3% ($N = 17$)	100%	9.5% ($N = 2$)
Female	100%	22.7% ($N = 5$)	---	90.5% ($N = 19$)
Race/Ethnicity				
White	95.5%	77.3%	85.7%	85.7%
Black	---	4.5%	14.3%	14.3%
Hispanic/Latino	18.2%	18.2%	---	---
Other/Unknown	4.5%	---	---	---
Relationship Status				
Currently Married	68.2%	77.3%	71.4%	71.4%
Currently Single	31.8%	22.7%	28.6%	28.6%
Ever Divorced/Widowed	40.9%	31.8%	52.4%	61.9%
Current Relationship Length (in years)	$M = 30.84$ ($SD = 16.01$)	$M = 27.38$ ($SD = 16.86$)	$M = 28.06$ ($SD = 19.85$)	$M = 30.41$ ($SD = 18.39$)
Education				
High school or some college	81.8%	45.5%	57.2%	38.19%
Bachelor's degree or higher	18.1%	54.5%	42.8%	61.9%
Employment Status				
Employed full or part-time	68.2%	61.9%	28.6%	57.2%
Unemployed, retired, or disabled	31.8%	38.1%	71.4%	42.9%
Disease Progression				
Stage I	22.7%	---	18.2%	---
Stage II	54.5%	---	27.3%	---
Stage III	22.7%	---	18.2%	---
Stage IV	---	---	36.4%	---
Treatment Type				
Surgery	68.2%	---	52.6%	---
Chemotherapy	72.7%	---	14.3%	---
Radiation	45.5%	---	54.5%	---
Hormone-Blocking	22.7%	---	47.6%	---
Relationship of Patient-Partner				
Spouse/significant other	72.7%	72.7%	76.2%	76.2%
Parent-child (son/daughter)	18.1%	18.1%	14.3%	14.3%
Friend	4.5%	4.5%	4.8%	4.8%
Other (sibling, ex-spouse)	4.5%	4.5% (sister)	4.8%	4.8% (ex-wife)

Table 2. Reliabilities (means and standard deviations) of psychosocial outcomes for breast cancer population over time.

Measures (time)	Breast Cancer					
	Survivor			Partner		
	T1	T2	T3	T1	T2	T3
Depression						
Center for Epidemiological Studies Depression Scale (CES-D) (range 0-60; higher = > symptoms)	$\alpha=.84$ $M = 15.77$ ($SD = 9.46$)	$\alpha=.91$ $M = 15.77$ ($SD = 11.16$)	$\alpha=.94$ $M = 15.14$ ($SD = 13.46$)	$\alpha=.84$ $M = 16.23$ ($SD = 10.65$)	$\alpha=.91$ $M = 5.52$ ($SD = 6.13$)	$\alpha=.89$ $M = 5.40$ ($SD = 6.15$)
Affect						
Negative Affect Schedule (PANAS) (range 10-50; higher = > negative affect)	$\alpha=.89$ $M = 22.95$ ($SD = 8.48$)	$\alpha=.86$ $M = 19.09$ ($SD = 6.83$)	$\alpha=.89$ $M = 18.10$ ($SD = 6.62$)	$\alpha=.89$ $M = 22.73$ ($SD = 8.54$)	$\alpha=.86$ $M = 20.14$ ($SD = 7.51$)	$\alpha=.89$ $M = 16.90$ ($SD = 6.73$)
Positive Affect Schedule (PANAS) (range 10-50; higher = > positive affect)	$\alpha=.86$ $M = 35.05$ ($SD = 7.37$)	$\alpha=.89$ $M = 33.91$ ($SD = 8.54$)	$\alpha=.95$ $M = 34.33$ ($SD = 9.18$)	$\alpha=.86$ $M = 35.86$ ($SD = 5.71$)	$\alpha=.89$ $M = 34.05$ ($SD = 7.81$)	$\alpha=.80$ $M = 33.65$ ($SD = 6.81$)
Relationship Satisfaction						
Relationship Assessment Scale (RAS) (range 7-35; higher = > satisfaction)	$\alpha=.54$ $M = 32.23$ ($SD = 2.33$)	$\alpha=.65$ $M = 31.00$ ($SD = 3.07$)	$\alpha=.64$ $M = 32.38$ ($SD = 2.71$)	$\alpha=.76$ $M = 32.14$ ($SD = 3.51$)	$\alpha=.93$ $M = 31.81$ ($SD = 5.16$)	$\alpha=.70$ $M = 31.80$ ($SD = 3.86$)

Table 3. Reliabilities (means and standard deviations) of psychosocial outcomes for prostate cancer population over time.

Measures (time)	Prostate Cancer					
	Survivor			Partner		
	T1	T2	T3	T1	T2	T3
Depression						
Center for Epidemiological Studies Depression Scale (CES-D) (range 0-60; higher = > symptoms)	$\alpha=.91$ $M = 12.24$ ($SD = 10.19$)	$\alpha=.89$ $M = 12.86$ ($SD = 10.67$)	$\alpha=.95$ $M = 16.26$ ($SD = 15.48$)	$\alpha=.90$ $M = 13.57$ ($SD = 10.96$)	$\alpha=.84$ $M = 11.10$ ($SD = 7.68$)	$\alpha=.87$ $M = 11.75$ ($SD = 7.75$)
Affect						
Negative Affect Schedule (PANAS) (range 10-50; higher = > positive affect)	$\alpha=.93$ $M = 17.19$ ($SD = 8.49$)	$\alpha=.88$ $M = 16.95$ ($SD = 7.62$)	$\alpha=.83$ $M = 15.78$ ($SD = 6.26$)	$\alpha=.84$ $M = 17.90$ ($SD = 6.47$)	$\alpha=.82$ $M = 16.24$ ($SD = 4.77$)	$\alpha=.91$ $M = 15.60$ ($SD = 6.03$)
Positive Affect Schedule (PANAS) (range 10-50; higher = > negative affect)	$\alpha=.86$ $M = 34.57$ ($SD = 6.48$)	$\alpha=.83$ $M = 35.81$ ($SD = 7.36$)	$\alpha=.89$ $M = 33.79$ ($SD = 8.80$)	$\alpha=.85$ $M = 33.62$ ($SD = 8.13$)	$\alpha=.79$ $M = 36.71$ ($SD = 5.93$)	$\alpha=.83$ $M = 34.50$ ($SD = 5.73$)
Relationship Satisfaction						
Relationship Assessment Scale (RAS) (range 7-35; higher = > satisfaction)	$\alpha=.93$ $M = 30.95$ ($SD = 5.36$)	$\alpha=.87$ $M = 31.71$ ($SD = 4.93$)	$\alpha=.93$ $M = 31.20$ ($SD = 5.43$)	$\alpha=.92$ $M = 29.35$ ($SD = 6.85$)	$\alpha=.96$ $M = 28.67$ ($SD = 8.47$)	$\alpha=.94$ $M = 28.40$ ($SD = 8.75$)

Table 4. Correlation matrix of the psychosocial outcome measures with each other for breast and prostate cancer survivors at Time 1, 2, 3.

	Depression			Negative Affect			Positive Affect			Rel Satisfaction		
	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
Depression T1	---											
Depression T2	.76**	---										
Depression T3	.71**	.72**	---									
Negative Affect T1	.79**	.79**	.68**	---								
Negative Affect T2	.67**	.82**	.72**	.78**	---							
Negative Affect T3	.55**	.63**	.82**	.58**	.64**	---						
Positive Affect T1	-.49**	-.27	-.49**	-.29	-.19	-.20	---					
Positive Affect T2	-.59**	-.53**	-.65**	-.51**	-.49**	-.51**	.63**	---				
Positive Affect T3	-.53**	-.49**	-.74**	-.49**	-.45**	-.49**	.68**	.70**	---			
Rel Satisfaction T1	-.21	-.23	-.10	-.12	-.13	.00	.14	.13	.11	---		
Rel Satisfaction T2	-.28	-.29	-.11	-.25	-.27	-.11	.10	.19	.09	.77**	---	
Rel Satisfaction T3	-.05	-.10	-.04	.01	-.09	-.08	-.06	.05	.08	.75**	.82**	---

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Correlations for breast and prostate cancer survivors are based on $N = 43$.

Table 5. Correlation matrix of the psychosocial outcome measures with each other for breast and prostate cancer partners at Time 1, 2, 3.

	Depression			Negative Affect			Positive Affect			Rel Satisfaction		
	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
Depression T1	---											
Depression T2	.63**	---										
Depression T3	.56**	.73**	---									
Negative Affect T1	.54**	.29	.06	---								
Negative Affect T2	.57**	.46**	.13	.67**	---							
Negative Affect T3	.63**	.59**	.66**	.36*	.44**	---						
Positive Affect T1	-.28	-.46**	-.49**	-.14	-.20	-.42**	---					
Positive Affect T2	-.38*	-.44**	-.30 ($p = .065$)	-.19	-.30	-.39*	.51**	---				
Positive Affect T3	-.39*	-.36*	-.36*	-.07	-.10	-.30 ($p = .064$)	.47**	.69**	---			
Rel Satisfaction T1	-.27	-.53**	-.44**	-.14	-.26	-.35*	.28	.23	.35*	---		
Rel Satisfaction T2	-.27	-.55**	-.35*	-.11	-.31*	-.32*	.22	.28	.33*	.95**	---	
Rel Satisfaction T3	-.22	-.43**	-.27	-.21	-.28	-.21	.14	.13	.21	.89**	.92**	---

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Correlations for breast and prostate cancer partners are based on $N = 43$.

Table 6. Descriptive statistics (means and standard deviations) of linguistic dimensions by cancer type and role, averaged over time.

LIWC Category	Breast Cancer		Prostate Cancer	
	Survivor (T1-T3)	Partner (T1-T3)	Survivor (T1-T3)	Partner (T1-T3)
Total Number of Text Files	66	62	60	50
Average Word Count	2,194.29 (<i>SD</i> = 812.98)	1,597.76 (<i>SD</i> = 674.24)	1,743.27 (<i>SD</i> = 521.98)	1,933.78 (<i>SD</i> = 763.71)
Total Pronoun Use	18.36 (<i>SD</i> = 2.07)	17.85 (<i>SD</i> = 2.28)	16.76 (<i>SD</i> = 2.15)	17.75 (<i>SD</i> = 1.73)
I	8.84 (<i>SD</i> = 1.79)	6.33 (<i>SD</i> = 1.32)	7.62 (<i>SD</i> = 1.93)	6.67 (<i>SD</i> = 1.28)
We	0.92 (<i>SD</i> = 0.45)	1.17 (<i>SD</i> = 0.80)	1.13 (<i>SD</i> = 0.49)	2.06 (<i>SD</i> = 1.13)
Self	9.76 (<i>SD</i> = 1.51)	8.04 (<i>SD</i> = 1.07)	8.75 (<i>SD</i> = 1.77)	8.73 (<i>SD</i> = 1.07)
You	1.38 (<i>SD</i> = 0.48)	1.38 (<i>SD</i> = 0.59)	1.24 (<i>SD</i> = 0.51)	1.16 (<i>SD</i> = 0.49)
Other	3.89 (<i>SD</i> = 1.36)	5.22 (<i>SD</i> = 1.78)	3.49 (<i>SD</i> = 1.46)	4.61 (<i>SD</i> = 1.60)
Total Affect Expressed	3.28 (<i>SD</i> = 0.62)	3.34 (<i>SD</i> = 0.82)	3.08 (<i>SD</i> = 0.63)	3.09 (<i>SD</i> = 0.50)
Positive Emotion	2.00 (<i>SD</i> = 0.47)	2.07 (<i>SD</i> = 0.59)	2.09 (<i>SD</i> = 0.60)	1.99 (<i>SD</i> = 0.40)
Positive Feeling	0.37 (<i>SD</i> = 0.13)	0.33 (<i>SD</i> = 0.14)	0.32 (<i>SD</i> = 0.15)	0.35 (<i>SD</i> = 0.16)
Optimism	0.34 (<i>SD</i> = 0.15)	0.38 (<i>SD</i> = 0.14)	0.38 (<i>SD</i> = 0.23)	0.34 (<i>SD</i> = 0.94)
Negative Emotion	1.25 (<i>SD</i> = 0.43)	1.22 (<i>SD</i> = 0.46)	0.96 (<i>SD</i> = 0.40)	1.06 (<i>SD</i> = 0.39)
Anxiety	0.27 (<i>SD</i> = 0.10)	0.27 (<i>SD</i> = 0.16)	0.18 (<i>SD</i> = 0.10)	0.28 (<i>SD</i> = 0.16)
Anger	0.23 (<i>SD</i> = 0.16)	0.32 (<i>SD</i> = 0.23)	0.22 (<i>SD</i> = 0.13)	0.16 (<i>SD</i> = 0.16)
Sadness	0.39 (<i>SD</i> = 0.21)	0.31 (<i>SD</i> = 0.16)	0.23 (<i>SD</i> = 0.17)	0.27 (<i>SD</i> = 0.17)

Table 7. Independent samples t-tests of linguistic dimensions of breast cancer and prostate cancer survivors, averaged over time.

