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Coping with Social Support Within a Marriage Afflicted by Cancer: An Interdependent Dynamic Viewpoint

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COPING AND SOCIAL SUPPORT WITHIN A MARRIAGE AFFLICTED BY CANCER: AN INTERDEPENDENT AND DYNAMIC VIEWPOINT

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Abstract

The purpose of this study was to understand the nature of the cancer experience for both the cancer patient and his/her spouse and to explore the relationships that influence the evolution of the cancer experience. Using retrospective data, 53 cancer patients and their spouses filled out questionnaires over the course of two and a half months about their marriage, their mental health, the social support that the patient received, and how the patient coped. Patients and spouses were found to have equivalent levels of mental health, but somewhat disparate perceptions of the social support that the patient received and the stressors the patient faced. While marital quality remained stable over Time and between Respondents, mental health and patient social support improved over Time. With further investigation, the study found a number of relationships between variables that suggest a model for the evolution of the cancer experience: initial marital quality and predicted social support and patient coping which, in turn, predicted final reports of marital quality. Shared understanding of the cancer experience did not predict social support, but did predict patient coping. Shared understanding of patient coping was, however, strongly associated with social support. This model corresponds with Lazarus and Folkman's (1984) process view of coping and social support and further reiterates a need for both clinicians and future research to view coping and social support in a dyadic and dynamic viewpoint.

Coping and Social Support Within a Marriage Afflicted By Cancer: An Interdependent and Dynamic Viewpoint

Physical illness, in every degree of severity, is one of the most widespread and difficult stressors that an individual and those within his/her social network may face (Hobfoll & Stevens, 1990). Illness can be life-changing and must be understood on more than a physiological level. In a survey of cancer patients, 84% of the participants reported that the experience of cancer had changed their view of themselves, 83% described changes in their relations with others, 79% recounted a change in their daily priorities and routines, 67% reported changes in their plans for the future, and 66% expressed a change in their view of the world (Collins, Taylor, & Skokan, 1990). Such severe changes in one's belief system suggests that illness is not purely a biomedical phenomenon, but rather is intricately linked to psychological factors that affect the course of an illness and how individuals may choose to handle their condition.

With recent medical advances in the fight against cancer, individuals affected by the disease have better prognoses and are living longer lives (Behen & Rodrigue, 1994). This has shifted the psychological focus on cancer from issues of death and bereavement to the psychosocial processes that aid in a successful physical and mental recovery from cancer (Behen & Rodrigue, 1994). In particular, researchers have been interested in the coping mechanisms that patients employ to maintain a positive mental health. Social support as a method of coping has continuously been found to be one of the most necessary and important approaches in handling the stress of cancer (Northouse, 1988; Peters-Goldern, 1982). Yet, within the literature on cancer, coping, and social support, researchers are only beginning to look at how a patient's environment and relationships are intricately entangled in how a patient copes. Of particular importance to an adult's struggle with cancer is how his/her marital relationship creates an environment that both the patient and his/her spouse must cope and support each other in. The need for a further understanding of coping and social support within the cancer experience as (1) a multidimensional and dynamic phenomenon and (2) one that affects more than the ill patient is necessary to clinically aid those patients, their spouses, and families whose lives have been altered by the diagnosis of cancer.

Stress, Coping, and Social Support

Stress results from an imbalance in the demands of a particular situation and an individual's abilities to meet those demands (Billings & Moos, 1981). Faced with such stress, individuals appraise both the situation and their own capabilities in handling it; in primary appraisal, the individual evaluates the significance and impact of the stressful situation and, in secondary appraisal, the individual assesses his/her own resources and options to handle such stress (Livneh, 2000). Individuals' options involve both their coping strategies and the level of social support they receive. The way in which one defines the meaning of a situation influences the plan of coping that one develops (Moos & Schaefer, 1986, as cited in Bartman & Roberto, 1996). Coping strategies can be defined as both behavioral and cognitive attempts to use personal and social resources to master, alleviate, or simply tolerate stressful events and the emotions that they evoke (Billings and Moos, 1981; Ptacek, Smith, Espe, & Raffety, 1994; Terry, 1994). Coping, furthermore, can be seen as an active and mobile process that constantly changes an individual's cognitions and behaviors in order to manage external or internal stressors (Lazarus & Folkman, 1984). Lazarus and Folkman's (1984) process view of coping highlights the constantly changing nature of coping in which cognitive and behavioral efforts to alleviate stress are shaped by and, in turn, shape the social context of the individual.

Debate has been longstanding on where social support fits into the coping paradigm. Traditionally, resources that one may use to handle a stressful situation have been divided into personal resources, which refer to coping skills, and interpersonal resources, which refer to social support (Ptacek, Pierce, Dodge, & Ptacek, 1997). Yet, this view limits coping to only involve the primary individual; coping, however, is affected by the environment and relationships of the individual and hence should also be viewed as an interpersonal process (Coyne, Ellard, & Smith, 1990). With this more encompassing position, social support's place within coping becomes evident: it is a beneficial tool employed within coping strategies (Terry, 1994).

Social support involves relationships with which an individual defines and understands his/her social identity and, through which, an individual is provided emotional, material, and informational support and aid (Bartman & Roberto, 1996). Social support is two-fold: it is partially determined by an individual's personal development, or intraindividual development, and is also determined by the relationships a person has, or his/her interindividual development (Antonucci & Jackson, 1990). Social support buffers a person from the effects of stress through both facilitating coping and diminishing the degree of the stressor (Northouse, 1988). The positive effects of social support can be considerable: Meyerowitz (1980) found that those who have an outlet to express the negative emotions of anger, guilt, and depression fend better with illness than do others (as cited in Bartman & Roberto, 1996; Wallston, Alagna, DeVellis,

& DeVellis, 1983). The source of support, however, often defines its effectiveness: numerous studies have found that intimate and close relationships are the most vital source of support and, furthermore, those who lack such intimate support have deficient means to cope with stressors (Coyne & DeLongis, 1986; Lieberman, 1982 as cited in Coyne, Ellard, & Smith, 1990). Barker and Lemle (1987) additionally found that people often report using informal helpers, like family and friends, much more often than professional helpers.

Researchers have been in debate over the appropriate way to measure support since it concerns both social integration, which involves levels of intimacy, and supportive interactions, which involves the actual support received (Hobfoll & Stevens, 1990). Psychologists have questioned whether it is the quality or quantity of support that characterizes its effectiveness. Contemporary theory contends that it is the quality of social support that increases and improves a person's functioning within a stressful situation (Billings & Moos, 1981). The coping person's perception of their support network is an important component to how quality is defined, yet different individuals require different kinds of social support, even when faced with the same stressor (Dakof & Taylor, 1990). Ptacek, Dodge, Pierce, and Ptacek (1997) suggest that several dimensions of support must be looked at, including both perceived and received support, satisfaction with the received support, and the individual's own level of seeking support. Kessler (1991) has found these distinctions to be important as it seems that how an individual perceives support is more significant in a person's adjustment to stress than is the actual support received (as cited in Acitelli & Antonucci, 1994)

Theoretical Conceptualizations of Coping

Dispositional Versus Situational Coping

Early research viewed coping as an inherent predisposition of the individual to respond in similar ways to stress irrespective of the actual situation or stressor (Terry, 1994). This viewpoint is referred to as trait or dispositional coping and hinges on the maintenance of psychological and emotional stability throughout situations (Billings & Moos, 1981). Support for this theory tends to be similar and begins by looking at an individual's disposition and seeing how that yields a certain coping method. An example of such is Carver et al.'s (1989) finding that Type A personalities are more likely to plan how to actively confront a stressor and to persist in the strategy they choose than are other personality types (as cited in Terry, 1994). The dispositional outlook on coping has, however, been criticized in failing to predict how an individual may behave in a discrete stressful event because it limits coping to more general and more typical situations (Billings & Moos, 1981; Lazarus & Folkman, 1984, as cited in Ptacek & Gross, 1997).

In response to inadequacies of dispositional coping, more recent theory broadens the perception of coping to include how coping can vary in both cognitions and behaviors from situation to situation (Billings & Moos, 1981). In situational coping, individuals appraise the stressfulness and controllability of a particular event and then employ the appropriate coping method for the nature of the event and resources that they may have (Terry, 1994). Looking at coping through a situational lens may involve researching how individuals react, for example, to a specific illness. While often the more accepted outlook on coping, the situational lens also has its limitations. Both the dispositional and situational outlooks on coping can contribute to our understanding of the process; hence, a compromise of the two viewpoints is beneficical. Coping must be looked at as a multidimensional process that involves both a person's inherent disposition to respond to events in a particular way and how the nature of the situation affects a person's choice in coping mechanisms (Ptacek & Gross, 1997).

The Focus of Coping

The first researchers on coping separated coping mechanisms into the two categories of problem-focused and emotion-focused strategies (Billings & Moos, 1981; Pearlin & Schooler, 1978, as cited in Livneh, 2000). While further subdivisions have taken place, this chief partition has remained throughout coping literature and can be found in contemporary research. Problem-focused coping relies on a cognitive response to stress and involves individuals' attempts to minimize or eliminate the impact of a stressful event (Billings & Moos, 1981; Livneh, 2000). An example of this would be for a cancer patient who chooses to get several opinions on his/her diagnosis to find the best method to treat the disease. Emotion-focused coping relies more on an affective response and involves both cognitions and behaviors that regulate the emotions evoked by the stressor rather than to regulate or confront the stressor itself (Billings & Moos, 1981; Livneh, 2000). An example of this would be a cancer patient's adoption of a "fighting" and optimistic spirit towards the disease without resolving on how to treat the cancer. A person's decision of which method to employ is intricately connected to his/her sense of control in the situation: with events that have the potential to be controlled, people tend more to use problem-focused coping; with a less controllable situation, people more readily use emotion-focused coping (Terry, 1994). Problem-focused and emotion-focused strategies both involve the use of social support and, as such, social support acts to tie these two strategies together (Terry, 1994).

Emotion-focused strategies often seem like the better choice in coping as they are more immediate methods to cope with a stressful situation. They, however, are less effective in bettering the situation because those who employ emotion-focused strategies do not confront the stressor (Hobfoll & Stevens, 1990). In fact, a reliance on emotion-focused coping has been found to result in poor mental health (Aldwin & Reverson, 1987; Terry, 1991, as cited in Terry, 1994). On the other hand, problem-focused coping has been positively correlated with an increased psychological well-being (Folkman, Lazarus, Gruen, & DeLongis, 1986, as cited in Terry, 1994).

Often associated with the division of emotion-focused and problem-focused coping is the category of avoidance. Avoidance coping involves an individual's disengagement to the stressful event through means of denial, social withdrawal, and preoccupation or escapism through temporary distractions (Livneh, 2000). Not surprisingly, avoidance has been found to be very maladaptive to its users as it, similarly to emotion-focused coping, ignores or displaces the need to confront the stressor (Livneh, 2000)

Further Divisions in Coping

One early method that researchers looked at in defining coping and dividing it into further classifications by the type of action taken. Billings and Moos (1981) specifically divided an individual's active attempts at alleviating stress into cognitive, behavioral, and avoidant strategies. People who use active cognitive coping attempt to manage their situation by cognitive appraisals; Billings and Moos (1981) provide the examples of individuals who try "to see the positive side of the situation" and who draw on "past experiences in similar situations" (p. 141). People who use active behavioral coping make attempts to deal directly with the problem and do such by gathering information on the subject or taking definitive action in an attempt to solve the stressful problem (Billings & Moos, 1981). Avoidant strategies, also included in this subdivision, involve methods of actively avoiding confrontation with the stressor by, for example, preparing "for the worst" and not sharing or acknowledging one's emotions (Billings & Moos, 1981, p. 141). Both active behavioral and active cognitive coping have been associated with a decrease in stress while avoidant coping has been found to increase stress (Billings & Moos, 1981).

While further divisions of coping into more specific categories has occurred, a discussion of each particular coping mechanism is unnecessary and irrelevant to the focus of this paper.

Cancer, Coping, and Social Support

The Nature of Cancer

The term cancer involves much more than the biological growth and spread of mutated cells; the process involves many different, challenging steps and changes for the individual. The individual's life is altered at diagnosis as his/her lifestyle and activities are interrupted by treatment plans, daily medical visits, and often debilitating side effects (Johnson, Lauver & Nail, 1989). Treatment can often be worse for the patients than the pain of the actual cancer; for example, 75% of those undergoing radiation experience diarrhea, fatigue, urinary problems, and irritating skin reactions, including psoriasis and hair loss (Johnson et al., 1989; Peters-Golden, 1982). The stress evoked by cancer further

varies depending on both the type and stage of the disease (Ptacek, Pierce, Ptacek, & Nogel, 1999). Several researchers have found that the cancer experience begins with a period of marked stress at diagnosis, which lessens over time as the patient and his/her family adjust to the disease and its treatment and which may again be elevated if late stages or recurrences develop (Fang, Manne, & Pape, 2001; Weihs, Enright, Howe, & Simmens, 1999). From all of this, patients experience emotional distress from handling a shift in their functional abilities, a possible loss in their mobility and capacity to work, a loss of their independence, and the simple, yet severe, threat of pain, disfigurement, and possible death (Livneh, 2000; Hobfoll & Stevens, 1990). For many patients, this can lead to depression, isolation, a loss in self-esteem, anxiety, diminished body image, fear of death, and dysfunction within their family, marriage, and social group (Bartman & Roberto, 1996).

Cancer is a chronic illness and, as such, can have long-term detrimental effects on the psychosocial health of both the patient and those with whom he/she interacts. Significant levels of depression commonly persist for the patient throughout the first two years of treatment following diagnosis (Kayser, Sormanti, & Strainchamps, 1999). Similarly, psychological distress can persist for those in a chronically ill patient's social network: six months after an uncomplicated myocardial infarction, the wives of patients remained at considerable risk for psychological distress, with 32% meeting the criteria for a clinical psychiatric diagnosis (Coyne & Smith, 1991). The likelihood of persisting psychological problems results from an interplay of the coping strategies employed, the individual's perceived social support and level of family cohesion, his/her past psychological history, and his/her age and education (Kayser et al., 1999). Chronic illness creates a huge demand for social support for all parties involved with the stressful event; social support is significantly correlated with adjustment one year after diagnosis (Hobfoll & Stevens, 1990; Ptacek, Pierce, Ptacek, & Nogel, 1997). Unfortunately, it seems that when the demand increases for such support, particularly when the need is long-term, patients and those in intimate relationships with them see their support networks dissipate and are left lonely and uncomforted (Hobfoll & Lehmen, 1989 as cited in Hobfoll & Stevens, 1990; Peters-Golden, 1982) .

Methods of Coping with Cancer

The nature of cancer creates a unique situation to explore what coping methods those affected by cancer employ and how successful various strategies are at combating the stress of cancer. It is important to note that while the divisions of coping mechanisms are distinct, in practice, not all people exhibit one dominant coping style, but rather people tend to employ a variety of different strategies (Bartman & Roberto, 1996; Collins, Taylor, & Skoken, 1990). Chronic illness, in particular, produces so many different disruptions in people's lives that it is common for individuals to utilize various coping methods dependent on the nature of specific stressors (Collins et al., 1990).

The research compiled on the effects of problem-focused coping versus emotion-focused coping in confronting the stressor of cancer parallel the more general findings on the effectiveness of each strategy. In other words, problem-focused coping has been found to lessen the daily distress individuals face from their cancer and treatment; in opposition, emotion-focused coping has been found to be less effective in facing cancer-related stress (Johnson et al., 1989). This finding acts to advocate the need of intervention strategies that educate individuals on the experience of cancer, which may foster more use of problem-solving strategies and could, in turn, help to lessen the disruption of cancer on patients' lifestyles (Johnson et al., 1989).

One's sense of control also comes into play in how one deals with cancer. Those who maintain a higher sense of control or who face more controllable situations have been found to use problem-focused coping (Collins et al., 1990). This finding, however, remains a correlation as it is unclear to whether problem-focused coping or sense of control is the causative factor. In a more problem-focused lens, researchers found that if a person believes that he/she can control his/her cancer (internal locus) or that others, such as medical professionals, can control the disease, the person has less depression and has a more positive psychosocial adaptation to his/her cancer (Livneh, 2000). In a study on how cancer patients' belief systems and view on life change post-diagnosis, Collins et al. (1990) found that while patients found many of the life changes they underwent to be beneficial, their view of the world and future were more difficult to link to positive changes. Part of this finding may be a result of the level of control in the situation: one's future and the world are uncontrollable phenomena. In a different study, Bartman and Roberto (1996) found that older women tended to employ avoidance coping strategies in handling their breast cancer; the use of avoidant strategies may be a method for these women to maintain some control over their lives in the sense that they are *choosing* to not let their illness deeply affect them. Ell, Nishimoto, Mantell, and Hamovitch (1988) found that such a sense of control or self-efficacy when combating a diagnosis of cancer results in positive psychological well-being; the researchers suggest that clinicians should consider looking into using control-enhancing approaches when working with chronically ill patients.

