PSYCHOLOGICAL DISTRESS AND RELATIONSHIP SATISFACTION IN CANCER PATIENTS AND THE IMPACT OF PARTNERS

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ABSTRACT

This study examines psychological distress and relationship satisfaction in cancer patients and their partners. It is widely recognized that spouses coping with a cancer diagnosis are at risk of psychological distress, and changes in relationship satisfaction. Debate exists within the literature regarding the level of distress and satisfaction experienced by patients, and to what extent they are influenced by their partners. Twenty six couples coping with a breast or prostate cancer diagnosis, completed two questionnaires over six months assessing: psychological distress, relationship satisfaction, attachment style, self -esteem and matching of partner ideal standards. The cross-sectional results indicate that higher patient distress was associated with their own lower levels of self esteem, less secure, and more anxious attachment styles. Patient relationship satisfaction was increased in those with a less anxious attachment style and in patients who perceived their partner as matching more closely their own ideal standards and perceptions of the patients on vitality and attractiveness.

Longitudinal results show an increase in patient distress was also predicted by their partner's perceiving lower matching between their own ideal standards and perceptions of the patients on warmth and trustworthiness. Unexpectedly, higher relationship satisfaction over time, was also predicted by *lower* matching of their own ideal standards and perceptions of their partners on warmth and trustworthiness, as measured initially. An increase in patient satisfaction was also predicted over time when patient distress was low, self esteem high and they had higher matching between their own ideal standards and partner perceptions of the patient partner on both warmth and trustworthiness as well as vitality and attractiveness. Explanations for the results, together with clinical and research implications are discussed.

Keywords: Patients, Partners, Cancer, Psychological Distress, Relationship Satisfaction, Ideal Standards, Attachment style, Self Esteem

1. Introduction

When an individual is diagnosed with cancer, his or her life will substantially change. The majority of cancer research has focused on the patient, which is essential in order to treat and support the patient. It is however, important to consider the impact of the cancer diagnosis and treatment on both the patient and their partner (Hagedoorn, Sanderman, Coyne, Bolks, & Tuinstra, 2008). Patients and their partners may experience many stressors surrounding details of the diagnosis, medical information, treatment options, and likely outcomes, financial implications, relationships with their spouse/partner and the impact on other family members (Fincannon & Bruss, 2003).The primary focus of this study is on patient outcomes, but also includes the impact of partner outcomes on the patient.

Patients have to adjust to the potential physical and lifestyle changes brought on by their cancer treatments. These may include hair loss, nausea, weight change and change in sexual functioning, along with role changes in the household (Shapiro & Recht, 2001). There are obviously medical aspects to the diagnosis and treatment of cancer as well as psychological impacts. For some patients there is the hope of recovery and delay of recurrence, however for others, the cancer may be terminal where the disease has progressed beyond the benefits of treatment (Arden-Close, Gidron, & Moss- Morris, 2008). It is clear there are many hurdles that the couple must overcome on their cancer journey. Both patients and partners will react to the cancer in different ways but these reactions will commonly include distress (Iwamitsu, Shimoda, Abe, & Tani, 2005). There are many types of cancer all of which come with their own challenges in treatment and outcome. This study will focus on patients diagnosed with breast or prostate cancer and their partners. The focus of this study will be on psychological distress and relationship satisfaction in patients. It will also look at how partner outcomes impact on the patient, after the cancer diagnosis and over time. Predictors of psychological distress and relationship satisfaction in this study are attachment style, self esteem, and ideal standards.

This introduction will briefly review the incidence of cancer and describe breast and prostate cancer and their treatments. Psychological distress is reviewed together with its relationship with cancer. Relationship satisfaction is reviewed in the context of the literature on psychological distress and attachment. Attachment theory is outlined and attachment styles identified again in the context of cancer and in relation to psychological distress and relationship satisfaction. Ideal standards are introduced and described with relation to cancer and relationships. Finally, self esteem is discussed regarding the role and impact it has on patients and partners. The introduction will conclude with the hypotheses for the current study.

1.1 *Incidence of Breast Cancer and Prostate Cancer in New Zealand*

Breast cancer is the most common cause of cancer death in women worldwide (Key, Verkasalo, & Banks, 2001) and one of the most common forms of cancer in New Zealand women. It was responsible for 2479 (92 cases per 100,000) new registrations in 2005, the third most common cancer of all cancer sites (Ministry of Health, 2008) and the fourth leading site for cancer deaths. Among males, prostate cancer is the most common cancer with 2471 new registrations in 2005, (i.e. 95 per 100,000 males) and the fifth most common site for cancer deaths (Ministry of Health, 2008).

1.2 *Breast Cancer and Prostate Cancer*

Cancer occurs when cells grow abnormally amongst healthy tissue, grouping together to form malignant (cancerous) tumours. Breast cancer is an uncontrolled growth of breast cells. Usually breast cancer either begins in the cells of the lobules, or the ducts. Less commonly, breast cancer can begin in the stromal tissues, which include the fatty and fibrous connective tissues of the breast. Over time, cancer cells can invade nearby healthy breast tissue and make their way into the auxiliary lymph nodes, which are part of the immune system. If cancer cells get into the

lymph nodes, they have a greater probability that there will also be spread by the blood stream (Neal & Hoskin, 1997).

Some women may be at greater risk of developing the disease. Many of the established risk factors are linked to oestrogens (Peled, Carmil, Siboni-Samocha, & Shoam-Vardi, 2008). Risk is also increased by early menarche, oral contraceptives and hormonal therapy for menopause, late menopause, obesity in postmenopausal women, alcohol, family history of breast cancer or previous cancer (Easton, 1999; Kelsey, Gammon, & John, 1993). Some risk is reduced by childbearing with greater protection for those who have an early first birth and a larger number of births. Breastfeeding and exercise probably have a protective effect (Beral & Reeves, 1993).

When diagnosed, breast cancers are given a 'stage' (one to four), which indicates the tumour's size and how far it has spread within the breast, surrounding tissues or to other organs in the body (Consumer's Institute of New Zealand Ltd, 2000; Southern Cross Healthcare, 2006). Women with primary invasive breast cancer receive both local and systemic treatment. Surgery and radiation therapy are local treatments given to reduce the risk of recurrent cancer in the breast, chest wall, and regional lymph nodes. In some cases, these local treatments may prevent the dissemination of cancer and may reduce mortality from breast cancer. Cytotoxic chemotherapy and hormonal therapy are systemic treatments given after surgery, to reduce systemic recurrences and overall mortality from breast cancer. Patients often receive a combination of these treatments depending on their type and stage of breast cancer (Shapiro & Recht, 2001). It is possible for cancer cells to spread (metastasize) from the breast to other parts of the body via the lymphatic system and by direct entry into the blood vessels. Once this has occurred they can form 'secondary' cancers.

Prostate cancer is a malignant tumour of the prostate gland found only in men. The prostate is a small gland of about 4cm that sits below the bladder and is a disease associated with aging. This cancer occurs mainly in men over 50 years (Cancer Society of New Zealand, 2007).

The cause is not yet fully understood but some men are at greater risk than others. It has been estimated that a 50-year-old man has a lifetime risk of 42% for developing histological evidence of prostate cancer, a 9.5% risk of developing clinical disease, and a 2.9% risk of dying of prostate cancer (Scher, Isaacs, & Zelefsky, 2000) Other risks include a family history of prostate cancer and a high animal fat diet (Cancer Society of New Zealand, 2007; Crawford, 2003; Steinberg, Cater, & Beaty, 1990).

Prostate cancer tumours are given a grade called a Gleason score (5-10) and also a stage. This score gives an assessment of how aggressive the cancer is under the microscope. It may be confined to the prostate or immediately outside the prostate. If the cancer has spread to distant parts of the body, this would indicate it has become metastatic (Cancer Society of New Zealand, 2007).

There are four treatment options for early stage prostate cancer: surgery, radiation therapy (external beam radiation or brachytherapy), hormone therapy and observation, also known as watchful waiting or active surveillance. The advantages of radiation treatment and radical prostatectomy are the treatment is usually curative. Despite these advantages, side-effects can occur such as urinary leakage and impotence. Brachytherapy involves placement of radioactive seeds in the prostate. It has a more localized effect compared with external beam radiation treatment resulting in the reduction of radiation dose to surrounding structures. Active surveillance may be appropriate in men who are older, and those with important co-morbidities (Cancer Society of New Zealand, 2007; Postma, 2006).

1.3 *Why study breast and prostate cancer over time?*

The rationale for studying these cancers in this research was their types of treatment and durations of treatment are similar (typically six months). Thus, in choosing these two types of cancer a comparison between them is more easily made. Many previous studies have included all types of cancer, which can make comparison between them more difficult as they require

different treatment regimens, over varying time frames. This may result in measuring outcome variables like distress and satisfaction at different time points which may further complicate the interpretation of results. The purpose of comparing a female cancer with a male cancer was to have a balance between female and male patients and partners. This potentially reduces the likelihood that results can interpreted as effects of gender or role (e.g. all patients are female and distressed or, all males are caregivers).

The design for this study is longitudinal. It is important to measure variables such as psychological distress and relationship satisfaction at the point when the distress is likely to begin e.g. after a cancer diagnosis. However, few studies have measured how couples cope within a few weeks after a cancer diagnosis and over the treatment period. Relationship satisfaction is likely to be influenced in times of stress (Badr, Carmack, Kashy, Cristofanilli, & Revenson, 2010) but is normally unlikely to change dramatically over a short period of time (Fletcher, 2002). This study aimed to investigate change in patient and partner relationship satisfaction during a period of prolonged stress.

1.4 Psychological Distress

1.4.1 *Psychological distress and cancer*

When one member of a couple is diagnosed with a chronic illness such as cancer, his or her life will substantially change. Psychological distress is common (Hagedoorn, et al., 2008). The literature is inconsistent and at times confusing when defining psychological distress. Different terminology has been used such as psychological stress, psychological distress, stress and depression. In the current study I have used the term ‘psychological distress’ which is conceptualized as subclinical depressive symptoms.

Throughout the literature there are examples of patients experiencing different levels of psychological distress at different times during their cancer journey. Therefore it is somewhat difficult to conclude that there is a particular time when patients are more likely to experience

distress. It was important to study levels of distress in patients over time in order to identify when patients may be experiencing distress (Fechner-Bates, Coyne, & Schwenk, 1994; Morasso, Costantini, & Viterbori, 2001; Stommel, Kurtz, & Given, 2004). This study therefore measured patient and partner psychological distress two weeks or so after the cancer diagnosis and again six months later after the patient has completed treatment.

Psychological distress is important, as retrospective studies of life stress and cancer have suggested that these stressful events are associated with shorter survival, fatigue, distress and recurrence of breast cancer (Dougall & Baum, 2001; Levy, Herberman, Lippman, D'Angelo, & Lee, 1991). Such distress will impact on an individual, the couple, and the wider family and will have short term and long term consequences.

Living with cancer may be stressful enough for patients and partners without having to cope with the additional burden of psychological distress often associated with illness (Benazon & Coyne, 2000). This is a particularly stressful time because of fears of the cancer, treatment success, or disease recurrence. It has been estimated that about a third of all cancer patients and their partners experience clinically relevant psychological distress or dysfunction (Williamson & Schultz, 1995). Although it has been suggested that these symptoms are a normal reaction to a threat as significant as cancer, the effects of psychological distress may be debilitating and negatively influence the overall well-being of the patient and the relationship with their spouse/partner (Bloom, 1996). Although women with early stage breast cancer and their partners often initially experience great fear and apprehension about the future, most experience diminished distress the farther they are from the time of diagnosis or as the patient's prognosis improves (Hagedoorn, et al., 2008). This study focuses on the level of distress experienced by the patient and the influence their partner has on this distress.

Patients may experience distress to greater degree than their partner as they are faced with a more direct threat from the cancer. The side effects of treatment are more immediate making them physically and psychologically effected whereas the partner is without the physical

aspect of the cancer (Hagedoorn, et al., 2008). More distressed patients with cancer experience poorer quality of life, are less compliant with medical care, and have longer hospital stays (Hagedoorn, et al., 2008; Onitilo, Nietert, & Egede, 2006). Psychological distress in prostate cancer patients has also been shown to have negative effects on couples relationship communication and intimacy (Manne, Badr, Zaider, Nelson, & Kissane, 2010). Most women with early stage breast cancer do not experience long term psychological problems, but almost all experience some difficulties in adjustment (Manne, et al., 2006). I will be investigating psychological distress in patients who have just been diagnosed with cancer together with predictors of distress such as attachment, relationship satisfaction, matching between partner ideals and perceptions, and self esteem.

Much research has investigated the effect of cancer on patient outcomes (Hagedoorn, et al., 2008) and couples, but there is little research focusing on partner effects on patient outcomes. Patients who are in a relationship will share their cancer experience with their partner. This would suggest the patient's cancer experience may influence the partner's emotional well being, and vice versa – that is , as a couple they are interdependent (Hagedoorn, et al., 2008). Research has shown that some partners initially experience substantial psychological distress, whereas patient distress grows over time (Couper, et al., 2009). There is evidence to suggest in the social support literature that unsuccessful attempts by partners to support their patient may in fact increase patient levels of distress (Manne, et al., 2004). For example, partners of women with breast cancer often experience emotional distress and difficulty helping the woman with breast cancer cope with the emotional impact of the illness (Lugton, 1997). The consequence for partners may be feelings of helplessness and as a result, the partner may be less able to assist the patient with her cancer recovery. As a result, the patient already struggling with cancer may become depressed and less able to obtain needed support from her partner (Manne, et al., 2004).

The current study aimed to identify patient predictors of psychological distress that is, partner attachment, self esteem, relationship satisfaction, matching between partner ideals and perceptions, both immediately after diagnosis and over time.

1.5 Relationship Satisfaction

1.5.1 *Relationship Satisfaction and Psychological distress and Cancer*

The shared stressor of cancer can affect both partners well-being, as well as the quality of their relationship (Badr, et al., 2010). In addition to the cancers potentially adverse psychological impact on patients and partners, there may be an impact on the marital relationship (Couper, et al., 2009). Relationship satisfaction may either increase or decrease after a cancer diagnosis, depending on other factors, for example spousal support (Hegedoorn, et al., 2000). This study found that partners who actively engaged in supporting their patient increased patient marital satisfaction as opposed to those who were overprotective. Thus, well meaning partners may in fact decrease satisfaction in patients. These patients also suffer from increased distress when partners are over protective (Hegedoorn, et al., 2000).

Whether couples are newlyweds or in established long term marital relationships, research has identified a link between relationship satisfaction and depressive symptoms. Many studies have shown psychological distress and relationship satisfaction may impact on each other (Whisman, 2002). Specifically, a decrease in satisfaction has predicted an increase in depressive symptoms (Manne, et al., 2006; Meredith, Strong, & Feeney, 2007; Schmaling & Jacobson, 1990).

Hafstrom and Schram (1984), measured relationship satisfaction and distress across a range of chronic illnesses and found wives of chronically ill husbands were significantly less satisfied with their marriage, and experienced distress (Hafstrom & Schram, 1984). Several studies suggest that a crucial factor affecting the spouse's well-being is the quality of the marital relationship (Coyne & Smith, 1991; Kriegsman et al.,1994; Manne & Zautra, 1990). Higher

levels of marital satisfaction have been shown to buffer the effects of cancer patients' physical impairment on their partners' distress (Fang, Manne, & Pape, 2001) and the effects of one partner's distress on that of the other (Carmack Taylor, et al., 2008) . A subsequent study in lung cancer showed that working to maintain or enhance the relationship was particularly important for partners' emotional adjustment (Badr & Carmack Taylor, 2008). Marital satisfaction has also been found to predict change in patients' distress over time. Patients who reported that their marriage was unsatisfactory, regardless of their reports of distress 15 months after the cancer diagnosis, were at greater risk for elevated distress in the future than were those who were satisfied with their marriage. The findings suggest that marital satisfaction could be used as an indicator of a patient's distress trajectory over time (Weihs, Enright, Howe, & Simmens, 1999)

For women with breast cancer, their intimate relationship may buffer them as they cope with the psychological stressors. When a woman is coping with a diagnosis of breast cancer the negative effects of marital dissatisfaction may be exacerbated, leading to greater psychological distress at a time when she is in need of spousal support (Giese-Davis, Hermanson, Koopman, Weibel, & Spiegel, 2000). Some cancers like prostate cancer have stressors which are unique to the prostate cancer experience such as effects on sexuality and incontinence. These in turn may have an impact on both the patient's and partner's levels of distress and relationship satisfaction (Manne, et al., 2010).

A meta-analysis by Hagedoorn et al (2008) reviewed levels of patient distress in cancer couples compared to individuals with cancer. They concluded that levels of distress in patients of couples were higher than patients who were single. One explanation posited that patients with cancer who had a partner, might not receive the support they needed. As a result their distress may have increased, whereas single patients tended to look for support from multiple sources. In the current study I predicted patients who reported lower levels of distress would be more satisfied in their relationship. This should also be the case for patients when their partner's are reporting low levels of distress.

Relationship satisfaction may change over time after a cancer diagnosis and treatment. In a study of prostate cancer patients and their partners, results have shown some partners experienced increasing marital dissatisfaction over six months, whereas patient's marital satisfaction remained constant (Couper, et al., 2009). Although women with early stage breast cancer and their partners often initially experience great fear and apprehension about the future, most experience diminished distress the farther they are from the time of diagnosis or as the patient's prognosis improves (Hagedoorn, et al., 2008) .

This study will investigate the effect of partner predictor variables on the patient's relationship satisfaction. These were measured both shortly after the diagnosis and as predictors of change over time. It is predicted that patient relationship satisfaction will be higher, when their partners report lower levels of psychological distress, more secure attachment, higher self esteem and closer matching between ideals and partner perceptions.