LIWC Category	BC Survivor (T1-T3)	PC Survivor (T1-T3)	Mean Diff	<i>t</i>	df	Sig.
Average Word Count	2,194.29 (<i>SD</i> = 812.98)	1,743.27 (<i>SD</i> = 521.98)	451.02	2.15*	41	<i>p</i> < .05
Total Pronoun Use	18.36 (<i>SD</i> = 2.07)	16.76 (<i>SD</i> = 2.15)	1.61	2.50*	41	<i>p</i> < .05
I	8.84 (<i>SD</i> = 1.79)	7.62 (<i>SD</i> = 1.93)	1.22	2.16*	41	<i>p</i> < .05
We	0.92 (<i>SD</i> = 0.45)	1.13 (<i>SD</i> = 0.49)	-0.22	-1.49	41	<i>ns</i>
Self	9.76 (<i>SD</i> = 1.51)	8.75 (<i>SD</i> = 1.77)	1.01	2.02*	41	<i>p</i> = .051
You	1.38 (<i>SD</i> = 0.48)	1.24 (<i>SD</i> = 0.51)	0.14	.931	41	<i>ns</i>
Other	3.89 (<i>SD</i> = 1.36)	3.49 (<i>SD</i> = 1.46)	0.39	.899	41	<i>ns</i>
Total Affect Expressed	3.28 (<i>SD</i> = 0.62)	3.08 (<i>SD</i> = 0.63)	0.20	1.05	41	<i>ns</i>
Positive Emotion	2.00 (<i>SD</i> = 0.47)	2.09 (<i>SD</i> = 0.60)	0.59	-.537	41	<i>ns</i>
Positive Feeling	0.37 (<i>SD</i> = 0.13)	0.32 (<i>SD</i> = 0.15)	0.26	1.14	41	<i>ns</i>
Optimism	0.34 (<i>SD</i> = 0.15)	0.38 (<i>SD</i> = 0.23)	-0.04	-.634	41	<i>ns</i>
Negative Emotion	1.25 (<i>SD</i> = 0.43)	0.96 (<i>SD</i> = 0.40)	0.29	2.34*	41	<i>p</i> < .05
Anxiety	0.27 (<i>SD</i> = 0.10)	0.18 (<i>SD</i> = 0.10)	0.09	2.81*	41	<i>p</i> < .01
Anger	0.23 (<i>SD</i> = 0.16)	0.22 (<i>SD</i> = 0.13)	0.01	0.24	41	<i>ns</i>
Sadness	0.39 (<i>SD</i> = 0.21)	0.23 (<i>SD</i> = 0.17)	0.16	2.82*	41	<i>p</i> < .01

Table 8. Independent samples t-tests of linguistic dimensions of breast cancer and prostate cancer partners, averaged over time.

LIWC Category	Breast Cancer Partner (T1-T3)	Prostate Cancer Partner (T1-T3)	Mean Diff	<i>t</i>	df	Sig.
Average Word Count	1,597.76 (<i>SD</i> = 674.24)	1,933.78 (<i>SD</i> = 763.71)	-336.02	-1.51	40	<i>ns</i>
Total Pronoun Use	17.85 (<i>SD</i> = 2.28)	17.75 (<i>SD</i> = 1.73)	0.10	0.16	40	<i>ns</i>
I	6.33 (<i>SD</i> = 1.32)	6.67 (<i>SD</i> = 1.28)	-0.34	-0.85	40	<i>ns</i>
We	1.17 (<i>SD</i> = 0.80)	2.06 (<i>SD</i> = 1.13)	-0.35	-1.16	40	<i>ns</i>
Self	8.04 (<i>SD</i> = 1.07)	8.73 (<i>SD</i> = 1.07)	-0.69	-2.08*	40	<i>p</i> < .05
You	1.38 (<i>SD</i> = 0.59)	1.16 (<i>SD</i> = 0.49)	0.21	1.27	40	<i>ns</i>
Other	5.22 (<i>SD</i> = 1.78)	4.61 (<i>SD</i> = 1.60)	0.62	1.18	40	<i>ns</i>
Total Affect Expressed	3.34 (<i>SD</i> = 0.82)	3.09 (<i>SD</i> = 0.50)	0.25	1.18	40	<i>ns</i>
Positive Emotion	2.07 (<i>SD</i> = 0.59)	1.99 (<i>SD</i> = 0.40)	0.08	0.54	40	<i>ns</i>
Positive Feeling	0.33 (<i>SD</i> = 0.14)	0.35 (<i>SD</i> = 0.16)	0.01	-0.29	40	<i>ns</i>
Optimism	0.38 (<i>SD</i> = 0.14)	0.34 (<i>SD</i> = 0.94)	0.04	1.14	40	<i>ns</i>
Negative Emotion	1.22 (<i>SD</i> = 0.46)	1.06 (<i>SD</i> = 0.39)	0.17	1.28	40	<i>ns</i>
Anxiety	0.27 (<i>SD</i> = 0.16)	0.28 (<i>SD</i> = 0.16)	-0.00	-0.09	40	<i>ns</i>
Anger	0.32 (<i>SD</i> = 0.23)	0.16 (<i>SD</i> = 0.16)	0.16	2.58*	40	<i>p</i> < .05
Sadness	0.31 (<i>SD</i> = 0.16)	0.27 (<i>SD</i> = 0.17)	0.04	0.81	40	<i>ns</i>

Table 9. Paired samples t-tests of linguistic dimensions of women with breast cancer and their partners, averaged over time.

LIWC Category	Breast Cancer Survivor (T1-T3)	Breast Cancer Partner (T1-T3)	Mean Diff	<i>t</i>	df	Sig.
Average Word Count	2,194.29 (<i>SD</i> = 812.98)	1,597.76 (<i>SD</i> = 674.24)	596.53	3.35*	21	<i>p</i> < .01
Total Pronoun Use	18.36 (<i>SD</i> = 2.07)	17.85 (<i>SD</i> = 2.28)	.513	1.42	21	<i>ns</i>
I	8.84 (<i>SD</i> = 1.79)	6.33 (<i>SD</i> = 1.32)	2.51	6.61*	21	<i>p</i> < .001
We	0.92 (<i>SD</i> = 0.45)	1.17 (<i>SD</i> = 0.80)	-.795	-4.39*	21	<i>p</i> < .001
Self	9.76 (<i>SD</i> = 1.51)	8.04 (<i>SD</i> = 1.07)	1.72	4.96*	21	<i>p</i> < .001
You	1.38 (<i>SD</i> = 0.48)	1.38 (<i>SD</i> = 0.59)	.004	.030	21	<i>ns</i>
Other	3.89 (<i>SD</i> = 1.36)	5.22 (<i>SD</i> = 1.78)	-1.34	-3.53*	21	<i>p</i> < .01
Total Affect Expressed	3.28 (<i>SD</i> = 0.62)	3.34 (<i>SD</i> = 0.82)	-.061	-.395	21	<i>ns</i>
Positive Emotion	2.00 (<i>SD</i> = 0.47)	2.07 (<i>SD</i> = 0.59)	-.068	-.630	21	<i>ns</i>
Positive Feeling	0.37 (<i>SD</i> = 0.13)	0.33 (<i>SD</i> = 0.14)	.035	.823	21	<i>ns</i>
Optimism	0.34 (<i>SD</i> = 0.15)	0.38 (<i>SD</i> = 0.14)	-.042	-1.38	21	<i>ns</i>
Negative Emotion	1.25 (<i>SD</i> = 0.43)	1.22 (<i>SD</i> = 0.46)	.027	.267	21	<i>ns</i>
Anxiety	0.27 (<i>SD</i> = 0.10)	0.27 (<i>SD</i> = 0.16)	-.007	-.198	21	<i>ns</i>
Anger	0.23 (<i>SD</i> = 0.16)	0.32 (<i>SD</i> = 0.23)	-.093	-1.68	21	<i>ns</i>
Sadness	0.39 (<i>SD</i> = 0.21)	0.31 (<i>SD</i> = 0.16)	.086	2.00	21	<i>p</i> = .059

Table 10. Paired samples t-tests of linguistic dimensions of men with prostate cancer and their partners, averaged over time.

LIWC Category	Prostate Cancer Survivor (T1-T3)	Prostate Cancer Partner (T1-T3)	Mean Diff	<i>t</i>	df	Sig.
Average Word Count	1,743.27 (<i>SD</i> = 521.98)	1,933.78 (<i>SD</i> = 763.71)	-211.34	-1.13	19	<i>ns</i>
Total Pronoun Use	16.76 (<i>SD</i> = 2.15)	17.75 (<i>SD</i> = 1.73)	-1.09	-2.37*	19	<i>p</i> < .05
I	7.62 (<i>SD</i> = 1.93)	6.67 (<i>SD</i> = 1.28)	.852	1.84	19	<i>ns</i>
We	1.13 (<i>SD</i> = 0.49)	2.06 (<i>SD</i> = 1.13)	-.887	-3.73*	19	<i>p</i> < .001
Self	8.75 (<i>SD</i> = 1.77)	8.73 (<i>SD</i> = 1.07)	-.033	-0.07	19	<i>ns</i>
You	1.24 (<i>SD</i> = 0.51)	1.16 (<i>SD</i> = 0.49)	.096	0.77	19	<i>ns</i>
Other	3.49 (<i>SD</i> = 1.46)	4.61 (<i>SD</i> = 1.60)	-1.19	-2.68*	19	<i>p</i> < .05
Total Affect Expressed	3.08 (<i>SD</i> = 0.63)	3.09 (<i>SD</i> = 0.50)	.019	0.11	19	<i>ns</i>
Positive Emotion	2.09 (<i>SD</i> = 0.60)	1.99 (<i>SD</i> = 0.40)	.120	0.72	19	<i>ns</i>
Positive Feeling	0.32 (<i>SD</i> = 0.15)	0.35 (<i>SD</i> = 0.16)	-.027	-0.49	19	<i>ns</i>
Optimism	0.38 (<i>SD</i> = 0.23)	0.34 (<i>SD</i> = 0.94)	.045	0.83	19	<i>ns</i>
Negative Emotion	0.96 (<i>SD</i> = 0.40)	1.06 (<i>SD</i> = 0.39)	-.085	-0.70	19	<i>ns</i>
Anxiety	0.18 (<i>SD</i> = 0.10)	0.28 (<i>SD</i> = 0.16)	-.098	-2.28*	19	<i>p</i> < .05
Anger	0.22 (<i>SD</i> = 0.13)	0.16 (<i>SD</i> = 0.16)	.060	1.73	19	<i>ns</i>
Sadness	0.23 (<i>SD</i> = 0.17)	0.27 (<i>SD</i> = 0.17)	-.028	-0.51	19	<i>ns</i>

Table 11. Repeated Measures Analysis of Variance tests for change in linguistic dimensions of women with breast cancer over time.

Breast Cancer Survivors ($N = 22$)									
LIWC Category	Time 1 M (SD)	Time 2 M (SD)	Time 3 M (SD)	T1-T2 $MDiff$ (p)	T2-T3 $MDiff$ (p)	T1-T3 $MDiff$ (p)	F	df	p
Average Word Count	2300.36 (967.26)	2484.73 (1,006.37)	1797.79 (954.80)	-184.36 (<i>ns</i>)	686.96* (.006)	502.59 (.058)	6.31*	2, 42	.004
Total Pronoun Use	17.99 (2.07)	19.07 (2.29)	18.03 (2.34)	-1.08* (.01)	1.04* (.006)	-.038 (<i>ns</i>)	7.60*	2, 42	.002
I	8.85 (1.80)	8.93 (2.02)	8.74 (2.41)	-.079 (<i>ns</i>)	0.19 (<i>ns</i>)	0.11 (<i>ns</i>)	0.11	2, 42	<i>ns</i>
We	1.03 (0.69)	0.78 (0.46)	0.94 (0.65)	0.26 (<i>ns</i>)	-0.17 (<i>ns</i>)	0.09 (<i>ns</i>)	1.48	2, 42	<i>ns</i>
Self	9.88 (1.44)	9.70 (2.00)	9.68 (1.96)	0.18 (<i>ns</i>)	0.02 (<i>ns</i>)	0.20 (<i>ns</i>)	0.17	2, 42	<i>ns</i>
You	1.09 (0.38)	1.58 (0.69)	1.47 (0.75)	-0.49* (.015)	0.11 (<i>ns</i>)	-0.39* (.008)	5.88*	2, 42	.006
Other	3.83 (1.82)	4.39 (1.67)	3.42 (1.48)	-0.56 (<i>ns</i>)	0.97* (.005)	0.41 (<i>ns</i>)	3.81*	2, 42	.030
Total Affect Expressed	3.25 (0.80)	3.14 (0.74)	3.44 (0.74)	0.11 (<i>ns</i>)	-0.29 (<i>ns</i>)	-0.18 (<i>ns</i>)	1.71	2, 42	<i>ns</i>
Positive Emotion	1.87 (0.66)	1.92(0.51)	2.22 (0.62)	-0.05 (<i>ns</i>)	-0.31 (<i>ns</i>)	-0.35* (.068)	3.89*	2, 42	.028
Positive Feeling	0.38 (0.19)	0.39 (0.20)	0.33 (0.21)	-0.01 (<i>ns</i>)	0.06 (<i>ns</i>)	0.05 (<i>ns</i>)	0.54	2, 42	<i>ns</i>
Optimism	0.36 (0.20)	0.27 (0.14)	0.40 (0.33)	0.09 (<i>ns</i>)	-0.13 (<i>ns</i>)	-0.04 (<i>ns</i>)	2.07	1.5, 32	<i>ns</i>
Negative Emotion	1.36 (0.49)	1.21 (0.45)	1.19 (0.58)	0.15 (<i>ns</i>)	0.02 (<i>ns</i>)	0.17 (<i>ns</i>)	1.64	2, 42	<i>ns</i>
Anxiety	0.32 (0.19)	0.24 (0.19)	0.24 (0.18)	0.08 (<i>ns</i>)	-0.00 (<i>ns</i>)	0.08 (<i>ns</i>)	1.31	2, 42	<i>ns</i>
Anger	0.20 (0.19)	0.28 (0.27)	0.20 (0.21)	-0.07 (<i>ns</i>)	0.08 (<i>ns</i>)	0.00 (<i>ns</i>)	1.14	1.4, 29	<i>ns</i>
Sadness	0.46 (0.29)	0.31 (0.17)	0.41 (0.33)	0.15 (<i>ns</i>)	-0.10 (<i>ns</i>)	0.05 (<i>ns</i>)	2.70	2, 42	<i>ns</i>

Table 12. Repeated Measures Analysis of Variance tests for change in linguistic dimensions of breast cancer partners over time.