The specific situation of cancer and the benefits of different methods of coping again follow the broader findings on the effectiveness of active cognitive, active behavioral, and avoidant strategies. Behen and Rodrigue (1994) found that those patients who employed active coping and who confronted their cancer experienced less distress than those who used either avoidance or acceptance-resignation, the passive resignation to one's illness. Furthermore, active coping was associated with more positive belief changes of patients in their view of themselves, their relationships, their priorities, their future, and their view of the world (Collins et al., 1990). On the other hand, those cancer patients that employed avoidance strategies in an attempt to handle their stresses reported higher levels of depression (Bartman & Roberto, 1996).

In a review of previous research done on cancer and coping methods, Livneh (2000) details the specific methods of coping that are either effective or maladaptive in confronting cancer. Livneh (2000) suggests a new and important division of tools to cope with cancer; she partitions coping into categories of engagement and disengagment. These new categories have similar tendencies of past divisions and tend to overlap into these old divisions. Engagement is a category of adaptive mechanisms that include problem-focusing, planning, information-seeking, restraint, confrontation, maintaining a fighting spirit, seeking social support, and expressing emotions (Livneh, 2000). Disengagment, on the other hand, is maladaptive and includes denial, wishful thinking, fantasy, problem avoidance, escapism, self-criticism and blame, social withdrawal, substance/chemical abuse, behavioral disengagment, fatalism, and resignation (Livneh, 2000).

The Effects of Demographics on Coping with Cancer

The gender, age, and socioeconomic status (SES) of a cancer patient can further affect his/her choice of coping strategies and their effectiveness. Men report less use of active-behavioral and avoidant coping strategies and a greater employment of active-cognitive and problem-focused strategies (Billings & Moos, 1981; Ptacek et al., 1999). Women, on the other hand, use more emotion-focused and social support resources in their coping, and have also been found to use avoidant strategies to the detriment of their mental health (Billings & Moos, 1981; Ptacek et al., 1997; Ptacek et al., 1999). Concerning social support, women perceive more support, are more satisfied with the support they get, make greater use of their social networks, and are more likely to seek out support than are men (Ptacek et al., 1997).

The age of a cancer patient influences the extent, the length, and the intensity of both the disease and the emotional problems that he/she endures (Bartman & Roberto, 1996). Younger patients and their families have a more difficult time than older patients do in handling the diagnosis and experience of cancer (Bartman & Roberto, 1996). This results from the idea of "on time" and "off time" events: older people have had more health problems and, as a result, are more willing to accept them than are younger individuals, who see cancer as a traumatic threat to their priorities, daily activities, and lives (Bartman & Roberto, 1996). Older women were also found to use more avoidant strategies in handling their breast cancer, but this choice was not beneficial and led to greater depression (Bartman & Roberto, 1996).

Cancer and socioeconomic status (SES) are highly related: cancer diagnosis, difficulty in adaptation, and death from the disease are greater in lower SES populations than in higher SES groups (Ell & Nishimoto, 1989). Higher education and income were also positively related to active behavioral, active cognitive, and problem-focused coping strategies (Ell & Nishimoto, 1989). Ell and Nishimoto (1989) explain this phenomenon in part by suggesting that the poor have less access to a support network outside of their family since they have less time and resources to place towards the pursuit of additional support and alternative strategies in coping.

Social Support and Cancer

One method of coping with cancer that pervades all the many divisions of the coping paradigm is social support. Much research has accumulated on social support and its interplay with the experience of cancer. Northouse (1988) found that patients that were provided more support had fewer adjustment problems to their cancer than did those with less support. In fact, in a sample of breast cancer patients, social support was the main predictor of positive adjustment (Peters-Golden, 1982). Furthermore, breast cancer victims with adequate social support face less depression and have less fear of recurrence (Northouse, 1988). Effective social support further predicts other positive factors in the psychological struggle against cancer: those whose support needs are met have higher levels of self-esteem and self-efficacy, have better emotional adjustment, and are more effective in their employment of other coping strategies (Peters-Golden, 1982). Social support is so involved in positive psychological health and adjustment to cancer that it is more accountable for patients' adjustment than either medical or demographic variables (Northouse, 1988).

Social support has also been found to affect an individual's physiological and immunological responses (Swensen & Fuller, 1992). Loneliness and immune function are connected: those who report loneliness have lower levels of natural killers, important cells for the maintenance of the immune system, and higher levels of antibodies to the Epstein-Barr Virus (Swensen & Fuller, 1992). In addition to this, Swensen and Fuller (1992) have found that there are physiological benefits to self-disclosure, which involves sharing secrets, an increase in affection, and a decrease in isolation. Certainly, with a disease as severe as cancer, social support does not act as a physiological "cure" to the disease; however, it may indeed aid in a cancer patient's day to day health, as it fends off depression that may result in poorer immune function (Swensen & Fuller, 1992).

Considering the ample evidence of the necessity of social support in aiding the psychosocial experience of cancer, it is rather disturbing that only half of a sample of cancer patients assessed the support that they received as adequate to fill their needs, with 26% reporting inadequate support, and 9% describing their support as inconsistent (Peters-Golden, 1982). Patients overwhelmingly reported a nonmaterialization of the support networks that they had expected to form after diagnosis (Peters-Golden, 1982). What is further surprising is that those who did receive support often saw the support as inappropriate and frustrating (Peters-Golden, 1982).

Peter-Golden's (1982) findings emphasize the need to look at social support as a cyclical process between both the giver and receiver of support. Seventy-two percent of cancer patients report being misunderstood by others (Peters-Golden, 1982). When looking at how healthy individuals view cancer patients, it becomes apparent that these healthy individuals, the conventional providers of support, often know that they do not and cannot understand the cancer experience. As a result, 61% of healthy individuals report that they would avoid contact with someone that they knew had cancer (Peters-

Golden, 1982). Or, if healthy individuals do choose to maintain a relationship with a cancer patient, they often assume that an optimistic and cheerful attitude would be the most appropriate outlook to take; however, this can leave the cancer patient feeling wary and unsure of how to share all of the negative emotions they have been facing (Pistrang & Barker, 1992). Research has shown social support to be an essential element of the coping process; yet, many cancer patients are left feeling unsupported and misunderstood. Such conflict calls into need a greater focus on understanding the multidimensional process of social support and how both the cancer patient and those in his/her social network affect each other's methods of coping with the stressful experience of cancer.

Coping with Cancer as an Interdependent Process

Researchers have recently shifted their focus from a reductionist view of coping to a more interdependent one (Coyne et al., 1990). The former view studied coping with cancer from the viewpoint of only the coping patient and ignored his/her environment and the relationships that make it up (Coyne et al., 1990; Coyne & Smith, 1991; Terry, 1994). The previous narrow focus on the coping individual distorted the phenomenon of social support by viewing it as a matter of personal cognition and ignoring its reciprocal nature (Coyne & Smith, 1991). Social support and coping are best viewed as interdependent processes between both the recipient and provider of support; these dyadic processes involve recognition of one's own and others' emotional needs (Coyne et al., 1990; Kayser et al., 1999)

Caregivers and Coping

Within the recent shift of research to a more expansive definition of coping, there have been many new studies that focus on the caregiver and his/her resources (Hobfoll & Stevens, 1990). For those individuals involved with an ill person, they face the possibility of losing a loved one, of changes in their own relationships, and of a loss of independence within their decision to care for the patient (Hobfoll & Stevens, 1990). Caregivers can even experience negative physiological affects and have been shown to have significantly poorer immune functions than their non-caregiving peers (Kennedy, Kiecolt-Glaser, & Glaser, 1990). While caregivers may try to put their own needs on the backburner, it is necessary and important that they also find outlets for their emotions through their own social support networks (Ptacek et al., 1997). Whether professional or personal, all caregivers face the dilemma as to whether they should reveal or hide away the distress they are experiencing from caregiving (Larson, 1993). When caregivers are provided with support from both family and friends for their efforts, they experience a better psychosocial adjustment and, in turn, provide better care (Hobfoll & Stevens, 1990).

Coping and Support within the Family

The diagnosis of cancer dramatically affects a family's functioning; a family must adjust their daily schedule, redistribute household responsibilities, and adopt a new sense of what is "normal" for them (Kayser et al., 1999). The family unit is vital to its members' mental health, with psychological distress being negatively related to openness and encouragement of emotional expression within the family (Northouse, 1988). Effective communication within the family unit positively predicts both patients' adjustment and sense of family cohesion and negatively predicted family conflict (Spiegel, Bloom, & Gottheil, 1983). Kayser et al. (1999) found that women who actively involve their families in the coping process report both better personal and family adaptation to their cancer. Kupst and Schulman (1988) reported that coping in a family was highly correlated to the quality of the marriage within the family unit (as cited in Hoekstra-Weebers, Jaspers, Kamps, & Klip, 1998). As it seems that a patients' response to the cancer hinges partly on his/her families response, Ell, Nishimoto, Mantel, and Hamovitch (1988) suggest the need for family-focused intervention to aid both the family's and patient's adjustment.

Coping and Support within the Marital Relationship

The experience of cancer is elevated to a more intimate level when looking at coping and support within the institution of marriage. The intimacy found in marriage extends beyond the exchange of resources found in less intimate relationships and is better defined by the communal nature, mutual commitment, and responsiveness of both partners in the couple (Coyne et al., 1990). Characteristic of a communal and long-term relationship is that each member of the dyad can expect a kind of reciprocity in the future, in which they know that either they can count on or be counted on by their partner in a time of need (Lichtman, Taylor, & Wood, 1988). As such, intimacy is interactive and involves a tacit reciprocity of support between the couple; in fact, some research has indicated that few other relationships can compensate for the intimacy and support found in marriage (Lichtman et al., 1988; Pistrang & Barker, 1995). Within this dyad, however, men and women vary in their perceptions of the function of marriage. A woman's physical and psychological health is tied more to marriage than a man's, and the link

between marital satisfaction and social support is stronger for wives than husbands (Acitelli & Antonucci, 1994). The importance that women place on marriage is a result, in part, of women defining their sense of self by the mutual participation within a marriage (Kayser et al., 1999). Women's coping abilities are described within the context of their relationship and part of their self-concept involves not only receiving support from their husbands, but also giving out support (Kayser et al., 1999). Not surprisingly, women who are involved in more intimate and supportive relationships have less distress than those in relationships that lack such intimacy and support (Hobfoll & Stevens, 1990). While less research has been done on a husband's place in the marital dyad, Ptacek et al. (1997) did find that wives are the main source of support for husbands.

When looking at how the diagnosis of chronic illness affects marriage, a plethora of research has found that marital quality generally remains stable throughout the cancer experience (Fang et al., 2001; Lewis & Hammond, 1992; Lichtman et al., 1988; Weihs et al., 1999). Successful marital adjustment to cancer was, however, partially predicted by the quality of the relationship before diagnosis, while marital difficulties often were related to a more difficult cancer, in terms of prognosis, length, physical impairment, and treatment (Lichtman et al., 1998; Meryerowitz, Sparks, & Spears, 1979). While marital quality may remain stable throughout the cancer experience, both partners are heavily affected: Coyne (1988) showed that spouses have equal risk as patients do for psychological distress (as cited in Coyne et al., 1990). With such findings, the interdependent cycle with which spouses and patients both give and receive support becomes apparent. If either a spouse or a cancer patient experiences stress with which they cannot cope or are not receiving adequate support to handle their stresses, they may become less able to provide the necessary support for their respective partner (Revenson & Majerovitz, 1991).

Relationship-focused Coping

Coyne and Smith (1991) add another dimension to the common division of emotion-focused and problem-focused coping with their addition of relationship-focused coping. Within relationship-focused coping, partners must struggle with the presence of another and his/her emotional needs (Coyne & Smith, 1991). Mechanisms of relationship-focused coping include *active engagement*, which involves mutual discussions, concerns for a partner's emotional well-being, and the use of constructive problem solving, and *protective buffering*, where one partner hides his/her concerns and avoids arguments with his/her spouse (Coyne & Smith, 1991). While all patients, to varying degrees, hide their pain, fears, remorse, and anger, this kind of self-concealment can increase a patient's stress while lessening his/her chance of receiving support and empathy from his/her social network (Larson, 1993). While protective buffering was not found to decrease the quality of life of either partners, it did increase depression and decrease personal self-care of the individuals (Kayser et al., 1999). Furthermore, chronically ill patients that actively engaged their spouses had higher personal self-efficacy, while those using buffering experienced a decrease in self-efficacy (Coyne & Smith, 1999).

The Different Relationships that Exist: Patients and their Spouses

The quality of support that a patient receives from his/her spouse predicts both positive adjustment to cancer and increased mental health (Kayser et al., 1999). The nature of this support, however, varies depending on the gender of the patient. Within the realm of coping with cancer in a marriage, there are four distinct individuals who may vary in their needs and resources; they are the male patient, his wife, the female patient, and her husband.

For a married man, in general, his wife is his primary provider of support (Ptacek et al., 1997). This does not change within the cancer experience and, in many ways, the experience amplifies a man's support system. In a study on prostate cancer patients, all male patients reported receiving at least some support from their wives and 88% reported receiving the highest level of support possible from their wives (Ptacek et al., 1999). When looking at other chronic illnesses, similar findings occur: when male patients return home after a myocardial infarction, their wives provide them with effective and generous care (Coyne et al., 1990).

Wives of chronically ill patients have the same level of distress from the experience as do their ill husbands (Coyne & Smith, 1991). In fact, some data suggests that spouses of either sex may even experience more stress than their ill partner does over the cancer (Gotay, 1984). Yet, even with support being a significant predictor of psychological adjustment for both a patient and his/her spouse, both husbands and wives perceive less support than their ill partners (Ptacek et al., 1997). Part of this results from spouses' fears of placing a greater burden of their own troubles onto their already ill partner (Ell et al., 1988). Wives, however, are in a more fortunate position than husbands of cancer patients are as wives report receiving more support from a variety of family and professional outlets (Ptacek et al., 1997). This support can lead to greater psychological adjustment and mental health. Two explanations that have been given for this finding are that women are better able to solicit support that they need or, perhaps, that supporters are more likely to offer their help to women over men due to social gender roles (Ptacek et al., 1997).

A woman with cancer often is in constant conflict over her inability to attend to the needs of her family and her past responsibilities as a result of her illness (Kayser et al., 1999). Female patients often attempt to make up for for their declining abilities to participate in tangible household activities and responsibilities by compensating their partners with psychological rewards, often in the form of emotional support (Kayser et al., 1999; Pistrang & Barker, 1992). Kayser et al. (1999) explain that it is important for a woman to feel like she is participating fully and mutually in her relationships through both giving and receiving support. In fact, with increased mutuality in their relationships, women report more effective personal coping, higher levels of quality of life and self-care, and decreased depression (Kayser et al., 1999).

Following this concept of mutuality, for a woman with cancer, her husband acts as the most pivotal and important person within her network of support (Peters-Golden, 1982). In an attempt to maintain mutuality and not seem like a burden, many women will employ protective buffering and self-silencing strategies to cope within their relationships; yet, both of these strategies result in increased depression and decreased self-care for the female cancer patients (Kayser et al., 1999). Lichtman et al. (1988) found that 25% of breast cancer patients reported that when they did want to talk to their partners, they felt that their husbands often discounted their fears and anxieties, making it more difficult to freely express all of their concerns. In other situations, a woman may have no choice but to ignore her disease and health needs because her partner and family do not restructure responsibilities to lessen the demands on her; for those post myocardial infarction female patients studied, it seemed that as soon as they were discharged, they returned to their pre-existing caretaking roles within the household (Coyne et al., 1990). As a result of a husband's heavy dependency on his wife for emotional support, a woman with cancer may be in the most vulnerable position within the relationships that exist in marriage and cancer: a husband's inability to find the appropriate resources to be able to provide support for his wife can result in psychological maladjustment and poor mental health for the ill wife (Ptacek et al., 1997).