1.6 Attachment

1.6.1 *Attachment Theory and Styles*

Attachment theory is one of the most comprehensive theories researched today. It was conceptualized and established initially by John Bowlby (Bowlby, 1973, 1979, 1982, 1988). Attachment has two main goals; firstly, to ensure safety against predatory threats by maintaining proximity to an attachment figure (other individual), and secondly to use that attachment figure as a base from which to independently explore during times of safety (Hunter & Maunder, 2001).

Bowlby's theory offers an explanation of how relationships are formed, maintained or break down, and the influence they have on individuals involved. These attachment bonds are based on organized behavioural patterns and experiences, and may continue through childhood, adolescence and adulthood, thus characterizing the individual, 'from the cradle to the grave'(Bowlby, 1979; Fletcher, 2002). However, not all attachment bonds are the same (Bowlby, 1979; Hazan & Shaver, 1987).

Ainsworth and others extended attachment theory in 1978. They described patterns of attachment style based on the infants' response to their caregiver observed during the laboratory 'Strange Situation' experiment. Secure attachment styles are generally developed by infants who have receptive caregivers who respond to behavioural cues offered by the infant (Ainsworth, Blehar, Waters, & Wall, 1978; Rholes & Simpson, 2004). Ainsworth and colleagues described insecure attachment as splitting into two categories: avoidant and anxious-ambivalent attachment (Ainsworth, et al., 1978). Anxious-ambivalent infants displayed a mixed reaction to their mother on her return. Initially they may have been distressed on separation and were agitated; however, on the mother's return they were distressed and agitated but did not readily seek or accept comfort.

Hazan and Shaver (1987) published the first groundbreaking study applying attachment theory to adult intimate relationships. They believed adult romantic love is an attachment process similar to infant attachment. They felt underlying childhood experiences and dynamics shape adult social experiences and relationships. Through the development of a similar self report measure to Ainsworth, Hazan and Shaver found similar patterns. In their study over half of the adult's attachment style were classified as secure (56%), and the other half were divided almost equally into the insecure - avoidant and anxious-ambivalent styles (Hazan & Shaver, 1987).

These styles of attachment have been later described as being on a continuum (Simpson, 1990). This conveys the idea that attachment style is not discrete and the point at which an individual exists along the spectrum depends on their developmental life experience (Hunter & Maunder, 2001; Simpson, 1990).

As people mature they form 'working models' which are psychological structures that underlie the different attachment styles (Feeney & Collins, 2004). Working models are flexible but are sensitive to external events like intimate relationships, however attachment styles are generally stable over a life time within an individual (Fletcher, 2002). They are thought to be core features of personality that shape the manner in which the attachment system is expressed by

directing cognitive affective, and behavioural response patterns in attachment relevant contexts (Collins, Guichard, Ford, & Feeney, 2004). The working models concept is thus a cornerstone of the attachment theory as they are presumed to organize attachment behaviour, mediate individual differences in attachment styles and explain stability in attachment functioning across the lifespan.

These models are 'working' as they are constantly being updated through experiences, allowing people to form ideas and expectations of others based on these experiences. Stressors in the social or physical environment, for example a cancer diagnosis , should trigger the role of working models (Rholes & Simpson, 2004; Simpson, Rholes, & Nelligan, 1992). Working models are a tool used to assess and make sense of relationships when stressed. In general terms the security an individual experiences is also a result of environmental circumstance, e.g. separation, vulnerability (illness) and internal working models of self and others that influence perception and expectations (Bowlby, 1969; Fitness, Fletcher, & Overall, 2003; Fletcher, 2002). Adults in intimate relationships and in stressful environments behave and react differently, based on the activation of their attachment style (Collins & Allard, 2003). Secure adults seek and offer support, whereas avoidant or anxious individuals tend to withdraw from their partner and cope using different strategies. In short, attachment styles influence how an individual copes with a distressing situation (Simpson & Rholes, 2004). Different attachment styles may help explain individual differences in response to a cancer diagnosis.

Simpson et al (1992) demonstrated the effects of environmental stressors on dating couples. They studied what effect the adult attachment style might have in moderating behaviour when one member of a couple was faced with an anxiety inducing stressful situation. They found the men and women with secure attachment styles behaved differently to those who had an avoidant attachment style. For example when stressed, women who had a secure style tended to seek support, whereas women who were avoidant tended to withdraw from their partner irrespective of his behaviour. The more stressed the women were the more their behaviour was influenced by their attachment style (Fletcher, 2002). The same was seen in men who had a

secure style. They tended to offer support to their anxious women more than men who had an avoidant style, who in turn showed little support to their anxious partners (Simpson, et al., 1992).

The present study examined the attachment styles of patients and partners in established relationships when in a stressful situation (i.e. coping with a cancer diagnosis) and what influence they had on patient psychological distress and relationship satisfaction.

1.6.2 *Attachment and Relationship Satisfaction*

According to attachment theory, a relationship is satisfying to the extent that it meets basic needs. Attachment quality and satisfaction turns on the question "Can I trust my partner to be available and provide for my needs?" Security in a relationship promotes the development of intimacy and open communication, along with comfort, care, and sexual gratification.

Attachment style is scrutinized when looking for a romantic partner. In the transition from dating relationships to long term stable relationships attachment style can facilitate or hinder this process. Individuals high on "anxiety over relationships" tend to adopt hyper-activating strategies magnifying psychological distress and attachment behaviours in order to illicit support (Simpson, Rholes, & Phillips, 1996). These attachment strategies influence relationship interdependence and potential satisfaction when in stressful situations as highlighted by Simpson (1990). He found people who possessed avoidant and anxious attachment styles reported being involved in relationships characterized by less interdependence and lower relationship satisfaction (Simpson, 1990). Anxiety of an attempted or preempted separation or trauma e.g., a cancer diagnosis, should can activate the attachment system and behaviours (Hazan & Shaver, 1994).

Relationship satisfaction and longevity may be influenced by relationship history and life events. Emotional bonds hold two people together whether or not they still enjoy being together. Satisfaction is also determined by the partner's actual behavior, and in part by the expectations associated with the extent to which perceptions of their partners match their ideal standards on

vitality/attractiveness (Fletcher, Simpson, Thomas, & Giles, 1999; Hazan & Shaver, 2004). People who have avoidant and anxious attachment styles have reported being less satisfied with their relationship (Simpson, 1990).

Attachment has also been shown to moderate the association between marital satisfaction and depression within couples. Patients and their partners who are anxiously attached report lower marital satisfaction when depressed (Heene, Buysse, & Van Oost, 2007) . Research on mothers of children with congenital heart disease found mothers were less satisfied with their relationship based on their avoidant or anxious attachment style (Berant, Mikulincer, & Florian, 2003).

The current study hypothesizes that patients and partners who are more securely attached will be more satisfied in their relationship. Secure attachment in patients and their partners also predicts higher patient relationship satisfaction over time.

1.6.3 *Attachment and Psychological Distress and Cancer*

Adult attachment measures have been shown to correlate with psychological conditions including psychological distress. Research has shown unipolar depression is more common in people classified as having insecure attachment (Hunter & Maunder, 2001) . Hunter and Maunder (2001) suggest that people with insecure attachment styles may have weaker regulatory effect on levels of stress, greater perception of the stressor, and longer physiological experience of stress than those with secure attachment styles.

Clear links have been made in adult attachment styles between avoidant attachment, and psychological distress (Simpson & Rholes, 2004). Mickelson, Kessler and Shaver (1997) found relative to secure people, those who were more avoidant or anxious scored higher on a measure of depressive episodes (Simpson & Rholes, 2004). More specifically, higher scores on attachment anxiety or avoidance have been associated with more severe symptoms of depression in samples of patients with chronic pain (Ciechanowski, Sullivan, Jensen, Romano, & Summers, 2003;

Meredith, et al., 2007; Schmidt, Nachtigall, Wuethrich-Martone, & Strauss, 2002), and HIV-positive patients (Riggs, Vosvick, & Stallings, 2007). In addition, negative attachment behaviours, may be more apparent in insecure attachment styles, and therefore lead to poorer health outcomes and higher levels of psychological distress (Diamond & Hicks, 2004). Other studies have shown secure attachment is significantly related to a higher appraisal of the ability to deal with stressors (Mikulincer & Florian, 2004; Wimberly, Carver, Laurenceau, Harris, & Antoni, 2005).

In cancer research, Tacon (2003) found women with breast cancer were significantly higher on avoidant attachment than women without cancer (Tacon, 2003). One interpretation of this finding is that working models are activated when people are stressed, e.g. a diagnosis of breast cancer, thus triggering avoidance as their attachment response. Additionally, the trauma of receiving the diagnosis may also have prompted avoidance as a coping mechanism (Tacon, 2003).

The caregiver's distress linked to cancer patients, is also related to the attachment style of the caregiver (Kim & Carver, 2009). It has been argued that people with insecure attachment cannot tolerate the increased negative affect that occurs in stressful life events. Secure attachment negatively correlates with psychological distress (Bifulco, Moran, Ball, & Bernazzani, 2002). Kuscu and colleagues (2009), found cancer caregivers who had avoidant or ambivalent (insecure) attachment, had more problems with depression. Caregivers with avoidant (insecure) attachment style tend to withdraw from distressing situations and avoid any situation that involves caregiving. This in turn may result in higher levels of patient distress (Kuscu, et al., 2009).

In the current study I predicted that more securely attached patients and partners would both be less psychologically distressed. For patients and their partners who have anxious attachment styles, I expected patients to be more distressed shortly after their diagnosis, and over time.

1.7 **Ideal Standards**

1.7.1 *Ideal Standards Model*

The Ideal Standards Model was developed by Fletcher, Simpson, Thomas and Giles (1999) and has been well supported (Fletcher, Simpson, & Thomas, 2000a; Overall, Fletcher, & Simpson, 2006; Simpson, Fletcher, & Campbell, 2001). This model proposes that partner and relationship ideals serve three functions: evaluation, explanation, and regulation. Accordingly, partner and relationship ideals predate and causally influence important judgments and decisions in relationships (Fletcher, et al., 1999).

The foundations for the Ideals Standards Model are derived from social and evolutionary principles that are most clearly evident in the Strategic Pluralism Model of human mating (Gangestad & Simpson, 2000). This theory suggests that humans have evolved a set of mating strategies that reflect their environments and require them to achieve a compromise in mate qualities between those that signal good genes (qualities of a good mate) and those that signal good investment (qualities of a good parent). The Ideal Standards Model reflects this interaction between evolution and environment, suggesting the standards people use in choosing mates are based on the search for qualities that reflect the dual need for good genes and good investment. Specifically, Fletcher et al. (1999) found that ideal partner qualities could be best conceptualised in terms of three dimensions; warmth/trustworthiness which incorporates personal qualities such as being kind and supportive, vitality/attractiveness includes attributes such as being attractive and healthy, and status/resources which describes qualities such as financial security and professional ambition (Fletcher, et al., 1999).

Concerned with explaining the cognitive processes that are involved in intimate relationships, the Ideal Standards Model postulates that individuals possess cognitive representations of their ideal partner and relationship with respect to each of the three dimensions (Fletcher & Simpson, 2000). The consistency between ideal standards and actual perceptions (termed ‘ideal-perception consistency’) is then used to (a) evaluate current partners and

relationships, (b) explain relationship events and (c) regulate the self, current partner and relationship. The evaluative function of ideal standards has received considerably more attention in the literature than the explanatory and regulatory functions. Fletcher et al., (1999) found, as predicted, that higher ideal-perception consistency is linked to more positive partner and relationship evaluations, and the results of Fletcher et al. (2000a) show that this consistency is also associated with lower rates of relationship break down. Thus, magnitude of discrepancies between standards and perceptions, allow individuals to evaluate the quality of their partner and to understand what is happening in their relationship. For example, higher perceived gaps between standards and perceptions of the partner have been shown to predict lower levels of satisfaction (Fletcher, et al., 1999).

Other findings, including sex differences and the importance placed on the three dimensions, are also well replicated (e.g. Fletcher et al., 2004 and Overall et al., 2006). Warmth/trustworthiness characteristics are the most important ideal standards for both men and women, but gender differences emerge in the importance placed on the other two dimensions (Fletcher, et al., 2000a). Specifically, women (relative to men) place more importance on status/resource characteristics in a potential mate and place less importance on vitality/attractiveness characteristics. This gender difference can be interpreted using the framework of Parental Investment Theory, which suggests that because women physically invest more in their offspring they therefore place greater importance on partner characteristics that will ensure that they are supported and provided for during this time (Fletcher, Tither, O'Loughlin, Friesen, & Overall, 2004). Individuals with positive beliefs about their partner's supportiveness and trustworthiness also stress the benefits of a long lasting relationship (Mikulincer & Shaver, 2007).

1.7.2 *Ideal Standards and Cancer*

What role do Ideal Standards in relationships play when one person is diagnosed with cancer? There is no prior research on this question. However, when a person is diagnosed with a

serious illness such as cancer, one would expect ideal standards may be threatened and re-evaluated. It would be reasonable to suggest that perceptions of the extent to which their partners match their ideal standards on vitality/attractiveness and warmth/trustworthiness may play an important role (Fletcher & Simpson, 2000). Warmth/trustworthiness is closely related to social support, and may become pivotal in times of stress (Cutrona, 1996). Women (and perhaps men) may also give more importance to the standard of vitality /attractiveness when diagnosed with breast cancer.

In the prior literature it has been found that the perceived discrepancy between ideal standards and perceptions tend to drive relationship evaluations (Fletcher, et al., 1999). Thus, the smaller the gap between perceptions of a partner and the importance attached to ideal standards, the more positively people will evaluate their relationship (Fletcher, 2002; Fletcher, Simpson, & Thomas, 2000; Fletcher, et al., 1999). From a patient's perspective, the extent to which they will continue to match their partners' ideals on both warmth and trustworthiness and vitality and attractiveness should also become more influential after a cancer diagnosis. Will their partner continue to see them as attractive and supportive? In the current study I investigated the role of two partner ideal dimensions thought to be pivotal -- warmth and trustworthiness and vitality and attractiveness -- both shortly after diagnosis and longitudinally over time. I predicted that higher matching between ideal standards and perceptions for both patients and partners would be associated with lower psychological distress and higher relationship satisfaction.

1.8 Self Esteem

Self-esteem is a term used in psychology to reflect a person's overall evaluation or appraisal of his or her own worth. Self-esteem encompasses beliefs (for example, "I am competent" or "I am incompetent") and emotions such as triumph, despair, pride and shame. A person's self-esteem may also be reflected in their behaviour, such as in assertiveness, distress, confidence or caution (McKay & Fanning, 2000). In the mid 1960s, Rosenberg and other social-

learning theorists, defined self-esteem in terms of a stable sense of personal worth or worthiness. Many early theories suggested that self-esteem is a basic human need or motivation. American psychologist Abraham Maslow, for example, included self-esteem in his hierarchy of needs (Maslow, 1987). According to terror management theory, self-esteem serves a protective function and reduces anxiety about life and death (Greenberg, 2008).

1.8.1 *Self Esteem, Psychological Distress, Relationship Satisfaction and Cancer*

For many people a major stressor like cancer may impact on one's self esteem and levels of psychological distress. It is obvious that a cancer diagnosis threatens optimism about the future. This threatens feelings of control and self-esteem since patients have little opportunity to influence the progression or recurrence of this impairing and life-threatening disease (Stiegelis, et al., 2003). Patients who are distressed may find their self esteem is reduced at this time. Low self esteem has been related to greater psychological distress in ovarian cancer patients (Norton, Manne, Rubin, Hernandez, & Carlson, 2005). In this study patients looked to their partners for support in order to maintain self esteem and reduce distress. When they did not receive the desired support their self esteem was reduced and psychological distress increased.
Self-esteem research has mainly focused on breast-cancer patients and yielded inconsistent findings. For instance, one study revealed that almost 50% of the respondents reported retrospectively that their self-esteem had increased following diagnosis and treatment, whereas another longitudinal study revealed that patients treated with mastectomy plus adjuvant treatment, reported a poorer self-esteem at the end of the first year as compared with the initial assessment three months after surgery (Carpenter, 1997; Penman, Bloom, Fotopoulos, & Cook, 1986).

Stiegelis et al, (2003) studied self esteem and psychological distress in ovarian cancer patients. Results support their hypotheses regarding the theory of cognitive adaptation in that patients were able to respond to cancer with high levels of self-esteem and lower levels of self

esteem were predictive of psychological distress (Stiegelis, et al., 2003). In another study of breast cancer patients low patient self esteem predicted high levels of distress (Gale, et al., 2001). The current study investigated self esteem and psychological distress in the context of breast and prostate cancer for patients and their partners. It was predicted that lower patient self esteem would be correlated with higher levels of psychological distress after diagnosis. It was also predicted that patient self esteem levels would predict changes in patient distress over time. Specifically, low patient self esteem would predict high patient distress over time. Further, it was predicted that low partner self esteem would impact by increasing their patient's levels of distress in the short term and over time.

Does self esteem impact on relationship satisfaction and distress in couples with cancer? There is limited research in cancer patients; however, Gale et al, (2001) investigated whether self esteem was a predictor of distress in women in relationships with breast cancer. Women in low quality relationships experienced significantly more distress and had lower self esteem compared to women who were in high quality relationships. However, in this study self esteem was not related to relationship quality (Gale, et al., 2001). The current study predicts patient and partner self esteem will impact on patient relationship satisfaction after diagnosis and over time. That is, low self esteem in patients and partners will predict low relationship satisfaction.