Breast Cancer Partners (<i>N</i> = 22)									
LIWC Category	Time 1 <i>M</i> (<i>SD</i>)	Time 2 <i>M</i> (<i>SD</i>)	Time 3 <i>M</i> (<i>SD</i>)	T1-T2 <i>MDiff</i> (<i>p</i>)	T2-T3 <i>MDiff</i> (<i>p</i>)	T1-T3 <i>MDiff</i> (<i>p</i>)	<i>F</i>	df	<i>p</i>
Average Word Count	1392.06 (849.28)	1869.17 (923.96)	1719.56 (612.27)	-477.11* (.008)	149.61 (<i>ns</i>)	-327.50 (<i>ns</i>)	3.89*	2, 34	.030
Total Pronoun Use	18.02 (2.49)	18.38 (2.17)	17.71 (2.96)	-0.36 (<i>ns</i>)	0.67 (<i>ns</i>)	0.31 (<i>ns</i>)	1.03	2, 34	<i>ns</i>
I	6.56 (2.05)	5.92 (1.25)	6.56 (1.59)	0.64 (<i>ns</i>)	-0.64 (<i>ns</i>)	0.00 (<i>ns</i>)	1.11	2, 34	<i>ns</i>
We	1.72 (0.94)	1.94 (0.83)	1.79 (1.08)	-0.22 (<i>ns</i>)	0.16 (<i>ns</i>)	-0.07 (<i>ns</i>)	0.42	2, 34	<i>ns</i>
Self	8.28 (1.73)	7.86 (1.11)	8.35 (1.25)	0.42 (<i>ns</i>)	-0.48 (<i>ns</i>)	-0.06 (<i>ns</i>)	0.75	2, 34	<i>ns</i>
You	1.65 (1.01)	1.26 (0.63)	1.28 (0.71)	0.39 (<i>ns</i>)	-0.02 (<i>ns</i>)	0.36 (<i>ns</i>)	1.62	1.3, 22.5	<i>ns</i>
Other	4.94 (2.51)	6.06 (1.91)	4.99 (1.92)	-1.12 (<i>ns</i>)	1.06* (.024)	-0.06 (<i>ns</i>)	3.58*	2, 34	.039
Total Affect Expressed	3.39 (0.86)	3.10 (0.77)	3.32 (0.95)	0.29 (<i>ns</i>)	-0.22 (<i>ns</i>)	0.08 (<i>ns</i>)	1.37	2, 34	<i>ns</i>
Positive Emotion	2.05 (0.72)	1.96 (0.62)	2.11 (0.63)	0.09 (<i>ns</i>)	-0.14 (<i>ns</i>)	-0.05 (<i>ns</i>)	0.39	2, 34	<i>ns</i>
Positive Feeling	0.26 (0.22)	0.35 (0.19)	0.38 (0.16)	-0.09 (<i>ns</i>)	-0.03 (<i>ns</i>)	-0.12 (<i>ns</i>)	2.12	2, 34	<i>ns</i>
Optimism	0.45 (0.33)	0.35 (0.12)	0.36 (0.09)	0.09 (<i>ns</i>)	-0.00 (<i>ns</i>)	0.09 (<i>ns</i>)	1.26	1.2, 20.6	<i>ns</i>
Negative Emotion	1.32 (0.65)	1.07 (0.60)	1.18 (0.52)	0.25 (<i>ns</i>)	-0.11 (<i>ns</i>)	0.15 (<i>ns</i>)	1.67	2, 34	<i>ns</i>
Anxiety	0.25 (0.21)	0.30 (0.22)	0.27 (0.21)	-0.06 (<i>ns</i>)	0.03 (<i>ns</i>)	-0.03 (<i>ns</i>)	0.46	2, 34	<i>ns</i>
Anger	0.36 (0.44)	0.23 (0.17)	0.28 (0.24)	0.13 (<i>ns</i>)	-0.05 (<i>ns</i>)	0.08 (<i>ns</i>)	0.98	1.5, 25.4	<i>ns</i>
Sadness	0.38 (0.26)	0.23 (0.19)	0.33 (0.21)	0.15* (.034)	-0.10 (<i>ns</i>)	0.05 (<i>ns</i>)	3.44*	2, 34	.044

Table 13. Repeated Measures Analysis of Variance tests for change in linguistic dimensions of men with prostate cancer over time.

Prostate Cancer Survivors ($N = 21$)									
LIWC Category	Time 1 M (SD)	Time 2 M (SD)	Time 3 M (SD)	T1-T2 $MDiff$ (p)	T2-T3 $MDiff$ (p)	T1-T3 $MDiff$ (p)	F	df	p
Average Word Count	1800.94 (715.74)	1775.61 (623.45)	1496.89 (627.26)	25.33 (<i>ns</i>)	278.72 (<i>ns</i>)	304.06 (<i>ns</i>)	2.59	2, 34	<i>ns</i>
Total Pronoun Use	16.94 (2.09)	17.41 (2.30)	17.04 (2.61)	-0.47 (<i>ns</i>)	0.37 (<i>ns</i>)	-0.10 (<i>ns</i>)	0.53	2, 34	<i>ns</i>
I	7.62 (2.19)	8.04 (1.67)	8.08 (2.01)	-0.42 (<i>ns</i>)	-0.04 (<i>ns</i>)	-0.46 (<i>ns</i>)	0.81	2, 34	<i>ns</i>
We	1.12 (0.48)	1.29 (0.68)	1.08 (0.86)	-0.17 (<i>ns</i>)	0.22 (<i>ns</i>)	0.05 (<i>ns</i>)	0.74	2, 34	<i>ns</i>
Self	8.75 (2.02)	9.33 (1.35)	9.16 (1.82)	-0.59 (<i>ns</i>)	0.17 (<i>ns</i>)	-0.41 (<i>ns</i>)	1.31	2, 34	<i>ns</i>
You	1.20 (0.75)	0.94 (0.42)	1.27 (0.63)	0.26 (<i>ns</i>)	-0.32 (<i>ns</i>)	-0.06 (<i>ns</i>)	2.04	2, 34	<i>ns</i>
Other	3.86 (1.79)	3.91 (1.75)	3.20 (1.81)	-0.05 (<i>ns</i>)	0.71 (<i>ns</i>)	0.66 (<i>ns</i>)	1.84	2, 34	<i>ns</i>
Total Affect Expressed	3.07 (0.95)	2.79 (0.62)	3.47 (0.83)	0.28 (<i>ns</i>)	-0.68* (.012)	-0.41 (<i>ns</i>)	5.37*	2, 34	.009
Positive Emotion	1.96 (0.82)	1.89 (0.55)	2.43 (0.87)	0.07 (<i>ns</i>)	-0.53* (.04)	-0.47 (<i>ns</i>)	5.16*	2, 34	.011
Positive Feeling	0.35 (0.23)	0.28 (0.19)	0.30 (0.21)	0.07 (<i>ns</i>)	-0.02 (<i>ns</i>)	0.05 (<i>ns</i>)	0.91	2, 34	<i>ns</i>
Optimism	0.35 (0.29)	0.32 (0.19)	0.46 (0.37)	0.03 (<i>ns</i>)	-0.13 (<i>ns</i>)	-0.11 (<i>ns</i>)	1.75	2, 34	<i>ns</i>
Negative Emotion	1.05 (0.51)	0.89 (0.44)	1.01 (0.48)	0.16 (<i>ns</i>)	-0.12 (<i>ns</i>)	0.04 (<i>ns</i>)	1.32	2, 34	<i>ns</i>
Anxiety	0.19 (0.15)	0.20 (0.24)	0.16 (0.14)	-0.00 (<i>ns</i>)	0.04 (<i>ns</i>)	0.03 (<i>ns</i>)	0.22	2, 34	<i>ns</i>
Anger	0.27 (0.23)	0.17 (0.14)	0.22 (0.16)	0.10 (<i>ns</i>)	-0.06 (<i>ns</i>)	0.04 (<i>ns</i>)	1.97	2, 34	<i>ns</i>
Sadness	0.21 (0.20)	0.22 (0.16)	0.24 (0.23)	-0.01 (<i>ns</i>)	-0.02 (<i>ns</i>)	-0.03 (<i>ns</i>)	0.37	2, 34	<i>ns</i>

Table 14. Repeated Measures Analysis of Variance tests for change in linguistic dimensions of prostate cancer partners over time.

Prostate Cancer Partners ($N = 21$)									
LIWC Category	Time 1 M (SD)	Time 2 M (SD)	Time 3 M (SD)	T1-T2 $MDiff$ (p)	T2-T3 $MDiff$ (p)	T1-T3 $MDiff$ (p)	F	df	p
Average Word Count	1566.00 (542.44)	1938.91 (1212.51)	1930.27 (1123.88)	-372.91 (<i>ns</i>)	8.64 (<i>ns</i>)	-364.27 (<i>ns</i>)	0.81	2, 20	<i>ns</i>
Total Pronoun Use	18.18 (2.12)	18.16 (2.57)	18.16 (2.37)	0.02 (<i>ns</i>)	0.00 (<i>ns</i>)	0.02 (<i>ns</i>)	0.00	2, 20	<i>ns</i>
I	6.72 (1.69)	7.13 (2.28)	6.97 (2.35)	-0.41 (<i>ns</i>)	0.16 (<i>ns</i>)	-0.25 (<i>ns</i>)	0.14	2, 20	<i>ns</i>
We	1.64 (1.00)	1.61 (1.09)	2.20 (2.09)	0.03 (<i>ns</i>)	-0.59 (<i>ns</i>)	-0.56 (<i>ns</i>)	1.76	1.2, 12.2	<i>ns</i>
Self	8.36 (1.45)	8.74 (2.11)	9.17 (1.57)	-0.39 (<i>ns</i>)	-0.43 (<i>ns</i>)	-0.82 (<i>ns</i>)	0.57	2, 20	<i>ns</i>
You	1.22 (0.75)	1.15 (0.66)	1.08 (0.74)	0.07 (<i>ns</i>)	0.06 (<i>ns</i>)	0.14 (<i>ns</i>)	0.12	2, 20	<i>ns</i>
Other	5.59 (2.35)	5.13 (1.86)	4.62 (1.96)	0.46 (<i>ns</i>)	0.52 (<i>ns</i>)	0.98 (<i>ns</i>)	0.92	2, 20	<i>ns</i>
Total Affect Expressed	3.25 (0.69)	2.85 (0.78)	3.05 (0.82)	0.40* (.041)	-0.19 (<i>ns</i>)	0.21 (<i>ns</i>)	1.01	1.2, 12.2	<i>ns</i>
Positive Emotion	1.89 (0.46)	1.93 (0.75)	2.06 (0.88)	-0.05 (<i>ns</i>)	-0.13 (<i>ns</i>)	-0.17 (<i>ns</i>)	0.21	1.3, 13.4	<i>ns</i>
Positive Feeling	0.34 (0.19)	0.38 (0.28)	0.34 (0.22)	-0.04 (<i>ns</i>)	0.04 (<i>ns</i>)	-0.01 (<i>ns</i>)	0.12	2, 20	<i>ns</i>
Optimism	0.24 (0.21)	0.32 (0.19)	0.43 (0.26)	-0.08 (<i>ns</i>)	-0.11 (<i>ns</i>)	-0.19 (<i>ns</i>)	1.61	2, 20	<i>ns</i>
Negative Emotion	1.34 (0.57)	0.89 (0.65)	0.96 (0.48)	0.44 (<i>ns</i>)	-0.07 (<i>ns</i>)	-0.38* (.031)	3.88*	2, 20	.038
Anxiety	0.44 (0.31)	0.14 (0.14)	0.23 (0.22)	0.29* (.013)	-0.09 (<i>ns</i>)	0.21 (<i>ns</i>)	9.70*	2, 20	.001
Anger	0.18 (0.10)	0.23 (0.43)	0.14 (0.13)	-0.04 (<i>ns</i>)	0.09 (<i>ns</i>)	0.04 (<i>ns</i>)	0.37	1.1, 10.9	<i>ns</i>
Sadness	0.39 (0.29)	0.18 (0.12)	0.26 (0.17)	0.21* (.014)	-0.08 (<i>ns</i>)	0.14 (.041)	4.57*	1.3, 13.3	.043

Table 15. Repeated Measures Analysis of Variance tests for change in psychosocial outcomes of women with breast cancer over time.