While much attention has been focused on the difficult situation that female cancer patients face, within the dyadic relationship of marriage, husbands of wives with cancer also are in particularly vulnerable positions (Witkens, 1979, as cited in Hoekstra-Weebers et al., 1998). In fact, husbands report equivalent levels of distress as their ill wives do (Northouse, 1988). Husbands often feel inadequate to help their wives cope with their diagnosis of cancer, feel unprepared to cope with their own reactions, and have a great deal of stress from the uncertainty, conflicting emotions, fears, and concerns that they face (Kayser et al., 1999; Northouse, 1988). Much of the maladjustment that husbands feel derives from their inability to find appropriate social support; for husbands, wives are the main source of support, so a diagnosis of cancer can leave a husband deprived of his usual outlet of emotions and source of support (Ell et al, 1988; Ptacek et al., 1997). Men tend to have fewer social ties outside of their marriage and also have greater trouble eliciting social support when they are faced with a stressor (Revenson & Majerovitz, 1991). When comparing both husbands and wives of cancer patients, Ptacek et al. (1997) found that while both equally sought for support, wives received more support from their siblings, children, other family members, and medical staff than did husbands. This finding again highlights the particularly vulnerable position that both a cancer-stricken woman and her husband must handle within the cancer experience.

Conflict within a Marriage Coping with Cancer

Within the four possible marital relationships of coping with cancer, conflict and marital difficulties can arise. Partners who use different coping strategies in a dissynchronic way may increase the distress that their partner is experiencing (Adams-Greenly, 1986 in Hoekstra-Weebers et al., 1998; Coyne & Smith, 1997). Within such an intimate context, the distress and actions of one partner is undoubtedly going to affect the other partner (Coyne et al., 1990). Coyne et al. (1990) provide an example of how what may seem like a supportive and helpful action, such as a wife's reminder for her husband to take his medication, could be unhelpful and counterproductive when looked at dyadically, since the patient may lose his sense of autonomy and self-efficacy with such reminders. Finding the appropriate balance between each partner's distinct coping is necessary not only for the general well-being of the relationship, but also for the physical health of the patient (Coyne & Smith, 1991). Such conflict also arises in spousal misinterpretations of the actual cancer experience: spouses may try to encourage their ill partner to think positively or ignore the negatives, but this may be difficult for patients who still see a tough road ahead and who are looking for someone to communicate with about their fears (Lichtman, et al., 1988; Pistrang & Barker, 1995).

The Dyadic Nature of Coping and Social Support Within a Cancer-Stricken Marriage

In examining the different coping methods and social support employed by cancer patients and their spouses and how they interact, the interdependent nature of the coping and social support paradigm is apparent. Past studies have focused on identifying the life

changes that come with a diagnosis of cancer, but do not look at the interactive process between a patient and his/her spouse in coping with these life changes (Ptacek et al., 1997). The previous dichotomous designation of the spouse as the provider and the patient as the receiver of support has been considered problematic and obsolete as research has shown the intricate entanglement of the social networks of both patient and spouse (Coyne, Ellard, & Smith, 1990). To further understand the interdependence of coping, Coyne et al. (1990) formed focus groups of myocardial infarction patients and their spouses to discuss the coping's multivariable nature. The focus group challenged the traditional stress and coping paradigm for its failure to address the dual nature of coping. It, furthermore, raised the important issue that effective coping includes acknowledging the recipient and participant's goals and needs and, furthermore, addressing these needs as a couple (Coyne et al., 1990). Coyne et al. (1990) findings extend beyond couples handling the stress of a myocardial infarction; coping with cancer within a marriage also needs to be addressed in a dyadic lens.

The Present Study

The Purpose and Rationale Behind the Present Research

The purpose of the present study is to take a more in-depth look at the interdependent and dynamic processes of coping and social support within a marriage affected with cancer. Inherent in the environment of a cancer patient is his/her intimate and communal relationship with his/her spouse. The researcher contends that a married couple should be treated as a dyad in which oneself and one's environment works to cyclically redefine each other and the cancer experience. In this way, while marital quality may remain relatively stable over time, the variables of mental health, coping, and social support within the dyad are dynamic and ever-evolving within the experience of cancer. The study differs from many publications in this area of research as it is a longitudinal examination of the dynamic nature of coping and social support within a marriage afflicted with cancer. This study looks at both patient and spousal reports of the patient experience at various stages within the cancer experience; in particular, the research looks at pre-treatment, mid-treatment, post-treatment, and follow-up stages of the cancer process. The study relies on self-report as an instrument that will allow the researcher a better understanding of the internal processes of the participants (Ptacek, Smith, Espe, & Rafferty, 1994).

When looking at past research on coping and social support within a marriage with cancer, certain themes become apparent as well as holes in the literature of areas still needing to be studied. The present study works to look at the dynamic process of coping and social support throughout couples' experiences with cancer and what it is that predicts these changes. Based on the literature in this field, the present study will focus on four main aspects of the patient's and spouses' cancer experience: both partners' reports of (1) marital quality, (2) their mental health, (3) the patient's perceived social support, and (4) the patient's coping strategies. We will, furthermore, try to understand the patterns we find in coping and social support by looking at possible predictors of both; in particular, we will look at marital quality, shared understanding of the cancer experience, and shared understanding of patient coping as possible predictors of social support and patient coping. It is my hope that in reviewing both patients' and spouses' self-reports on the cancer experience, a better understanding of the interdependent and dynamic nature of coping and social support within the cancer experience will evolve from the patterns found.

Our Predictions

While we expect marital quality to remain relatively stable throughout the time period and between patient and spouse (Fang et al., 2001; Lewis & Hammond, 1992; Lichtman et al., 1988; Weihs et al., 1999), we hypothesize that neither mental health nor social support will maintain such stability across participants or time. In accordance with much of the emerging research on coping with cancer (Coyne et al., 1990; Coyne & Smith, 1991; Gotay, 1984; Ell, et al., 1988; Northouse, 1988), we expect that the mental health of the spouse will parallel that of the patient; that is to say, that both partners' mental health will be equally affected by the experience. In reference to both partners' perceptions of the social support the patient receives, we predict that significant differences between patient and spouse perception of social support will occur. Within this hypothesis, we expect our data to concur with past research (Northouse, 1988; Peters-Golden, 1982; Pistrang & Barker, 1992) to find that patients are perceiving less support than spouses feel they are giving. In accordance with the recent literature which suggests that spouses of cancer patients do not receive enough social support throughout the cancer experience (Ell et al., 1988; Fang et al., 2001; Revenson & Majerovitz, 1991), we also predict that spouses will report receiving less nurturance from their ill partners than these patients report giving.

The present study, furthermore, expects that mental health and social support will be dynamic processes that change over time. As past literature has shown post-diagnosis to be the most stressful time period within the treatment timeline (Fang et al., 2001;

Weihs et al., 1999), we hypothesize that both partners' mental health will be its poorest at pre-treatment as compared to after treatment has ended. Parallel to these predictions are our expectations for changes in social support over time: as initial stress lowers and routine sets in, social support will improve over time as spouses will be more apt to provide support and patients will be more willing to accept it.

To further understand the nature and dynamics of the cancer experience, this study plans to look at the relationships between marital quality, social support, coping, and shared understanding of both the cancer experience and how a patient copes to see how these variables shape and reshape each other and, hence, affect how the cancer experience unfolds. We hypothesize that marital quality throughout the cancer experience will strongly predict social support and, in some cases, how a patient chooses to cope with the experience. Similarly, we hypothesize that how both patient and spouse understand the cancer experience together will predict the level of social support the patient receives and the kind of coping he/she employs. The way in which a patient copes also seems a likely predictor of social support; hence, we hypothesize that a couples' shared understanding of patient coping will be a strong predictor of the kind of social support that the patient will receive from his/her spouse. Together, we expect our data to illustrate the dyadic and dynamic processes within the cancer experience and how these all come together with the interactions of the cancer patient and his/her spouse to shape the cancer experience.

Method

Participants

The participants were 53 cancer patients and their spouses recruited from

Midwestern cancer clinics. Sixty-one percent of the patients were male and 37% were female. Patients' average age was 58.84 years (*SD*=13.37), while spouses had a mean age of 59.39 years (*SD*=12. 82). All of the patients had cancer; the sample consisted of primarily breast and prostate cancer patients, although there was small percentage of other cancers. The study recruited patients in Stage 1 or Stage 2 of the disease as they and their spouses were less likely to be handling issues of death and possible bereavement and were more likely to be concerned with life issues. The mean time since diagnosis of cancer for the participants was 3.53 months (*SD*=3.72). Participants primarily identified themselves as Caucasian (96.3% of patients; 92.6 of spouses), while a small percentage reported being of African-American descent or did not identify their ethnicity. When asked about their educational background, 59.3% percent of patients and 64.8% of spouses reported having completed high school, with 30.4% of patients and 22.2% of spouses having finished four years of college and 7.4% of patients and 3.7% of spouses having completed graduate studies. The majority (51.9%) of patients were retired, while 44.4% of their spouses also shared retirement and 38.9% worked. Seventy-six percent of the couples earned an income between $10,000 and $40,000, while 18.6% earned more than $40,000. The couples averaged 33.02 years of marriage (*SD*=15.78) and had a median of two children.

Measures

Stress. Reports of stress from the cancer experience were collected using a face valid measure designed for this and past studies (CRS; Ptacek et al., 1997; Ptacek et al., 1999). This instrument was designed because of a lack of available stress measures that were geared to the cancer experience (e.g. Sarason, Johnson, & Siegal, 1978). The final

25-item measure was created from research literature (e.g., Oberst & James, 1985; Pederson & Valanis, 1989) and from conversations, responses, and written suggestions of cancer support group members. Included in the measure are items about physical, psychological, and social factors common within the cancer experience. In the present experiment, both patients and spouses were asked to complete the measure in reference to the *patient's* experience of what stressors the patient has experienced and what degree of stress particular event has caused.

Marital quality. Satisfaction within the marital relationship was measured by Spanier's Dyadic Adjustment Scale (DAS; Spanier, 1976). The DAS has been used in many other studies looking at how cancer affects marriage and family (Dahlquist, Czyzewski, & Jones, 1996; Fuller & Swensen, 1992; Ghizzani, Pirtoli, Bellezza, & Velicogna, 1995). The DAS measures marital quality on four dimensions (consensus, satisfaction, cohesion, and affection), however, researchers can also compute a total score (Antill & Cotton, 1982). Such total computation has been found to have high factorial validity and well-established utility (Blaney, Brown, & Blaney, 1985; Christensen & Shenk, 1991; Spanier & Thompson, 1982). Subjects respond to most items on this 32-item measure on a 6-point Likert-type scale. The pre-treatment reliability coefficient was .90 for both the patient and the spouse while the follow-up reliability coefficient for both patient and spouse was .91.

Mental health. Psychological adjustment was assessed using the Mental Health Inventory (MHI; Veit & Ware, 1983). This MHI scores on 5 separate levels: General Positive Affect, Emotional Ties, Anxiety, Depression, and Loss of Emotional and Behavioral Control. To obtain a broader score, these factors can combine into the second

order factors of Well-Being (a combination of General Positive Affect and Emotional Ties scales) and Distress (a combination of Anxiety, Depression, and Loss of Emotional and Behavioral Control). Participants respond to this 38-item measure on a 6-point Likert-type scale. It has demonstrated good internal consistency and a high stability coefficient over a 1-year interval (Veit & Ware, 1983), and subsequent factor analytic research has demonstrated a two-factor model (Tanaka & Huba, 1984).

Social support. A version of the Social Provisions Scale (SPS; Cutrona & Russell, 1987) was used to measure cancer patients' and spouses' reports of the social support they received from their partners. Participants were to answer this 24-item measure in reference to their relationship with their spouse in the last two weeks and answered on a 4-point Likert-type scale. The SPS provides a measure of the global perceived availability of social support by using a total score derived by summing together its six subscales that are based on the aspects of social support described by Weiss (1975). SPS has six provisions that include guidance (in the form of advice or information), reliable alliance (the assurance that one's spouse is dependable during stressful times), reassurance of worth (patients feeling recognized as competent by their spouses), attachment (emotional closeness to spouse), social integration (a sense of belonging within a group), and opportunity for nurturance (to provide support for their spouse). Research using the SPS suggests that the total score yields a reliable, valid index of general perceptions of available support. For example, Cutrona and Russell performed a confirmatory factor analysis and found support for a general factor of perceived available support that accounted for the high intercorrelations among the six subscales of the SPS.

Coping. Styles of coping were assessed using the state COPE measure (Carver et al., 1989). This 53-item questionnaire measures coping in response to a particular event on 14 different subscales, which can be narrowed into the three coping categories of adaptive, acquiescent, and avoidant coping. The participants were asked to answer these questions on a 4-point Likert-type scale with 1 ("I have not done this at all") to 4 ("I have done this a lot") in reference to the patient's efforts since the beginning of the treatment process. The measure has good psychometric properties with alphas that ranged from .45 to .92, test-retest reliabilities ranging from .46 to .86, and both discriminant and convergent validity with other measures of coping (Carver et al., 1989; Carver, 1997).

Procedure

All patients were recruited at the beginning of a regimen of radiation treatment, a therapy that has a standard length of six weeks. Of the 54 couples that recruited, only one couple indicated that they were not interested; of those 53 couples, 49 completed the questionnaires at every time period. All participants were assessed at four time periods for the study: at the start of treatment, at mid-treatment, at post-treatment, and at a follow-up appointment one month after the last treatment. In the patients' initial appointment for treatment, they were given the pre-treatment packet, which included the DAS and MHI questionnaires, to complete in the office or to take home to complete. The mid-treatment packet, comprised of the MACL, Cancer-Experience Stress Scale, and SPS, was given three weeks into treatment to again be completed either in the office or at home. The patients received the post-treatment packet, which included the COPE, Perceptions of Cancer-Related Support, and a second SPS, in their last appointment. And lastly, a follow-up packet, containing a second DAS and MHI, was administered at a follow-up meeting one month after the completion of that regimen of treatment.

Results

Overview

The present study examines dyads' perceptions of cancer-related stress, changes that occur over Time and between Respondents in their perceptions of marital quality, mental health, and the social support patients receive, as well as the associations between the variables that shape the cancer experience. A series of 2x2 analyses of variance were performed on the DAS, MHI, and SPS measures using Time (which varies with measures) and Respondents (patient vs. spouse) as factors. In reference to the relationships that occurred within the cancer experience, a series of Pearson correlations were calculated between pre-treatment and follow-up reports of marital quality and both social support (mid- and post-treatment) and coping. Shared understanding of the cancer experience was represented by an intra-class correlation coefficient (Cohen & Cohen, 1983) that measured the degree of association between patient and spouse reports of stressors experienced during treatment. Pearson correlation coefficients were then computed between the measure of shared understanding and patient and spouse report of both social support and patient coping.

Perception of Cancer-Related Stress Between Patient and Spouse

Table 1 displays the percentage of our sample that reported that patients faced particular cancer-related stressors and the degree to which they would rate each stress for the patient. The idea for such a comparison was instigated by Ptacek et al.'s (1999) similar research. By looking at the number of couples who rated an event as evoking some stress, a better understanding of the common stressors of the cancer experience can be understood. By this logic, for over 80% of our subjects, the cancer experience involves medical checkups, possibility of recurrence, change in activity level, making decisions about treatment, receiving treatment, informing friends, treatment by physicians, interactions with friends, treatment by nurses, time demanded for treatment, and adverse reactions to radiation therapy. The stressor most commonly reported by the sample was concern for the time demanded for treatment (*n*=48) while the experience of a loss of one's job or career was least often reported (*n*=11).

When looking only at those who did make ratings, patients and spouses commonly reported that the patient experienced some stress as a result of particular events. For example, high percentages of both patients and spouses rated the possibility of recurrence (83.0% patients, 66.0% spouses) and a change in activity level (66.0% patients, 79.2% spouses) as evoking some stress for patients. In fact, when looking at the top five experiences that evoked some stress, patients and spouses shared high concern for three of these five experiences (possibility of recurrence, adverse reactions to radiation therapy, and a change in activity level).