1.9 Study Hypotheses

1.9.1 Patients who are more psychologically distressed will report lower levels of relationship satisfaction, lower secure attachment, perceive lower matching between their own ideal standards and perceptions of their partners on vitality and attractiveness, lower self esteem, and higher levels of anxious attachment.

1.9.2 Patients who report higher levels of relationship satisfaction will report lower levels of psychological distress and anxious attachment, higher self esteem, higher matching between their own ideal standards and perceptions of their partners' ideals, and will be more securely attached.

1.9.3 Patients' levels of psychological distress and relationship satisfaction will be influenced by their partners' levels of psychological distress, relationship satisfaction, attachment, self esteem, and the extent to which their ideal standards match their perceptions of their partners. High partner distress, low relationship satisfaction, anxious attachment, low self esteem and low matching ideal standards will predict high patient psychological distress and low relationship satisfaction.

1.9.4 Changes in patient psychological distress and relationship satisfaction over six months will be predicted by patient attachment, self esteem and matching ideals. Lower self esteem, higher anxious attachment, and lower matching of ideals will predict higher patient distress and lower relationship satisfaction over time.

1.9.5 Changes in patient psychological distress and relationship satisfaction over six months will be predicted by partner psychological distress, relationship satisfaction, attachment, self esteem and matching ideals. In partners; higher distress, lower relationship satisfaction, higher anxious attachment, lower self esteem and lower matching of ideal standards will predict higher patient psychological distress and lower patient relationship satisfaction.

2. METHOD

2.1 Participants

2.1.1 Sample characteristics - time one

Participants for this study were individuals who had recently been diagnosed with breast or prostate cancer and their spouse or partner. A summary of the participants' demographics is provided in Table 1. In total there were twenty six couples recruited for the study giving a total of fifty two individuals. Twelve couples (46%) had one member with breast cancer and fourteen couples (54%) had one member with prostate cancer. On average patients had been diagnosed seven weeks prior to completing the first questionnaire. The mean age of patients was 54.7 years of age and the mean age of partners was 54.6 years. Of the participants, 88% of patients and 85% of partners were New Zealand Europeans. The remaining patients and partners were from other ethnicities. In terms of education, 27% of patients and 19% of partners had no school qualification, 38% of patients and 31% of partners had a secondary school qualification, 12% of patients and 39% of partners had a trade certificate, 23% of patients and 8% of partners had a tertiary or higher qualification. There were 54% of patients and 46% of partners that indicated working in full time. Of the remaining participants, 15% of patients and partners indicated working part time, 4% of patients and no partners indicated that they were unemployed. There were 23% of patients and 8% of partners who were homemakers whilst 4% patients and 23% of partners were retired. The remaining participants answered 'other'. The majority of couples were married (92%) and had been on average for 25 years. 92% of patients and 96% of partners had children leaving 58% of couples with children living at home. There were 31% of patients who indicated being on sick leave at the time of the study. Co morbid illness (e.g. Depression, arthritis, heart disease) was reported in 36% of patients and 43% of partners.

TABLE 1. ***Demographic profile of study participants at time one***

	Patient	Partner
Age (Years)	55 (12.7)	55 (12.0)
Sex/ Cancer Type		
Female/ Breast	12 (46%)	14 (54%)
Male/ Prostate	14 (54%)	12 (46%)
Ethnicity		
NZ European	23 (88%)	22 (85%)
Other	3 (15%)	4 (15%)
Education		
Left without School certificate	7 (27%)	5 (19%)
NZ School Certificate	5 (19%)	5 (19%)
NZ Sixth form and University Entrance	5 (19%)	3 (12%)
Trade or other tertiary certificate/diploma	3 (12%)	10 (39%)
Degree or postgraduate diploma	6 (23%)	2 (8%)
other	-	1 (4%)
Employment		
Full time job	14 (54%)	12 (46%)
Part time job	4 (15%)	4 (15%)
Unemployed	1 (4%)	-
Homemaker	6 (23%)	2 (8%)
Retired/other	1 (4%)	8 (31%)
Marital status		
Married (years)	24 (92%)	24 (92%)
Living together	2 (8%)	2 (8%)
Length (years)	25 (14%)	-
Children	23 (92%)	24 (96%)
Children at home	15 (58%)	15 (58%)
Sick Leave		
Yes	8 (31%)	-
No	10 (69%)	18 (70%)
Missing	8 (30%)	8 (30%)
Time since diagnosis		
One month	14 (54%)	-
Two – four months	12 (46%)	-
Co-morbid illness		
None	8 (31%)	9 (35%)
Depression	1 (4%)	-
Arthritis	3 (12%)	4 (15%)
Heart disease	1 (4%)	2 (8%)
Diabetes	1 (4%)	1 (4%)
Multiple Sclerosis	-	1 (4%)
Other	3 (12%)	3 (12%)

Note : Mean (SD) or number of cases (%) are presented.

2.1.2 Sample characteristics - time two

At time two, six months later, twenty four (92%) of the sample remained. Cancer treatments and changes in circumstances are summarized in Table 2. Two couples dropped out, one from each cancer group. One couple ended their relationship and the other was no longer willing to participate due to the stress attributed to their cancer experience.

TABLE 2: ***Patient cancer treatments and changes in personal circumstances at time two***

Treatment	***Breast Cancer*** *N=11*	***Prostate Cancer*** *N=13*
Surgery	11	1
Chemotherapy	9	-
Radiation	4	7
Hormones	8	11
Changes in employment	5	1
Due to illness	3	-
Other	3	2

Of the remaining patient sample, most patients received a combination of treatments as shown in Table 2 above. All breast cancer patients had surgery. Nine had chemotherapy, four had received radiation and eight had hormone therapy to treat their cancer. One prostate cancer patient had surgery. Seven prostate cancer patients had received radiation therapy and eleven had hormone therapy. Five (21%) patients had changed their employment status, three (13%) being a result of their illness. One patient replaced a full time job with sick leave. Five (21%) patients had some other change in their personal circumstances. One partner of a prostate cancer patient changed to part time employment. This was not as a result of their partner's illness. Six partners (25%) experienced a change of other personal circumstances for example, caring for another sick family member.

2.2 Recruitment

Recruitment for this study began in December 2007. Couples were recruited from the private practice of an Oncologist in Christchurch, New Zealand. The study sample was made up of recently diagnosed prostate or breast cancer patients and their partners. Couples had received

their diagnosis up to four weeks before study participation. There was no restriction on age. Inclusion criteria for the study were: (a) The cancer was not metastatic beyond locoregional lymph glands, (b) Participants were married or were living together and both partners were willing to participate, (c)Patients were only treated for breast or prostate cancer. Couples were excluded if both had another cancer diagnosis or if the spouse/partner had another severely debilitating chronic illness (e.g., Alzheimer's disease) This was to reduce the potential confounding variable significant care being required for another chronic illness other than cancer).

2.3 Procedure

The Oncologist briefly introduced the study by giving the couple an information sheet (Appendix A). Approximately thirty percent of couples approached declined the invitation to participate. Those who declined did so as they felt unable to take on another task whilst processing their diagnosis. Some partners declined due to a prior loss of spouse or family member adding to the burden of their partner's diagnosis. If couples were interested in participating, with couple consent, the author was given contact details from the Oncologist. The author contacted by telephone. An appointment was made to meet face to face and further introduce and discuss the study requirements and gain consent for participation (Appendix B (patient consent form) and C (partner consent form)). Having given informed consent, the couples were invited to complete the questionnaires (Appendix D (patient) and E (partner)) at home in their own time during the following week. Questionnaires were returned to the author at the University of Canterbury in the addressed stamped envelope provided. Questionnaires took participants approximately 30- 40 minutes to complete. The main author, supervisor and Oncologist were available to be contacted if any issues or queries arose for participants that related to the study. Each couple was given a $10 Westfield shopping voucher as a token of participation and incentive to complete and return the questionnaires. Six months later the time

two questionnaire was posted to the participants. They were asked to follow the same instructions for completing and returning the questionnaire as time one.

Each individual and partner was given a code to so their data was anonymous. Questionnaires were stored separately from the consent forms which contained participant identification. All consent forms were signed by the author and the Oncologist and stored securely in the Psychology Department, University of Canterbury. The study was approved by the Upper South A Regional Ethics Committee. Ethics reference: URA/07/06/045.

2.4 Measurement

Each questionnaire was made up of six sections which included background information, health and well-being, feelings about self and relationships. Both the patient and partner questionnaires were the same except for information specific to the patient's illness.
Along with demographic data, variables measured at both time points were psychological distress, attachment, relationship satisfaction and ideals, general health, social support, impact of life events and self esteem. For this thesis, social support and impact of events data were not used. Demographic questions were different for time two, asking about changes in personal circumstances and patient cancer treatments (Appendix F (patient) and G (partner)).

2.4.1 Psychological distress

The Centre of Epidemiologic Studies Depression Scale (CES-D)

The Centre of Epidemiologic Studies Depression Scale (CES-D) (Radloff, 1977) is a valid and reliable short self report scale designed to measure depressive symptoms in the general population (Knight, Williams, McGee, & Olaman, 1997; Lyness, et al., 1997; Radloff, 1977). The items of the scale are symptoms associated with depression which have been used in previously validated longer scales. The new scale was tested in household interview surveys and in psychiatric settings (Eaton, Muntaner, Smith, Tien, & Ybarra, 2004; Radloff, 1977).

Items are rated relating to the last week on a four point likert scale ranging from '0= rarely or none of the time' (less than 1 day) to 3 = 'Most or all of the time' (5 to 7 days). Items

include questions like ‘I was bothered by things that usually don’t bother me’, ‘I had trouble keeping my mind on what I was doing’ and ‘I felt depressed’. Four positively framed items are reverse scored before scores for the 20 items are summed. Higher scores indicate higher psychological distress with a cut-off of 16 indicating symptoms of clinical concern with a sensitivity of 0.64 and specificity of 0.94 in major depressive disorder (Rush, First, & Blacker, 2008). Internal consistency is high across a range of populations ranging between 0.85 - 0.90 (Eaton, et al., 2004). In a study by Tuinstra et al, looking specifically at cancer patients and their partners the internal consistencies of the CES-D were 0.91 for patients and 0.88 for partners (Tuinstra, et al., 2004). In a study looking specifically at cancer patients, Hann, Winter and Jacobsen (1999) assessed the psychometric properties of the CES-D in a sample of women undergoing treatment for breast cancer. The internal consistency analysis in this study demonstrated a coefficient alpha of 0.89, and test-retest coefficient of 0.57 over 2.5 weeks (Eaton, et al., 2004). For the current sample, reliability coefficients were calculated to be 0.86 for patients at time one and 0.83 at time two as well as 0.87 for partners at time one and two.

2.4.2 Relationship Satisfaction

The Perceived Relationship Quality Components Inventory (PRQC)

The Perceived Relationship Quality Components Inventory (PRQC) (Fletcher, et al., 2000), is a self report 18 item questionnaire used to measure relationship satisfaction. It is made up of six perceived relationship quality components namely, relationship satisfaction, commitment, intimacy trust, passion and love. Each perceived relationship quality component is assessed by three questions. Each statement is answered on a seven point Likert scale (ranging from 1= not at all to 7= extremely). Instructions are to rate the current partner and relationship on each item. All items were averaged, with higher scores representing higher relationship satisfaction. This scale has been shown to be both reliable and valid (Fletcher et al., 2000). For the current study reliability coefficients for perceived relationship satisfaction were 0.95 for patients and 0.97 for partners at time one and two

2.4.3 Attachment

Adult Attachment Questionnaire (AAQ)

The Adult Attachment Questionnaire (AAQ) (Simpson, et al., 1996) is a dimensional measure of attachment style which is based on Hazan and Shaver's description of attachment. The scale is made of 17 items. Participants rate on a 7-point likert scale (1= strongly agree to 7= strongly disagree) how each item relates to the way they feel about romantic relationships in general (Fraley & Shaver, 1998). Items include statements such as "I find it relatively easy to get close to others", "I worry that my partner(s) don't really love me", and I usually want more intimacy than others do". The AAQ is made up of two subscales or dimensions, 'avoidance' (7 items) and 'anxiety' (9 items). When the subscales were created the corrected item-total correlation for patient secure items two and four on the avoidance scale for example, "I'm not very comfortable having to depend on other people", and "I rarely worry about being abandoned by others" were very low (e.g. 0.198, 0.207). Thus, these two items were removed for all analyses of patient and partner data. The remaining two secure items were combined with the avoidant items to make up the secure-avoidant subscale later labelled for simplicity the secure attachment variable. This was calculated by secure- avoidant attachment ratings. Low scores on each of these subscales reflect 'secure' attachment indicating the absence of problems associated with high levels of avoidance or anxiety (Simpson, et al., 1996). Simpson et al (1996) reported reliability coefficients for men and women on each of the dimensions with 0.70 and 0.74 for avoidance and 0.72 and 0.76 for the anxiety dimension. Another study found Cronbach's alphas for the avoidance scale were 0.79 and 0.82 for men and women and 0.74 and 0.81 for the anxiety scale respectively (Simpson, Rholes, Campbell, Tran, & Wilson, 2003).

For the current study, reliability coefficients for the secure attachment subscale were 0.50 at time one and 0.55 at time two and for the patient's anxiety dimension 0.84 and 0.64. The reliability coefficients for partner secure attachment was 0.75 at time one, and 0.70 at time two. Reliability of partner anxiety was 0.65 at both time points.

2.4.4 General *Health*

The Short Form 12 Health Survey (SF12)

The questionnaire included the short form 12 Health survey (SF-12). This is a 12 item self report questionnaire adapted from the original Short Form -36 Health Survey (Ware & Sherbourne, 1992; Ware, Snow, & Kosinski, 1993). The SF-12 contains eight subscales and takes approximately two minutes to complete. These domains include questions about physical functioning, physical role functioning, bodily pain, general health, vitality (energy vs. fatigue), social functioning, and emotional role functioning and mental health. From these eight domains a physical health component summary and a mental health component summary is calculated. Lower scores on the two components represent lower self reported health functioning. For the purpose of this study the physical health and mental health subscales were recorded with the SF-12 for patients and partners. Items are scored on a three or five point scale. An example of a physical health item being; "During the past two weeks, how much of the time have you had any of the following problems with your work or other regular daily activities as a result of your physical health?" E.g. a) "Accomplished less than you would like" (1 = All of the time, 5 = None of the time). For the current study reliability coefficients for the physical health and mental health subscales were found to be 0.80 and 0.84 for patients and partners 0.80 and 0.81, respectively at time one. Time two reliability coefficients were 0.76 and 0.78 for patient physical and mental health and 0.84 and 0.81 for partners. There is evidence from other studies of reliability of both subscales scales and test-retest coefficients within the range of 0.73 to 0.89 (Resnick & Parker, 2001).

2.4.5 Ideal Standards

Ideal Standards Model

The measures used were constructed from the short forms of the Partner Ideal Scales, which were originally developed by Fletcher et al. (1999). These scales have demonstrated good internal reliability, test-retest reliability, and convergent and predictive validity when used to assess the importance of partner ideal standards, and they comprise three distinct factors (Fletcher et al., 1999; Fletcher et al., 2000a; Fletcher et al., 2004; Campbell et al., 2001). The specific scale items for the three mate ideal dimensions were: warmth/trustworthiness (understanding, supportive, kind, good listener, sensitive, and considerate), and attractiveness/vitality (sexy, nice body, attractive appearance, good lover, outgoing, and adventurous), and status/resources (successful, nice house, financially secure, dresses well, and good job).

Participants were asked to compare their current partner to their expectations regarding their ideal partner. Participants rated each attribute according to the degree to which their current romantic partner matched their ideal partner (1 = *does not match my ideal at all*, 7 = *completely matches my ideal*). Higher scores indicate greater consistency between an individual's partner ideal standards and his or her partner perceptions. This methodology has produced valid and reliable results in prior research (e.g., Campbell et al., 2001; Overall et al., 2006). In the current research, the scales also attained good internal validity (ranging from .66 to .93 across patients and partners).

2.4.6 Self esteem

Rosenberg Self-Esteem Scale

Self-esteem was measured using the 10-item Rosenberg Self Esteem Scale (Rosenberg, 1965). The Rosenberg self-esteem scale is one of the most popularly used measures of global self-evaluation. This scale measures global feelings of self-worth (e.g., I feel that I am a person of worth, at least on an equal basis with others). Participants rated each item on a 7-point Likert

scale with anchors of 1 = Strongly Agree and 7 = Strongly Disagree. Negative items were reverse scored. All items within the scale were then averaged so that higher scores represent higher (more positive) self-esteem. The original sample for which the scale was developed consisted of 5,024 High School Juniors and Seniors from 10 randomly selected schools in New York State (Rosenberg, 1965).The reliability coefficients for the current study were 0.82 for patients at time one and 0.88 at time two. Reliability coefficients were 0.79 for partners at both time points.

2.5 Cancer information

Open questions were included in the patient-questionnaire to gain information about the cancer diagnosis and treatment. Questions included time since diagnosis and what their diagnosis was. In addition to this, patients were asked to indicate the treatments they were likely to receive at time one, and what treatments they had received for their cancer at time two.

2.6 Data Analysis

Data analysis was performed using the statistical analysis programme SSPS. The statistical analyses that were conducted included descriptive statistics, reliability analyses, correlations, dependent t-tests, and multiple regression analyses. To facilitate interpretation of the results, all scales were checked and reverse coded if needed so that low numbers on the scales equaled low scores on each construct.