Outcome Variable	Breast Cancer Survivors ($N = 22$)						F	df	p
	Time 1 $M (SD)$	Time 2 $M (SD)$	Time 3 $M (SD)$	T1-T2 $MDiff (p)$	T2-T3 $MDiff (p)$	T1-T3 $MDiff (p)$			
Depression	14.81 (8.51)	14.67 (10.13)	15.14 (13.46)	.143 (<i>ns</i>)	-.176 (<i>ns</i>)	-.333 (<i>ns</i>)	.031	2, 40	<i>ns</i>
Negative Affect	22.19 (7.87)	18.29 (5.83)	18.10 (6.62)	3.91* (.043)	.190 (<i>ns</i>)	4.10* (.035)	5.85*	2, 40	.006
Positive Affect	35.00 (7.55)	34.14 (8.68)	34.33 (9.18)	.857 (<i>ns</i>)	-.190 (<i>ns</i>)	.667 (<i>ns</i>)	.155	2, 40	<i>ns</i>
Relationship Satisfaction	32.29 (2.37)	31.29 (2.83)	32.38 (2.71)	1.00 (<i>ns</i>)	-1.10* (.021)	-.095 (<i>ns</i>)	2.68	1.6, 31.2	<i>ns</i>

Table 16. Repeated Measures Analysis of Variance tests for change in psychosocial outcomes of breast cancer partners over time.

Outcome Variable	Breast Cancer Partners (<i>N</i> = 22)						<i>F</i>	df	<i>p</i>
	Time 1 <i>M</i> (<i>SD</i>)	Time 2 <i>M</i> (<i>SD</i>)	Time 3 <i>M</i> (<i>SD</i>)	T1-T2 <i>MDiff</i> (<i>p</i>)	T2-T3 <i>MDiff</i> (<i>p</i>)	T1-T3 <i>MDiff</i> (<i>p</i>)			
Depression	14.45 (8.43)	4.80 (5.29)	5.40 (6.15)	9.65* (.000)	-.600 (<i>ns</i>)	9.05* (.000)	24.43*	2, 38	<.001
Negative Affect	21.50 (7.39)	19.65 (7.34)	16.90 (6.73)	1.85 (<i>ns</i>)	2.75 (<i>ns</i>)	4.60* (.028)	3.72*	2, 38	.033
Positive Affect	35.85 (6.00)	34.55 (7.65)	33.65 (6.81)	1.30 (<i>ns</i>)	.900 (<i>ns</i>)	2.20 (<i>ns</i>)	1.37	2, 38	<i>ns</i>
Relationship Satisfaction	32.05 (3.62)	31.85 (5.29)	31.80 (3.86)	.200 (<i>ns</i>)	.050 (<i>ns</i>)	.250 (<i>ns</i>)	.102	2, 38	<i>ns</i>

Table 17. Repeated Measures Analysis of Variance tests for change in psychosocial outcomes of men with prostate cancer over time.

Outcome Variable	Prostate Cancer Survivors (<i>N</i> = 21)						<i>F</i>	df	<i>p</i>
	Time 1 <i>M</i> (<i>SD</i>)	Time 2 <i>M</i> (<i>SD</i>)	Time 3 <i>M</i> (<i>SD</i>)	T1-T2 <i>MDiff</i> (<i>p</i>)	T2-T3 <i>MDiff</i> (<i>p</i>)	T1-T3 <i>MDiff</i> (<i>p</i>)			
Depression	12.84 (10.55)	13.58 (10.99)	16.26 (15.48)	-.737 (<i>ns</i>)	-2.68 (<i>ns</i>)	-3.42 (<i>ns</i>)	1.34	2, 36	<i>ns</i>
Negative Affect	17.37 (8.80)	17.00 (7.82)	15.58 (6.26)	.368 (<i>ns</i>)	1.42 (<i>ns</i>)	-1.79 (<i>ns</i>)	.902	1, 4, 24.5	<i>ns</i>
Positive Affect	33.58 (6.27)	35.63 (6.52)	33.79 (8.80)	-2.05 (<i>ns</i>)	1.84 (<i>ns</i>)	-.211 (<i>ns</i>)	1.76	2, 36	<i>ns</i>
Relationship Satisfaction	30.74 (5.41)	31.37 (5.07)	31.00 (5.49)	-.632 (<i>ns</i>)	.368 (<i>ns</i>)	-.263 (<i>ns</i>)	.430	2, 36	<i>ns</i>

Table 18. Repeated Measures Analysis of Variance tests for change in psychosocial outcomes of prostate cancer partners over time.

Outcome Variable	Prostate Cancer Partners (<i>N</i> = 21)						<i>F</i>	df	<i>p</i>
	Time 1 <i>M</i> (<i>SD</i>)	Time 2 <i>M</i> (<i>SD</i>)	Time 3 <i>M</i> (<i>SD</i>)	T1-T2 <i>MDiff</i> (<i>p</i>)	T2-T3 <i>MDiff</i> (<i>p</i>)	T1-T3 <i>MDiff</i> (<i>p</i>)			
Depression	13.60 (11.24)	11.40 (7.75)	11.75 (7.75)	2.20 (<i>ns</i>)	-.350 (<i>ns</i>)	1.85 (<i>ns</i>)	1.22	2, 38	<i>ns</i>
Negative Affect	17.40 (6.20)	16.40 (4.84)	15.60 (6.03)	1.00 (<i>ns</i>)	.800 (<i>ns</i>)	1.80 (<i>ns</i>)	1.04	2, 38	<i>ns</i>
Positive Affect	33.75 (8.32)	36.30 (5.77)	34.50 (5.73)	-2.55 (<i>ns</i>)	1.80 (<i>ns</i>)	-.750 (<i>ns</i>)	1.69	2, 38	<i>ns</i>
Relationship Satisfaction	29.16 (6.98)	28.58 (8.73)	28.68 (8.89)	.579 (<i>ns</i>)	-.105 (<i>ns</i>)	.474 (<i>ns</i>)	.350	2, 36	<i>ns</i>

Table 19. Hierarchical regression tests for overall use of emotion words and depression of survivors with breast and prostate cancer.

Predictor/Independent Variable	Time 2 Depression				Time 3 Depression			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.576***				.498***
Depression at Time 1	.759***	.759	.576		.706***	.706	.498	
Block Two				.000 (<i>ns</i>)				.004 (<i>ns</i>)
Depression at Time 1	.759***	.759	.442		.703***	.706	.492	
Total Affect Words	-.005	.043	.000		.062	.094	.004	
R ² for Total Model				.576 (<i>ns</i>)				.502 (<i>ns</i>)

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Regressions for breast and prostate cancer survivors are based on $N = 43$.

Table 20. Hierarchical regression tests for overall use of emotion words and negative affect of survivors with breast and prostate cancer.

Predictor/Independent Variable	Time 2 Negative Affect				Time 3 Negative Affect			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.612***				.332***
Negative Affect at Time 1	.782***	.782	.612		.576***	.576	.332	
Block Two				.002 (<i>ns</i>)				.000 (<i>ns</i>)
Negative Affect at Time 1	.784***	.782	.613		.576***	.576	.332	
Total Affect Words	-.044	-.021	.002		.003	.028	.000	
R ² for Total Model				.614 (<i>ns</i>)				.332 (<i>ns</i>)

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 21. Hierarchical regression tests for overall use of emotion words and positive affect of survivors with breast and prostate cancer.

Predictor/Independent Variable	Time 2 Positive Affect				Time 3 Positive Affect			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.401***				.458***
Positive Affect at Time 1	.633***	.633	.401		.677***	.677	.458	
Block Two				.019 (<i>ns</i>)				.005 (<i>ns</i>)
Positive Affect at Time 1	.649***	.633	.416		.696***	.677	.449	
Total Affect Words	.138	.063	.019		.071	-.118	.005	
R ² for Total Model				.420 (<i>ns</i>)				.463 (<i>ns</i>)

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 22. Hierarchical regression tests for overall use of emotion words and relationship satisfaction of survivors with breast and prostate cancer.

Predictor/Independent Variable	Time 2 Relationship Satisfaction				Time 3 Relationship Satisfaction			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.588***				.558***
Relationship Satisfaction at Time 1	.767***	.767	.588		.747***	.747	.558	
Block Two				.011 (<i>ns</i>)				.000 (<i>ns</i>)
Relationship Satisfaction at Time 1	.774***	.767	.596		.747***	.747	.558	
Total Affect Words	-.107	-.053	.011		.015	.035	.000	
R ² for Total Model				.599 (<i>ns</i>)				.558 (<i>ns</i>)

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 23. Hierarchical regression tests for overall use of emotion words and depression of breast and prostate cancer partners.

Predictor/Independent Variable	Time 2 Depression				Time 3 Depression			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.403***				.314***
Depression at Time 1	.635***	.635	.403		.561***	.561	.315	
Block Two				.056 (<i>p</i> = .054)				.022 (<i>ns</i>)
Depression at Time 1	.653***	.635	.424		.572***	.561	.325	
Total Affect Words	-.238	-.190	.056		-.150	-.106	.023	
R ² for Total Model				.459 (<i>ns</i>)				.336 (<i>ns</i>)

Note. * *p* < .05, ** *p* < .01, *** *p* < .001. Regressions for breast and prostate cancer partners are based on *N* = 43.

Table 24. Hierarchical regression tests for overall use of emotion words and negative affect of breast and prostate cancer partners.

Predictor/Independent Variable	Time 2 Negative Affect				Time 3 Negative Affect			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.446***				.139*
Negative Affect at Time 1	.668***	.668	.446		.373*	.373	.139	
Block Two				.000 (<i>ns</i>)				.001 (<i>ns</i>)
Negative Affect at Time 1	.667***	.668	.442		.370*	.373	.136	
Total Affect Words	-.012	-.066	.000		-.033	-.067	.001	
R ² for Total Model				.446 (<i>ns</i>)				.140 (<i>ns</i>)

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 25. Hierarchical regression tests for overall use of emotion words and positive affect of breast and prostate cancer partners.

Predictor/Independent Variable	Time 2 Positive Affect				Time 3 Positive Affect			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.233***				.179**
Positive Affect at Time 1	.483***	.483	.233		.423**	.423	.179	
Block Two				.004 (<i>ns</i>)				.000 (<i>ns</i>)
Positive Affect at Time 1	.487**	.483	.236		.423**	.423	.178	
Total Affect Words	.061	.032	.004		-.005	-.032	.000	
R ² for Total Model				.237 (<i>ns</i>)				.179 (<i>ns</i>)

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 26. Hierarchical regression tests for overall use of emotion words and relationship satisfaction of breast and prostate cancer partners.

Predictor/Independent Variable	Time 2 Relationship Satisfaction				Time 3 Relationship Satisfaction			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.879***				.709***
Relationship Satisfaction at Time 1	.937***	.937	.878		.842***	.842	.709	
Block Two				.000 (<i>ns</i>)				.002 (<i>ns</i>)
Relationship Satisfaction at Time 1	.938***	.937	.837		.833***	.842	.658	
Total Affect Words	-.002	.205	.000		.040	.228	.002	
R ² for Total Model				.879 (<i>ns</i>)				.711 (<i>ns</i>)

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 27. Hierarchical regression tests for positive emotion words and depression of survivors with breast and prostate cancer.

Predictor/Independent Variable	Time 2 Depression				Time 3 Depression			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.576***				.498***
Depression at Time 1	.759***	.759	.576		.706***	.706	.498	
Block Two				.003 (<i>ns</i>)				.001 (<i>ns</i>)
Depression at Time 1	.749***	.759	.543		.712***	.706	.479	
Positive Emotion	-.055	-.186	.003		.027	-.143	.001	
R ² for Total Model				.579 (<i>ns</i>)				.499 (<i>ns</i>)

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Regressions for breast and prostate cancer survivors are based on $N = 43$.

Table 28. Hierarchical regression tests for positive emotion words and negative affect of survivors with breast and prostate cancer.

Predictor/Independent Variable	Time 2 Negative Affect				Time 3 Negative Affect			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.612***				.332***
Negative Affect at Time 1	.782***	.782	.612		.576***	.576	.332	
Block Two				.010 (<i>ns</i>)				.004 (<i>ns</i>)
Negative Affect at Time 1	.755***	.782	.531		.556***	.576	.280	
Positive Emotion	-.104	-.302	.010		-.067	-.238	.004	
R ² for Total Model				.622 (<i>ns</i>)				.336 (<i>ns</i>)

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 29. Hierarchical regression tests for positive emotion words and positive affect of survivors with breast and prostate cancer.

Predictor/Independent Variable	Time 2 Positive Affect				Time 3 Positive Affect			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.401***				.458***
Positive Affect at Time 1	.633***	.633	.401		.677***	.677	.458	
Block Two				.027 (<i>ns</i>)				.033 (<i>ns</i>)
Positive Affect at Time 1	.650***	.633	.417		.742***	.677	.489	
Positive Emotion	.165	.100	.027		.194	-.057	.033	
R ² for Total Model				.428 (<i>ns</i>)				.491(<i>ns</i>)

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 30. Hierarchical regression tests for positive emotion words and relationship satisfaction of survivors with breast and prostate cancer.