Patients' and spouses' ratings of the level of stress different experiences evoked were significantly similar for the majority of experiences. Only the experience of receiving treatment was found to be statistically different in patients' and spouses' reports, r=.46, p<.001. The top five experiences patients reported as most stressful, beginning with the most stressful, were possibility of recurrence(M=2.64), change in activity level (M=2.47), loss of hair (M=2.45), adverse reactions to chemotherapy (M=2.40), and reduction in ability to perform your job at pre-cancer level (M=2.36).

Spouses reported perceptions of similar highly stressful experiences for the patient: receiving treatment (M=2.74), change in activity levels (M=2.65), pain (M=2.51), adverse reactions (M=2.50), and possibility of recurrence(M=2.50), respectively.

Marital Quality Over Time and Between Respondents

Analyses were conducted on the within-subjects factors of Respondents and Time (pre-treatment v. follow-up) for the DAS. No significant main effects were found for these factors. When looking at changes in reported marital quality over Time, the mean score for pre-treatment was 4.5 (*SD*=.06) and the mean score at follow-up was 4.5 (*SD*=.06), F(1, 46)=0.02, n.s., MSe=0.08. When comparing patient to spouse, the mean score for both partners was 4.5 (*SD*=.07), F(1,46)=0.84, n.s., MSe=0.04. No significant interactions occurred between the two factors.

Mental Health Between Respondents and Over Time

An analysis revealed changes across Time (pre-treatment v. follow-up) and Respondents. In concurrence with our hypothesis, patients' and spouses' scores for mental health were not significantly different from each other on all seven subscales of the MHI. The mean score on the Well-Being, a second-order factor that combines General Positive Affect and Emotional Ties, for the patient was 61.5 (*SD*=1.78), and for the score for the spouse was 61.0 (*SD*=1.48), F(1, 45)=.09, n.s., MSe=126.00 The mean score for Distress, a second-order factor that combines Anxiety, Depression, and Loss of Emotional and Behavioral Control, for the patient was 51.1 (*SD*=2.74) and 51.3 (*SD*=2.18) for the spouse, F(1,48)=.01, n.s., MSe=403.95. Thus, Table 2 contains the mean scores and corresponding F-values for each subscale of the differences between patients and spouses on the MHI. No significant interactions between time and respondent factors were observed.

Table 2 also contains the mean scores and F-values for each subscale of the MHI for the changes that occurred over Time. In accordance with our expectations, a significant main effect of Time was observed for all seven MHI subscales except for the Emotional Ties scale. In addition, Well-Being scores showed a significant increase in mental health between pre-treatment and follow-up, with the mean score at pre-treatment being 59.6 (*SD*=1.35) and at follow-up 62.9 (*SD*= 1.67), F(1, 45)=9.22, p<.005, MSe=55.58. Distress showed a significant decrease over time, with a mean score at pre-treatment of 55.0 (*SD*=1.92) and at follow-up of 47.3 (*SD*=2.29), F(1, 48)=36.02, p>.001, MSe=80.97.

Social Support Between Respondents and Over Time

An analogous analysis revealed that no significant main effect between respondents for the total SPS score occurred, with the mean score of the patient being 79.8 (*SD*=1.05) and of the spouse being 81.5 (*SD*=1.16), F(1, 48)=2.50, n.s., MSe=54.39. However, the subscales of Reassurance of Worth and Nurturance both had significant main effects for respondents. There was a significant difference in patient' means scores of perceived Reassurance of Worth and (M=13.2, *SD*=.24) and spouses scores (M=13.8, *SD*=.27), F(1, 45)=4.73, p<.05, MSe=3.47. In Nurturance, spouses (M=12.1, *SD*=.34) reported lower nurturance from the patients (M=10.8, *SD*=.35), F(1, 47)=11.39, p<.001, MSe=7.26. Again, no significant interactions occurred between Time and Respondent factors.

A significant main effect for Time (mid- v. post-treatment) was found for the total SPS score, with more perceived support reported at post-treatment than at mid-treatment; post-treatment had a mean score of 79.7 (*SD*=.99) and mid-treatment had a mean score of 81.6 (*SD*=1.08), F(1, 48)=1.76, p<.05, MSe=27.32. A similar trend followed for greater support reported at post-treatment over mid-treatment for both the subscales of Reassurance of Worth and Nurturance: Resasurrance of Worth had mean scores of 13.3 (*SD*=.24) at mid-treatment and 13.7 (*SD*=.24) at post-treatment, F(1,45)=4.39, p<.05, MSe=1.70 and Nurturance had mean scores of 11.1 (*SD*=.32) at mid-treatment and 11.7 (*SD*=.29) at post-treatment, F(1, 47)=6.98, p<.05, MSe=2.02. No significant interactions were observed. Table 3 contains the mean scores and F-values of the SPS subscales.

Associations Between Initial Marital Quality and Social Support

Measures of marital quality at pre-treatment were correlated with social support to determine whether couples reporting more satisfying marriages also received and provided better social support. As hypothesized, there were numerous significant positive correlations and no negative correlations between initial reports of marital quality and mid-treatment reports of social support. The temporal direction of the analysis infers that initial marital quality predicts social support. Patients' overall score for the SPS significantly correlated with every subscale and total score of the DAS, except for the second factor item of spouses' report of marital consensus, r (53)=.134, n.s. As seen in Table 4, spouses' total SPS score significantly correlated with every subscale and total score of patient and spouse DAS reports. Patients' DAS total score significantly correlated with 10 out of 14 of the SPS subscales and total scores, with correlations ranging from .310 to .643, p<.05. Spouses' DAS total scores predicted 4 out of 7 of patients' SPS scores, with correlations ranging from .283 to .516, p<.05, and significantly correlated with all of the spouses' SPS scores, correlations ranged from .334 to .552, p<.05. Interestingly, no significant correlations were observed between patient report of nurturance and any of the DAS subscales or total scores. Similarly, for spouse report of nurturance, no correlations were found with patients' DAS and, in reference to spouse DAS scores, only consensus, affection, and the overall spouse DAS score correlated to nurturance. Spouses report of marital consensus also did not predict any factors of social support, except social integration, r (53)=.297, p=.031.

Similar patterns occurred when looking at how pre-treatment reports of marital quality predicted post-treatment reports of social support. Again, the majority (61.4%) of correlations were significant and all were positive. As with mid-treatment social support, patients total score for social support correlated with every sub-factor and total score for marital quality, except concerning the subscale of spouses' report of marital consensus, r (52)=.174, n.s. As seen in Table 5, every subscale of the DAS predicted the overall spouse score of social support, with correlations ranging from .323 to .492, p<.05. The patients' overall report of marital satisfaction predicted every subscale of both patient and spouse report of social support, with correlations ranging from .297 to .582, p<.05. Similarly, the spouses' overall report of marital satisfaction predicted every subscale of social support, except for patient report of guidance, r (49)=.222, n.s., and spouse report of attachment, r (48)=.268, n.s. Analogous to mid-treatment correlations, neither patient or spouse report of nurturance significantly correlated with any of the DAS subscales. And again, spouses' report of marital consensus did not predict any of patients' reports of social support.

Associations Between Initial Marital Quality and Patient Coping

Marital quality was correlated with both partners' reports of patient coping to see if a couple's marital quality could predict the type of coping a patient employed. In accordance with our hypotheses, both patient and spouse reports of marital quality predicted both partners' report of patient coping. When looking at how patients saw their own coping, patients' overall scores reported marital quality negatively predicted behavior disengagement, r (50)=-.324, p<.05, and alcohol/substance use, r (52)=-.286, p<.05 to cope. Patients' perception of their use of religious coping was also positively correlated to spouses' overall marital quality scores, r (51)=.326, p<.05. Other significant correlations can be found in Table 6.

In reference to spouses' report of their ill partners' use of coping mechanisms, patients' overall report of marital quality positively predicted spouses' reports of patients' religious coping, r (48)=.329, p<.05, and negatively predicted their use of disbelief, r (51)=-.340, p<.05, mental disengagement, r (49)=-.289, p<.05, and alcohol or drugs, r (52)=-.388, p<.01, to cope. Spouses' overall DAS score positively predicted their reports of their ill partners use of positive reappraisal, r (49)=.291, p<.05, and religion, r (48)=.470, p≤.001 to cope and negatively predicted patient use of disbelief, r (51)=-.485, p<.001, to cope. Table 7 shows other significant correlations found between coping and pre-treatment marital quality.

Associations of Shared Understanding of the Cancer Experience

Our hypothesis that shared understanding of the cancer experience would predict social support was not supported by the data: only one significant correlation was observed with the SPS subscales: shared understanding was linked with higher levels of patient reported reassurance of worth, r (52)=.383, p<.01.

Shared understanding was strongly associated with several of the COPE subscales. Higher levels of shared understanding was significantly and positively linked to patients' self-reports of engaging in more restraint coping, seeking emotional social support, the venting of emotions, more mental disengagement, and use of disbelief. Shared understanding positively predicted spouses' perceptions of patient coping that involved taking action, suppressing competing issues and concentrating on the present cancer, utilizing institutional social support, using emotional social support, and venting emotions. Pearson correlations ranged from .287 to .504 and can be viewed in Table 8.

Associations with Shared Understanding of Patient Coping

In concurrence with our predictions, shared understanding of patient coping was highly correlated with partners' perceptions of social support received by patient at mid- and post-treatment. As seen in Table 9, when correlated with mid-treatment patient reports of social support, shared understanding of how the patient coped significantly and positively predicted patient reports of guidance, social integration, attachment, and the total SPS score. In reference to how spouses perceived the social support that their ill partners received at mid-treatment, shared understanding of how the patient coped significantly and positively predicted reassurance of worth, social integration, and attachment. A similar pattern is observed with post-treatment measures of social support: shared understanding of patient coping significantly and positively correlates with guidance, social integration, attachment, reliable alliance, and an overall social support score. When correlated with post-treatment spouse perception of patient social support, shared understanding of patient coping significantly predicts every subscale of social support except reliable alliance, r (49)=.106, n.s..

Associations of Marital Quality at Follow-Up and Social Support

Follow-up reports of marital quality were correlated with patient and spouse reports of social support that the patient received at mid- and post-treatment. Analogous to the other marital quality-social support statistics, a majority (71.4%) of the correlations between follow-up reports of marital quality and mid-treatment reports of social support were significant and all were positive correlations. As hypothesized, high levels of social support were related to high levels of marital quality after treatment had ended. As seen in Table 10, both patient and spouse overall social support score was significantly correlated with every factor of the DAS scale, with correlations ranging from .312 to .610, p<.05. The patient total DAS score significantly correlated with 11 out of 14 of the SPS total and subscales, with patient report of nurturance and spouse report of nurturance and guidance not having significance. Twelve out of 14 of the SPS subscales significantly correlated with spouse overall marital quality score, with both patient and spouse report of nurturance as insignificant. Again, neither the patient or spouse report of nurturance was significant across the DAS subscales. Spouse report of guidance was also not significant across all patient scores of marital quality.

In accordance with our hypothesis of a strong association between final reports of marital quality and post-treatment social support, 82.1% of the correlations between follow-up reports of marital quality and post-treatment reports of social support were significant and positive correlations. As Table 11 shows, both patient and spouse total scores for social support significantly correlated across the spectrum of DAS subscales, with correlations ranging from .343 to .701, p<.05. Both patient and spouse overall scores for marital quality significantly correlated with every aspect of the SPS, except for both partners' reports of nurturance.

Associations of Marital Quality at Follow-up and Patient Coping

As hypothesized, patient coping affects marital quality after the experience of cancer. As seen in Table 12, when looking at patient perception of how they cope, patient overall follow-up DAS score significantly positively correlates with their use of emotional social support, r (47)=.348, p<.05, positive reappraisal of the situation, r (47)=.390, p<.01, acceptance, r (47)=.306, p<.05, and religion, r (48)=.290, p<.05, and negatively correlates with behavioral disengagement, r (47)=-.441, p<.01, to cope. Also, in reference to patient report of their coping, spouses' total score for marital quality significantly and positively correlates with positive reappraisal of the situation, r (47)=.439, p<.01, and religion, r (48)=.400, p<.01, while it negatively correlates with patients' use of mental disengagement, r (49)=-.300, p<.05, and alcohol/drugs, r (48)=-.288, p<.05, to cope.

As seen in Table 13, in reference to how spouses perceive their ill partners to cope, patient follow-up DAS scores positively and significantly correlated with religious coping, r (45)<.05, p<.05, and significantly and negatively correlate with behavioral disengagement r (47)=-.474, p≤.001, mental disengagement, r (46)=-.296, p<.05, and alcohol/ drug use, r (49)=-.309, p<.05, to cope. Spouses' report of marital quality also correlated with their perceptions of patient coping with a positive significant correlation for religious coping, r (45)=.455, p<.01, and negative significant correlations for disbelief, r (48)=-.349, p<.05, behavioral disengagement, r (47)=-.377, p<.05, mental disengagement, r (46)=-.338, p<.05, and alcohol/drug use, r (49)=-.420, p<.01, to cope.

Discussion

In an attempt to better understand the cancer experience, the present study explored patients' and spouses' perceptions of cancer-related stressors, as well as exploring how marital quality, mental health, and social support differed between marital partners and across time. Our findings indicated a dynamic nature to the unfolding of the cancer experience. To further understand what fueled these changes and movement, we investigated the relationships between the person-environment variables of initial and final reports of marital quality, social support, coping, and shared understanding of the cancer experience and patient coping. Our findings lend themselves to a process-oriented view of the cancer experience (Lazarus & Folkman, 1984): the interactions between cancer-related variables work to shape and reshape each other which, in turn, fuel the changes and progression of the cancer experience.

Perception of Cancer-Related Stress Between Patient and Spouse

To gain a greater understanding of the specific stressors that cancer patients face, the present study looked at the percentages to which our sample reported particular stressors as well as the degree to which they considered these different events stressful. Both patients and spouses reported what they perceived the stress level to be for the patient who faced a particular stressful situation. Our rationale behind this is that while it is undeniable that cancer, as a whole, is a stress-evoking experience, it is important to highlight that this stress actually is comprised of a variety of individual stressors that the patient and his/her social network face (i.e. possibility of recurrence, change in family roles, treatment by physicians) (Ptacek et al., 1999). Each of these individual stressors, in turn, evokes particular types of coping and social support from patients and their networks depending on the type of stressor (Ptacek et al., 1999).

We found in this analysis that the majority of the both partners' ratings of the level of stress a patient may have from a certain experience were statistically similar. This finding, in general, suggests that spouses are very aware of the different situations their ill partner may face and how stressful these experiences are for the patient. Patients' and spouses' report of stress for receiving treatment is particularly interesting: partners scores were significantly different, with spouses reporting that they would perceive much higher levels of distress for the patient from receiving treatment than would the patient. While the majority of stress ratings were statistically similar between patients and spouses, some discrepancy occurred. Our data coincide with Pistrang and Barker's (1992) similar research that found that patients most often discussed physical problems and discomfort due to treatment with their spouses, even though this was only a moderate concern and, in reality, possibility of recurrence or death were patients' greatest concerns. Pistrang and Barker's (1992) findings can be applied to the patterns in our data, where spouses reported that they perceived receiving treatment, pain, change in activity level, and adverse reactions to treatment as patients' most pressing concerns. This emphasis on treatment and pain was not replicated as greatly in patients' reports of their top stressors, in which the possibility of recurrence was the patients' most stressful concern. While the amount of statistically similar patient and spouse perceptions of cancer-related stress is promising, the results also indicate a need for better and more open communication between partners.

Marital Quality, Mental Health, and Social Support Over Time and Comparatively Between Patient and Spouse

The stability of marital quality throughout the cancer experience. Under the premise that the experience of cancer can be a tumultuous and life-changing event for the patient and his/her spouse(Collins et al., 1990), we expected to find patterns of change within how the couple chose to handle the disease and the social environment it created. However, while we expected to find that the diagnosis and treatment of cancer to be life-changing for the patient and his/her family, we hypothesized that marital quality would remain constant throughout the timeline of treatment. The nature of this prediction was in keeping with a sizeable literature that has consistently shown the stability of marriage over time, even when faced with a traumatic event (Fang, Manne, & Pape, 2001; Weihs et al., 1999). Our hypothesis was confirmed by the data, which showed no significant differences in report of marital quality between time or partners. Much other research asserts that marriage is a very stable institution that can weather the emotional storm that chronic illness, in particular cancer, may evoke (Weihs et al., 1999). Our findings dovetailed Fang et al.'s work (2001), which surveyed cancer patients and their spouses at three different points throughout the cancer experience and found no significant changes in marital satisfaction throughout the time. This study's data, furthermore, concurred with Lichtman, Taylor, and Wood (1988) who found that those couples who expressed satisfaction with their marriage before the cancer experience had successful marital adjustment after treatment ended, once again reiterating the solidity of marriage. While our study found marital quality, as a whole, to be a relatively consistent phenomenon, individual couples' marital quality may not have remained so stable. Future research may consider comparing couples whose marital quality improved with cancer and those whose marital satisfaction decreased with cancer to further understand the variables at play that predict these two different endings.