Descriptive statistics were completed to determine the composition of the sample; this included gender, ethnicity, age, number of dependants, education, employment and relationship status. Descriptive statistics were also used to analyse the characteristics of the sample's cancer and co-morbidity status. Reliability statistics were calculated to evaluate the internal consistency of each scale prior to completing further analysis. Dependent t-tests were conducted to analyse within-relationship differences of relationship satisfaction, psychological distress, self esteem, attachment and matching ideals. Cross-sectional and longitudinal correlations were used to

analyse the association between relationship satisfaction, psychological distress, self esteem, attachment and matching ideals at time one and two (six months later).

Multiple regression analyses were conducted to establish the relationship between patient psychological distress and relationship satisfaction and predictor variables self esteem, attachment and matching ideals at time one after their cancer diagnosis. Firstly, these were run simultaneously analyzing patient dependent variables with patient independent variables. This procedure was replicated using the same patient dependent variables being psychological distress and relationship satisfaction, but with partner independent variables at time one. When this analysis was initially run all variables were added into the model together (as was done in the previous model for patient data). However, this resulted in excessive multicolinearity because of the high correlation between the ideal/perception matching variables of warmth/trustworthiness and vitality/attractiveness. To deal with this issue, these analyses were completed using three different models. The first model used the partner independent variables of secure and anxious attachment and self esteem. Models two and three used the same two independent variables, but added in turn ideal/perception matching of warmth/trustworthiness and vitality/attractiveness respectively.

Standard multiple regressions were used to predict changes in patient psychological distress and relationship satisfaction over six months. For example, time two distress was regressed on each of the independent variables (including time 1 distress). Finally, Patient psychological distress and relationship satisfaction were regressed on each of the same seven partner variables one at a time, together with time one distress or satisfaction in order to predict how well each predicted change over time.

3. RESULTS

Results were analysed using SPSS version 15.0 for Windows™. Following a summary of the descriptive statistics and correlations, results are described with respect to each hypothesis. To begin, the study sample is summarised with descriptive data for patients and partners at time one and six months later at time two. Second, results are reported using the predictors of patient distress and relationship satisfaction. Third, partner predictors of patient distress and relationship satisfaction are analysed. Fourth, changes over time in patient psychological distress and relationship satisfaction are analyzed using patient predictors. Finally, changes over time in patient psychological distress and relationships satisfaction are analyzed using partner predictors.

3.1 Descriptive results: Means and Standard Deviations

The means and standard deviations and dependent t-tests of the major variables across the two time periods are presented in Table 3. The mean scores and standard deviations were more or less as expected. There was a significant decrease in patient relationship satisfaction from time one to time two. Partner psychological distress decreased significantly from time one to time two. Higher scores on the CES-D indicated higher psychological distress with a cut-off of 16 indicating symptoms of clinical concern. This cut off score translates to an average of 0.8. Seven (27%) patients and eight (31%) partners scored above the cut-off score at time one. Five (21%) patients and two (8%) partners remained over the cut off at time two. Partner matching ideals for warmth and trustworthiness were also significant with an increase from time one to time two. No other differences between time one and time two were found.

TABLE 3*: Descriptive statistics for patients and their partners*

	Time 1		Time 2		
Patient	*M*	*SD*	*M*	*SD*	*t*
CES-D psychological distress	0.61	0.46	0.51	0.38	1.03
Relationship satisfaction	6.06	0.80	5.61	0.87	2.60*
Self esteem	3.44	0.44	3.48	0.48	0.48
Secure attachment	1.98	1.80	1.82	1.74	0.38
Anxious attachment	2.37	1.10	2.55	0.88	1.14
Matching warmth/trustworthiness	6.31	0.88	6.36	0.66	0.33
Matching vitality/attractiveness	5.38	1.16	5.44	1.19	0.35
Partner					
CES-D psychological distress	0.64	0.40	0.34	0.29	3.88**
Relationship satisfaction	5.98	1.01	5.89	0.98	0.75
Self esteem	3.60	0.40	3.48	0.37	1.62
Secure attachment	2.35	1.63	2.90	1.70	1.54
Anxious attachment	2.53	0.87	2.42	0.89	0.78
Matching warmth/trustworthiness	6.14	1.07	5.83	1.29	2.05*
Matching vitality/attractiveness	5.68	0.96	5.33	1.16	1.78

*p<0.05 **p< 0.01 N = 26

Note: Secure attachment was calculated by secure – avoidant attachment. Matching variables were participant's ratings of the degree to which their current partner matched their ideal partner on a 1 – 7 Likert scale. Psychological distress was measured with the Center for Epidemiologic Studies Depression Scale (CES-D) on a 0-3 Likert scale. Relationship satisfaction was measured with the Perceived Relationship Quality Components (PRQC) Inventory on a 1 – 7 Likert scale. Self Esteem was measured with the Rosenberg Self Esteem Scale on a 1-4 Likert scale. Attachment was measured with the Adult Attachment Questionnaire (AAQ) on a 1-7 Likert scale. Matching Ideal Standards were measured with the Ideal Standards Questionnaires on a 1-7 Likert scale.

3.2 Correlations across partners and time

Cross sectional correlations were calculated between patients and their partners for both time periods. Results are presented in Table 4. Self esteem significantly correlated between patients and partners at time one. At time two relationship satisfaction and matching ideals of vitality/ attractiveness were significantly correlated. No other cross sectional correlations were found.

Longitudinal correlations for patients and partners across time are displayed in Table 5. They generally showed moderate levels of consistency across time. However, the correlations were typically higher for the partners than the patients. It seems likely that the relatively low stability across time for the patients on constructs such as psychological distress, relationship satisfaction, self esteem, and secure attachment, reflects the stress and difficulties involved in dealing with a serious illness and uncertain prognosis.

TABLE 4: ***Cross sectional correlations between patients and partners for both time periods***

	Time 1	Time 2
CES-D psychological distress	-0.16	0.19
Relationship satisfaction	0.32	0.71**
Self esteem	0.43*	0.17
Secure attachment	0.30	0.21
Anxious attachment	0.20	0.31
Matching warmth /trustworthiness	-0.04	0.27
Matching vitality/attractiveness	0.09	0.55**

*$p<0.05$ ** $p<0.01$ N = 26

Note: Secure attachment was calculated by secure – avoidant attachment. Matching variables were participant's ratings of the degree to which their current partner matched their ideal partner on a 1 – 7 Likert scale. Psychological distress was measured with the Center for Epidemiologic Studies Depression Scale (CES-D) on a 0-3 Likert scale. Relationship satisfaction was measured with the Perceived Relationship Quality Components (PRQC) Inventory on a 1 – 7 Likert scale. Self Esteem was measured with the Rosenberg Self Esteem Scale on a 1-4 Likert scale. Attachment was measured with the Adult Attachment Questionnaire (AAQ) on a 1-7 Likert scale. Matching Ideal Standards were measured with the Ideal Standards Questionnaires on a 1-7 Likert scale.

TABLE 5: ***Longitudinal correlations for patients and partners across time 1 and time 2***

	Patient	Partner
CES-D psychological distress	0.33	0.49*
Relationship satisfaction	0.48*	0.85**
Self esteem	0.44*	0.56**
Secure attachment	0.24	0.53*
Anxious attachment	0.72**	0.71**
Matching warmth/trustworthiness	0.45*	0.83**
Matching vitality/attractiveness	0.73*	0.62**

*$p<0.05$ ** $p<0.01$ N = 26

Note: Secure attachment was calculated by secure – avoidant attachment. Matching variables were participant's ratings of the degree to which their current partner matched their ideal partner on a 1 – 7 Likert scale. Psychological distress was measured with the Center for Epidemiologic Studies Depression Scale (CES-D) on a 0-3 Likert scale. Relationship satisfaction was measured with the Perceived Relationship Quality Components (PRQC) Inventory on a 1 – 7 Likert scale. Self Esteem was measured with the Rosenberg Self Esteem Scale on a 1-4 Likert scale. Attachment was measured with the Adult Attachment Questionnaire (AAQ) on a 1-7 Likert scale. Matching Ideal Standards were measured with the Ideal Standards Questionnaires on a 1-7 Likert scale.

3.3 Predicting patient psychological distress.

I predicted that patients who are more psychologically distressed would report lower levels of relationship satisfaction, secure attachment, highly matching ideals, and low self esteem,

as well as higher levels of anxious attachment. Simultaneous multiple regressions were run with patient psychological distress as the dependent variable with the six key independent variables as assessed at time one. Results are displayed in Table 6.

The alpha level was set to $p < 0.1$, because of the low sample size, and the need to avoid type two errors. The multicolinearity in these equations was not excessive. However, there are many variables in the final equation (relative to the sample size) and it can be difficult to interpret regression coefficients when variables being controlled that share semantic or conceptual content (e.g., the extent to which partners match ideal standards and relationship satisfaction). Thus, I only interpreted results when the zero-order correlations and the regression coefficients were both significant and in the same direction (these rules were followed for all subsequent multiple regression analyses). This procedure should help protect against type 1 error (especially given the liberal setting of the alpha level).

Using these rules, the only variable to consistently predict patient psychological distress was self esteem; namely, as predicted, higher self esteem was associated with lower distress.

3.3.1 What predicts relationship satisfaction in patients?

I hypothesised that patients who report higher relationship satisfaction will report lower levels of psychological distress, lower anxious attachment, and higher levels of self esteem, highly matching ideals and more secure attachment. Simultaneous multiple regressions were run with relationship satisfaction as the dependent variable with the six key independent variables from time 1. Results are displayed in Table 6.

As predicted in the cross sectional analyses, patients who were less anxious were more satisfied in their relationship. Patients who perceived their partner closely matching between their own ideal standards and perceptions of the partner on warmth and trustworthiness were also more satisfied in their relationships. Also an increase in patient relationship satisfaction was predicted over time by their partner's perceiving higher matching between their own ideal standards and perceptions of the patients on warmth and trustworthiness as well as vitality and attractiveness.

TABLE 6*: Simultaneous multiple regressions with patient psychological distress and relationship satisfaction at time 1 after cancer diagnosis as the dependent variables*

Patient Psychological Distress (CES-D)	**Beta**	**Zero-order correlation**
Relationship Satisfaction	-0.29	-0.13
Secure Attachment	0.14	0.28*
Anxious Attachment	-0.39*	-0.03
Matching warmth/trustworthiness	0.07	-0.11
Matching vitality/attractiveness	0.05	0.05
Self esteem	-0.74***	-0.70***
Multiple R = 0.77***		
Patient Relationship Satisfaction		
CES-D psychological distress	-0.24	-0.13
Secure Attachment	0.21	0.15
Anxious Attachment	-0.33*	-0.30*
Matching warmth/trustworthiness	0.52***	0.65***
Matching vitality/attractiveness	0.30*	0.54***
Self esteem	-0.10	0.05
Multiple R = .81***		

*p<0.1 **p<0.05 *** p<0.01 N = 26

Note: Secure attachment was calculated by secure – avoidant attachment. Matching variables were participant's ratings of the degree to which their current partner matched their ideal partner on a 1 – 7 Likert scale. Psychological distress was measured with the Center for Epidemiologic Studies Depression Scale (CES-D) on a 0-3 Likert scale. Relationship satisfaction was measured with the Perceived Relationship Quality Components (PRQC) Inventory on a 1 – 7 Likert scale. Self Esteem was measured with the Rosenberg Self Esteem Scale on a 1-4 Likert scale. Attachment was measured with the Adult Attachment Questionnaire (AAQ) on a 1-7 Likert scale. Matching Ideal Standards were measured with the Ideal Standards Questionnaires on a 1-7 Likert scale.

3.3.2 Do partners influence their patient's levels of distress and relationship satisfaction after a cancer diagnosis?

I predicted that the patient's level of psychological distress and relationship satisfaction would be predicted by their partner's level of psychological distress, relationship satisfaction, attachment, self esteem and matching ideals after the cancer diagnosis. Specifically, higher levels of patient distress would be related to higher levels of partner distress and anxious attachment as well as lower levels of partner relationship satisfaction, secure attachment, self esteem and lower matching ideals.

When testing this hypothesis the six key partner independent variables were entered into the multiple regression equation with patient dependent variables. Initially the results indicated a high degree of multicolinearity because of the high correlation between some of the variables, in

particular the partner's perception of matching between their own ideal standards and perceptions of the patients on warmth and trustworthiness as well as vitality and attractiveness. For example, the tolerance index for matching ideal warmth and trustworthiness was 0.24 and it was 0.27 for relationship satisfaction. In order to reduce the multicolinearity, regressions were independently calculated in the form of three models shown in Table 7.

Patient psychological distress was the dependent variable for all three regression analyses. In model one the independent variables were partner relationship satisfaction, secure and anxious attachment, and self esteem. Models two and three had the same independent variables with perception of matching ideals warmth and trustworthiness and vitality and attractiveness added independently. In model two, matching ideal warmth and trustworthiness was added, resulting in a specific partner effect. If partners reported their patient did not closely match their ideal for being warm and trustworthy, their patients were more psychologically distressed. In model three matching vitality and attractiveness replaced matching warmth and trustworthiness which had little effect on patient psychological distress.

The same procedure was repeated using patient relationship satisfaction as the dependent variable. The same rationale for the three models applied. Results are shown in Table 8.

Partner anxious attachment was statistically significant for models one and two and nearly significant for model three. These results suggested partners who were less anxious in their attachment style, had patients who were more satisfied in their relationship.

TABLE 7: ***Simultaneous multiple regressions of patient psychological distress as the dependent variables and partner independent variables at time 1***

	Beta	Zero-order correlation
Model One		
Relationship satisfaction	-0.24	-0.26*
Secure attachment	-0.17	-0.16
Anxious attachment	-0.40*	-0.20
Self esteem	-0.31	-0.33**
Multiple R =0.52*		
Model Two		
Matching warmth/trustworthiness	-0.60**	-0.43**
Relationship satisfaction	0.26	-0.26*
Secure attachment	-0.07	-0.16
Anxious attachment	-0.35*	-0.20
Self esteem	-0.30	-0.33**
Multiple R=0.61*		
Model Three		
Matching vitality/attractiveness	-0.29	-0.25*
Relationship satisfaction	-0.07	-0.26*
Secure attachment	-0.22	-0.16
Anxious attachment	-0.48**	-0.20*
Self esteem	-0.26	-0.33**
Multiple R = 0.55		

*p<0.10 **p<0.05 *** p<0.01 N = 26

Note: Secure attachment was calculated by secure – avoidant attachment ratings.Matching variables were participant's ratings of the degree to which their current partner matched their ideal partner on a 1 – 7 Likert scale. Model two and three have the same variables in addition to matching warmth/trustworthiness and matching vitality attractiveness separately added. This procedure was followed to avoid excessive multicolinearity because of the high correlation between matching variables warmth/trustworthiness and vitality/attractiveness. Psychological distress was measured with the Center for Epidemiologic Studies Depression Scale (CES-D) on a 0-3 Likert scale. Relationship satisfaction was measured with the Perceived Relationship Quality Components (PRQC) Inventory on a 1 – 7 Likert scale. Self Esteem was measured with the Rosenberg Self Esteem Scale on a 1-4 Likert scale. Attachment was measured with the Adult Attachment Questionnaire (AAQ) on a 1-7 Likert scale. Matching Ideal Standards were measured with the Ideal Standards Questionnaires on a 1-7 Likert scale.

TABLE 8: ***Simultaneous multiple regressions of patient relationship satisfaction as the dependent variables and partner independent variables at time 1***

	Beta	Zero-order correlation
Model One		
CES-D psychological distress	-0.09	-0.24*
Secure attachment	-0.09	0.17
Anxious attachment	-0.42*	-0.43**
Self esteem	0.03	0.16
Multiple $R = 0.44$		
Model Two		
Matching warmth/trustworthiness	0.27	0.28*
CES-D Psychological distress	-0.17	-0.24*
Secure attachment	-0.11	0.18
Anxious attachment	-0.38*	-0.43**
Self esteem	-0.04	0.16
Multiple R=0.50		
Model Three		
Matching vitality/attractiveness	0.22	0.31*
CES-D psychological distress	-0.17	-0.24*
Secure attachment	-0.05	0.17
Anxious attachment	-0.31	-0.43**
Self esteem	-0.05	0.16
Multiple R=0.47		

*p<0.1 **p<0.05 ***p<0.01 N = 26

Note: Secure attachment was calculated by secure – avoidant attachment ratings.
Matching variables were participant's ratings of the degree to which their current partner matched their ideal partner on a 1 – 7 Likert scale. Model two and three have the same variables in addition to matching warmth/trustworthiness and matching vitality attractiveness separately added. This procedure was followed to avoid excessive multicolinearity because of the high correlation between matching variables warmth/trustworthiness and vitality/attractiveness. Psychological distress was measured with the Center for Epidemiologic Studies Depression Scale (CES-D) on a 0-3 Likert scale. Relationship satisfaction was measured with the Perceived Relationship Quality Components (PRQC) Inventory on a 1 – 7 Likert scale. Self Esteem was measured with the Rosenberg Self Esteem Scale on a 1-4 Likert scale. Attachment was measured with the Adult Attachment Questionnaire (AAQ) on a 1-7 Likert scale. Matching Ideal Standards were measured with the Ideal Standards Questionnaires on a 1-7 Likert scale.

3.3.3 Can we predict changes in patient distress and relationship satisfaction from cancer diagnosis over time?

I hypothesised changes in patient psychological distress and relationship satisfaction over six months would be predicted by patient attachment, self -esteem, psychological distress, relationship satisfaction, and matching ideals.

A standard regression approach was used to test these predictions. The time two variable (e.g., psychological distress) was regressed on both time one psychological distress and the

predictor variable (e.g., secure attachment at time one). These analyses were run for the patient dependent variables with each of the six key patient independent variables being tested in turn to assess the extent to which they predicted change over time. Results are displayed in Table 9.