Predictor/Independent Variable	Time 2 Relationship Satisfaction				Time 3 Relationship Satisfaction			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.588***				.558***
Relationship Satisfaction at Time 1	.767***	.767	.588		.747***	.747	.558	
Block Two				.000 (<i>ns</i>)				.001 (<i>ns</i>)
Relationship Satisfaction at Time 1	.767***	.767	.581		.749***	.747	.560	
Positive Emotion	-.004	.083	.000		-.027	.019	.001	
R ² for Total Model				.588 (<i>ns</i>)				.559 (<i>ns</i>)

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 31. Hierarchical regression tests for positive emotion words and depression of breast and prostate cancer partners.

Predictor/Independent Variable	Time 2 Depression				Time 3 Depression			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.403***				.314***
Depression at Time 1	.635***	.635	.403		.561***	.561	.315	
Block Two				.042 (<i>ns</i>)				.002 (<i>ns</i>)
Depression at Time 1	.642***	.635	.412		.559***	.561	.311	
Positive Emotion	-.206	-.183	.042		-.041	-.065	.002	
R ² for Total Model				.445 (<i>ns</i>)				.316 (<i>ns</i>)

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Regressions for breast and prostate cancer partners are based on $N = 43$.

Table 32. Hierarchical regression tests for positive emotion words and negative affect of breast and prostate cancer partners.

Predictor/Independent Variable	Time 2 Negative Affect				Time 3 Negative Affect			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.446***				.139*
Negative Affect at Time 1	.668***	.668	.446		.373*	.373	.139	
Block Two				.038 (<i>ns</i>)				.001 (<i>ns</i>)
Negative Affect at Time 1	.655***	.668	.428		.368*	.373	.132	
Positive Emotion	-.196	-.238	.038		-.035	-.091	.001	
R ² for Total Model				.484 (<i>ns</i>)				.140 (<i>ns</i>)

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 33. Hierarchical regression tests for positive emotion words and positive affect of breast and prostate cancer partners.

Predictor/Independent Variable	Time 2 Positive Affect				Time 3 Positive Affect			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.233**				.179**
Positive Affect at Time 1	.483**	.483	.233		.423**	.423	.179	
Block Two				.003 (<i>ns</i>)				.001 (<i>ns</i>)
Positive Affect at Time 1	.490**	.483	.235		.429**	.423	.180	
Positive Emotion	.052	-.015	.003		.039	-.024	.001	
R ² for Total Model				.236 (<i>ns</i>)				.180 (<i>ns</i>)

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 34. Hierarchical regression tests for positive emotion words and relationship satisfaction breast and prostate cancer partners.

Predictor/Independent Variable	Time 2 Relationship Satisfaction				Time 3 Relationship Satisfaction			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.879***				.709***
Relationship Satisfaction at Time 1	.937***	.937	.878		.842***	.842	.709	
Block Two				.006 (<i>ns</i>)				.019 (<i>ns</i>)
Relationship Satisfaction at Time 1	.908***	.937	.717		.789***	.842	.546	
Positive Emotion	.080	.408	.006		.149	.427	.020	
R ² for Total Model				.885 (<i>ns</i>)				.728 (<i>ns</i>)

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 35. Hierarchical regression tests for communal coping (“we-talk”) and depression of survivors with breast and prostate cancer.

Predictor/Independent Variable	Time 2 Depression				Time 3 Depression			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.576***				.498***
Depression at Time 1	.759***	.759	.576		.706***	.706	.498	
Block Two				.000 (<i>ns</i>)				.000 (<i>ns</i>)
Depression at Time 1	.766***	.759	.518		.709***	.706	.445	
“We”	.022	-.241	.000		.010	-.230	.000	
R ² for Total Model				.576 (<i>ns</i>)				.498 (<i>ns</i>)

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Regressions for breast and prostate cancer survivors are based on $N = 43$.

Table 36. Hierarchical regression tests for communal coping (“we-talk”) and negative affect of survivors with breast and prostate cancer.

Predictor/Independent Variable	Time 2 Negative Affect				Time 3 Negative Affect			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.612***				.332***
Negative Affect at Time 1	.782***	.782	.612		.576***	.576	.332	
Block Two				.003 (<i>ns</i>)				.008 (<i>ns</i>)
Negative Affect at Time 1	.769***	.782	.555		.555***	.554	.292	
“We”	-.054	-.244	.003		-.093	-.111	.008	
R ² for Total Model				.615 (<i>ns</i>)				.340 (<i>ns</i>)

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 37. Hierarchical regression tests for communal coping (“we-talk”) and positive affect of survivors with breast and prostate cancer.

Predictor/Independent Variable	Time 2 Positive Affect				Time 3 Positive Affect			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.401***				.458***
Positive Affect at Time 1	.633***	.633	.401		.677***	.677	.458	
Block Two				.028 (<i>ns</i>)				.036 (<i>ns</i>)
Positive Affect at Time 1	.621***	.633	.384		.660***	.677	.433	
“We”	.167	.211	.028		.190	.248	.036	
R ² for Total Model				.429 (<i>ns</i>)				.494 (<i>ns</i>)

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 38. Hierarchical regression tests for communal coping (“we-talk”) and relationship satisfaction of survivors with breast and prostate cancer.

Predictor/Independent Variable	Time 2 Relationship Satisfaction				Time 3 Relationship Satisfaction			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.588***				.558***
Relationship Satisfaction at Time 1	.767***	.767	.588		.747***	.747	.558	
Block Two				.009 (<i>ns</i>)				.002 (<i>ns</i>)
Relationship Satisfaction at Time 1	.746***	.767	.531		.737***	.747	.518	
“We”	.097	.256	.009		.046	.205	.002	
R ² for Total Model				.596 (<i>ns</i>)				.560 (<i>ns</i>)

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 39. Hierarchical regression tests for communal coping (“we-talk”) and depression of breast and prostate cancer partners.

Predictor/Independent Variable	Time 2 Depression				Time 3 Depression			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.403***				.314***
Depression at Time 1	.635***	.635	.403		.561***	.561	.315	
Block Two				.000 (<i>ns</i>)				.012 (<i>ns</i>)
Depression at Time 1	.635***	.635	.378		.589***	.561	.325	
“We”	.001	-.160	.000		.112	-.038	.012	
R ² for Total Model				.403 (<i>ns</i>)				.326 (<i>ns</i>)

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Regressions for breast and prostate cancer partners are based on $N = 43$.

Table 40. Hierarchical regression tests for communal coping (“we-talk”) and negative affect of breast and prostate cancer partners.

Predictor/Independent Variable	Time 2 Negative Affect				Time 3 Negative Affect			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.446***				.139*
Negative Affect at Time 1	.668***	.668	.446		.373*	.373	.139	
Block Two				.099**				.020 (<i>ns</i>)
Negative Affect at Time 1	.638***	.668	.403		.366*	.373	.134	
“We”	-.316**	-.376	.099		-.143	-.161	.020	
R ² for Total Model				.545**				.160 (<i>ns</i>)

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 41. Hierarchical regression tests for communal coping (“we-talk”) and positive affect of breast and prostate cancer partners.

Predictor/Independent Variable	Time 2 Positive Affect				Time 3 Positive Affect			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.233**				.179**
Positive Affect at Time 1	.483**	.483	.233		.423**	.423	.179	
Block Two				.014 (<i>ns</i>)				.006 (<i>ns</i>)
Positive Affect at Time 1	.484**	.483	.234		.425**	.423	.181	
“We”	.117	.112	.014		.077	.069	.006	
R ² for Total Model				.247 (<i>ns</i>)				.185 (<i>ns</i>)

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 42. Hierarchical regression tests for communal coping (“we-talk”) and relationship satisfaction of breast and prostate cancer partners.

Predictor/Independent Variable	Time 2 Relationship Satisfaction				Time 3 Relationship Satisfaction			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.879***				.709***
Relationship Satisfaction at Time 1	.937***	.937	.878		.842***	.842	.709	
Block Two				.008 (<i>ns</i>)				.008 (<i>ns</i>)
Relationship Satisfaction at Time 1	.909***	.937	.753		.812***	.842	.590	
“We”	.094	.366	.008		.093	.355	.008	
R ² for Total Model				.887 (<i>ns</i>)				.717 (<i>ns</i>)

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 43. Hierarchical regression tests for change in emotional expression (total affect words) over time and depression of survivors with breast and prostate cancer.

Predictor/Independent Variable	Time 1 - Time 2 Δ Depression				Time 1 - Time 3 Δ Depression			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.002 (<i>ns</i>)				.000 (<i>ns</i>)
Total Affect at Time 1	.047	.047	.002		.012	.012	.000	
Block Two				.000 (<i>ns</i>)				.011 (<i>ns</i>)
Total Affect at Time 1	.038	.047	.001		.056	.012	.003	
Total Affect at Time n	.014	.039	.000		-.113	-.092	.011	
R ² for Total Model				.002 (<i>ns</i>)				.011 (<i>ns</i>)

Note. Time n corresponds to the second time interval of the dependent variable.

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Regressions for breast and prostate cancer survivors are based on $N = 43$.

Table 44. Hierarchical regression tests for change in emotional expression (total affect words) over time and negative affect of survivors with breast and prostate cancer.

Predictor/Independent Variable	Time 1 - Time 2 Δ Negative Affect				Time 1 - Time 3 Δ Negative Affect			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.001 (<i>ns</i>)				.000 (<i>ns</i>)
Total Affect at Time 1	.035	.035	.001		-.007	-.007	.000	
Block Two				.043 (<i>ns</i>)				.021 (<i>ns</i>)
Total Affect at Time 1	.215	.035	.027		.053	-.007	.002	
Total Affect at Time n	-.275	-.134	.043		-.155	-.135	.020	
R ² for Total Model				.044 (<i>ns</i>)				.021 (<i>ns</i>)

Note. Time n corresponds to the second time interval of the dependent variable.

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 45. Hierarchical regression tests for change in emotional expression (total affect words) over time and positive affect of survivors with breast and prostate cancer.

Predictor/Independent Variable	Time 1 - Time 2 Δ Positive Affect				Time 1 - Time 3 Δ Positive Affect			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.023 (<i>ns</i>)				.061 (<i>ns</i>)
Total Affect at Time 1	.153	.153	.023		.248	.248	.062	
Block Two				.001 (<i>ns</i>)				.000 (<i>ns</i>)
Total Affect at Time 1	.180	.153	.018		.255	.248	.055	
Total Affect at Time n	-.042	.077	.001		-.018	.080	.000	
R ² for Total Model				.024 (<i>ns</i>)				.062 (<i>ns</i>)

Note. Time n corresponds to the second time interval of the dependent variable.

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 46. Hierarchical regression tests for change in emotional expression (total affect words) over time and relationship satisfaction of survivors with breast and prostate cancer.

Predictor/Independent Variable	Time 1 - Time 2 Δ Relationship Satisfaction				Time 1 - Time 3 Δ Relationship Satisfaction			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.014 (<i>ns</i>)				.000 (<i>ns</i>)
Total Affect at Time 1	-.119	-.119	.014		-.014	-.014	.000	
Block Two				.140*				.014 (<i>ns</i>)
Total Affect at Time 1	.205	-.119	.024		-.065	-.014	.003	
Total Affect at Time n	-.495*	-.361	.141		.127	.101	.014	
R ² for Total Model				.155*				.014 (<i>ns</i>)

Note. Time n corresponds to the second time interval of the dependent variable.

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 47. Hierarchical regression tests for change in emotional expression (total affect words) over time and depression of breast and prostate cancer partners.

Predictor/Independent Variable	Time 1 - Time 2 Δ Depression				Time 1 - Time 3 Δ Depression			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.121*				.009 (<i>ns</i>)
Total Affect at Time 1	-.348*	-.348	.121		.097	.097	.009	
Block Two				.038 (<i>ns</i>)				.024 (<i>ns</i>)
Total Affect at Time 1	-.508*	-.348	.154		.178	.097	.025	
Total Affect at Time n	.253	-.069	.038		-.174	-.091	.024	
R ² for Total Model				.159 (<i>ns</i>)				.033 (<i>ns</i>)

Note. Time n corresponds to the second time interval of the dependent variable.

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Regressions for breast and prostate cancer partners are based on $N = 43$.

Table 48. Hierarchical regression tests for change in emotional expression (total affect words) over time and negative affect of breast and prostate cancer partners.

Predictor/Independent Variable	Time 1 - Time 2 Δ Negative Affect				Time 1 - Time 3 Δ Negative Affect			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.001 (<i>ns</i>)				.035 (<i>ns</i>)
Total Affect at Time 1	-.035	-.035	.001		.188	.188	.035	
Block Two				.116*				.072 (<i>ns</i>)
Total Affect at Time 1	-.314	-.035	.059		.330	.188	.085	
Total Affect at Time n	.440*	.241	.116		-.304	-.150	.072	
R ² for Total Model				.117*				.107 (<i>ns</i>)

Note. Time n corresponds to the second time interval of the dependent variable.

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 49. Hierarchical regression tests for change in emotional expression (total affect words) over time and positive affect of breast and prostate cancer partners.

Predictor/Independent Variable	Time 1 - Time 2 Δ Positive Affect				Time 1 - Time 3 Δ Positive Affect			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.014 (<i>ns</i>)				.019 (<i>ns</i>)
Total Affect at Time 1	.118	.118	.014		.138	.138	.019	
Block Two				.002 (<i>ns</i>)				.073 (<i>ns</i>)
Total Affect at Time 1	.152	.118	.014		.281	.138	.062	
Total Affect at Time n	-.054	.042	.002		-.306	-.175	.073	
R ² for Total Model				.016 (<i>ns</i>)				.092 (<i>ns</i>)

Note. Time n corresponds to the second time interval of the dependent variable.