Patient and spouse mental health and perceptions of social support. In reference to patient and spouse mental health, we predicted that the couple would share equivalent levels of both well-being and distress. This may seem to go against obvious logic, as, in general, one would presume that the cancer patient would have greater stressors and poorer mental health than his/her spouse. A plethora of recent literature, however, opposes such logic and instead proposes that often patient and spouse share similar levels of mental health (Coyne & Smith, 1991; Ell, et al., 1988; Kayser et al., 1999; Northouse, 1988). The hypothesis that both partners' mental health will be equally affected by the experience was supported by our results. While not facing the same trials as a cancer patient, spouses with chronically ill partners face helplessness and uncertainty of the outcome of treatment and their future, financial and care-giving demands, a lack of information from the medical community, and often inadequate social support that can lead to social isolation (Fang et al., 2001). In fact, some researchers have found that spouses can have worse mental health than their ill wife or husband (Gotay, 1984).

In knowing that both patients and spouses suffer similarly from the experience of cancer, one might expect that both members of the dyad would work to provide positive and appropriate support for the other. And yet, this study found that there were discrepancies in how spouses and patients, as a whole, viewed the social support that the patient received. While in overall agreement of social support, in concurrence with our hypothesis, patients reported receiving less reassurance of worth than spouses had reported providing. This finding can be interpreted in several manners. First, our findings may be partially explained by the perceived vs. actual support paradigm. Kessler (1991, as cited in Acitelli & Antonucci, 1994) found that how an individual perceives support is more significant to a person's adjustment than the actual support they received. The discrepancies between the two partner's reports of social support may be partially understood in this lens: both patient and spouse had different perceptions of the support a patient received and, as a result, did not concur on the actual support provided.

Another interpretation of our data is that part of the discrepancy between the support that a spouse thinks he/she gives and the support that a patient actually perceives may be a result of poor communication. Findings from other cancer patients have revealed that the majority of cancer patients often feel misunderstood and that the support they receive is commonly inadequate and inconsistent (Peters-Golden, 1982). Patients often report that they have trouble communicating with their spouse, which leaves them feeling like they have no outlet for their anxieties and fears (Pistrang & Barker, 1992). On the flip side, spouses often have trouble communicating their own needs and fears to an already burdened patient and may choose to withdraw out of an inability to see a more helpful action (Pistrang & Barker, 1995). This kind of self-concealment is common for both the patient and spouse; yet, it increases stress and lessens the individual's chances of receiving the support he/she needs (Larson, 1993). The implications of such findings are obvious: to narrow the gap between perceived and actual support and to heighten the quality of such aid, better communication is necessary. Part of getting the right support is asking for it. Clinicians should consider interventions that focus on improving communication between partners to understand each other's emotional and personal needs.

Several theorists have posited that an important part of complete social support is the receiver's chance to provide nurturance to the individuals who provide him/her support; in other words, that the main recipients of support also feel that they have the opportunity to reciprocate the help they have been provided (Kayser et al., 1999; Weiss, 1975). While the present study did not look extensively at social support for spouses, both patients' and spouses' reports of patient nurturance provided the study a glimpse into the support spouses received. Based on a growing literature that indicates that spouses do not receive sufficient support when handling a partner's chronic illness (Ell et al., 1988; Fang et al., 2001; Revenson & Majerovitz, 1991), we hypothesized that spouses would report that patients were less nurturing than patients reported. Our data supported this prediction. Our findings concur with Ptacek et al.'s (1997) research that indicates that spouses of either sex perceive less support than their ill partners. This is troublesome as the present study and a number of researchers have found that spouses with chronically ill partners often have just as much distress as the patient (Coyne & Smith, 1991; Ell, et al., 1988; Kayser et al., 1999; Northouse, 1988). As such, a spouse's adaptation to cancer is just as vital as is the patient's adjustment (Ell et al., 1988). If too distressed, spouses' efforts towards their ill partners may be futile (Manne, Alfieri, Taylor, & Dougherty, 1999; Pistrang & Barker, 1992). What is unique to this finding are the disparate assumptions between the partners; that is, that patients did not recognize that spouses needed more support. One explanation of our findings may coincide with Fang et al.'s (2001) work that indicates that a distressed patient may be unable to focus on more than his/her immediate needs. Nonetheless, it contradicts Lichtman et al. (1988) study in which both patients and their spouses took on more responsibility with the diagnosis and yet, both partners felt they were receiving enough attention and help from their spouse.

While Lichtman et al. (1988) may show a more positive view of support during the cancer experience, the need for greater social support for spouses is apparent. Again, communication acts as a vital part of eliciting support; often, spouses do not share their needs with their ill partners because they do not wish to burden them any further (Ell et al., 1988). Yet, previous studies have found social support for spouses with chronically ill partners to significantly predict better psychosocial adjustment and less depression (Ell et al., 1988; Hobfoll & Stevens, 1990; Ptacek et al., 1997; Revenson & Majerovitz, 1991). The need for increased social support for spouses becomes particularly salient as recent literature highlights the reciprocity of social support; if both partners are provided ample support, each can then more effectively provide support for the other (Ell et al., 1988; Hobfoll & Stevens, 1990; Revenson & Majerovitz, 1991).

The evolution of mental health and social support over time. When considering how patient and spouse mental health may change over time, we hypothesized that both partners' mental health would improve from pre-treatment to follow-up reports. Our data supported this prediction, finding that well-being increased and distress decreased over the treatment timeline. This increase in mental health between mid-treatment and after treatment ended is logical and corresponds with much of the previous literature (Fang et al., 2001; Irvine, Brown, Crooks, Roberts, & Brown, 1991; Weihs et al., 1999). At the pre-treatment stage, the couple has recently faced the diagnosis of cancer, but is unaware of what their next several months or years of treatment may be like. In many ways, these families' lives have been "turned upside down." The time immediately after diagnosis has often been found to be the most stressful: the family is unaware of what treatment will be like, are often uneducated about the particular cancer they may be facing, and are first grappling with questions of possible death (Fang et al., 2001; Weihs et al., 1999). As time goes on, however, the couple is faced with less strain as they learn more about the cancer experience and begin to even see a routine develop. The results also should be interpreted in the lens of our experimental design: a follow-up questionnaire implies that the patient has completed treatment and, while not necessarily immune to relapse, the patient and his/her spouse may feel like their battle has come to a close.

Similarly, we hypothesized, in accordance with past research (Fang et al., 2001; Weihs et al., 1999), that social support would be greater at post-treatment than at mid-treatment. We premised this on the logic that since post-treatment would seem to be a less stressful time, it may be easier to both provide and accept support at that time than in the middle of treatment. The data supported our hypothesis that patients would report receiving more social support from their spouses, who also would report providing more support to their ill partners, after treatment ended than during the middle of treatment.

These findings are highly interrelated to the similar changes that occurred over time in both patients' and spouses' mental health. As much research has shown (Northouse, 1988; Peters-Golden, 1982; Swensen & Fuller, 1992), social support positively predicts a better adjustment, greater self-esteem and self-efficacy, more effective use of coping strategies, and a decrease in depression. Thus, our findings that both mental health and social support improve over time are logical; the two should have parallel paths. To a more specific degree, our data showed that both partners were more distressed in the earlier part of the treatment process, which could lead to neither partners being able to adequately provide support for the other in this stressful time. This proposal coincides with other literature that has found that as stress increases for either spouse, they become less able to provide necessary support to their partner (Fang et al. 2001; Hoekstra-Webers, Jaspers, Kamps, & Klip, 1998; Revenson & Majerovitz, 1991). This may be a result of both partners focusing on their immediate personal situation rather than their partner's needs or, perhaps, their effort have become confused as they try to satiate their own and their partners needs (Fang et al., 2001; Manne, Alfieri, Taylor, & Dougherty, 1999; Pistrang & Barker, 1995)

The Relationships that Shape the Cancer Experience

The diagnosis of cancer brings about many considerable changes to the families it affects; the continuous changes in mental health and social support across time and between marital partners that we have examined only begin to describe how life is altered with a diagnosis of cancer. To more fully understand such substantial changes, the present study chose to investigate further the processes that underlie these changes. More specifically, we first explored possible predictors that helped to shape partners' reports of both patient coping and the social support patients received. We determined that initial reports of marital quality, shared understanding of the cancer experience, and dyadic agreement of patient coping all acted to predict social support and coping. We then examined coping and social support's role in shaping other components of the cancer experience and found that both affect marital quality reports once treatment has been completed. When viewed as a whole, these associations come together to form a model of the internal dynamic within the cancer experience: one's marriage, mental health, use of coping mechanisms, social support, and understanding of cancer and coping all continually affect each other and, in so doing, shape and reshape the patient's environment (these interactions can be viewed in Figure 1). The associations we found and the significance of how they predict each other to form the cancer experience are discussed below in greater detail.

Associations of initial reports of marital quality with social support and coping. As the SPS measures patients' perceptions of the support they received from their spouses, we hypothesized that initial reports of marital quality would be a strong predictor of social support. The rationale behind our expectation is obvious: within a marriage, the couple shares a past of how they have both chosen to react to stressful situations that they have encountered together and this history will have helped to shape their marriage and will be perpetuated in the type of responses they are apt to give in stressful situations in the future (Gottlieb & Wagner, 1991). In other words, the type of relationship that a couple has and the way in which they have mutually responded to situations in the past will be exemplified and reiterated when facing the new trial of a cancer diagnosis. Our expectation that initial marital quality would predict social support at both mid- and post-treatment was strongly supported by the data. What was particularly interesting was the degree to which marital quality predicted both patient and spouse perception of social support. In both cases, more than 60% of the possible 140 correlations were significant. The abundance of significant correlations concurs with the literature that sees a couples' reaction to stress as a logical extension of the type of marriage they have and their history in handling stressful situations (Gottlieb & Wagner, 1991).

We interpreted the data to indicate that if a couple's relationship is strong, then social support for cancer will follow; if marital quality is low, than social support may also be low. In other words, those couples that began the cancer experience with high marital quality had ill partners who reported receiving and spouses who reported providing more social support throughout the timeline of cancer. This coincides with an abundance of literature on the positive effects of marriage and how it can lead to better social support, mental health, and adjustment (Kessler & Essex, 1982; Menegan & Lieberman, 1986; Pearlin & Johnson, 1977, all cited in Lin and Westcott, 1991; Revenson & Majerovitz, 1991). These results highlight the importance of a high quality marriage when dealing with such severe stressors as chronic disease. Pistrang and Barker (1995) looked at the flip side of our findings—what happens when a patient does not receive sufficient support from their spouse—and found that even when the patient had as much support from other sources, psychosocial distance from his/her spouse was detrimental to the patient's well being.

Within the data, we discerned a particularly surprising pattern. Similar to the analysis of social support over time and between participants, we found few significant correlations between marital quality and nurturance. In fact, no correlations occurred when looking at both patient and spouse report of nurturance at post-treatment. We understand these findings to mean that nurturance, in many ways, was the exception to the plethora of ways that we had found marital quality to predict some facet of social support. In other words, patients gave less and spouses reported less nurturance than would be expected based on how partners rated their marriages. These findings reiterate other areas of the present study that portray the spouse as the "silent" partner, whose personal needs for support may be overshadowed by the patient's more conspicuous stressful situation.

Positive associations also occurred between partners' reports of initial marital quality and their report of how the patient coped. These findings are logical and parallel the similar correlations between initial marital quality and social support: past experiences within a couples' marriage is likely to have shown both partners how each spouse tends to cope with the situation (Gottlieb & Wagner, 1991). In fact, some researchers have recently suggested that coping should be examined dyadically: Wethington & Kessler (1991) explain that the burden of coping is shared by marital partners, particularly when the stressor directly affects both. They refer to this new view of coping as "mutual coping" and, under this lens, it follows naturally that marital quality would predict patient coping because a patient's coping extends past the individual to affect the many person and environmental variables around them.

Shared understanding of both the cancer experience and patient coping. To understand the dynamic and changing processes that evolve throughout the cancer experience, we chose to look at how shared understandings of both the cancer experience and patient coping may affect other variables within the cancer experience. Logically, past studies have suggested and found that the more a patient felt that his/her partner understood the cancer experience, the more positively they saw the support their spouse provided (Fang et al., 2001; Pistrang & Barker, 1995). In concurrence with the literature, we hypothesized that a couple's shared understanding of the cancer experience would predict patients' perceptions of social support. Our prediction also dovetailed Lichtman et al.'s (1985) finding that those couples with divergent views of the cancer process experienced more marital difficulties, isolation, and a lack of support from their partner. Despite reasons for expecting that shared understanding would predict social support, only one significant correlation occurred between agreement on the cancer experience and the 7 subscales of the SPS; in this correlation, couples' shared understanding of the cancer experience predicted patient mid-treatment reassurance of worth. This finding was surprising as it seemed sensible to presume that a shared understanding of the cancer experience and the stressors that a patient faces would predict better support; that is to say, if a spouse understands the particulars of what the patient is going through and what is causing him/her stress, it would seem rational that the spouse would be able to provide the patient better support. The possible implications of this unpredicted finding are discussed below.

When looking at how a couple's shared understanding of the cancer experience predicted patients' and spouses' perceptions of patient use of coping mechanisms, we again hypothesized that a dyadic agreement of the cancer experience would predict perceptions of patient coping. The data supported this hypothesis to a greater degree; patient coping was often predicted by how a couple understood the cancer experience. We expected these results as it makes sense that depending on what stressors a couple faces, the patient may choose to cope in a particular way. For example, for stressors out of the control of the patient, like the possibility of death, both a patient and spouse may see emotional social support as most effective and employed to pacify such fears.

A couple's shared understanding of how the patient copes was a better predictor of social support than a shared understanding of the actual cancer experience. The abundance of significant correlations between shared understanding of how the patient copes and both partners' perceptions of social support is logical. If partners agree on how a patient copes, both may be more in tuned in giving, receiving, and asking for the appropriate support. In this way, the spouse may be more informed on how to tailor the proper support for his/her ill partner.

These discrepant findings can be interpreted in several ways. While a lack of correlation between shared understanding and social support is surprising, particularly when such correlation was found between shared understanding and different methods of coping, one interpretation may be that to provide effective support, it matters less to know *what* the person is distinctly facing and is more important to understand *how* the individual is facing the stressor. This interpretation coincides with previous literature that posits that coping should be seen in a dyadic lens: the tasks and issues involved in coping are shaped by the actions and response of one's partner; as such, this give and take can affect how the couple perceives the experience as well as how the experience unfolds (Coyne & Smith, 1991). Our findings do not, however, coincide with other past research that found a shared understanding of the cancer experience to be a positive predictor of social support (Fang et al., 2001; Lichtman et al., 1985; Pistrang & Barker, 1995). Such discord calls into light the need for further investigation into the subject. In the sizeable body of literature that has been reviewed for this paper, there had yet to be a study that measured how shared understanding of patient coping affect social support until the present research. One direction for future research may be to continue to compare how strongly both dyad agreement on the cancer experience and on patient coping predicts social support.

The associations between final reports of marital quality and both coping and social support. From our analysis, the present study has determined that the interacting factors of social support and coping are shaped by various influences that range from partners' marital satisfaction to their shared agreement of what the experience of cancer is and how the patient is choosing to face it. Social support and coping, however, are not stagnant phenomena: they shift and change with time and also influence the other processes at play in the cancer experience. While social support and coping undoubtedly affect numerous variables involved within a marriage afflicted with cancer, we chose to concentrate particularly on their effects on partners' final reports of marital quality after treatment had ended.

First, we hypothesized that social support at both mid- and post- treatment would predict follow-up reports of marital quality. As the association between these variables was so strong when looking at initial reports of marital quality, we expected comparatively high levels of correlation. Our data supported these hypotheses. In fact, even greater amounts of correlations were found: 72.4% and 82.1% of possible correlations were significant for mid-treatment and post-treatment, respectively. To an extent, these findings seem antithetical to our earlier findings that reported marital quality did not change over time. However, while our results show prediction temporally, these findings are not causative; rather, our results display the relationship that marital quality and social support have in influencing each other.