TABLE 9: ***Predicting changes in patient psychological distress and relationship satisfaction over six months***

	Beta
Patient CES-D Psychological distress	
Secure attachment	-0.33*
Anxious attachment	0.44**
Self esteem	-0.50*
Relationship satisfaction	-0.01
Matching warmth/trustworthiness	-0.26
Matching vitality/attractiveness	-0.01
Patient Relationship Satisfaction	
Secure attachment	-0.23
Anxious attachment	0.00
Self esteem	-0.14
CES-D psychological distress	0.09
Matching warmth/trustworthiness	-0.47*
Matching vitality/attractiveness	0.06

*p<0.1 **p=<0.05 ***p=<0.01 N = 24

Note: Secure attachment was calculated by secure – avoidant attachment ratings. Matching variables were participant's ratings of the degree to which their current partner matched their ideal partner on a 1 – 7 Likert scale. Psychological distress was measured with the Center for Epidemiologic Studies Depression Scale (CES-D) on a 0-3 Likert scale. Relationship satisfaction was measured with the Perceived Relationship Quality Components (PRQC) Inventory on a 1 – 7 Likert scale. Self Esteem was measured with the Rosenberg Self Esteem Scale on a 1-4 Likert scale. Attachment was measured with the Adult

Results of these analyses firstly for patient psychological distress, indicated less secure attachment, lower self esteem, and more anxious attachment significantly predicted more patient psychological distress six months later.

Interestingly, results for predicting patient relationship satisfaction were quite different. None of the independent variables except matching warmth and trustworthiness had any role in predicting patient relationship satisfaction in six months. Unexpectedly, patients who rated their partner as low on matching between their own ideal standards and perceptions of the partner on

warmth and trustworthiness were more satisfied with their relationships at six months after diagnosis.

3.3.4 Do partners influence change in patient distress and relationship satisfaction over time from cancer diagnosis through to end of treatment?

I expected changes in patient psychological distress and relationship satisfaction over six months would be predicted by partner psychological distress, relationship satisfaction attachment, self esteem and matching ideals. Specifically, higher patient distress would be predicted by higher levels of partner anxious attachment, lower levels of partner secure attachment, self esteem, relationship satisfaction, and both matching ideals. Higher patient relationship satisfaction would be predicted by higher levels of partner secure attachment, self esteem, and both matching ideals as well as lower levels of partner anxious attachment and psychological distress.

Cross lagged multiple regressions were run as in Table 9. This time, six key partner independent patient variables were used in order to predict change in the independent variables at time two whilst controlling for time one patient independent variables. Results are shown in Table 10. As expected, lower partner self esteem significantly predicted higher patient psychological distress at six months.

Patient relationship satisfaction was also predicted over time when their partners indicated higher self esteem, and lower levels of psychological distress. Also as expected an increase in patient relationship satisfaction was predicted over time by their partner's perceiving higher matching between their own ideal standards and perceptions of the patients on warmth and trustworthiness as well as vitality and attractiveness.

TABLE 10: ***Predicting changes in psychological distress and relationship satisfacti of the patient from partner independent variables over six months***

	Beta
CES-D Psychological distress	
Secure attachment	-0.25
Anxious attachment	0.06
Self esteem	-0.42**
Relationship satisfaction	0.14
Matching warmth/trustworthiness	0.15
Matching vitality/attractiveness	0.07
Relationship Satisfaction	
Secure attachment	0.25
Anxious attachment	-0.19
Self esteem	0.32*
CES-D psychological distress	-0.32*
Matching warmth/trustworthiness	0.55***
Matching vitality/attractiveness	0.41**

*p<0.1**p=<0.05***p=<0.01 N = 24

Note: Secure attachment was calculated by secure – avoidant attachment ratings.
Matching variables were participant's ratings of the degree to which their current partner matched their ideal partner on a 1 – 7 Likert scale. Model two and three have the same variables in addition to matching warmth/trustworthiness and matching vitality attractiveness separately added. This procedure was followed to avoid excessive multicolinearity because of the high correlation between matching variables warmth/trustworthiness and vitality/attractiveness. Psychological distress was measured with the Center for Epidemiologic Studies Depression Scale (CES-D) on a 0-3 Likert scale. Relationship satisfaction was measured with the Perceived Relationship Quality Components (PRQC) Inventory on a 1 – 7 Likert scale. Self Esteem was measured with the Rosenberg Self Esteem Scale on a 1-4 Likert scale. Attachment was measured with the Adult Attachment Questionnaire (AAQ) on a 1-7 Likert scale. Matching Ideal Standards were measured with the Ideal Standards Questionnaires on a 1-7 Likert scale.

4. DISCUSSION

This research investigated the impact a cancer diagnosis has on patients and partners regarding levels of psychological distress and relationships satisfaction. The study measured how these variables predicted each other, together with attachment style, self esteem, and matching partner ideal standards. The effects that partner predictor variables had on patient distress and relationship satisfaction, after the cancer diagnosis and over time, were also investigated. Many predicted findings were found, but some unexpected results were also obtained. In this section, I will discuss these findings in three sections. First, psychological distress in patients is discussed from cross sectional and longitudinal data. Second, the impact partners have on patient distress is discussed. Third, I discuss relationship satisfaction in patients from both the cross sectional and longitudinal perspective followed by the impact of partners on satisfaction. Following this, strengths and weaknesses of the study are discussed, as well as clinical and research implications, before the thesis conclusion.

4.1 Psychological Distress

Individuals diagnosed with cancer and their spouses are vulnerable to psychological distress (see Hagedoorn et al. 2008). As other researchers have indicated, many patients with cancer do not experience long term psychological problems, but almost all experience some difficulties in adjustment as do their partners (Manne, et al., 2006). Identification of psychological distress in patients with cancer is important as it has been shown to have adverse effects on physical and psychological health outcomes (Hamer, Chida, & Molloy, 2009). In this study it was found that patient psychological distress did not change over time, whereas the level of psychological distress in partners decreased significantly. These levels were established looking at CES-D scores. Higher scores on the CES-D indicated higher psychological distress with a cut-off of 16 indicating symptoms of clinical concern. Seven patients (27%) and eight partners (31%) scored above the cut-off score after diagnosis compared to five (21%) patients and two (8%) partners who remained highly distressed over time. A rate of about thirty percent is

reasonable to be expected in the sample although the sample size is small and the incidence rates in the literature vary (Hagedoorn, et al., 2008; Helgeson, Synder, & Seltman, 2004) .

It was predicted that patients who are more psychologically distressed would report lower levels of relationship satisfaction, secure attachment, matching ideals, and self esteem, but higher levels of anxious attachment both cross-sectionally and over time.

4.1.2 Patients

The only variable in the cross sectional analyses to consistently predict patient psychological distress was self esteem; namely, as predicted, higher self esteem was associated with lower distress. This result is consistent with other research where low self esteem has indicated vulnerability to increased psychological distress in the standard population (Cooper-Evans, Alderman, Knight, & Oddy, 2008; Moradi & Subich, 2004) and in cancer patients (Gale, et al., 2001; Norton, et al., 2005)

Although it was expected that patients who are more psychologically distressed would report lower levels of relationship satisfaction, secure attachment, highly matching ideals, and higher levels of anxious attachment in my study these variables were not significantly related to psychological distress. These results, however, need to be treated with caution, given the low sample size.

4.1.3 Patient change over time

Results of the analyses for patient psychological distress indicated that lower patient secure attachment, more anxious attachment, and lower self esteem at time one, significantly predicted more patient psychological distress six months later.

Regarding the relationship with attachment, these results are consistent with prior research. Insecure attachment has been suggested to impact on how one copes with stress. For example, people with insecure attachment styles may perceive a stressor as “greater than it is”, and experience the physiological symptoms of stress for longer periods of time, than those with secure attachment styles (Hunter and Maunder 2001; Simpson & Rholes,2004).

Consistent with predictions, patients who experienced lower self esteem also reported higher levels of psychological distress. This is consistent with prior literature where lower self esteem has been related to greater psychological distress in cancer patients (Norton, Manne, Rubin, Hernandez & Carlson, 2005; Stiegelis, et al., 2003).

Although it was expected that lower relationship satisfaction and lower matching of ideal standards would increase psychological distress over time, this was not found in the present study. These results will be discussed later.

4.1.4 Partner effects on patients

How do partners affect patient outcomes? In the cross sectional analyses I predicted patient's levels of psychological distress would be influenced by their partner's levels of psychological distress, relationship satisfaction, attachment, self esteem and matching of ideals. Specifically, higher levels of patient distress would be related to higher levels of partner distress and anxious attachment as well as low levels of partner relationship satisfaction, lower secure attachment, lower self esteem and lower matching ideals.

Results indicated patients who were more distressed over time, had partners who were lower on anxious attachment (therefore more secure). This result is difficult to explain and was in stark contrast to expectations, based on prior research (Simpson & Rholes, 2004). If a partner is anxious in a stressful situation for example, coping with their patient's cancer diagnosis, he or she is presumably less likely to have the resources available to support and therefore reduce distress in the patient partner. One speculative explanation is that patients may be more distressed if their partner was not especially anxious after the diagnosis. This however, would only be the case for the partners who had an anxious attachment style activated by the stress of the diagnosis.

As predicted, self esteem played a role, again as expected from previous research. Partners who reported lower self esteem, had patients who were more distressed (Stiegelis, et al., 2003). Lower partner self esteem may inhibit partners being able to give the necessary support and care to the patient partner, resulting in increased patient distress.

With respect to matching ideals it was found that partners who reported the patient "as less closely matching their ideal for being warm and trustworthy", predicted more psychological distress over time in the patients. This intriguing finding showcases the interdependence between the members of each couple. Perhaps partners who perceive the patients as weak on this central domain fail to provide the kind of validation and support that is especially needed in this situation (Manne et al., 2004).

This interpretation is consistent with Wimberly and colleagues (2005), who found that when partners were less emotionally invested or involved in the relationship, the patient had increased distress and marital dissatisfaction (Wimberly, et al., 2005).

Contrary to predictions, high partner distress, low relationship satisfaction, low secure attachment and low matching on ideals standards for vitality and attractiveness, were not related to patient psychological distress. This may have been a result of low power and so replication with a larger sample may reveal different results.

4.1.5 Partner influence on patient change in psychological distress over time

As expected, lower partner self esteem significantly predicted higher patient psychological distress at six months. This result again could be explained by care giving and support in relationships, particularly when one partner has an illness. Patients may in fact become more distressed if they are not receiving the care and support they require, as their partner's self esteem is inhibiting them doing so. Previous research has shown, partners low self esteem may be a reflection of the patients distress – although this was not explored in the current study (Gale, et al., 2001; Norton, Manne, Rubin, Hernandez, & Carlson, 2005).

Through emotional contagion the partner may be affected by the patient's distress, and in turn the patient affected by the partner's low self esteem. This may give further support to the notion that couples behave as an interdependent emotional system (Hagedoorn, et al., 2008).

Similar interdependence has been seen in studies with breast cancer patients and their partners. Women whose quality of life and emotional well being deteriorated after treatment, had

partners whose emotional well being (including self esteem) also reduced (Badr, et al., 2010). Furthermore, quality of life factors such as depression are negatively associated with survival in women with breast cancer (Greer, Morris, Pettingale, & Haybittle, 1990). It is probable that intimate partners play a more active role in cancer patient's psychological distress than had previously been thought. Interventions should therefore be aimed at both women with breast cancer and their partners (Badr, et al., 2010).

In contrast to what was expected however, it was found that partner attachment, relationship satisfaction, and ideal standards did not predict change in patient psychological distress over time. These results will be discussed later.

4.2 Relationship Satisfaction

It was predicted that patients who reported higher levels of relationship satisfaction would report lower levels of psychological distress and anxious attachment with cross sectional analysis. They would also have higher self esteem, well matching ideals and would be securely attached. Patient's levels of relationship satisfaction may also be influenced by their partner's levels of these same predictor variables over time.

4.2.1 Patients

Corresponding with the hypotheses, cross sectional analyses did show patients who were less anxious in their attachment style, were more satisfied in their relationship. This has been demonstarted in prior literature where more anxious people tend to be less satisfied in their relationships. These patients would be more available for their partner which may help facilitate mutual support within the relationship therefore increasing satisfaction (Hazan & Shaver, 1994; Simpson, 1990).

As expected, if the partner matched their patient's ideal (from the patient's point of view) closely there was higher patient relationship satisfaction. That is, patients who perceived their current partner being a closer match to their ideal partner on warmth and trustworthiness were

more satisfied in their relationship. The same was found for the matching ideals of vitality and attractiveness in their partner. These findings are consistent with the literature, which suggests that warmth and trustworthiness characteristics are the most important factors in relationship evaluations by both men and women (Fletcher, et al., 1999). In this study sample (with a relatively even gender split) the expected result could be magnified, in the context of stress and illness (Fletcher, et al., 2000a). That is, patient perceptions of their partner and relationships may be even more important after a cancer diagnosis when patients are vulnerable to issues of body image, attractiveness, sexuality, and intimacy.

Against predictions, self esteem, secure attachment and psychological distress were not (cross-sectionally) related to relationship satisfaction. These null findings are discussed later.

4.2.2 Patient change in relationship satisfaction over time

Interestingly, the longitudinal results for predicting patient relationship satisfaction were quite different to psychological distress. None of the independent variables, except matching ideals on warmth and trustworthiness, had any role in predicting patient relationship satisfaction over six months. In contrast to expectation, patients who perceived lower matching between their own ideal standards and perceptions of the partners on warmth and trustworthiness were more satisfied with their relationships at six months after diagnosis. This was the opposite pattern to previous research where greater discrepancy between standards and perceptions of the partner have been shown to predict lower levels of satisfaction (Fletcher, et al., 1999).

One speculative explanation for this result is that patients who have more negative perceptions in this key dimension, are less disappointed with the support they receive. In contrast, perhaps having more "rose-tinted" perceptions, set patients "up for a fall" in the months after the diagnosis. Indeed, there is evidence from a series of studies by McNulty and colleagues that positive expectations and attributions can lead to disappointment and be a source of dysfunction over time, especially when relationships are faced with serious problems or challenging situations

(McNulty & Karney, (2004); McNulty, O'Mara, & Karney, (2008); McNulty, & Russell, (in press)).

Although it was expected that low relationship satisfaction and low matching of ideal standards would increase psychological distress, it was not found in the present study. These null results are discussed later.

4.2.3 Partner effects on patients

As predicted, cross sectional results suggested that partners who were less anxious in their attachment style, had patient partners who were more satisfied in their relationship. Again this seems logical as more secure and less anxious partners are more available to provide the care-giving needs of the patient, which in turn may influence relationship satisfaction for the patient (Hazan & Shaver, 1994; Simpson, 1990). Contrary to predictions, no other partner variables had any effect on patient relationship satisfaction.

4.2.4 Partner effect on patient relationship satisfaction over time

As expected, improved patient relationship satisfaction was predicted over time, when their partners indicated higher self esteem, and lower levels of psychological distress. As previously mentioned there is no prior research in cancer patients concerning these findings.

Also as hypothesised, when partners reported their patient more closely matched their ideals regarding warmth and trustworthiness, and vitality and attractiveness, patient relationship satisfaction was also predicted to be higher, six months later. These results indicate that relationship satisfaction from the patient's point of view is linked, in part, by how they perceived by their partner in these dimensions. These findings may well be a product of the pivotal importance of these particular dimensions when the patient is diagnosed with cancer, as previously noted (these effects may be weaker in "normal" non stressful situations).

Although it was expected that attachment may predict relationship satisfaction, in the present study partner attachment did not predict patient relationship satisfaction. These null results are discussed later.

4. 3 Strengths and Weaknesses

Before discussing the final implications of this study, it is important to identify the strengths and weaknesses of this research.

4.3.1 Strengths

Much of the research particularly for psychological distress in cancer is cross- sectional in design. Cancer is a chronic illness commonly associated with distress. Measuring distress at a single point in time may not give a true picture as to the nature and level of distress and relationship satisfaction being experienced. The current study is longitudinal with two points of measurement. The advantage of this design is having the ability to measure levels of distress and satisfaction immediately after diagnosis and then predict the change that might be seen six months later. Much of the previous literature has also focused on patients, sometime after treatment finished. As a result what the patient (let alone the couple) is experiencing at the time they are most vulnerable in the months after the cancer diagnosis, is neglected.

With respect to the sample characteristics, both the patient and partner groups showed a good representation of ages (ranging from individuals in their early thirties up to those in theirs seventies), employment and education status, as well as an even distribution of males and females in each group. An additional strength of the sample was that it was drawn from the community. This makes generalizing to community populations a reasonable step, in contrast to most other research on attachment and ideal standards, which has typically been conducted on student samples.

The present study focused on patients and the impact their partners have on their outcomes. As was indicated in the current research, there are likely to be factors which are more or less important, and contribute to psychological distress and relationship satisfaction and the interdependence of the couple. For example, levels of self esteem and perceptions of partner. Although the study had low power, there were a number of statistically significant results.

Increasing the number of participants and hence the power, in further similar investigation seems to be a promising future direction.

The attachment results are also in line with the theory, first postulated by Bowlby (1969) that attachment styles are activated in times of stress. There is no prior literature regarding ideal standards and cancer. The results again indicate these standards and processes may play an important role in understanding how coping with illnesses like cancer are linked to intimate relationships.

4.3.2 Weaknesses

Recruitment for this study was slower than anticipated, which resulted in a low number of participants and low power. Low power limited the kinds of analyses and virtually guaranteed the presence of some null findings. This also meant that gender differences could not be analyzed along with potential differences between breast cancer and prostate cancer patients.