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 50. Hierarchical regression tests for change in emotional expression (total affect words) over time and relationship satisfaction of breast and prostate cancer partners.

Predictor/Independent Variable	Time 1 - Time 2 Δ Relationship Satisfaction				Time 1 - Time 3 Δ Relationship Satisfaction			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.002 (<i>ns</i>)				.050 (<i>ns</i>)
Total Affect at Time 1	.042	.042	.002		.224	.224	.050	
Block Two				.049 (<i>ns</i>)				.059 (<i>ns</i>)
Total Affect at Time 1	-.130	.042	.011		.342	.224	.095	
Total Affect at Time n	.280	.200	.149		-.271	-.121	.059	
R ² for Total Model				.050 (<i>ns</i>)				.109 (<i>ns</i>)

Note. Time n corresponds to the second time interval of the dependent variable.

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 51. Hierarchical regression tests for change in positive emotion words over time and depression of survivors with breast and prostate cancer.

Predictor/Independent Variable	Time 1 - Time 2 Δ Depression				Time 1 - Time 3 Δ Depression			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.001 (<i>ns</i>)				.012 (<i>ns</i>)
Positive Emotion at Time 1	.026	.026	.001		-.111	-.111	.012	
Block Two				.005 (<i>ns</i>)				.001 (<i>ns</i>)
Positive Emotion at Time 1	.072	.026	.004		-.099	-.111	.008	
Positive Emotion at Time n	-.086	-.048	.005		-.027	-.072	.001	
R ² for Total Model				.006 (<i>ns</i>)				.013 (<i>ns</i>)

Note. Time n corresponds to the second time interval of the dependent variable.

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Regressions for breast and prostate cancer survivors are based on $N = 43$.

Table 52. Hierarchical regression tests for change in positive emotion words over time and negative affect of survivors with breast and prostate cancer.

Predictor/Independent Variable	Time 1 - Time 2 Δ Negative Affect				Time 1 - Time 3 Δ Negative Affect			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.013 (<i>ns</i>)				.005 (<i>ns</i>)
Positive Emotion at Time 1	.115	.115	.013		.072	.072	.005	
Block Two				.030 (<i>ns</i>)				.000 (<i>ns</i>)
Positive Emotion at Time 1	.224	.115	.036		.064	.072	.003	
Positive Emotion at Time n	-.205	-.086	.030		.018	.046	.000	
R ² for Total Model				.043 (<i>ns</i>)				.005 (<i>ns</i>)

Note. Time n corresponds to the second time interval of the dependent variable.

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 53. Hierarchical regression tests for change in positive emotion words over time and positive affect of survivors with breast and prostate cancer.

Predictor/Independent Variable	Time 1 - Time 2 Δ Positive Affect				Time 1 - Time 3 Δ Positive Affect			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.053 (<i>ns</i>)				.075 (<i>ns</i>)
Positive Emotion at Time 1	.231	.231	.053		.273	.273	.075	
Block Two				.001 (<i>ns</i>)				.001 (<i>ns</i>)
Positive Emotion at Time 1	.214	.231	.033		.256	.273	.052	
Positive Emotion at Time n	.031	.145	.001		.039	.154	.001	
R ² for Total Model				.054 (<i>ns</i>)				.076 (<i>ns</i>)

Note. Time n corresponds to the second time interval of the dependent variable.

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 54. Hierarchical regression tests for change in positive emotion words over time and relationship satisfaction of survivors with breast and prostate cancer.

Predictor/Independent Variable	Time 1 - Time 2 Δ Relationship Satisfaction				Time 1 - Time 3 Δ Relationship Satisfaction			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.000 (<i>ns</i>)				.016 (<i>ns</i>)
Positive Emotion at Time 1	-.002	-.002	.000		-.127	-.127	.016	
Block Two				.148*				.041 (<i>ns</i>)
Positive Emotion at Time 1	.240	-.002	.041		-.228	-.127	.042	
Positive Emotion at Time n	-.455*	-.327	.148		.226	.124	.041	
R ² for Total Model				.148*				.057 (<i>ns</i>)

Note. Time n corresponds to the second time interval of the dependent variable.

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 55. Hierarchical regression tests for change in positive emotion words over time and depression of breast and prostate cancer partners.

Predictor/Independent Variable	Time 1 - Time 2 Δ Depression				Time 1 - Time 3 Δ Depression			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.084 (<i>ns</i>)				.083 (<i>ns</i>)
Positive Emotion at Time 1	-.290	-.290	.084		.288	.288	.083	
Block Two				.006 (<i>ns</i>)				.005 (<i>ns</i>)
Positive Emotion at Time 1	-.341	-.290	.082		.298	.288	.087	
Positive Emotion at Time n	.093	-.094	.006		-.069	-.028	.005	
R ² for Total Model				.090 (<i>ns</i>)				.088 (<i>ns</i>)

Note. Time n corresponds to the second time interval of the dependent variable.

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Regressions for breast and prostate cancer partners are based on $N = 43$.

Table 56. Hierarchical regression tests for change in positive emotion words over time and negative affect of breast and prostate cancer partners.

Predictor/Independent Variable	Time 1 - Time 2 Δ Negative Affect				Time 1 - Time 3 Δ Negative Affect			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.047 (<i>ns</i>)				.078 (<i>ns</i>)
Positive Emotion at Time 1	-.216	-.216	.047		.280	.280	.078	
Block Two				.082 (<i>p</i> = .07)				.051 (<i>ns</i>)
Positive Emotion at Time 1	-.403*	-.216	.114		.312	.280	.095	
Positive Emotion at Time n	.342	.121	.082		-.228	-.185	.051	
R ² for Total Model				.129 (<i>ns</i>)				.129 (<i>ns</i>)

Note. Time n corresponds to the second time interval of the dependent variable.

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 57. Hierarchical regression tests for change in positive emotion words over time and positive affect of breast and prostate cancer partners.

Predictor/Independent Variable	Time 1 - Time 2 Δ Positive Affect				Time 1 - Time 3 Δ Positive Affect			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.002 (<i>ns</i>)				.001 (<i>ns</i>)
Positive Emotion at Time 1	-.047	-.047	.025		.030	.030	.001	
Block Two				.093 (<i>p</i> = .058)				.000 (<i>ns</i>)
Positive Emotion at Time 1	-.247	-.047	.003		.029	.030	.001	
Positive Emotion at Time n	.365	.230	.119		.011	.013	.000	
R ² for Total Model				.095 (<i>ns</i>)				.001 (<i>ns</i>)

Note. Time n corresponds to the second time interval of the dependent variable.

Note. * *p* < .05, ** *p* < .01, *** *p* < .001.

Table 58. Hierarchical regression tests for change in positive emotion words over time and relationship satisfaction of breast and prostate cancer partners.

Predictor/Independent Variable	Time 1 - Time 2 Δ Relationship Satisfaction				Time 1 - Time 3 Δ Relationship Satisfaction			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.040 (<i>ns</i>)				.025 (<i>ns</i>)
Positive Emotion at Time 1	.199	.199	.040		.157	.157	.025	
Block Two				.155*				.001 (<i>ns</i>)
Positive Emotion at Time 1	-.065	.199	.003		.158	.157	.025	
Positive Emotion at Time n	.474*	.438	.155		-.024	-.013	.001	
R ² for Total Model				.195*				.026 (<i>ns</i>)

Note. Time n corresponds to the second time interval of the dependent variable.

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 59. Hierarchical regression tests for change in communal coping (“we-talk”) over time and depression of survivors with breast and prostate cancer.

Predictor/Independent Variable	Time 1 - Time 2 Δ Depression				Time 1 - Time 3 Δ Depression			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.012 (<i>ns</i>)				.005 (<i>ns</i>)
“We” at Time 1	.111	.111	.012		.067	.067	.004	
Block Two				.000 (<i>ns</i>)				.001 (<i>ns</i>)
“We” at Time 1	.113	.111	.012		.079	.067	.005	
“We” at Time n	-.008	.023	.000		-.030	.002	.001	
R ² for Total Model				.012 (<i>ns</i>)				.005 (<i>ns</i>)

Note. Time n corresponds to the second time interval of the dependent variable.

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Regressions for breast and prostate cancer survivors are based on $N = 43$.

Table 60. Hierarchical regression tests for change in communal coping (“we-talk”) over time and negative affect of survivors with breast and prostate cancer.

Predictor/Independent Variable	Time 1 - Time 2 Δ Negative Affect				Time 1 - Time 3 Δ Negative Affect			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.001 (<i>ns</i>)				.000 (<i>ns</i>)
“We” at Time 1	.030	.030	.001		-.018	-.018	.000	
Block Two				.074 (<i>ns</i>)				.017 (<i>ns</i>)
“We” at Time 1	-.046	.030	.002		-.077	-.018	.005	
“We” at Time n	.238	.271	.075		.144	.112	.017	
R ² for Total Model				.075 (<i>ns</i>)				.017 (<i>ns</i>)

Note. Time n corresponds to the second time interval of the dependent variable.

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 61. Hierarchical regression tests for change in communal coping (“we-talk”) over time and positive affect of survivors with breast and prostate cancer.

Predictor/Independent Variable	Time 1 - Time 2 Δ Positive Affect				Time 1 - Time 3 Δ Positive Affect			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.011 (<i>ns</i>)				.010 (<i>ns</i>)
“We” at Time 1	.105	.105	.011		.098	.098	.010	
Block Two				.015 (<i>ns</i>)				.070 (<i>ns</i>)
“We” at Time 1	.071	.105	.005		-.021	.098	.000	
“We” at Time n	.125	.145	.015		.291	.282	.070	
R ² for Total Model				.026 (<i>ns</i>)				.080 (<i>ns</i>)

Note. Time n corresponds to the second time interval of the dependent variable.

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 62. Hierarchical regression tests for change in communal coping (“we-talk”) over time and relationship satisfaction of survivors with breast and prostate cancer.

Predictor/Independent Variable	Time 1 - Time 2 Δ Relationship Satisfaction				Time 1 - Time 3 Δ Relationship Satisfaction			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.001 (<i>ns</i>)				.008 (<i>ns</i>)
“We” at Time 1	.032	.032	.001		-.091	-.091	.008	
Block Two				.036 (<i>ns</i>)				.001 (<i>ns</i>)
“We” at Time 1	-.017	.032	.000		-.102	-.091	.009	
“We” at Time n	.196	.192	.036		.025	-.017	.001	
R ² for Total Model				.037 (<i>ns</i>)				.009 (<i>ns</i>)

Note. Time n corresponds to the second time interval of the dependent variable.

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 63. Hierarchical regression tests for change in communal coping (“we-talk”) over time and depression of breast and prostate cancer partners.

Predictor/Independent Variable	Time 1 - Time 2 Δ Depression				Time 1 - Time 3 Δ Depression			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.000 (<i>ns</i>)				.002 (<i>ns</i>)
“We” at Time 1	-.013	-.013	.000		.047	.047	.002	
Block Two				.052 (<i>ns</i>)				.006 (<i>ns</i>)
“We” at Time 1	-.154	-.013	.017		.000	.047	.000	
“We” at Time n	.269	.188	.052		.092	.092	.006	
R ² for Total Model				.053 (<i>ns</i>)				.009 (<i>ns</i>)

Note. Time n corresponds to the second time interval of the dependent variable.

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Regressions for breast and prostate cancer partners are based on $N = 43$.

Table 64. Hierarchical regression tests for change in communal coping (“we-talk”) over time and negative affect of breast and prostate cancer partners.

Predictor/Independent Variable	Time 1 - Time 2 Δ Negative Affect				Time 1 - Time 3 Δ Negative Affect			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.009 (<i>ns</i>)				.021 (<i>ns</i>)
“We” at Time 1	-.094	-.094	.009		.145	.145	.021	
Block Two				.184**				.050 (<i>ns</i>)
“We” at Time 1	.171	-.094	.021		.277	.145	.057	
“We” at Time n	-.504**	-.415	.184		-.260	-.120	.050	
R ² for Total Model				.193**				.071 (<i>ns</i>)

Note. Time n corresponds to the second time interval of the dependent variable.

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 65. Hierarchical regression tests for change in communal coping (“we-talk”) over time and positive affect of breast and prostate cancer partners.

Predictor/Independent Variable	Time 1 - Time 2 Δ Positive Affect				Time 1 - Time 3 Δ Positive Affect			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.004 (<i>ns</i>)				.010 (<i>ns</i>)
“We” at Time 1	.064	.064	.004		.102	.102	.010	
Block Two				.017 (<i>ns</i>)				.015 (<i>ns</i>)
“We” at Time 1	-.016	.064	.000		.029	.102	.001	
“We” at Time n	.152	.144	.017		.144	.159	.015	
R ² for Total Model				.021 (<i>ns</i>)				.026 (<i>ns</i>)

Note. Time n corresponds to the second time interval of the dependent variable.

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 66. Hierarchical regression tests for change in communal coping (“we-talk”) over time and relationship satisfaction of breast and prostate cancer partners.