Yet, the increase in the amount of correlations does seem to be a significant pattern: with time, the association between marital quality and social support becomes stronger. One interpretation of the greater agreement we see between these variables is that perhaps the experience of cancer works to bring couples to a greater understanding of marriage and the structures within it. In other words, after the cancer experience, couples may have a more in tuned sense of their relationship and also the support they provide each other. Past research parallels this interpretation: Swensen and Fuller (1992) found that, in couples with a terminally ill patient, couples reported expressing their love to each other more often after diagnosis, having greater verbal expression of affection, participating in more self-disclosure, and providing more moral support than non-cancer couples. In fact, 65% of the couples in Swesen and Fuller's (1992) study said that they were closer after the cancer experience, while 28% said that they saw no change in their relationship, and 7% reported that their relationship have worsened. While our results may not have been so striking, the possibility that the cancer experience did, in fact, increase the couples' awareness of each other, the dynamics of their relationship, and the support they receive and provide seems like a plausible explanation to the trends in our data.

Of particular interest is the change in spouse report of marital consensus. When looking at the association between initial marital quality and social support at either mid- or post-treatment, there were no significant correlations for spouse report of marital consensus; however, when reviewing the same association but with follow-up marital quality, almost every correlation to social support is significant. Marital consensus, as measured by the DAS, refers to the level of agreement couples have concerning shared interests (i.e. recreation, religion, friends), life goals (i.e. career decisions, aims and goals), and life philosophies. That consensus increased between initial and follow-up reports of marital quality may suggest that the cancer experience shifted both partners'

perceptions on what their interests, goals, and life philosophies are. This parallels Coyne et al.'s (1990) findings that after the experience of cancer, many couples felt a shift in their priorities and within their relationships to concentrate on what they considered most significant in their lives.

Once again, an exception to the general trend of our data occurred with the subcategory of nurturance. When looking at how social support was associated with final reports ofmarital quality, there were no significant correlations across all the subscales of the DAS for both patients' and spouses' ratings of nurturance. This finding joins a similar pattern throughout our findings that indicates nurturance as an outlier in our study: patients' lack of appropriate nurturance cannot be explained by the other variables that we have reviewed. To reiterate, such a surprising trend does strongly call attention to a need to further understand the spouse's predicament within the cancer experience to better appreciate the role his/her needs play in molding the psychosocial outcome of a diagnosis of cancer.

The types of coping that the patient reportedly employed also affected marital quality at the end of treatment. This finding parallels the relationship we found between coping and initial reports of marital quality. As coping does not involve only the individual in a situation as intimate as marriage, it is logical that how a patient coped and how a spouse responded to it (mutual coping) would help to shed light on understanding one's marriage, which may, in turn, increase satisfaction within it (Gottlieb & Wagner, 1991).

The Dynamic Model of the Cancer Experience

Our findings come together to create a model of the interactions within the cancer experience and, in particular, the evolution of social support and coping throughout the cancer timeline (Figure 1). To understand such dynamism, we subscribe to Lazarus and Folkman's (1984) well-substantiated process-oriented view of coping. Lazarus and Folkman (1984) claim that it is essential to view coping from the standpoint of process, as this refers to the changing character of the coping person's cognitions and actions as the stressful event unfolds. Unexpected twists and turns when facing a stressor forces an individual to reappraise his/her situation and his/her responding thoughts and actions (Lazarus & Folkman, 1984). In this lens, coping and social support do not stand alone as separate beings; rather, they too are a dyad. How each partner copes places limits on the social support they provide and receive and conversely, social support simultaneously affects both partners' coping (Gottlieb & Wagner, 1991). Hence, we have chosen to extend Lazarus's process model of coping to also include the interactive phenomenon of social support.

We interpret our data to be a tangible example of process coping and social support. In concurrence with a process approach to both, we found that both coping and social support are shaped by the social context of the person-environment relationship, and yet, simultaneously, they influence and bring about change in this social context (Gottlieb & Wagner, 1991). More specifically, we found that initial marital quality and shared understanding of both the cancer experience and patient coping predicted how a patient was perceived to cope and the social support he/she received; coping and social support, in turn, affected later reports of marital satisfaction. In this way, while we interpreted our findings temporally, so to suggest that different variables predicted correlations with other variables, the direction of prediction is two-way: the different variables found to be inherent in the cancer experience fuel changes in each other and, in so doing, shape and reshape each other. These changes come together to dictate the evolution of the cancer experience.

One would not likely see all of these interactions if one were to only look at the experience of a cancer patient alone. To understand the cancer experience as a whole, one must look past just the patient to the persons and environment that surround him/her as these influences also maintain the power to alter the patient's response to the cancer (Gottlieb & Wagner, 1991). Others in the environment have the capacity to either increase or alleviate the stress of the situation and hence, the role a patient's marital partner plays adds one more dimension to the already complex interactions occurring within the cancer experience (Wethington & Kessler, 1991). When looking at coping within the intimate setting of marriage, it is obvious that the dyad influence each other in how they choose to cope (Wethington & Kessler, 1991). What is often forgotten, it seems, is that a spouse with a chronically-ill partner faces different, but equivalent degrees of stress. As a result, the members of a marital dyad must concurrently deal with their own and their partners reaction to the stressor (Gottlieb & Wagner, 1991). Furthermore, social support from one's spouse, in turn, acts to influence, encourage, redirect, and re-channel the other's coping behavior (Gottlieb & Wagner, 1991). While our study did not look specifically at how each partner's reaction affected the other, this relationship seems relatively well-implied in our findings and further substantiates a need to view both coping and social support on a mutual dimension.

On a broader scale, our findings have implications for current theory. While we found numerous correlations that imply a dynamic nature to how the cancer experience unfolds, there are, undoubtedly, many more similar associations between variables that we did not include in our study. The interactive picture that we have painted about the cancer experience can extend to a more general dimension. Lazarus and Folkman's (1984) process view of coping and social support provides an important framework to view all processes that unfold over time. Their work and our own highlight the necessity to use longitudinal studies when looking at both social support and coping as such studies are able to better capture the active and continuous changes that occur within both. By viewing coping, social support, and other processes in a dynamic lens, we are able to better understand each of these variables and factors that govern their expression (Gottlieb & Wagner, 1991).

Practical Applications

The present study provides a story of how the cancer experience unfolds within a marriage. While many areas of the study would benefit from further research, there are nonetheless real-world implications within the findings. Hospital personnel, social workers, and clinicians should teach and encourage open communication and cancer education within families affected by the disease. As our findings indicated that the post-diagnosis and beginning treatment time period is the most stressful, a need for early clinical intervention becomes apparent. Clinicians should concentrate on educating patients, their spouses, and families about what to expect in the upcoming months, as well as more general information about the cancer experience and different stressors that the entire family unit may face. While our particular study found that shared

understanding of the cancer experience did not necessarily imply better social support provision, it is nevertheless useful for families to be knowledgeable about cancer. From this study's results, we would also encourage patients and spouses to be aware of not only the stressors both partners may face, but also *how* each handles the different problems, since our study indicates that understanding how a patient copes can predict better social support provision. Clinicians should thus encourage providers of support to tailor their aid to fit into how the individual chooses to cope with a particular problem.

While the present study did not focus heavily on the support a spouse receives, our findings join a growing literature that has found that spouses often lack the necessary support they require to get through the cancer experience even though they have been found to suffer similar levels of distress as their ill partners (Coyne & Smith, 1991; Ell, et al., 1988; Kayser et al., 1999; Northouse, 1988). Clinicians must recognize spouses' needs and encourage patients to provide more support for their spouses as well as encourage spouses to take advantage of their social support network of friends and family members. While a great deal of literature has found that both partners in a marriage rely most heavily on their spouse for support (Ell et al., 1988; Peters-Golden, 1982; Ptacek et al., 1997; Revenson & Majerovitz, 1991), there would undoubtedly also be benefit from spouses increasing their support network outside of their marriage. Such friends may provide tangible aid by helping with household chores, as well as providing an emotional outlet for spouses who feel they do not want to burden their ill partner any further (Revenson & Majerovitz, 1991). Increased support for spouses of cancer patients will not only benefit the spouse: with more support, spouses will have a better psychosocial adjustment and, as a result, provide better care for their ill partners (Hobfoll & Stevens, 1990). Furthermore, Kayser et al. (1999) found that increased mutuality in a marriage afflicted with cancer equated to a female patient coping better, reporting a higher quality of life, and having better adjustment. If given the chance to reciprocate support, patients may in fact increase their own mental health by providing support. As said before, open communication of both partners' needs is a vital component to increasing social support and, hence, mental health for both.

Limitations and Future Directions

While ours and other studies have found that marital quality remains stable over the course of cancer, it seems plausible that marital satisfaction may have shifted throughout the cancer, but that these changes were too small to be noticed by the measures employed. Fang et al. (2001) made a suggestion for their own data which applies appropriately also to this study: in order to understand the intricacies of how cancer affects marital quality, a more sensitive scale should be employed that takes into consideration changes in marital quality as a result of illness. Fang et al. (2001) recommended, in particular, the CARES marital subscale (Schag & Heinrich, 1988) and a measure used by Williamson and colleagues (Williamson, Shaffer, & Schulz, 1998) to test for stronger correlations between spouse distress and marital quality. The researchers further suggested using both a cancer-specific and a general measure of marital quality so to tease out the subtle changes in marital satisfaction that may have resulted from the cancer (Fang et al., 2001). Their suggestions are highly applicable to the present study and should extend to future research that looks at associations between marital quality and illness, specifically cancer. Another possible confound to our findings is that our first measure of marital quality was post-diagnosis, but before treatment began. This is a highly stressful and intense time for couples facing the diagnosis of cancer and, as such, the DAS may not have yielded results that are representative of the couples' marital quality before their experience with cancer.

A large limitation to our study, and one of particular scrutiny in the general psychology field as of late, is our use of retrospective data to assess coping and social support. While self-report is considered the only way to gain direct access to an individual's internal cognitions and processes (Ptacek et al., 1994), data can be skewed by defensive processes, response biases, and general inaccuracies (Ptacek et al., 1994). Ptacek et al. (1994) has found that coping self-reports are not free from such bias, but rather can be confounded by both passage of time and knowledge of the outcome of the coping process (Ebbinguaus, 1885/1964; Ross & Fletcher, 1985; Zechmeister & Nyberg, 1982, all cited in Ptacek et al., 1994). Literature on the inaccuracy of retrospective self-reports of stress has been equivocal: some research has found that stress enhances recall (Bohannon, 1992, as cited in Ptacek et al., 1999), while other literature has found that stress reduces accuracy in self-reports (Burke, Heuer, & Reisburg, 1992, as cited in Ptacek et al., 1999). These problems with self-report instruments all can cause increased likelihood of invalidity in outcomes and problems in causality (Staton, Danoff-Burg, Cameron, & Ellis, 1994, as cited in Ptacek et al., 1999).

To our benefit, the longitudinal design of our study resulted in a relatively short recall period with intervals between questionnaire packets never exceeding a month of time. Furthermore, Ptacek et al. (1999) raises a valid counterargument against the inaccuracies of self-report when looking at marital couples experiencing a diagnosis of cancer: the reactions that husbands and wives have towards each other in the present are based on their perceptions of the past, independent as to whether these memories are accurate.

A third drawback of the present study is that the population examined was ethnically homogenous and generally well-educated. While our findings may be very applicable to this subset of the population, they do not account for a larger and more diverse population and hence lack external validity. And yet, where our study perhaps should have homogeneity, as in age and cancer type, we lack it. The majority of our participants had either breast or prostate cancer; these two cancers are dramatically different in the general age of patients, their treatment, and their prognoses. Eighty percent of men who have prostate cancer are over the age of 65 (Ptacek et al., 1999). This varies considerably with breast cancer patients who tend to be middle-aged or, at times, younger. While the diagnosis of cancer is traumatic for any age group, older individuals tend to be more accepting of disease as a part of what they expect in their lives with increasing age, while younger patients often see cancer as a severe, bewildering, and unfair turn in their lives (Bartman & Roberto, 1996). This disparity in how patients view cancer could affect how the disease influences their mental health and views on coping and social support.

A further shortcoming of the present study is our lack of investigation of potential gender differences. Past research has found that husbands have a harder time adjusting than wives do to their spouse's diagnosis of cancer and that men, in general, have more trouble eliciting social support than do women (Revenson & Majerovitz, 1991; Hoekstra-Webers et al., 1998). Ptacek et al. (1999) found that women tend to perceive more support, make better use of the support they are given, seek support more quickly than do

men, and are more satisfied with the support they do receive. In not looking at gender differences in perceived social support, we ignored the possibility of finding some interesting patterns and associations between gender and social support. Furthermore, Kayser et al. (1999) found that female patients, in particular, emphasized a need to be able to reciprocate the support they received from their husbands and were found to do this by compensating for the decline in household responsibilities with increased psychological and emotional support for their spouses. With such information, our findings that spouses did not receive adequate nurturance from their ill partners are surprising. An interesting step to take with this in future research would be to investigate nurturance across genders to see if male patients also benefit from providing nurturance to their wives.

Another possible path for future research would be to investigate the dyadic nature of coping and social support within a marriage afflicted by cancer for couples who are in the later stages of cancer. There is quite a hole in the present literature on cancer within a marriage in reference to couples who face the different and more difficult stressors that come with a cancer that may end in death. While the time span looked at in other literature and in the present study find post-diagnosis to be the most stressful period of the cancer timeline, the small amount of literature that looks at the later stages of cancer show these times to be most stressful (Collins et al., 1990; Peters-Golden, 1982). On top of this, several researchers have found that as a chronic illness progresses, the patients lose much of their support network and tend to receive much less support, even though they are often the ones in greatest need of support (Swensen & Fuller, 1992). Future research should consider filling this gap in the literature by looking at how later stages of cancer affect a dyad; and, if the patient does pass away, research should not be terminated, but rather should look at how the surviving half of the dyad, the spouse, continues to cope. While certainly a more difficult area of research to look at both methodologically and personally for the researcher, these couples and the clinicians who work with them are perhaps in the greatest need to have some intellectual light shined on them of how they cope and how they may elicit support more successfully for a better psychosocial adjustment to the effects of cancer.

And yet, what seems to be the most pivotal direction for future research is a need to better understand the spouse's role in the cancer experience in relation to his/her ill partner. Very little research has looked at this and, of the research that has, it has not take into account the full experience of the spouse and his/her interactions with others and the environment. This is certainly a limitation of our own study. Future research must not divide the marital dyad when looking at how cancer affects a marriage; while certainly there are individual implications within a cancer diagnosis, these implications cannot be fully understood if not looked at within the context of the dyad. Hence, future research should adopt both a process and a mutual view of coping and social support to gain a better understanding and clearer picture of how cancer affects a marriage.

Conclusion

The present study looked at how marital quality, mental health, the provision of social support, and coping were associated with each other over the course of cancer treatment and how these interactions affected both the cancer patient and his/her spouse. We found that both patients and spouses had comparable reports of distress and well-being and yet, neither partners were satisfied with the social support they were provided

by the other. We further found that social support and mental health are dynamic and intertwined phenomena: they changed with each other over the course of the cancer experience. In an effort to explore such dynamism both across time and between patients, we reviewed different associations between variables, which resulted in an interactive model of the cancer experience that parallels Lazarus and Folkman's (1984) process-oriented theory of coping and social support. We specifically found that initial marital quality, shared understanding of the cancer experience, and dyad agreement on patient coping predicted coping and social support which, in turn, affected reports of marital quality after treatment had ended. Our model accentuates the dynamic and dyadic nature of the cancer experience: the social networks and the environment surrounding the patient shape and are shaped by each other to form the path that a cancer patient and his/her spouse must take. While each partner experiences his/her own stressors and perceptions of support and the environment, these cognitions and their resulting actions work to influence the other individual in the dyad. When taken together, marital partners influence on each other is cyclic: one partner's perceptions and responses affect the others', which in turn reshapes the original partner's views and behaviors.