Slow recruitment may have been a product of several factors. Firstly the timing of recruitment immediately followed a cancer diagnosis. This is a particularly difficult and stressful time for couples, who are processing a large amount of information regarding the diagnosis, the potential care plan and overall life changes during treatment and because of the cancer. They are confronting the possibility that the cancer could kill them. For a few couples, study participation was too much for them to cope with. This was unfortunate as these couples were experiencing considerable psychological distress, and they would have added more variance and power to the analysis.

The inclusion criteria were very specific, which created a delay in recruiting couples, and a number of potential couples who were excluded. Some of these were couples in gay relationships, and couples where the partner had also recently had a cancer treated. Given the age demographic of the targeted population this was quite common.

The questionnaire was long and comprehensive. This may have had an impact on those who completed them at the six-month follow up, at the end of an intensive treatment period.

Attrition was therefore reasonably low however, only two couples (one from each cancer group) discontinued. One couple ended their relationship and the other was no longer willing to participate due to the stress attributed to their cancer experience.

4.4 Implications

4.4.1 Clinical Implications

Results from this research indicate the importance of considering both psychological distress and relationship satisfaction in the patient and partner in the context of breast or prostate cancer diagnosis and treatment. Specifically, the findings from this study highlighted some important clinical considerations regarding distress and relationship satisfaction that should be discussed during information sharing about the diagnosis and the treatment of breast or prostate cancer. Psychological distress is more likely to be experienced by the patient if their self esteem is low at time of diagnosis. Their partner may influence their levels of distress also. That is, if partners think their patient is not warm and trustworthy, patients are likely to be more psychological distressed.

It is also important to consider potential changes that may occur for the couple over time. For example, higher patient distress at the end of treatment is likely if the patient is less securely attached, more anxious, anxious and experiences lower self esteem after diagnosis. Partners may also influence distress levels in the patient partners over time. For example, low partner self esteem after diagnosis predicts higher patient distress over time.

Relationship satisfaction may be influenced by the patient's attachment style which is activated under stress. Patients who were less anxious in their attachment style may be more satisfied in their relationship. Patients who see their partner as warm and trustworthy may be more satisfied in their relationship.

If partners are highly anxious, patient relationship satisfaction may be lower. However conversely, if partners have higher self esteem, and lower levels of psychological distress, their patient partners may be more satisfied in their relationship.

As he or she progresses through treatment phase (in this case over six months) changes in their relationship satisfaction may be experienced. An increase in the patient's relationship satisfaction may be predicted over time if their partner sees them as warm and trustworthy as well as vital and attractive. It could be beneficial to discuss potential changes in satisfaction with couples through relationship counseling.

Interestingly, patients who do not see their partner as particularly warm and trustworthy may be more satisfied with their relationships over time, as their expectations remain low and they are less likely to be disappointed.

4.4.2 Implications for future research

Future research is needed to confirm and extend the results found in this study. There were a number of null findings which warrants replicating the study to further test the study predictions. Future research should also consider looking at the two groups of breast and prostate cancer couples for a longer duration increasing the longitudinal component of the design (i.e., increasing follow up to one year). This study specifically looked at breast and prostate cancer although they were not able to be directly compared due to low power. In the future it would also be interesting to investigate other types of cancer and see if similar outcomes are observed.

This study is one of very few that has considered attachment style, self esteem and ideal standards within a population of cancer patients *and their partners*. The results indicate the importance of attachment and specific ideal standards in relation to psychological distress and relationship satisfaction. Future research should further investigate how these factors are related.

Overall , the most powerful results were those showing how partner outcomes changed patient partner outcomes though the effect of partner outcomes has been somewhat neglected in previous literature.

Participants were given the opportunity to write comments about the study on completion of the questionnaire. Future research would be guided by this qualitative data as it gave insight to

the couple's journey, in addition to the quantitative work. Many partners expressed their gratitude for the study at the end of the questionnaire. They were thankful for being given the opportunity to discuss their relationship difficulties regarding the cancer with their patients. For them the study facilitated communication that was otherwise difficult. Inadvertently, this may have had an impact on their relationship satisfaction and level of distress particularly at time two after treatment.

Inclusion of a measure of social support would have been beneficial. According to the self esteem threat model (Uchino, 2004), the receipt of social support or aid from others can diminish self esteem, which in turn can increase psychological distress (Lepore, Glaser, and Roberts (2008). Researchers have noted that the receipt of social support can bring into relief the recipient's vulnerability and dependency consequently diminishing self esteem (Rowland, (1989) as cited in Lepore, Glaser and Roberts, 2008). This may be an appropriate explanation for those patients whose partners were giving them the required support and care. It would also be interesting to investigate the relationship between social support, attachment and patient outcomes.

4.5 Conclusions

The current study examined psychological distress and relationship satisfaction in cancer patients and their partners. Twenty six couples coping with a breast or prostate cancer diagnosis completed two questionnaires over six months assessing psychological distress, relationship satisfaction, attachment style, self-esteem and matching of partner ideal standards.

After the cancer diagnosis and treatment, patient psychological distress was greater when self esteem was lower, and over time if patients experienced an anxious attachment style.

Partners influenced levels of psychological distress in their patient partners. Patient distress was greater when their partner's had low self esteem which in turn also predicted changes

in patient distress over time together with partner's low perception of their patient matching their ideal on warmth and trustworthiness.

After the cancer diagnosis patient relationship satisfaction was greater in those who had a less anxious attachment style, and saw their partner ideally as both vital and attractive and warm and trustworthy. Unexpectedly however, a greater discrepancy between the perception of their current partner and ideal partner regarding warmth and trustworthiness predicted patient's relationship satisfaction over time.

Changes in patient satisfaction were predicted over time when levels of partner distress were low, self esteem high and they closely matched their partner's ideal standard in the relationship.

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6. APPENDICES

APPENDIX A

Information Sheet

RESEARCH PROJECT
"THE IMPACT OF CANCER ON PATIENTS AND THEIR PARTNERS"

Research aim

When one member of a couple develops a serious illness such as cancer, the lives of both partners are likely to be substantially affected. In addition, the relationship between both partners may change as a result of the illness. The aim of this project is to study the impact cancer has on patients and their partners. This research will contribute to our knowledge about how couples cope with a serious illness and may aid practitioners working with cancer patients and their partners (for example, therapists, and social workers) to help them deal with the impact of the illness in the future. This may also lead us to provide better support to couples so that psychological health is maximized and relationships maintained and potentially enhanced. At present not much is known about how couples cope with cancer, how they are affected and how their relationship is affected by the cancer journey.

Study requirements and procedure

You are invited to take part in this study examining the impact of cancer on patients and their partners. We are looking for people who have been recently diagnosed with breast or prostate cancer (first diagnosis) but have not yet begun treatment, and who would be willing to participate in the present study together with their spouse or partner. If you and your spouse/partner agree to participate in this study, you will both be asked to fill out questionnaires at 3 points in time over the 12 months. These questionnaires, will ask about you and your relationship (e.g., your health and well being, relationship satisfaction, relationships in general, changes in the relationship since the onset of the illness, give and take of social support). Each questionnaire is self administered and will take about 20-30 minutes to complete.

If you and your partner are happy to participate, you will be contacted by the researcher Hannah Blakely from the Department of Psychology, University of Canterbury. She will meet with you after a treatment planning consultation with your oncologist to explain the format of the questionnaire and will be happy to answer any queries or concerns that you may have. You will be given the first questionnaire to complete at home at your convenience or during this meeting with Hannah if requested. The second questionnaire will be sent to you by mail after the first phase of cancer treatment, and the third, one year after diagnosis. A freepost envelope will be provided to send the questionnaire back to us.

Participation and confidentiality

Your participation is entirely voluntary (your choice). You do not have to take part in this study, and if you choose not to take part this will not affect any future care or treatment.

If you do agree to take part you are free to withdraw from the study at any time, without having to give a reason and this will in no way affect your continuing health care.

You may have a friend, family or Whanau support to help you understand the study and any other explanation you may require.

If you have any queries or concerns regarding your rights as a participant in this study, you may wish to contact a Health and Disability Advocate, telephone: Christchurch 03 3777 501 South Island (other than Christchurch) 0800 377 766.

No material which could personally identify you will be used in any reports on this study. All identifying personal and medical information will be kept secure and strictly confidential.

It is not anticipated that participation in this study will involve any risk to you. However, if at any time during participation in this study you experience distress of any kind and would like to talk to someone about your experiences, please contact Hannah Blakely or Dr Roeline Kuijer for

advice regarding psychological assistance or other forms of assistance. The project has been reviewed and approved by the Upper South Island Ethics and University of Canterbury Human Ethics Committees.

Please feel free to contact the researcher or supervisors if you have any questions about this study.

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APPENDIX B

Patient Consent Form

Study Title: The Impact of Cancer on Patients and their Partners

I have read and understood the information sheet dated ……..for volunteers taking part in the study designed to measure the impact of cancer on patients and their partners. I have had the opportunity to discuss this study. I am satisfied with the answers I have been given.

I have had the opportunity to use whanau or friend support to help me ask questions and understand the study.

I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time and this will in no way affect future health care.

I understand that participation in this study is confidential and that no material which could identify me will be used in any reports in this study.

I have had time to consider whether to take part. Yes/no

I know who to contact if I have questions about the study. Yes/no

I wish to receive a copy of the results of this study. Yes/no

I agree to an approved auditor appointed by the ethics committee reviewing my relevant medical records for the sole purpose of checking the accuracy of the information recorded for the study. Yes/no

I agree to my Oncologist releasing information relevant to the cancer diagnosis to the lead investigator of this study. Yes/no

(Please ensure you have signed and dated this form on the reverse)

I ----------(full name) hereby consent to take part in this study.

Date ----------

Patient Signature----------

Address----------

Study ID:

Hannah Blakely
Department of Psychology
University of Canterbury
Private Bag 4800
Christchurch

Ph: 033667001 extn. 7986
Ph: 021 655 295

Study explained by: Hannah Blakely and Dr Chris Atkinson
Study Role: Lead Investigator, Oncologist

Signature ----------

Date----------

APPENDIX C

Partner Consent Form

Study Title: The Impact of Cancer on Patients and their Partners

I have read and understood the information sheet dated ……..for volunteers taking part in the study designed to measure the impact of cancer on patients and their partners. I have had the opportunity to discuss this study. I am satisfied with the answers I have been given.

I have had the opportunity to use whanau or friend support to help me ask questions and understand the study.

I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time and this will in no way affect future health care.

I understand that participation in this study is confidential and that no material which could identify me will be used in any reports in this study.

I have had time to consider whether to take part. Yes/no

I know who to contact if I have questions about the study. Yes/no

I wish to receive a copy of the results of this study. Yes/no

(Please ensure you have signed and dated this form on the reverse)

I ----------(full name) hereby consent to take part in this study.

Date ----------

Partner Signature----------

Address----------

Study ID:

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Study Role: Lead Investigator,

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Date----------

APPENDIX D

Participant id number…….

Date:……..

The Impact of Cancer on Patients and their Partners

Measurement number 1

Patient Questionnaire

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Instructions

Please read the instructions below before completing the questionnaire.

The questionnaire consists of 6 sections:
1: Background Information
2. Health and Well-Being
3: Feelings about yourself
4: Relationships
5: Giving and receiving support
6: Measurement of stress

Please answer all of the questions according to the instructions. If you are unsure about how to answer, please give the best answer you can. There are no 'correct' or 'incorrect' answers: We are interested in how you feel and what you think. Don't take too long over your replies: your immediate reaction to each question will probably be more accurate than a long thought out response.
Questions will be asked in different formats:

a) Sometimes you will be asked to write down your answer on a dotted line.
b) Most of the time you will be asked to tick a circle. For example:

	Not at all	**A Little**	**Quite a bit**	**Very Much**
How often in the past two weeks Did you feel tense?	○	○	○	○

→ If you felt a little tense in the past two weeks then you tick "A Little".

c) Sometimes you will be asked to indicate to what extent you agree with certain statements by circling a number. For example:

	I strongly agree ↓						**I strongly disagree** ↓
In certain times, I usually expect the best.	1	2	3	4	5	6	7

→ If you agree with that statement quite strongly but not completely, then you circle number '6'.

It is important that you and your partner each fill out the questionnaire in private and that you do not discuss any of the questions while filling out the questionnaire. Of course you are free to discuss any of the topics after you have mailed the questionnaires back in the provided stamped return envelope to the University of Canterbury.

The study involves completing three questionnaires. This first questionnaire will take about 20 to 30 minutes to complete. The second and third questionnaires will be posted to you on completion of treatment and at one year since diagnosis. They should take 15 to 20 minutes to complete. On completion of this questionnaire you will receive a $10 shopping voucher in thanks for participating.

It is not anticipated that participation in the study will involve any risk to you. However, if at any time during participation in the study you experience distress of any kind and want to talk to someone about your experience, please contact Hannah Blakely (03 364 2987 ext 7986) or Roeline Kuijer (03 364 2902) for advice regarding psychological assistance or other forms of assistance.

Thank you very much for your willingness to participate in this study

Part 1: Background Information

Please tick the appropriate circle or write down your answer.

1. What is your gender
   - ○ Male
   - ○ Female

2. What is your age? ……. Years

3. What is your highest educational qualification?
   - ○ Left without school certificate
   - ○ NZ School certificate
   - ○ NZ Sixth form Certificate
   - ○ NZ University Entrance before 1986
   - ○ Trade or other tertiary certificate/diploma
   - ○ Degree or Postgraduate Diploma
   - ○ Other: ……....

4a. What is your employment status?
   - ○ I have a full time job
   - ○ I have a part time job for …. hrs per week
   - ○ I am unemployed (go to 5)
   - ○ I am a homemaker (go to 5)
   - ○ I am retired (go to 5)
   - ○ I receive a disability benefit
   - ○ Other ……..

4b. If your answer to question 4a was that you have a full time or part time job: Are you currently on sick leave?
   - ○ Yes
   - ○ No

5. What is your marital status?
   - ○ Married
   - ○ Living together

6. How long have you been married/ living together? ……Years …….. months

7a. Do you have Children?
   - ○ Yes ……..(number of children)
   - ○ No

7b. If you answered 'yes' how many live at home? ……..

8. Which ethnic group do you belong to?
   - ○ New Zealand European
   - ○ Maori
   - ○ Samoan
   - ○ Cook Island Maori
   - ○ Tongan
   - ○ Niuean
   - ○ Chinese
   - ○ Indian
   - ○ Other (such as Dutch, Japanese, Tokelau an) Please state……

Part 2. Health and Well-Being
2.1 Medical Information

The following questions are about your illness. Please tick the appropriate circle or write down your answer.

1. How long ago were you diagnosed with cancer? …….weeks / months
2. What type of cancer do you have? ……
3. Which of the following treatments are you likely to receive since being diagnosed?
   - ○ Surgery
   - ○ Chemotherapy
   - ○ Radiation therapy
   - ○ Hormone therapy
   - ○ Other …….

4. Do you suffer from any other illness/condition? (please tick circle or write down your answer)
   - ○ Depression
   - ○ Arthritis
   - ○ Heart disease
   - ○ Diabetes
   - ○ Multiple Sclerosis
   - ○ Other chronic condition (please specify): …….

2.2 Well-being

Please indicate for all of the following statements how often you felt or behaved this way during the past week

During the past week…

		Rarely or none of the time (less than 1 day)	Some or a little of the time (1 to 2 days)	Occasionally or a moderate amount of the time (3 to 4 times a week)	Most or all of the time (5 to 7 days)
1	I was bothered by things that usually don't bother me	○	○	○	○
2	I did not feel like eating: my appetite was poor	○	○	○	○
3	I felt that I could not shake off the blues even with help from my family or friends	○	○	○	○
4	I felt that I was just as good as other people	○	○	○	○
5	I had trouble keeping my mind on what I was doing	○	○	○	○
6	I felt depressed	○	○	○	○
7	I felt that everything I did was an effort	○	○	○	○
8	I felt hopeful about the future	○	○	○	○
9	I thought my life had been a failure	○	○	○	○
10	I felt fearful	○	○	○	○
11	My sleep was restless	○	○	○	○
12	I was happy	○	○	○	○
13	I talked less than usual	○	○	○	○

During the past week…		**Rarely or none of the time (less than 1 day)**	**Some or a little of the time (1 to 2 days)**	**Occasionally or a moderate amount of the time (3 to 4 times a week)**	**Most or all of the time (5 to 7 days)**
14	I felt lonely	○	○	○	○
15	People were unfriendly	○	○	○	○
16	I enjoyed life	○	○	○	○
17	I had crying spells	○	○	○	○
18	I felt sad	○	○	○	○
19	I felt people disliked me	○	○	○	○
20	I could not get “going”	○	○	○	○

2.3 Health

1	In general, would you say your health is…	**Excellent** ○	**Very good** ○	**Good** ○	**Fair** ○	**Poor** ○

2. The following items are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

	No, not limited at all	**Yes, limited a little**	**Yes, limited a lot**
a. Vigorous activities, such as running, lifting heavy objects**,** participating in strenuous sport?	○	○	○
b. Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf?	○	○	○
c. Lifting or carrying groceries.	○	○	○
d. Climbing several flights of stairs.	○	○	○
e. Climbing one flight of stairs.	○	○	○
f. Bending, kneeling or stooping.	○	○	○
g. Walking more than one mile.	○	○	○
h. Walking several blocks.	○	○	○
i. Walking one block.	○	○	○
j. Bathing or dressing yourself.	○	○	○

3. During the past 2 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your **physical health**?

	All of the time	**Most of the time**	**Some of the time**	**A little of the time**	**None of the time**
a. Cut down the amount of time you spent on work or other activities?	○	○	○	○	○

	All of the time	**Most of the time**	**Some of the time**	**A little of the time**	**None of the time**
b. Accomplished less than you would like?	○	○	○	○	○

c. Were limited in the kind of work or other activities?	○	○	○	○	○
d. Had difficulty performing the work or other activities (for example, it took extra time)	○	○	○	○	○

4. During the past 2 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any **emotional problems** (such as feeling depressed or anxious)?