Predictor/Independent Variable	Time 1 - Time 2 Δ Relationship Satisfaction				Time 1 - Time 3 Δ Relationship Satisfaction			
	Beta	<i>r</i>	sr ²	R ² Δ	Beta	<i>r</i>	sr ²	R ² Δ
Block One				.127*				.114 (<i>ns</i>)
“We” at Time 1	.356*	.356	.127		.337	.337	.114	
Block Two				.116*				.007 (<i>ns</i>)
“We” at Time 1	.163	.356	.020		.381	.337	.112	
“We” at Time n	.391*	.472	.116		-.093	.089	.007	
R ² for Total Model				.243*				.120 (<i>ns</i>)

Note. Time n corresponds to the second time interval of the dependent variable.

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 67. Actor-partner (APIM) analyses for overall emotional expression (i.e., total affect words) and psychosocial outcomes at Time 2 for cancer survivors and their partners.

IV	DV (Time 2)	Interdependence	Actor Effects		Partner Effects	
		Patient → partner (<i>r</i>)	Patient	Partner	Patient → Partner	Partner → Patient
Total Affect						
	Depression	.35***	.14	-.23	.09	-.01
	Negative Affect	.35**	-.02	-.03	.01	-.10
	Positive Affect	.35**	.11	.02	.05	-.13
	Relationship Satisfaction	.36***	-.01	.60***	.03	.06

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. APIM analyses for breast and prostate cancer survivors and their partners are based on $N = 86$.

Table 68. Actor-partner (APIM) analyses for positive emotional expression (i.e., positive emotion words) and psychosocial outcomes at Time 2 for cancer survivors and their partners.

IV	DV (Time 2)	Interdependence	Actor Effects		Partner Effects	
		Patient → partner (<i>r</i>)	Patient	Partner	Patient → Partner	Partner → Patient
Positive Emotion						
	Depression	.27*	-.16	-.24	.13	.16
	Negative Affect	.27*	-.35*	-.19	-.02	.01
	Positive Affect	.27*	.16	-.05	.11	-.23
	Relationship Satisfaction	.27*	.27	.67***	.16	-.13

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. APIM analyses for breast and prostate cancer survivors and their partners are based on $N = 86$.

Table 69. Actor-partner (APIM) analyses for communal coping (“we-talk”) and psychosocial outcomes at Time 2 for cancer survivors and their partners.

IV	DV (Time 2)	Interdependence	Actor Effects		Partner Effects	
		Patient → partner (<i>r</i>)	Patient	Partner	Patient → Partner	Partner → Patient
“We”						
	Depression	.40***	-.45**	-.18	.32	-.05
	Negative Affect	.38***	-.41**	-.24	.06	-.03
	Positive Affect	.38***	.11	.24	-.16	-.09
	Relationship Satisfaction	.37***	.20	.24	.44*	.10

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. APIM analyses for breast and prostate cancer survivors and their partners are based on $N = 86$.

Table 70. Breakdown of Supercategories, Subcategories and Reliabilities of Original Categories for Qualitative Coding of Survivors with Breast and Prostate Cancer and Their Partners.

SUPER CATEGORIES	MID-LEVEL CATEGORIES	ORIGINAL SUBCATEGORIES
I. CANCER & HEALTH-RELATED ISSUES	1. CHEMOTHERAPY/RADIATION/SURGERY	a.) treatment concerns (chemo/radiation) (ICC = .85) b.) surgery (ICC = .86)
	2. ADDITIONAL HEALTH ISSUES & CONCERNS	a.) difficulty concentrating (ICC = .80) b.) fatigue (ICC = .80) c.) physical limitations (e.g., leg injury) (ICC = .98)
	3. DOCTORS/ INFORMATION & RESOURCES	a.) appointments with doctors (ICC = .76) b.) information about cancer (e.g., literature) (ICC = .77)
II. EMOTIONS & PSYCHOLOGICAL PROCESSES	1. ANXIETY/ DEPRESSION	a.) anxiety (ICC = .85) b.) depression (ICC = .78)
	2. NEGATIVE EMOTIONS	a.) anger (ICC = .70)
	3. POSITIVE EMOTIONS	a.) happiness (e.g., positive attitude) (ICC = .85)
	4. CONTROL VS. EXPRESSION OF EMOTIONS	a.) controlling vs. expressing emotions (ICC = .75) (e.g., opening up)
III. SOCIAL PROCESSES	1. RELATIONSHIP MAINTENANCE & NEGOTIATION	a.) communication with spouse/partner (ICC = .76) b.) relationship with spouse/partner (ICC = .72)
	2. CONCERN FOR SPOUSE/PARTNER	a.) concern for partner's health and well-being (ICC = .72)
	3. CONCERN FOR OTHER SOCIAL NETWORK MEMBERS	a.) concern for family (children, grandchildren) (ICC = .84) b.) concern for friends (ICC = .71)
	4. SOCIAL SUPPORT	a.) available social support (family/friends) (ICC = .74)
	* PARTNER'S OWN SUPPORTIVE BEHAVIOR	a.) providing support for sick spouse/partner (ICC = .84) (e.g., taking in groceries)
	5. ISOLATION/CONFLICT	a.) lack of social support (ICC = .70) (e.g., feelings of isolation) b.) conflict (ICC = .93)

*Note. Category only applies to the Partners of Survivors with Breast and Prostate Cancer.

Table 70 (cont). Breakdown of Supercategories, Subcategories and Reliabilities of Original Categories for Qualitative Coding of Survivors with Breast and Prostate Cancer and Their Partners.

SUPER CATEGORIES	MID-LEVEL CATEGORIES	ORIGINAL SUBCATEGORIES
IV. INTRAPERSONAL PROCESSES	1. ROLE CHANGES/ROLE TRANSITIONS	a.) role change (ICC = .70)
	2. STRESS & COPING	a.) sources of stress (ICC = .73)
		b.) coping with stress (ICC = .79)
	3. SELF-APPRAISAL & PERSONAL GOALS	a.) reflecting on intrapersonal growth (since dx) (ICC = .73)
		b.) self-enhancement goals (taking care of self) (ICC = .90)
4. RECALL OF PAST EXPERIENCES	a.) past experiences in life (ICC = .73)	
5. DEATH/DYING	a.) inevitability of dying (ICC = .78)	
	b.) funeral and burial arrangements (ICC = .82)	
V. EXTERNAL PROCESSES	1. ACTIVITIES/EVENTS	a.) activities (errands) (ICC = .80)
		b.) events (travel) (ICC = .88)
	2. WORK/FINANCES	a.) work/employment (ICC = .82)
b.) finances (ICC = .94)		
3. LIVING CONDITIONS	a.) current living situation (e.g., home, moving) (ICC = .78)	
VI. STUDY-RELATED ITEMS/OTHER	1. STUDY-RELATED ITEMS	a.) scheduling counseling sessions (ICC = .82)
		b.) questions about research project (ICC = .86)
2. MISCELLANEOUS/OTHER/SMALL TALK	a.) small talk ("how are you?") (ICC = .97)	
	b.) weather (ICC = .98)	

Table 71. Overview of Coding Categories for Survivors with Breast and Prostate Cancer and Their Partners.

SUPER CATEGORIES	SUBCATEGORIES	SINGLE ITEM EXAMPLES
I. CANCER & HEALTH-RELATED ISSUES	1. CHEMOTHERAPY/RADIATION/SURGERY 2. ADDITIONAL HEALTH ISSUES & CONCERNS 3. DOCTORS/ INFORMATION & RESOURCES	Chemotherapy side effects (treatment concerns) Blood pressure (heart monitor) Literature about cancer
II. EMOTIONS & PSYCHOLOGICAL PROCESSES	1. ANXIETY/ DEPRESSION 2. NEGATIVE EMOTIONS 3. POSITIVE EMOTIONS 4. CONTROL VS. EXPRESSION OF EMOTIONS	Symptoms of anxiety/depression Anger, irritable, embarrassment Happiness, positive attitude Controlling emotions, opening up (crying)
III. SOCIAL PROCESSES	1. RELATIONSHIP MAINTENANCE & NEGOTIATION 2. CONCERN FOR SPOUSE/PARTNER 3. CONCERN FOR OTHER SOCIAL NETWORK MEMBERS 4. SOCIAL SUPPORT * PARTNER'S OWN SUPPORTIVE BEHAVIOR 5. ISOLATION/CONFLICT	Communication with spouse Partner's current health Aging mother Family/friends social support Being supportive, taking spouse to chemotherapy Lack of social support/conflicts
IV. INTRAPERSONAL PROCESSES	1. ROLE CHANGES/ROLE TRANSITIONS 2. STRESS & COPING 3. SELF-APPRAISAL & PERSONAL GOALS 4. RECALL OF PAST EXPERIENCES 5. DEATH/DYING	Role change, accepting "sick role" Sources of stress/ways to cope Intrapersonal growth (with diagnosis) Prior alcohol and tobacco use Inevitability of dying, funeral, burial arrangement
V. EXTERNAL PROCESSES	1. ACTIVITIES/EVENTS 2. WORK/FINANCES 3. LIVING CONDITIONS	Fishing, swimming, cooking, errands Financial trouble, going back to work Home burglary, moving
VI. STUDY-RELATED ITEMS/OTHER	1. STUDY-RELATED ITEMS 2. MISCELLANEOUS/OTHER/SMALL TALK	Scheduling, questions about research project Small talk, weather

**Note. Category only applies to the Partners of Survivors with Breast and Prostate Cancer.*

Table 72. Mean Frequency of Subcategories Discussed During Counseling for Survivors with Breast and Prostate Cancer and Their Partners (across all sessions).

SUBCATEGORIES	BC SURVIVORS	BC PARTNERS	PC SURVIVORS	PC PARTNERS
1. CHEMOTHERAPY/RADIATION/SURGERY	42.09 (<i>SD</i> = 31.51)	4.94 (<i>SD</i> = 8.41)	33.41 (<i>SD</i> = 47.04)	2.11 (<i>SD</i> = 4.26)
2. ADDITIONAL HEALTH ISSUES & CONCERNS	32.50 (<i>SD</i> = 36.26)	6.28 (<i>SD</i> = 11.02)	31.82 (<i>SD</i> = 33.21)	21.67 (<i>SD</i> = 37.81)
3. DOCTORS/ INFORMATION & RESOURCES	9.55 (<i>SD</i> = 21.73)	4.11 (<i>SD</i> = 7.64)	9.53 (<i>SD</i> = 17.57)	8.11 (<i>SD</i> = 12.69)
1. ANXIETY/ DEPRESSION	26.45 (<i>SD</i> = 27.61)	7.67 (<i>SD</i> = 18.55)	17.53 (<i>SD</i> = 22.77)	21.78 (<i>SD</i> = 19.61)
2. NEGATIVE EMOTIONS	2.00 (<i>SD</i> = 5.68)	1.50 (<i>SD</i> = 4.40)	1.35 (<i>SD</i> = 5.57)	0.00 (<i>SD</i> = 0.00)**
3. POSITIVE EMOTIONS	7.32 (<i>SD</i> = 15.88)	4.28 (<i>SD</i> = 9.90)	2.00 (<i>SD</i> = 4.24)	0.00 (<i>SD</i> = 0.00)**
4. CONTROL VS/. EXPRESSION OF EMOTIONS	2.09 (<i>SD</i> = 5.34)	0.83 (<i>SD</i> = 2.57)	1.12 (<i>SD</i> = 4.61)	0.00 (<i>SD</i> = 0.00)**
1. RELATIONSHIP MAINTENANCE & NEGOTIATION	29.50 (<i>SD</i> = 37.40)	38.06 (<i>SD</i> = 59.61)	28.65 (<i>SD</i> = 20.92)	29.22 (<i>SD</i> = 32.77)
2. CONCERN FOR SPOUSE/PARTNER	2.41 (<i>SD</i> = 7.10)	41.33 (<i>SD</i> = 22.79)	2.76 (<i>SD</i> = 9.44)	35.67 (<i>SD</i> = 29.35)
3. CONCERN FOR SOCIAL NETWORK MEMBERS	49.14 (<i>SD</i> = 75.73)	21.50 (<i>SD</i> = 30.42)	16.00 (<i>SD</i> = 32.17)	18.33 (<i>SD</i> = 40.26)
4. SOCIAL SUPPORT	44.14 (<i>SD</i> = 31.62)	15.00 (<i>SD</i> = 12.67)	43.35 (<i>SD</i> = 39.92)	22.33 (<i>SD</i> = 34.72)
* PARTNER'S OWN SUPPORTIVE BEHAVIOR	---	30.17 (<i>SD</i> = 27.11)	---	38.89 (<i>SD</i> = 41.53)
5. ISOLATION/CONFLICT	19.82 (<i>SD</i> = 36.63)	11.44 (<i>SD</i> = 26.09)	5.35 (<i>SD</i> = 13.31)	4.00 (<i>SD</i> = 12.00)
1. ROLE CHANGES/ROLE TRANSITIONS	18.68 (<i>SD</i> = 27.75)	13.94 (<i>SD</i> = 19.79)	2.94 (<i>SD</i> = 7.55)	3.67 (<i>SD</i> = 7.62)
2. STRESS & COPING	9.95 (<i>SD</i> = 12.36)	17.83 (<i>SD</i> = 19.73)	16.88 (<i>SD</i> = 22.01)	7.78 (<i>SD</i> = 9.13)
3. SELF-APPRAISAL & PERSONAL GOALS	12.86 (<i>SD</i> = 20.13)	6.06 (<i>SD</i> = 18.19)	3.88 (<i>SD</i> = 11.24)	6.11 (<i>SD</i> = 11.20)
4. RECALL OF PAST EXPERIENCES	3.82 (<i>SD</i> = 8.46)	3.78 (<i>SD</i> = 11.33)	2.00 (<i>SD</i> = 8.25)	0.22 (<i>SD</i> = 0.67)
5. DEATH/DYING	18.45 (<i>SD</i> = 47.50)	5.11 (<i>SD</i> = 13.16)	3.35 (<i>SD</i> = 10.45)	1.00 (<i>SD</i> = 2.00)
1. ACTIVITIES/EVENTS	4.27 (<i>SD</i> = 7.72)	5.11 (<i>SD</i> = 12.92)	19.24 (<i>SD</i> = 23.57)	15.89 (<i>SD</i> = 26.71)
2. WORK/FINANCES	9.15 (<i>SD</i> = 83.71)	2.39 (<i>SD</i> = 4.64)	2.18 (<i>SD</i> = 8.97)	5.33 (<i>SD</i> = 8.41)
3. LIVING CONDITIONS	1.72 (<i>SD</i> = 4.63)	1.17 (<i>SD</i> = 4.95)	0.00 (<i>SD</i> = 0.00)**	0.00 (<i>SD</i> = 0.00)**
1. STUDY-RELATED ITEMS	14.73 (<i>SD</i> = 35.41)	5.11 (<i>SD</i> = 16.32)	10.29 (<i>SD</i> = 17.42)	20.33 (<i>SD</i> = 27.88)
2. MISCELLANEOUS/OTHER/SMALL TALK	15.55 (<i>SD</i> = 16.87)	14.89 (<i>SD</i> = 13.11)	21.29 (<i>SD</i> = 18.27)	4.67 (<i>SD</i> = 6.76)

*Note. Category only applies to the Partners of Survivors with Breast and Prostate Cancer.