Underneath our findings is a pattern common to the experience of cancer: each partner in the marital dyad struggles through an experience like cancer to both maintain his/her own well-being, while also attempting to provide the support and environment necessary for their spouse to adapt to the experience as positively as possible (Coyne et al., 1990). As social support and coping are best viewed as dynamic and interdependent processes, it is imperative that both partners be considered within this paradigm. To fully understand the experience of a cancer patient, one must also understand the experience of his/her most intimate tie, the marriage partner. To provide the best clinical advice and support to cancer patients, both partners' mental health must be taken into account, so to provide an environment in which either's needs for support are acknowledged and fulfilled. This, in turn, fosters a different cycle in which the patients or spouses who feel they are receiving appropriate support will be more willing and more prepared to offer support to their provider. As social support has been shown to be so integral to a positive adaptation to cancer (Northouse, 1988; Peters-Golden, 1982; Swensen & Fuller, 1992), the perpetuation of this cycle of support is fundamental to both the patient and his/her spouse's adjustment to cancer.

Few other relationships can compensate for the intimacy and support that can be found in many marriages (Lichtman et al., 1988; Pistrang & Barker, 1995). Part of the unparalleled nature of the intimacy found in marriage is that, in many cases, each partner shows a willingness to sustain great burdens for the other (Coyne et al., 1990). Physical illness, in particular, cancer, is a burden that many couples are forced to face in their lives. While the cancer experience can be wholly negative and result in no perceived good for some, the experience has also expanded and heightened others' perceptions of their priorities and their relationships. The benefits of the experience of cancer for patients commonly include refocusing to see the happiness of their present situation, a restructuring of their priorities to concentrate on what they now consider important, and a feeling of being better adjusted after the cancer experience than they felt in their life prior to cancer (Coyne et al., 1990). For those couples that successfully work together through the diagnosis and treatment of cancer, these benefits and refocused priorities have the chance to be shared and enjoyed by both partners of the dyad.

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Figure 1: The relationships that shape the cancer experience.

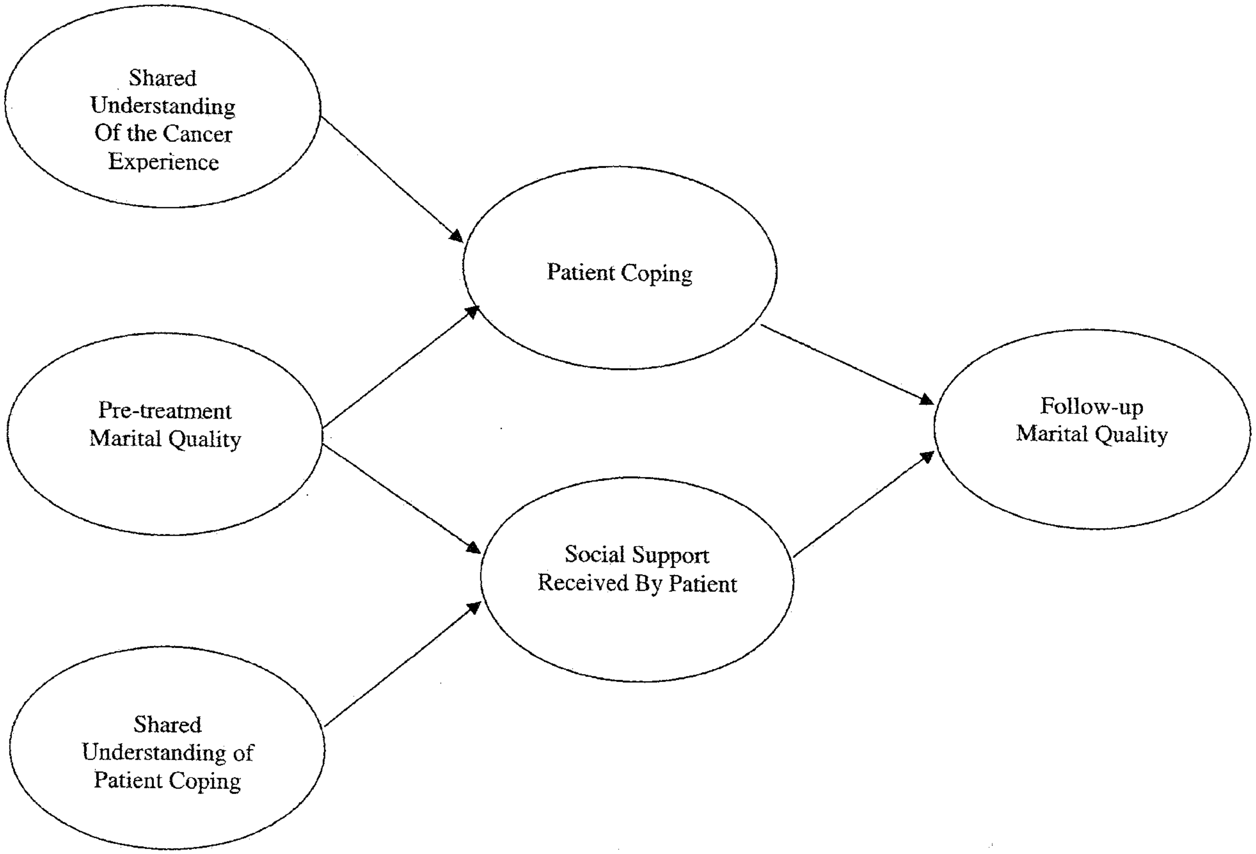

Table 1. Descriptive Statistics for Each Item in The Cancer Experience Survey for Both Patients and This Spouses

Experience	% Reporting Some Stress[1]		Mean Ratings[2]				
	Patient	Spouse	Patient	Spouse	*r*	(*n*)	*P*
Possibility of death	58.5	50.9	2.29	2.32	.63*	(34)	$p<.001$
Change in sexual identity	30.2	35.8	1.71	2.02	.13	(26)	$p>.05$
Social isolation from friends and family	24.5	20.8	1.59	1.50	.66*	(32)	$p<.001$
Pain	52.8	60.4	2.25	2.51	.69*	(37)	$p<.001$
Medical Checkups	54.7	60.4	2.09	2.25	.16	(45)	$p>.05$
Possibility of recurrence	83.0	66.0	2.64	2.50	.55*	(44)	$p<.001$
Loss of hair	37.7	34.0	2.45	2.42	.56*	(31)	$p<.001$
Change in sexual activity	47.2	54.7	2.25	2.49	.57*	(36)	$p<.001$
Reduction in ability to perform your job at pre-cancer level	52.8	54.7	2.36	2.14	.64*	(36)	$p<.001$
Change in activity level	66.0	79.2	2.47	2.65	.53*	(43)	$p<.001$
Strains on family finance	56.6	52.8	2.25	2.24	.63*	(42)	$p<.001$
Informing family members	41.5	41.5	1.98	1.84	.40*	(42)	$p<.01$
Making decisions about treatment	58.5	62.3	2.22	2.28	.52*	(46)	$p<.001$
Change in body image	39.6	37.7	1.86	1.77	.49*	(36)	$p<.01$
Others making decisions for you	26.4	30.2	1.70	1.89	.45*	(33)	$p<.01$
Interactions with family	28.3	32.1	1.58	1.55	.68*	(40)	$p<.001$
Loss of job/ career	8.4	11.3	1.73	2.09	.86*	(11)	$p<.001$
Receiving treatment	54.7	71.7	2.02	2.74	.46**	(47)	$p<.001$
Informing friends	41.5	54.7	1.89	1.89	.25	(47)	$p>.05$
Change in family roles	35.8	39.6	1.92	1.81	.48*	(34)	$p<.01$
Treatment by physicians	32.1	41.5	1.53	1.81	.21	(45)	$p>.05$
Interactions with friends	30.2	34.0	1.49	1.60	.48*	(43)	$p<.001$
Treatment by nurses	20.8	30.2	1.32	1.59	.30*	(44)	$p<.05$
Time demanded for treatment	56.4	62.3	2.00	2.19	.38*	(48)	$p<.01$
Adverse reactions to radiation therapy	75.5	66.0	2.40	2.50	.54*	(46)	$p<.001$

Note: Stress rations for events that did occur range from 1 ("Not at all") to 5 ("Extremely").

[1] Percentage reporting that the event had occurred and had invoked some stress in the patient.

[2] The mean rating for patients and spouses for couples in which both couple members agreed that the event had been experienced. *n* represents the number of such couples.

**Refers to means which are significantly *different* between patient and spouse

Table 2. Scores in the 5 subscales of the MHI between Respondents and over Time.

	Respondents			Time		
	Patient	Spouse	F-values	Pre-treatment	Follow-up	F-values
General Positive Affect	46.7 (1.45)	46.6 (1.11)	.009	45.1 (1.12)	48.2 (1.28)	12.450*
Emotional Ties	10.1 (0.26)	9.6 (0.32)	2.636	9.9 (0.25)	9.9 (0.29)	.072
Anxiety	19.7 (1.06)	20.0 (0.89)	.060	21.5 (0.78)	18.2 (0.89)	30.263*
Depression	9.3 (0.50)	9.2 (0.40)	.019	9.9 (0.37)	8.6 (0.44)	33.812*
Loss of Behavioral and Emotional Control	16.6 (0.97)	16.4 (0.74)	.070	17.4 (0.66)	15.6 (0.77)	19.365*

Table 2. Changes in the overall score and the 6 subscales of the SPS between Respondents and over Time.

	Respondents			Time		
	Patient	Spouse	F-values	Pre-treatment	Follow-up	F-values
Total Social Support Score	79.8 (1.05)	81.5 (1.15)	2.495	79.7 (0.99)	81.6 (1.08)	6.189*
Guidance	14.2 (0.24)	14.3 (0.24)	.176	14.1 (0.23)	14.3 (0.20)	1.763
Reassurance of worth	13.2 (0.24)	13.8 (0.27)	4.733*	13.3 (0.24)	13.7 (0.24)	4.388*
Social Integration	13.3 (0.26)	13.1 (0.27)	1.647	13.1 (0.25)	13.3 (0.28)	.593
Attachment	13.7 (0.31)	13.6 (0.30)	.420	13.5 (0.28)	13.8 (0.30)	1.316
Nurturance	10.8 (0.35)	12.1 (0.34)	11.396*	11.1 (0.32)	11.7 (0.30)	6.974*
Reliable Alliance	14.5 (0.18)	14.8 (0.18)	2.428	14.5 (0.18)	14.8 (0.18)	1.577

Table 4. Correlations between patient and spouse pre-treatment DAS scores and patient and spouse mid-treatment SPS scores

		Patient pre-treatment DAS scores					Spouse pre-treatment DAS scores				
Mid-treatment SPS scores		Total Score	Consensus	Satisfaction	Cohesion	Affection	Total Score	Consensus	Satisfaction	Cohesion	Affection
Patient Total SPS score	Pearson Correlation	.582*	.347*	.595*	.546*	.448*	.397*	.134	.424*	.505*	.356*
	Significance	.000	.011	.000	.000	.001	.004	.340	.002	.000	.009
	N	52	53	53	53	53	52	53	53	53	53
Patient Report of Guidance	Pearson Correlation	.484*	.199	.574*	.495*	.409*	.283*	.010	.339*	.471*	.288*
	Significance	.000	.153	.000	.000	.002	.042	.942	.014	.000	.037
	N	52	53	53	53	53	52	53	52	53	53
Patient Report of Reassurance of Worth	Pearson Correlation	.310*	.128	.453*	.196	.287*	.189	.006	.263	.194	.302*
	Significance	.027	.365	.001	.183	.039	.184	.969	.062	.169	.029
	N	51	52	52	52	52	51	52	51	52	52
Patient Report of Social Integration	Pearson Correlation	.643*	.510*	.561*	.534*	.459*	.516*	.297*	.453*	.573*	.377*
	Significance	.000	.000	.000	.000	.001	.000	.031	.001	.000	.005
	N	52	53	53	53	53	52	53	52	53	53
Patient Report of Attachment	Pearson Correlation	.530*	.354*	.519*	.465*	.454*	.383*	.077	.555*	.444*	.268
	Significance	.000	.009	.000	.000	.001	.005	.583	.000	.001	.053
	N	52	53	53	53	53	52	53	52	53	53
Patient Report of Nurturance	Pearson Correlation	-.012	.032	-.104	.107	-.044	.058	.147	-.103	.019	.022
	Significance	.932	.820	.460	.444	.755	.685	.295	.468	.893	.878
	N	52	53	53	53	53	52	53	52	53	53
Patient Report of Reliable Alliance	Pearson Correlation	.261	.098	.353*	.292*	.187	.075	-.110	.203	.200	.062
	Significance	.061	.487	.010	.034	.179	.596	.432	.149	.152	.661
	N	52	53	53	53	53	52	53	52	53	53
Spouse Total SPS score	Pearson Correlation	.550*	.444*	.504*	.423*	.406*	.552*	.378*	.585*	.428*	.321*
	Significance	.000	.001	.000	.002	.003	.000	.005	.000	.001	.019
	N	52	53	53	53	53	52	53	52	53	53
Spouse Report of Guidance	Pearson Correlation	.481*	.377*	.387*	.409*	.369*	.334*	.158	.488*	.359*	.021
	Significance	.000	.006	.005	.003	.008	.018	.269	.000	.010	.883
	N	50	51	51	51	51	50	51	50	51	51
Spouse Report of Reassurance of Worth	Pearson Correlation	.230	.181	.260	.182	.094	.372*	.274*	.399*	.174	.312*
	Significance	.104	.198	.062	.198	.510	.007	.050	.004	.216	.024
	N	51	52	52	52	52	51	52	51	52	52
Spouse Report of Social Integration	Pearson Correlation	.529*	.404*	.488*	.423*	.443*	.516*	.350*	.475*	.459*	.289*
	Significance	.000	.003	.000	.002	.001	.000	.010	.000	.001	.036
	N	52	53	53	53	53	52	53	52	53	53
Spouse Report of Attachment	Pearson Correlation	.576*	.444*	.518*	.489*	.409*	.505*	.307*	.622*	.353*	.287*
	Significance	.000	.001	.000	.000	.003	.000	.027	.000	.010	.039
	N	51	52	52	52	52	51	52	51	52	52
Spouse Report of Nurturance	Pearson Correlation	.152	.160	.146	.061	.143	.399*	.359*	.269	.220	.337*
	Significance	.288	.257	.303	.668	.311	.004	.009	.056	.117	.015
	N	51	52	52	52	52	51	52	51	52	52
Spouse Report of Reliable Alliance	Pearson Correlation	.481*	.377*	.490*	.381*	.256	.371*	.278*	.321*	.303*	.184
	Significance	.000	.006	.000	.005	.067	.007	.046	.022	.029	.193
	N	51	52	52	52	52	51	52	51	52	52

Table 5. Correlations between patient and spouse pre-treatment DAS scores and patient and spouse post-treatment SPS scores