	All of the time	**Most of the time**	**Some of the time**	**A little of the time**	**None of the time**
a**.** Cut down the amount of time you spent on work or other activities?	○	○	○	○	○
b. Accomplished less than you would like?	○	○	○	○	○
c. Didn't do work or other activities as carefully as usual?	○	○	○	○	○

	Extremely	**Quite a lot**	**Moderately**	**A little**	**Not at all**
5. How much bodily pain have you had during the past 2 weeks?	○	○	○	○	○
6. During the past 2 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?	○	○	○	○	○

7 For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 2 weeks…….

	All of the time	**Most of the time**	**Some of the time**	**A little of the time**	**None of the time**
a. have you felt calm and peaceful?	○	○	○	○	○
b.did you have a lot of energy?	○	○	○	○	○
c. have you felt downhearted and depressed?	○	○	○	○	○

8. During the past 2 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, etc.)?

All of the time	**Most of the time**	**Some of the time**	**A little of the time**	**None of the time**
○	○	○	○	○

Part 3: Feelings about yourself

3.1 Below is a list of statements dealing with your general feelings about yourself. Please answer each question by ticking one circle.

		strongly agree	agree	disagree	strongly disagree
1	On the whole, I am satisfied with myself.	○	○	○	○
2	At times I think I am no good at all.	○	○	○	○
3	I feel that I have a number of good qualities.	○	○	○	○
4	I am able to do things as well as most other people.	○	○	○	○
5	I feel I do not have much to be proud of.	○	○	○	○
6	I certainly feel useless at times.	○	○	○	○
7	I feel that I'm a person of worth, at least on an equal plane with others.	○	○	○	○
8	I wish I could have more respect for myself.	○	○	○	○
9	All in all, I am inclined to feel that I am a failure.	○	○	○	○
10	I take a positive attitude toward myself.	○	○	○	○

Part 4. Relationships

4.1 Experiences in close relationships

The statements below concern how you feel in emotionally intimate relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by circling one number in the scale.

		strongly agree						**strongly disagree**
I.	I find it relatively easy to get close to others.	1	2	3	4	5	6	7
2.	I'm not very comfortable having to depend on other people.	1	2	3	4	5	6	7
3.	I'm comfortable having others depend on me.	1	2	3	4	5	6	7
4	I rarely worry about being abandoned by others.	1	2	3	4	5	6	7
5	I don't like people getting too close to me.	1	2	3	4	5	6	7
6.	I'm somewhat uncomfortable being too close to others.	1	2	3	4	5	6	7
7.	I find it difficult to trust others completely.	1	2	3	4	5	6	7
8.	I'm nervous whenever anyone gets too close to me.	1	2	3	4	5	6	7
9.	Others often want me to be more intimate than I feel comfortable being.	1	2	3	4	5	6	7
10.	Others often are reluctant to get as close as I would like.	1	2	3	4	5	6	7

		Strongly agree						Strongly disagree
11.	I often worry that my partner(s) don't really love me.	1	2	3	4	5	6	7
12.	I rarely worry about my partner(s) leaving me.	1	2	3	4	5	6	7
13.	I often want to merge completely with others, and this desire sometimes scares them away.	1	2	3	4	5	6	7
14.	I'm confident others would never hurt me by suddenly ending our relationship.	1	2	3	4	5	6	7
15.	I usually want more closeness and intimacy than others do.	1	2	3	4	5	6	7
16.	The thought of being left by others rarely enters my mind.	1	2	3	4	5	6	7
17.	I'm confident that my partner(s) love me just as much and I love them.	1	2	3	4	5	6	7

4.2 The relationship with your partner

4.2 Please indicate what your **CURRENT** partner/relationship is like, answering each question that follows. Use this scale when answering each question, circling **ONE** number on each scale.

		Extremely						**Not at all**
1	How satisfied are you with your relationship?	1	2	3	4	5	6	7
2	How content are you with your relationship?	1	2	3	4	5	6	7
3	How happy are you with your relationship?	1	2	3	4	5	6	7
4	How committed are you to your relationship?	1	2	3	4	5	6	7
5	How dedicated are you to your relationship?	1	2	3	4	5	6	7
6	How devoted are you to your relationship?	1	2	3	4	5	6	7
7	How intimate is your relationship?	1	2	3	4	5	6	7
8	How close is your relationship?	1	2	3	4	5	6	7
9	How connected are you to your partner?	1	2	3	4	5	6	7
10	How much do you trust your partner?	1	2	3	4	5	6	7
11	How much can you count on your partner?	1	2	3	4	5	6	7
12	How dependable is your partner?	1	2	3	4	5	6	7

		Extremely						Not at all
13	How passionate is your relationship?	1	2	3	4	5	6	7
14	How lustful is your relationship?	1	2	3	4	5	6	7
15	How sexually intense is your relationship?	1	2	3	4	5	6	7
16	How much do you love your partner?	1	2	3	4	5	6	7
17	How much do you adore your partner?	1	2	3	4	5	6	7
18	How much do you cherish your partner?	1	2	3	4	5	6	7

4.3 Rate each factor below in terms of the importance that each factor has in describing your **IDEAL PARTNER** in a close relationship (dating, living together, or married). Circle **ONE** number in each scale**.**

	very important						**very unimportant**
Kind	1	2	3	4	5	6	7
Supportive	1	2	3	4	5	6	7
Understanding	1	2	3	4	5	6	7
Attractive appearance	1	2	3	4	5	6	7
Good lover	1	2	3	4	5	6	7
Outgoing	1	2	3	4	5	6	7
Adventurous	1	2	3	4	5	6	7
Sexy	1	2	3	4	5	6	7
Considerate	1	2	3	4	5	6	7
Sensitive	1	2	3	4	5	6	7
Nice body	1	2	3	4	5	6	7
A good listener	1	2	3	4	5	6	7
Successful (or potential to achieve)	1	2	3	4	5	6	7
Nice house or apartment (or potential to achieve)	1	2	3	4	5	6	7
Financially secure (or potential to achieve)	1	2	3	4	5	6	7
Dresses well (or potential to achieve)	1	2	3	4	5	6	7
Good job (or potential to achieve)	1	2	3	4	5	6	7

4.4 Rate each factor below in terms of the degree to which your **CURRENT PARTNER** matches your **IDEAL PARTNER** in a close relationship (dating, living together, or married). Circle **ONE** number in each scale**.**

	completely matches my ideal						**does not match my ideal at all**
Kind	1	2	3	4	5	6	7
Supportive	1	2	3	4	5	6	7
Understanding	1	2	3	4	5	6	7
Attractive appearance	1	2	3	4	5	6	7
Good lover	1	2	3	4	5	6	7
Outgoing	1	2	3	4	5	6	7
Adventurous	1	2	3	4	5	6	7
Sexy	1	2	3	4	5	6	7
Considerate	1	2	3	4	5	6	7
Sensitive	1	2	3	4	5	6	7
Nice body	1	2	3	4	5	6	7
A good listener	1	2	3	4	5	6	7
Successful (or potential to achieve)	1	2	3	4	5	6	7
Nice house or apartment (or potential to achieve)	1	2	3	4	5	6	7
Financially secure (or potential to achieve)	1	2	3	4	5	6	7
Dresses well (or potential to achieve)	1	2	3	4	5	6	7
Good job (or potential to achieve)	1	2	3	4	5	6	7

4.5 Rate each factor below in terms of how ACCURATELY each factor Describes YOURSELF. Circle ONE number in each scale.

	Very accurate						**Very inaccurate**
Kind	1	2	3	4	5	6	7
Supportive	1	2	3	4	5	6	7
Understanding	1	2	3	4	5	6	7
Attractive appearance	1	2	3	4	5	6	7
Good lover	1	2	3	4	5	6	7
Outgoing	1	2	3	4	5	6	7
Adventurous	1	2	3	4	5	6	7
Sexy	1	2	3	4	5	6	7
Considerate	1	2	3	4	5	6	7
Sensitive	1	2	3	4	5	6	7
Nice body	1	2	3	4	5	6	7
A good listener	1	2	3	4	5	6	7
Successful (or potential to achieve)	1	2	3	4	5	6	7
Nice house or apartment (or potential to achieve)	1	2	3	4	5	6	7
Financially secure (or potential to achieve)	1	2	3	4	5	6	7
Dresses well (or potential to achieve)	1	2	3	4	5	6	7
Good job (or potential to achieve)	1	2	3	4	5	6	7

4.6 Rate each factor below in terms of how ACCURATELY each factor Describes YOUR PARTNER. Circle ONE number in each scale.

	Very accurate						**Very inaccurate**
Kind	1	2	3	4	5	6	7
Supportive	1	2	3	4	5	6	7
Understanding	1	2	3	4	5	6	7
Attractive appearance	1	2	3	4	5	6	7
Good lover	1	2	3	4	5	6	7
Outgoing	1	2	3	4	5	6	7
Adventurous	1	2	3	4	5	6	7
Sexy	1	2	3	4	5	6	7
Considerate	1	2	3	4	5	6	7
Sensitive	1	2	3	4	5	6	7
Nice body	1	2	3	4	5	6	7
A good listener	1	2	3	4	5	6	7
Successful (or potential to achieve)	1	2	3	4	5	6	7
Nice house or apartment (or potential to achieve)	1	2	3	4	5	6	7
Financially secure (or potential to achieve)	1	2	3	4	5	6	7
Dresses well (or potential to achieve)	1	2	3	4	5	6	7
Good job (or potential to achieve)	1	2	3	4	5	6	7

Part 5: Giving and receiving support

The next questions are about the different types of support you and your partner may give each other. First you are asked to rate how often your partner has done something in the past week. Then, you are asked to rate how often you have done the same things in the past week.

In the past 2 weeks, how often did your partner…		**very often**	**often**	**sometimes**	**never**
1	comfort you when you were feeling down?	○	○	○	○
2	show you that he/she loved and cared for you?	○	○	○	○
3	give you practical help?	○	○	○	○
4	listen to you when you needed to talk about things that were on your mind?	○	○	○	○
5	give you information or advice?	○	○	○	○
6	show you that he/she appreciated you?	○	○	○	○
7	spend time with you?	○	○	○	○
8	take over some of your chores/ responsibilities in and around the house?	○	○	○	○
9	keep you company?	○	○	○	○
10	offer suggestions or ideas as solutions to things that bothered you?	○	○	○	○

11 All things considered, how satisfied were you with the support and help you received from your partner in the past week?

extremely satisfied	**quite satisfied**	**moderately satisfied**	**a little satisfied**	**Not at all satisfied**
○	○	○	○	○

	In the past 2weeks, how often did you….	very often	often	sometimes	never
1	Comfort your partner when he/she was feeling down?	○	○	○	○
2	show your partner that you loved and cared for him/her?	○	○	○	○
3	give your partner practical help?	○	○	○	○
4	listen to your partner when he/she needed to talk about things that were on his/her mind?	○	○	○	○
5	give your partner information or advice	○	○	○	○
6	show your partner that you appreciated him/her?	○	○	○	○
7	send time with your partner?	○	○	○	○
8	take over some of your partner's chores / responsibilities in and around the house?	○	○	○	○
9	keep your partner company?	○	○	○	○
10	offer suggestions or ideas as solutions to things that bothered him/her?	○	○	○	○

Part 6: Measurement of Stress

Recently you experienced a diagnosis of cancer. Below is a list of comments made by people after stressful life events. Please check each item, indicating how frequently these comments were true for you during the past seven days. If they did not occur at that time, please mark the 'not at all' column.

		often	**sometimes**	**rarely**	**not at all**
1	I thought about it when I didn't mean to.	○	○	○	○
2	I avoided letting myself get upset when I thought about it or was reminded of it	○	○	○	○
3	I tried to remove it from memory	○	○	○	○
4	I had trouble falling asleep or staying asleep, because of pictures or thoughts about it that came into my mind	○	○	○	○
5	I had waves of strong feelings about it	○	○	○	○
6	I had dreams about it	○	○	○	○
7	I stayed away from reminders of it.	○	○	○	○
8	I felt as if it hadn't happened or it wasn't real	○	○	○	○
9	I tried to talk about it	○	○	○	○
10	Pictures about it popped into my mind	○	○	○	○
11	Other things kept making me think about it, but I didn't deal with them.	○	○	○	○
12	I was aware that I still had a lot of feelings about it, but I didn't deal with them.	○	○	○	○
13	I tried not to think about it	○	○	○	○
14	Any reminder bought back feelings about it	○	○	○	○
15	My feelings about it were kind of numb	○	○	○	○

This is the end of the questionnaire. Thank you for your time.

The space below can be used to make comments (e.g. about the questionnaire or the research project).

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APPENDIX E

Participant id number…….

Date:……..

The Impact of Cancer on Patients and their Partners

Measurement number 1

Partner Questionnaire

Hannah Blakely
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021 655 295
Email: hvb12@student.canterbury.ac.nz

Instructions

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Questions will be asked in different formats:

d) Sometimes you will be asked to write down your answer on a dotted line.
e) Most of the time you will be asked to tick a circle. For example:

	Not at all	**A Little**	**Quite a bit**	**Very Much**
How often in the past two weeks Did you feel tense?	○	○	○	○

→ If you felt a little tense in the past two weeks then you tick "A Little".

f) Sometimes you will be asked to indicate to what extent you agree with certain statements by circling a number. For example:

	I strongly agree ↓						**I strongly disagree** ↓
In certain times, I usually expect the best.	1	2	3	4	5	6	7

→ If you agree with that statement quite strongly but not completely, then you circle number '6'.

It is important that you and your partner each fill out the questionnaire in private and that you do not discuss any of the questions while filling out the questionnaire. Of course you are free to discuss any of the topics after you have mailed the questionnaires back in the provided stamped return envelope to the University of Canterbury.
The study involves completing three questionnaires. This first questionnaire will take about 20 to 30 minutes to complete. The second and third questionnaires will be posted to you on completion of treatment and at one year since diagnosis. They should take 15 to 20 minutes to complete.
On completion of this questionnaire you will receive a $10 shopping voucher in thanks for participating.
It is not anticipated that participation in the study will involve any risk to you. However, if at any time during participation in the study you experience distress of any kind and want to talk to someone about your experience, please contact Hannah Blakely (03 364 2987 ext 7986) or Roeline Kuijer (03 364 2902) for advice regarding psychological assistance or other forms of assistance.

Thank you very much for your willingness to participate in this study

Part 1: Background Information

Please tick the appropriate circle or write down your answer.

1. What is your gender
   - ○ Male
   - ○ Female

2. What is your age? ……. Years

3. What is your highest educational qualification?
   - ○ Left without school certificate
   - ○ NZ School certificate
   - ○ NZ Sixth form Certificate
   - ○ NZ University Entrance before 1986
   - ○ Trade or other tertiary certificate/diploma
   - ○ Degree or Postgraduate Diploma
   - ○ Other: ……....

4a. What is your employment status?
   - ○ I have a full time job
   - ○ I have a part time job for …. hrs per week
   - ○ I am unemployed (go to 5)
   - ○ I am a homemaker (go to 5)
   - ○ I am retired (go to 5)
   - ○ I receive a disability benefit
   - ○ Other ……..

4b. If your answer to question 4a was that you have a full time or part time job: Are you currently on sick leave?
   - ○ Yes
   - ○ No

5. What is your marital status?
   - ○ Married
   - ○ Living together

6. How long have you been married/ living together? ……Years …….. months

7a. Do you have Children?
   - ○ Yes ……..(number of children)
   - ○ No

7b. If you answered 'yes' how many live at home? ……..

8 Which ethnic group do you belong to?
   - ○ New Zealand European
   - ○ Maori
   - ○ Samoan
   - ○ Cook Island Maori
   - ○ Tongan
   - ○ Niuean
   - ○ Chinese
   - ○ Indian
   - ○ Other (such as Dutch, Japanese, Tokelau an)
     Please state……

Part 2. Health and Well-Being

2.1 Medical Information

Please tick the appropriate circle or write down your answer.

1. Do you suffer from any other illness/condition? (please tick circle or write down your answer)

- ○ Arthritis
- ○ Heart disease
- ○ Diabetes
- ○ Multiple Sclerosis
- ○ Other condition (please specify):
  …….