** Subcategory was not discussed at all during counseling.

Table 73. Mean Frequency of Supercategories Discussed During Counseling for Survivors with Breast and Prostate Cancer and Their Partners.

SUPERCATEGORIES	BC SURVIVORS	BC PARTNERS	PC SURVIVORS	PC PARTNERS
I. CANCER & HEALTH-RELATED ISSUES	77.77 (<i>SD</i> = 42.84)	12.59 (<i>SD</i> = 13.68)	68.42 (<i>SD</i> = 39.75)	26.48 (<i>SD</i> = 42.37)
II. EMOTIONS & PSYCHOLOGICAL PROCESSES	36.30 (<i>SD</i> = 35.24)	13.65 (<i>SD</i> = 23.00)	21.16 (<i>SD</i> = 21.41)	21.78 (<i>SD</i> = 19.61)
III. SOCIAL PROCESSES	129.15 (<i>SD</i> = 90.73)	147.96 (<i>SD</i> = 101.55)	91.84 (<i>SD</i> = 42.69)	145.11 (<i>SD</i> = 88.66)
IV. INTRAPERSONAL PROCESSES	49.01 (<i>SD</i> = 41.91)	42.63 (<i>SD</i> = 28.41)	26.38 (<i>SD</i> = 25.34)	17.98 (<i>SD</i> = 19.71)
V. EXTERNAL PROCESSES	11.08 (<i>SD</i> = 10.41)	7.89 (<i>SD</i> = 14.57)	21.41 (<i>SD</i> = 25.66)	21.22 (<i>SD</i> = 29.74)
VI. STUDY-RELATED ITEMS/OTHER	22.50 (<i>SD</i> = 35.64)	12.56 (<i>SD</i> = 18.48)	20.94 (<i>SD</i> = 18.29)	24.67 (<i>SD</i> = 26.83)

Table 74. Mixed Model ANOVAs of Supercategories by role (patient-partner) as the within subjects variable, and sex (male-female) as the between subjects variable.

SUPERCATEGORIES	Role (within-subjects)	Sex (between-subjects)	Role x Sex Interaction
I. CANCER & HEALTH-RELATED ISSUES	$F(1, 24) = 25.88^{**}$	$F(1, 24) = 0.05$	$F(1, 24) = 2.98$
II. EMOTIONS & PSYCHOLOGICAL PROCESSES	$F(1, 24) = 2.15$	$F(1, 24) = 0.91$	$F(1, 24) = 0.30$
III. SOCIAL PROCESSES	$F(1, 24) = 5.61^*$	$F(1, 24) = 0.30$	$F(1, 24) = 1.94$
IV. INTRAPERSONAL PROCESSES	$F(1, 24) = 0.34$	$F(1, 24) = 2.64$	$F(1, 24) = 0.31$
V. EXTERNAL PROCESSES	$F(1, 24) = 0.10$	$F(1, 24) = 3.30$	$F(1, 24) = 0.39$
VI. STUDY-RELATED ITEMS/OTHER	$F(1, 24) = 1.82$	$F(1, 24) = 0.03$	$F(1, 24) = 1.31$

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 75. Correlation matrix of the six supercategories and the psychosocial outcomes of breast and prostate cancer survivors.

SUPERCATEGORIES	Depression	Negative Affect	Positive Affect	Relationship Satisfaction
I. CANCER & HEALTH-RELATED ISSUES	-.05	-.06	.03	-.16
II. EMOTIONS & PSYCHOLOGICAL PROCESSES	-.05	-.05	.09	.13
III. SOCIAL PROCESSES	-.32*	-.21	.14	-.25
IV. INTRAPERSONAL PROCESSES	.01	.01	-.20	.17
V. EXTERNAL PROCESSES	-.22	-.18	-.02	-.07
VI. STUDY-RELATED ITEMS/OTHER	-.24	-.24	.14	-.16

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Correlation analyses for breast and prostate cancer survivors are based on $N = 39$.

Table 76. Correlation matrix of the six supercategories and the psychosocial outcomes of breast and prostate cancer partners.

SUPERCATEGORIES	Depression	Negative Affect	Positive Affect	Relationship Satisfaction
I. CANCER & HEALTH-RELATED ISSUES	.18	-.14	.03	.01
II. EMOTIONS & PSYCHOLOGICAL PROCESSES	.04	.20	.22	-.05
III. SOCIAL PROCESSES	-.11	-.07	.10	.10
IV. INTRAPERSONAL PROCESSES	-.42*	.19	.10	.37
V. EXTERNAL PROCESSES	.21	.29	.28	-.27
VI. STUDY-RELATED ITEMS/OTHER	-.10	-.33	.17	.01

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Correlation analyses for breast and prostate cancer partners are based on $N = 27$.

Table 77. Bivariate Associations Between Breast Cancer Survivors' Top Five Key Concerns and Time 2 Psychosocial Well-Being Controlling for T1 Psychosocial Well-Being.

	T2 Depression	T2 Negative Affect	T2 Positive Affect	T2 Relationship Satisfaction
Predictor/Independent Variable	Beta	Beta	Beta	Beta
Psychosocial Outcome at Time 1	.691**	.656**	.597**	.519*
Chemotherapy/Radiation/Surgery	-.178	.169	.083	-.031
Additional Health Issues & Concerns	.178	.139	-.081	.108
Relationship Maintenance & Negotiation	-.350*	-.160	.619***	.241
Concern for Social Network Members	.135	-.136	-.057	-.028
Available Social Support	-.252	.006	.122	-.172

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Individual regression analyses for breast cancer survivors are based on $N = 22$.

Table 78. Bivariate Associations Between Breast Cancer Partners' Top Five Key Concerns and Time 2 Psychosocial Well-Being Controlling for T1 Psychosocial Well-Being.

	T2 Depression	T2 Negative Affect	T2 Positive Affect	T2 Relationship Satisfaction
Predictor/Independent Variable	Beta	Beta	Beta	Beta
Psychosocial Outcome at Time 1	.885***	.770***	.537*	.679**
Relationship Maintenance & Negotiation	-.065	-.190	.254	.242
Concern for Spouse/Partner	-.038	.001	-.077	-.155
Concern for Social Network Members	-.042	-.024	-.047	.236
Partners' Own Supportive Behavior	-.166	-.246	.006	-.219
Stress & Coping	.243 ($p = .053$)	.170	-.050	.029

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Individual regression analyses for breast cancer partners are based on $N = 18$.

Table 79. Bivariate Associations Between Prostate Cancer Survivors' Top Five Key Concerns and Time 2 Psychosocial Well-Being Controlling for T1 Psychosocial Well-Being.

	T2 Depression	T2 Negative Affect	T2 Positive Affect	T2 Relationship Satisfaction
Predictor/Independent Variable	Beta	Beta	Beta	Beta
Psychosocial Outcome at Time 1	.829***	.918***	.762***	.841***
Chemotherapy/Radiation/Surgery	.042	-.100	.037	-.082
Additional Health Issues & Concerns	-.125	-.022	-.102	-.183
Relationship Maintenance & Negotiation	.150	.083	-.161	.093
Available Social Support	.103	-.014	-.135	.065
Activities/Events	-.211	.074	-.211	-.263 ($p = .067$)

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Individual regression analyses for prostate cancer survivors are based on $N = 17$.

Table 80. Bivariate Associations Between Prostate Cancer Partners' Top Five Key Concerns and Time 2 Psychosocial Well-Being Controlling for T1 Psychosocial Well-Being.

	T2 Depression	T2 Negative Affect	T2 Positive Affect	T2 Relationship Satisfaction
Predictor/Independent Variable	Beta	Beta	Beta	Beta
Psychosocial Outcome at Time 1	.844**	.915***	.460	.954***
Depression/Anxiety	-.069	.012	.453	.165
Relationship Maintenance & Negotiation	-.121	-.320	.000	.204
Concern for Spouse/Partner	-.035	.066	-.502	-.008
Concern for Social Network Members	-.341	-.072	.699 ($p = .053$)	.069
Partners' Own Supportive Behavior	.263	.270 ($p = .07$)	.096	.022

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Individual regression analyses for prostate cancer partners are based on $N = 9$.

Table 81. Concurrent Associations Between Breast Cancer Survivors' Top Five Key Concerns and Psychosocial Well-Being at Time 1 and Time 2.

	Depression		Negative Affect		Positive Affect		Relationship Satisfaction	
	T1	T2	T1	T2	T1	T2	T1	T2
Chemotherapy/Radiation/Surgery	-.15	-.28	-.31	-.05	.05	.11	.08	.01
Additional Health Issues & Concerns	.02	.19	-.02	.13	-.11	-.14	-.47*	-.16
Relationship Maintenance & Negotiation	-.45*	-.59**	-.53*	-.46*	-.04	.60**	-.07	.20
Concern for Social Network Members	-.37	-.14	-.01	-.14	.36	.17	-.49*	-.27
Available Social Support	-.16	-.36	-.45*	-.29	-.28	-.05	.10	-.12

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Correlations for breast cancer survivors are based on $N = 22$.

Table 82. Concurrent Associations Between Breast Cancer Partners' Top Five Key Concerns and Psychosocial Well-Being at Time 1 and Time 2.

	Depression		Negative Affect		Positive Affect		Relationship Satisfaction	
	T1	T2	T1	T2	T1	T2	T1	T2
Relationship Maintenance & Negotiation	-.05	-.11	-.02	-.20	-.26	.10	-.49*	-.15
Concern for Spouse/Partner	.15	.07	.08	.05	.15	.01	-.30	-.33
Concern for Social Network Members	-.05	-.06	-.08	-.07	-.06	-.08	-.46 (*) (<i>p</i> = .054)	-.18
Partners' Own Supportive Behavior	.18	-.04	-.09	-.34	.08	.06	-.37	-.26
Stress & Coping	-.34	-.08	-.18	.03	.21	.06	.23	.17

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Correlations for breast cancer partners are based on $N = 18$.

Table 83. Concurrent Associations Between Prostate Cancer Survivors' Top Five Key Concerns and Psychosocial Well-Being at Time 1 and Time 2.

	Depression		Negative Affect		Positive Affect		Relationship Satisfaction	
	T1	T2	T1	T2	T1	T2	T1	T2
Chemotherapy/Radiation/Surgery	-.03	.01	.14	.03	.21	.19	.04	-.08
Additional Health Issues & Concerns	.07	-.07	-.28	-.27	-.13	-.20	-.09	-.18
Relationship Maintenance & Negotiation	-.01	.14	.26	.32	.14	-.05	.08	.14
Available Social Support	.07	.16	.09	.07	-.29	-.35	-.08	.04
Activities/Events	-.33	-.46	-.34	-.27	.03	-.19	-.03	-.26

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Correlations for prostate cancer survivors are based on $N = 17$.

Table 84. Concurrent Associations Between Prostate Cancer Partners' Top Five Key Concerns and Psychosocial Well-Being at Time 1 and Time 2.

	Depression		Negative Affect		Positive Affect		Relationship Satisfaction	
	T1	T2	T1	T2	T1	T2	T1	T2
Depression/Anxiety	.37	.26	.33	.31	-.67*	-.06	-.40	-.16
Relationship Maintenance & Negotiation	.43	.27	.81**	.63	-.45	-.21	-.64	-.42
Concern for Spouse/Partner	-.28	-.27	-.10	-.03	.03	-.49	.53	.51
Concern for Social Network Members	-.14	-.45	-.14	-.19	.45	.76*	.28	.34
Partners' Own Supportive Behavior	-.18	.11	-.05	.22	.50	.30	.27	.27

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Correlations for prostate cancer partners are based on $N = 9$.

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