2.2 Well-being

Please indicate for all of the following statements how often you felt or behaved this way during the past week

During the past week…		**Rarely or none of the time (less than 1 day)**	**Some or a little of the time (1 to 2 days)**	**Occasionally or a moderate amount of the time (3 to 4 times a week)**	**Most or all of the time (5 to 7 days)**
1	I was bothered by things that usually don't bother me	○	○	○	○
2	I did not feel like eating: my appetite was poor	○	○	○	○
3	I felt that I could not shake off the blues even with help from my family or friends	○	○	○	○
4	I felt that I was just as good as other people	○	○	○	○
5	I had trouble keeping my mind on what I was doing	○	○	○	○
6	I felt depressed	○	○	○	○
7	I felt that everything I did was an effort	○	○	○	○
8	I felt hopeful about the future	○	○	○	○
9	I thought my life had been a failure	○	○	○	○
10	I felt fearful	○	○	○	○
11	My sleep was restless	○	○	○	○
12	I was happy	○	○	○	○
13	I talked less than usual	○	○	○	○

During the past week…		**Rarely or none of the time (less than 1 day)**	**Some or a little of the time (1 to 2 days)**	**Occasionally or a moderate amount of the time (3 to 4 times a week)**	**Most or all of the time (5 to 7 days)**
14	I felt lonely	○	○	○	○
15	People were unfriendly	○	○	○	○
16	I enjoyed life	○	○	○	○
17	I had crying spells	○	○	○	○
18	I felt sad	○	○	○	○
19	I felt people disliked me	○	○	○	○
20	I could not get “going”	○	○	○	○

2.3 Health

1	In general, would you say your health is…	**Excellent** ○	**Very good** ○	**Good** ○	**Fair** ○	**Poor**

2. The following items are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

	No, not limited at all	**Yes, limited a little**	**Yes, limited a lot**
a. Vigorous activities, such as running, lifting heavy objects**,** participating in strenuous sport?	○	○	○
b. Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf?	○	○	○
c. Lifting or carrying groceries.	○	○	○
d. Climbing several flights of stairs.	○	○	○
e. Climbing one flight of stairs.	○	○	○
f. Bending, kneeling or stooping.	○	○	○
g. Walking more than one mile.	○	○	○
h. Walking several blocks.	○	○	○
i. Walking one block.	○	○	○
j. Bathing or dressing yourself.	○	○	○

3. During the past 2 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your **physical health**?

	All of the time	**Most of the time**	**Some of the time**	**A little of the time**	**None of the time**
a Cut down the amount of time you spent on work or other activities?	○	○	○	○	○

	All of the time	**Most of the time**	**Some of the time**	**A little of the time**	**None of the time**
b Accomplished less than you would like?	○	○	○	○	○
c Were limited in the					

kind of work or other activities?	○	○	○	○	○
D Had difficulty performing the work or other activities (for example, it took extra time)	○	○	○	○	○

4. During the past 2 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any **emotional problems** (such as feeling depressed or anxious)?

	All of the time	**Most of the time**	**Some of the time**	**A little of the time**	**None of the time**
a. Cut down the amount of time you spent on work or other activities?	○	○	○	○	○
b. Accomplished less than you would like?	○	○	○	○	○
c. Didn't do work or other activities as carefully as usual?	○	○	○	○	○

	Extremely	**Quite a lot**	**Moderately**	**A little**	**Not at all**
5. How much bodily pain have you had during the past 2 weeks?	○	○	○	○	○
6. During the past 2 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?	○	○	○	○	○

7 For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 2 weeks…….

	All of the time	**Most of the time**	**Some of the time**	**A little of the time**	**None of the time**
a. Have you felt calm and peaceful?	○	○	○	○	○
a. Did you have a lot of energy?	○	○	○	○	○
c. Have you felt downhearted and depressed?	○	○	○	○	○

8. During the past 2 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, etc.)?

All of the time	**Most of the time**	**Some of the time**	**A little of the time**	**None of the time**
○	○	○	○	○

Part 3: Feelings about yourself

3.1 Below is a list of statements dealing with your general feelings about yourself. Please answer each question by ticking one circle.

		strongly agree	agree	disagree	strongly disagree
1	On the whole, I am satisfied with myself.	○	○	○	○
2	At times I think I am no good at all.	○	○	○	○
3	I feel that I have a number of good qualities.	○	○	○	○
4	I am able to do things as well as most other people.	○	○	○	○
5	I feel I do not have much to be proud of.	○	○	○	○
6	I certainly feel useless at times.	○	○	○	○
7	I feel that I'm a person of worth, at least on an equal plane with others.	○	○	○	○
8	I wish I could have more respect for myself.	○	○	○	○
9	All in all, I am inclined to feel that I am a failure.	○	○	○	○
10	I take a positive attitude toward myself.	○	○	○	○

Part 4. Relationships

4.1 Experiences in close relationships

The statements below concern how you feel in emotionally intimate relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by circling one number in the scale.

		strongly agree						strongly disagree
I.	I find it relatively easy to get close to others.	1	2	3	4	5	6	7
2.	I'm not very comfortable having to depend on other people.	1	2	3	4	5	6	7
3.	I'm comfortable having others depend on me.	1	2	3	4	5	6	7
4	I rarely worry about being abandoned by others.	1	2	3	4	5	6	7
5	I don't like people getting too close to me.	1	2	3	4	5	6	7
6	I'm somewhat uncomfortable being too close to others.	1	2	3	4	5	6	7
7	I find it difficult to trust others completely.	1	2	3	4	5	6	7
8	I'm nervous whenever anyone gets too close to me.	1	2	3	4	5	6	7
9	Others often want me to be more intimate than I feel comfortable being.	1	2	3	4	5	6	7
10	Others often are reluctant to get as close as I would like.	1	2	3	4	5	6	7

		Strongly agree						Strongly disagree
11	I often worry that my partner(s) don't really love me.	1	2	3	4	5	6	7
12	I rarely worry about my partner(s) leaving me.	1	2	3	4	5	6	7
13	I often want to merge completely with others, and this desire sometimes scares them away.	1	2	3	4	5	6	7
14	I'm confident others would never hurt me by suddenly ending our relationship.	1	2	3	4	5	6	7
15	I usually want more closeness and intimacy than others do.	1	2	3	4	5	6	7
16.	The thought of being left by others rarely enters my mind.	1	2	3	4	5	6	7
17	I'm confident that my partner(s) love me just as much and I love them.	1	2	3	4	5	6	7

4.2 The relationship with your partner

4.2 Please indicate what your **CURRENT** partner/relationship is like, answering each question that follows. Use this scale when answering each question, circling **ONE** number on each scale.

		Extremely						**Not at all**
1	How satisfied are you with your relationship?	1	2	3	4	5	6	7
2	How content are you with your relationship?	1	2	3	4	5	6	7
3	How happy are you with your relationship?	1	2	3	4	5	6	7
4	How committed are you to your relationship?	1	2	3	4	5	6	7
5	How dedicated are you to your relationship?	1	2	3	4	5	6	7
6	How devoted are you to your relationship?	1	2	3	4	5	6	7
7	How intimate is your relationship?	1	2	3	4	5	6	7
8	How close is your relationship?	1	2	3	4	5	6	7
9	How connected are you to your partner?	1	2	3	4	5	6	7
10	How much do you trust your partner?	1	2	3	4	5	6	7
11	How much can you count on your partner?	1	2	3	4	5	6	7
12	How dependable is your partner?	1	2	3	4	5	6	7

		Extremely						Not at all
13	How passionate is your relationship?	1	2	3	4	5	6	7
14	How lustful is your relationship?	1	2	3	4	5	6	7
15	How sexually intense is your relationship?	1	2	3	4	5	6	7
16	How much do you love your partner?	1	2	3	4	5	6	7
17	How much do you adore your partner?	1	2	3	4	5	6	7
18	How much do you cherish your partner?	1	2	3	4	5	6	7

4.3 Rate each factor below in terms of the importance that each factor has in describing your **IDEAL PARTNER** in a close relationship (dating, living together, or married). Circle **ONE** number in each scale**.**

	very important						**very unimportant**
Kind	1	2	3	4	5	6	7
Supportive	1	2	3	4	5	6	7
Understanding	1	2	3	4	5	6	7
Attractive appearance	1	2	3	4	5	6	7
Good lover	1	2	3	4	5	6	7
Outgoing	1	2	3	4	5	6	7
Adventurous	1	2	3	4	5	6	7
Sexy	1	2	3	4	5	6	7
Considerate	1	2	3	4	5	6	7
Sensitive	1	2	3	4	5	6	7
Nice body	1	2	3	4	5	6	7
A good listener	1	2	3	4	5	6	7
Successful (or potential to achieve)	1	2	3	4	5	6	7
Nice house or apartment (or potential to achieve)	1	2	3	4	5	6	7
Financially secure (or potential to achieve)	1	2	3	4	5	6	7
Dresses well (or potential to achieve)	1	2	3	4	5	6	7
Good job (or potential to achieve)	1	2	3	4	5	6	7

4.4 Rate each factor below in terms of the degree to which your **CURRENT PARTNER** matches your **IDEAL PARTNER** in a close relationship (dating, living together, or married). Circle **ONE** number in each scale**.**

	completely matches my ideal						**does not match my ideal at all**
Kind	1	2	3	4	5	6	7
Supportive	1	2	3	4	5	6	7
Understanding	1	2	3	4	5	6	7
Attractive appearance	1	2	3	4	5	6	7
Good lover	1	2	3	4	5	6	7
Outgoing	1	2	3	4	5	6	7
Adventurous	1	2	3	4	5	6	7
Sexy	1	2	3	4	5	6	7
Considerate	1	2	3	4	5	6	7
Sensitive	1	2	3	4	5	6	7
Nice body	1	2	3	4	5	6	7
A good listener	1	2	3	4	5	6	7
Successful (or potential to achieve)	1	2	3	4	5	6	7
Nice house or apartment (or potential to achieve)	1	2	3	4	5	6	7
Financially secure (or potential to achieve)	1	2	3	4	5	6	7
Dresses well (or potential to achieve)	1	2	3	4	5	6	7
Good job (or potential to achieve)	1	2	3	4	5	6	7

4.5 Rate each factor below in terms of how **ACCURATELY** each factor Describes **YOURSELF**. Circle **ONE** number in each scale.

	Very accurate						**Very inaccurate**
Kind	1	2	3	4	5	6	7
Supportive	1	2	3	4	5	6	7
Understanding	1	2	3	4	5	6	7
Attractive appearance	1	2	3	4	5	6	7
Good lover	1	2	3	4	5	6	7
Outgoing	1	2	3	4	5	6	7
Adventurous	1	2	3	4	5	6	7
Sexy	1	2	3	4	5	6	7
Considerate	1	2	3	4	5	6	7
Sensitive	1	2	3	4	5	6	7
Nice body	1	2	3	4	5	6	7
A good listener	1	2	3	4	5	6	7
Successful (or potential to achieve)	1	2	3	4	5	6	7
Nice house or apartment (or potential to achieve)	1	2	3	4	5	6	7
Financially secure (or potential to achieve)	1	2	3	4	5	6	7
Dresses well (or potential to achieve)	1	2	3	4	5	6	7
Good job (or potential to achieve)	1	2	3	4	5	6	7

4.6 Rate each factor below in terms of how **ACCURATELY** each factor Describes **YOUR PARTNER**. Circle **ONE** number in each scale.

	Very accurate						**Very inaccurate**
Kind	1	2	3	4	5	6	7
Supportive	1	2	3	4	5	6	7
Understanding	1	2	3	4	5	6	7
Attractive appearance	1	2	3	4	5	6	7
Good lover	1	2	3	4	5	6	7
Outgoing	1	2	3	4	5	6	7
Adventurous	1	2	3	4	5	6	7
Sexy	1	2	3	4	5	6	7
Considerate	1	2	3	4	5	6	7
Sensitive	1	2	3	4	5	6	7
Nice body	1	2	3	4	5	6	7
A good listener	1	2	3	4	5	6	7
Successful (or potential to achieve)	1	2	3	4	5	6	7
Nice house or apartment (or potential to achieve)	1	2	3	4	5	6	7
Financially secure (or potential to achieve)	1	2	3	4	5	6	7
Dresses well (or potential to achieve)	1	2	3	4	5	6	7
Good job (or potential to achieve)	1	2	3	4	5	6	7

Part 5: Giving and receiving support

The next questions are about the different types of support you and your partner may give each other. First you are asked to rate how often your partner has done something in the past week. Then, you are asked to rate how often you have done the same things in the past week.

	In the past 2 weeks, how often did your partner…	**very often**	**often**	**sometimes**	**never**
1	Comfort you when you were feeling down?	○	○	○	○
2	Show you that he/she loved and cared for you?	○	○	○	○
3	Give you practical help?	○	○	○	○
4	Listen to you when you needed to talk about things that were on your mind?	○	○	○	○
5	Give you information or advice?	○	○	○	○
6	Show you that he/she appreciated you?	○	○	○	○
7	Spend time with you?	○	○	○	○
8	Take over some of your chores/ responsibilities in and around the house?	○	○	○	○
9	Keep you company?	○	○	○	○
10	Offer suggestions or ideas as solutions to things that bothered you?	○	○	○	○

11 All things considered, how satisfied were you with the support and help you received from your partner in the past week?

extremely satisfied	**quite satisfied**	**moderately satisfied**	**a little satisfied**	**Not at all satisfied**
○	○	○	○	○

In the past 2weeks, how often did you….		**very often**	**often**	**sometimes**	**never**
1	Comfort your partner when he/she was feeling down?	○	○	○	○
2	show your partner that you loved and cared for him/her?	○	○	○	○
3	give your partner practical help?	○	○	○	○
4	listen to your partner when he/she needed to talk about things that were on his/her mind?	○	○	○	○
5	give your partner information or advice	○	○	○	○
6	show your partner that you appreciated him/her?	○	○	○	○
7	send time with your partner?	○	○	○	○
8	take over some of your partner's chores / responsibilities in and around the house?	○	○	○	○
9	keep your partner company?	○	○	○	○
10	offer suggestions or ideas as solutions to things that bothered him/her?	○	○	○	○

Part 6: Measurement of Stress

Recently you experienced a diagnosis of cancer. Below is a list of comments made by people after stressful life events. Please check each item, indicating how frequently these comments were true for you during the past seven days. If they did not occur at that time, please mark the 'not at all' column.

		often	**sometimes**	**rarely**	**not at all**
1	I thought about it when I didn't mean to.	○	○	○	○
2	I avoided letting myself get upset when I thought about it or was reminded of it	○	○	○	○
3	I tried to remove it from memory	○	○	○	○
4	I had trouble falling asleep or staying asleep, because of pictures or thoughts about it that came into my mind	○	○	○	○
5	I had waves of strong feelings about it	○	○	○	○
6	I had dreams about it	○	○	○	○
7	I stayed away from reminders of it.	○	○	○	○
8	I felt as if it hadn't happened or it wasn't real	○	○	○	○
9	I tried to talk about it	○	○	○	○
10	Pictures about it popped into my mind	○	○	○	○
11	Other things kept making me think about it, but I didn't deal with them.	○	○	○	○
12	I was aware that I still had a lot of feelings about it, but I didn't deal with them.	○	○	○	○
13	I tried not to think about it	○	○	○	○
14	Any reminder bought back feelings about it	○	○	○	○
15	My feelings about it were kind of numb	○	○	○	○

This is the end of the questionnaire. Thank you for your time.

The space below can be used to make comments (e.g. about the questionnaire or the research project).

……
……
……
……
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……..

APPENDIX F

Participant id number…….

Date:……..

The Impact of Cancer on Patients and their Partners

Measurement Number 2/3

Patient Questionnaire

Part 1: Changes in background information

The following questions ask about possible changes in your personal circumstances that may have occurred in the past six months. (i.e., since the beginning of the study) Please tick the appropriate circle or write down your answer.

1a Did your employment status change compared to six months ago?

- ○ No (go to question 2)
- ○ Yes →
  - ○ I now have a full time job
  - ○ I now have a part time job for …. hrs per week
  - ○ I am now unemployed
  - ○ I am now a homemaker
  - ○ I now receive a disability benefit
  - ○ I am retired

1b. If your answer was 'yes to question 1a: Was the change in employment status a result of your illness?

- ○ Yes
- ○ No

1c. If your answer to 1a. was that you have a full time or part time job: Are you currently on sick leave?

- ○ Yes
- ○ No

2. Did anything else change in your personal circumstances in the past six months?

- ○ No
- ○ Yes, please specify:

……

Part 2. Health and Well-Being

2.1 Medical Information

The following questions are about your illness. Please tick the appropriate circle or write down your answer.

1. How long ago were you diagnosed with cancer? …….weeks / months

2. What type of cancer do you have? ……

3. Which of the following treatments have you received since being diagnosed?
   - ○ Surgery
   - ○ Chemotherapy
   - ○ Radiation therapy
   - ○ Hormone therapy
   - ○ Other …….

4. Do you suffer from any other illness/condition? (please tick circle or write down your answer)
   - ○ Depression
   - ○ Arthritis
   - ○ Heart disease
   - ○ Diabetes
   - ○ Multiple Sclerosis
   - ○ Other chronic condition (please specify):
     …….

APPENDIX G

Participant Id number…….

Date:……..

The Impact of Cancer on Patients and their Partners

Measurement Number 2/3

Partner Questionnaire

Part 1: Changes in background information

The following questions ask about possible changes in your personal circumstances that may have occurred in the past six months. (i.e., since the beginning of the study) Please tick the appropriate circle or write down your answer.

1a Did your employment status change compared to six months ago?

- ○ No (go to question 2)
- ○ Yes →
  - ○ I now have a full time job
  - ○ I now have a part time job for …. hrs per week
  - ○ I am now unemployed
  - ○ I am now a homemaker
  - ○ I now receive a disability benefit
  - ○ I am retired

1b. If your answer was 'yes to question 1a: Was the change in employment status a result of your partner's illness?

- ○ Yes
- ○ No

1c. If your answer to 1a. was that you have a full time or part time job: Are you currently on sick leave?

- ○ Yes
- ○ No

2 Did anything else change in your personal circumstances in the past six months?

- ○ No
- ○ Yes, please specify:

……

Part 2. Health and Well-Being

2.1 Medical Information

Please tick the appropriate circle or write down your answer.

1. Do you suffer from any other illness/condition? (please tick circle or write down your answer)

- ○ Arthritis
- ○ Heart disease
- ○ Diabetes
- ○ Multiple Sclerosis
- ○ Other condition (please specify):
  ……