		Patient pre-treatment DAS scores					Spouse pre-treatment DAS scores				
Post-treatment SPS scores		Total Score	Consensus	Satisfaction	Cohesion	Affection	Total Score	Consensus	Satisfaction	Cohesion	Affection
Patient Total SPS score	Pearson Correlation	.582*	.420*	.556*	.511*	.392*	.387*	.174	.340*	.528*	.345*
	Significance	.000	.002	.000	.000	.004	.005	.217	.015	.000	.012
	N	51	52	52	52	52	51	52	51	52	52
Patient Report of Guidance	Pearson Correlation	.533*	.391*	.496*	.429*	.336*	.222	.019	.254	.367*	.223
	Significance	.000	.005	.000	.002	.017	.125	.898	.078	.009	.119
	N	49	50	50	50	50	49	50	49	50	50
Patient Report of Reassurance of Worth	Pearson Correlation	.475*	.308*	.540*	.347*	.327*	.320*	.127	.265	.421*	.312*
	Significance	.000	.027	.000	.012	.018	.022	.368	.060	.002	.024
	N	51	52	52	52	52	51	52	51	52	52
Patient Report of Social Integration	Pearson Correlation	.516*	.421*	.422*	.464*	.357*	.343*	.149	.336*	.455*	.248
	Significance	.000	.002	.002	.001	.009	.014	.291	.016	.001	.077
	N	51	52	52	52	52	51	52	51	52	52
Patient Report of Attachment	Pearson Correlation	.489*	.286*	.569*	.388*	.416*	.381*	.100	.508*	.484*	.318*
	Significance	.000	.044	.000	.005	.003	.007	.489	.000	.000	.025
	N	49	50	50	50	50	49	50	49	50	50
Patient Report of Nurturance	Pearson Correlation	.079	.037	.061	.211	-.009	.097	.125	-.040	.142	.034
	Significance	.584	.793	.666	.134	.949	.497	.378	.780	.314	.809
	N	51	52	52	52	52	51	52	51	52	52
Patient Report of Reliable Alliance	Pearson Correlation	.423*	.391*	.346*	.342*	.270	.328*	.176	.209	.421*	.401*
	Significance	.002	.004	.012	.013	.053	.019	.211	.140	.002	.003
	N	51	52	52	52	52	51	52	51	52	52
Spouse Total SPS score	Pearson Correlation	.492*	.417*	.407*	.404*	.395*	.477*	.323*	.482*	.381*	.329*
	Significance	.000	.003	.003	.004	.004	.001	.022	.000	.006	.020
	N	49	50	50	50	50	49	50	49	50	50
Spouse Report of Guidance	Pearson Correlation	.414*	.388*	.273	.302*	.327*	.333*	.248	.363*	.250	.131
	Significance	.003	.005	.053	.032	.019	.018	.079	.010	.076	.361
	N	50	51	51	51	51	50	51	50	51	51
Spouse Report of Reassurance of Worth	Pearson Correlation	.297*	.174	.272	.324*	.290*	.543*	.419*	.528*	.276	.437*
	Significance	.045	.242	.064	.026	.048	.000	.003	.000	.061	.002
	N	46	47	47	47	47	46	47	46	47	47
Spouse Report of Social Integration	Pearson Correlation	.526*	.446*	.435*	.408*	.462*	.503*	.369*	.486*	.377*	.260
	Significance	.000	.001	.002	.004	.001	.000	.010	.001	.008	.074
	N	47	48	48	48	48	47	48	47	48	48
Spouse Report of Attachment	Pearson Correlation	.395*	.225	.460*	.325*	.299*	.268	.047	.472*	.241	.137
	Significance	.005	.120	.001	.023	.037	.065	.750	.001	.096	.349
	N	48	49	49	49	49	48	49	48	49	49
Spouse Report of Nurturance	Pearson Correlation	.157	.213	.042	.130	.138	.276	.204	.123	.264	.260
	Significance	.281	.137	.774	.367	.338	.055	.155	.399	.064	.068
	N	49	50	50	50	50	49	50	49	50	50
Spouse Report of Reliable Alliance	Pearson Correlation	.429*	.427*	.323*	.338*	.242	.326*	.280	.203	.245	.279
	Significance	.002	.002	.024	.017	.094	.024	.052	.167	.069	.052
	N	48	49	49	49	49	48	49	48	49	49

Table 6. Correlations between patient and spouse pre-treatment DAS scores and patient COPE scores

		Patient pre-treatment DAS scores					Spouse pre-treatment DAS scores				
Patient Report of Patient Coping		Total Score	Consensus	Satisfaction	Cohesion	Affection	Total Score	Consensus	Satisfaction	Cohesion	Affection
Action against stressor	Pearson Correlation	.178	.130	.172	.210	.026	-.030	.002	-.029	-.124	-.073
	Significance	.212	.359	.224	.136	.856	.833	.991	.841	.394	.619
	N	51	52	52	52	52	51	52	51	49	49
Planning to cope	Pearson Correlation	.144	.034	.162	.289*	-.020	.124	.163	.003	-.007	-.085
	Significance	.313	.812	.253	.038	.889	.387	.247	.981	.959	.552
	N	51	52	52	52	52	51	52	51	51	51
Suppress competing acts to cope	Pearson Correlation	.030	-.069	.028	.213	-.023	.135	.097	.118	.053	.186
	Significance	.833	.627	.845	.129	.871	.346	.493	.410	.706	.187
	N	51	52	52	52	52	51	52	51	52	52
Restraint coping	Pearson Correlation	-.136	-.206	-.109	.086	-.211	.035	.124	-.133	-.050	.155
	Significance	.340	.142	.441	.543	.133	.810	.397	.354	.726	.274
	N	51	52	52	52	52	51	52	51	52	52
Employment of institutional social support	Pearson Correlation	.093	-.054	.110	.304*	-.066	.019	.013	-.086	.184	-.040
	Significance	.519	.708	.443	.030	.647	.896	.928	.551	.196	.783
	N	50	51	51	51	51	50	51	50	51	51
Employment of emotional social support	Pearson Correlation	.158	-.023	.271	.320*	-.048	.171	.067	.172	.245	.068
	Significance	.272	.875	.054	.022	.739	.234	.640	.232	.083	.633
	N	50	51	51	51	51	50	51	50	51	51
Positive Reappraisal	Pearson Correlation	.132	-.062	.291*	.226	.022	.083	.010	.061	.172	.040
	Significance	.360	.665	.038	.112	.877	.565	.944	.673	.228	.778
	N	50	51	51	51	51	50	51	50	51	51
Acceptance coping	Pearson Correlation	.252	.129	.239	.202	.373*	.171	.082	.179	.154	.130
	Significance	.077	,366	.091	.154	.007	.234	.568	.215	.281	.363
	N	50	51	51	51	51	50	51	50	51	51
Religious coping	Pearson Correlation	.230	.110	.223	.403*	-.005	.326*	.282*	.166	.338*	.190
	Significance	.104	.436	.113	.003	.970	.020	.042	.245	.014	.178
	N	51	52	52	52	52	51	52	51	52	52
Venting emotions	Pearson Correlation	.025	-.036	-.024	.207	-.026	.192	.124	.159	.240	.125
	Significance	.861	.800	.867	.142	.653	.178	.380	.266	.086	.376
	N	51	52	52	52	52	51	52	51	52	52
Use of disbelief	Pearson Correlation	-.245	-.295*	-.214	.004	-.265	-.179	-.216	-.210	.083	-.023
	Significance	.083	.034	.127	.977	.058	.208	.125	.139	.558	.870
	N	51	52	52	52	52	51	52	51	52	52
Behavioral disengagement	Pearson Correlation	-.324*	-.251	-.428*	-.182*	-.118	-.044	.055	.007	-.215	-.106
	Significance	.022	.075	.002	.200	.408	.760	.702	.960	.130	.458
	N	50	51	51	51	51	50	51	50	51	51
Mental disengagement	Pearson Correlation	-.173	-.270	-.102	.064	-.276*	-.031	.049	-.086	-.093	-.002
	Significance	.225	.053	.472	.653	.048	.832	.732	.549	.511	.990
	N	51	52	52	52	52	50	52	51	52	52
Use of alcohol/drugs	Pearson Correlation	-286*	-.094	-.425*	-.212	-.190	-.074	.048	-.282*	-.007	.035
	Significance	.040	.505	.002	.127	.174	.600	.731	.043	.960	.801
	N	52	53	53	53	53	52	53	52	53	53

Table 7. Correlations between patient and spouse pre-treatment DAS scores and spouse COPE scores

		Patient pre-treatment DAS scores					Spouse pre-treatment DAS scores				
Spouse Report of Patient Coping		Total Score	Consensus	Satisfaction	Cohesion	Affection	Total Score	Consensus	Satisfaction	Cohesion	Affection
Action against stressor	Pearson Correlation	.145	.062	.238	.053	.110	.062	-.037	.198	-.021	-.182
	Significance	.326	.671	.099	.720	.451	.674	.802	.177	.883	.197
	N	48	49	49	49	49	48	49	48	52	52
Planning to cope	Pearson Correlation	-.038	-.113	.112	-.020	-.164	.003	-.008	.064	.097	-.020
	Significance	.793	.430	.434	.890	.250	.982	.957	.657	.495	.888
	N	50	51	51	51	51	50	51	50	52	52
Suppress competing acts to cope	Pearson Correlation	-.025	-.288*	.195	.205	-.085	.000	-.106	.006	.204	.031
	Significance	.862	.041	.169	.149	.554	.998	.460	.968	.151	.827
	N	50	5	51	51	51	50	51	50	51	51
Restraint coping	Pearson Correlation	-.103	-.279*	.029	.092	-.083	-.009	-.039	-.093	.060	.160
	Significance	.475	.048	.842	.520	.564	.952	.787	.522	.675	.263
	N	50	51	51	51	51	50	51	50	51	51
Employment of institutional social support	Pearson Correlation	-.076	-.198	.053	.082	-.175	-.061	-.143	.012	.108	-.098
	Significance	.595	.160	.710	.565	.216	.673	.313	.936	.447	.489
	N	51	52	52	52	52	51	52	51	52	52
Employment of emotional social support	Pearson Correlation	.026	-.136	.137	.167	-.073	-.044	-.138	-.014	.151	.001
	Significance	.854	.335	.334	.238	.606	.758	.331	.923	.284	.993
	N	51	52	52	52	52	51	52	51	52	52
Positive Reappraisal	Pearson Correlation	.203	.231	.151	.124	.023	.291*	.354*	.196	.055	.017
	Significance	.162	.106	.295	.392	.873	.045	.012	.177	.702	.905
	N	49	50	50	50	50	49	50	49	50	50
Acceptance coping	Pearson Correlation	.001	-.020	.016	-.067	.119	.047	.067	.043	-.013	.007
	Significance	.992	.887	.912	.643	.405	.744	.642	.768	.926	.959
	N	50	51	51	51	51	50	51	50	51	51
Religious coping	Pearson Correlation	.329*	.279	.217	.427*	.123	.470*	.427*	.316*	.441*	.253
	Significance	.022	.052	.134	.002	.400	.001	.002	.029	.002	.079
	N	48	49	49	49	49	48	49	48	49	49
Venting emotions	Pearson Correlation	-.113	-.194	-.046	.100	-.192	-.043	-.101	-.097	.154	.128
	Significance	.426	.163	.742	.477	.168	.765	.472	.496	.272	.361
	N	52	53	53	53	53	52	53	52	53	53
Use of disbelief	Pearson Correlation	-.340*	-.330*	-.261	-.187	-.253	-.485*	-.481*	-.447*	-.154	-.169
	Significance	.015	.017	.061	.183	.071	.000	.000	.001	.276	.232
	N	51	52	52	52	52	51	52	51	52	52
Behavioral disengagement	Pearson Correlation	-.226	-.097	-.326*	-.138	-.232	-.204	-.089	-.259	-.187	-.099
	Significance	.114	.501	.020	.335	.102	.156	.535	.069	.190	.491
	N	50	51	51	51	51	50	51	50	51	51
Mental disengagement	Pearson Correlation	-.289*	-.303*	-.144	-.256	-.261	-.192	-.117	-.212	-.219	-.080
	Significance	.044	.032	.318	.073	.068	.186	.419	.143	.127	.582
	N	49	50	50	50	50	49	50	49	50	50
Use of alcohol/drugs	Pearson Correlation	-.388*	-.339*	-.345*	-.193	-.328*	-.260	-.142	-.350*	-.174	-.111
	Significance	.005	.013	.011	.165	.016	.063	.310	.011	.214	.427
	N	52	53	53	53	53	52	53	52	53	53

Table 8. Shared understanding of the cancer experience and patient coping correlated with both patient and spouse report of social support at mid- and post-treatment.

		Shared Understanding of the Cancer Experience		Shared Understanding of Patient Coping	
		Shared Understanding Correlated with Mid-treatment SPS scores	Shared Understanding Correlated with Post-treatment SPS scores	Shared Understanding Correlated with Mid-treatment SPS scores	Shared Understanding Correlated with Post-treatment SPS scores
Patient Total SPS score	Pearson Correlation	.240	.150	.370*	.427*
	Significance	.083	.289	.006	.002
	N	53	52	53	52
Patient Report of Guidance	Pearson Correlation	.250	.075	.370*	.436*
	Significance	.071	.606	.006	.002
	N	53	50	53	50
Patient Report of Reassurance of Worth	Pearson Correlation	.383*	.192	.260	.257
	Significance	.005	.173	.063	.066
	N	52	52	52	52
Patient Report of Social Integration	Pearson Correlation	.085	.076	.277*	.422*
	Significance	.546	.593	.045	.002
	N	53	52	53	50
Patient Report of Attachment	Pearson Correlation	.076	.194	.381*	.257
	Significance	.589	.177	.005	.066
	N	53	50	53	52
Patient Report of Nurturance	Pearson Correlation	-.023	N/A	-.047	N/A
	Significance	.869		.738	
	N	53		53	
Patient Report of Reliable Alliance	Pearson Correlation	.193	-.028	.190	.422*
	Significance	.166	.843	.174	.002
	N	53	52	53	52
Spouse Total SPS score	Pearson Correlation	.107	.026	.261	.420*
	Significance	.444	.856	.059	.002
	N	53	50	53	50
Spouse Report of Guidance	Pearson Correlation	.061	.046	.138	.306
	Significance	.671	.751	.335	.027
	N	51	51	51	52
Spouse Report of Reassurance of Worth	Pearson Correlation	.213	.099	.386*	.415*
	Significance	.129	.508	.005	.004
	N	52	47	52	47
Spouse Report of Social Integration	Pearson Correlation	.025	-.083	.300*	.420*
	Significance	.862	.575	.029	.003
	N	53	48	53	48
Spouse Report of Attachment	Pearson Correlation	.074	.139	.302*	.313*
	Significance	.604	.341	.029	.028
	N	52	49	52	49
Spouse Report of Nurturance	Pearson Correlation	-.062	N/A	-.107	N/A
	Significance	.664		.452	
	N	52		52	
Spouse Report of Reliable Alliance	Pearson Correlation	.238	.140	.109	.106
	Significance	.089	.337	.440	.467
	N	52	49	52	49

Table 9. Shared understanding of the cancer experience correlated with patient and spouse report of patient coping.

		Shared Understanding of the Cancer Experience	
		Shared Understanding Correlated with Patient Report of Coping	Shared Understanding Correlated Spouse Report of Coping
Action against stressor	Pearson Correlation	.006	.072
	Significance	.966	.623
	N	52	49
Planning to cope	Pearson Correlation	.048	.065
	Significance	.737	.648
	N	52	51
Suppress competing acts to cope	Pearson Correlation	.231	.315*
	Significance	.099	.024
	N	52	51
Restraint coping	Pearson Correlation	.287*	.258
	Significance	.039	.068
	N	52	51
Employment of institutional social support	Pearson Correlation	.263	.320*
	Significance	.063	.021
	N	52	52
Employment of emotional social support	Pearson Correlation	.417*	.408*
	Significance	.002	.003
	N	51	52
Positive Reappraisal	Pearson Correlation	.265	.017
	Significance	.061	.907
	N	51	50
Acceptance coping	Pearson Correlation	-.020	.034
	Significance	.890	.814
	N	51	51
Religious coping	Pearson Correlation	.075	-.052
	Significance	.597	.725
	N	52	49
Venting emotions	Pearson Correlation	.341*	.504*
	Significance	.013	.000
	N	52	53
Use of disbelief	Pearson Correlation	.316*	.183
	Significance	.023	.194
	N	52	52
Behavioral disengagement	Pearson Correlation	-.075	.012
	Significance	.603	.936
	N	51	51
Mental disengagement	Pearson Correlation	.335*	.193
	Significance	.015	.180
	N	52	50
Use of alcohol/drugs	Pearson Correlation	-.061	-.148
	Significance	.662	.289
	N	53	53

Table 10. Correlations between patient and spouse follow-up DAS scores and patient and spouse mid-treatment SPS scores

		Patient follow-up DAS scores					Spouse follow-up DAS scores				
Mid-treatment SPS scores		Total Score	Consensus	Satisfaction	Cohesion	Affection	Total Score	Consensus	Satisfaction	Cohesion	Affection
Patient Total SPS score	Pearson Correlation	.599*	.437*	.569*	.578*	.352*	.610*	.537*	.442*	.534*	.541*
	Significance	.000	.002	.000	.000	.013	.000	.000	.001	.000	.000
	N	49	49	49	49	49	49	49	49	49	49
Patient Report of Guidance	Pearson Correlation	.571*	.430*	.477*	.607*	.375*	.513*	.402*	.338*	.561*	.513*
	Significance	.000	.002	.001	.000	.008	.000	.004	.018	.000	.000
	N	49	49	49	49	49	49	49	49	49	49
Patient Report of Reassurance of Worth	Pearson Correlation	.333*	.139	.450*	.232	.380*	.305	.163	.355*	.284	.288*
	Significance	.021	.346	.001	.113	.008	.035	.269	.013	.050	.047
	N	48	48	48	48	48	48	48	48	48	48
Patient Report of Social Integration	Pearson Correlation	.600*	.457*	.581*	.547*	.267	.698	.609*	.552*	.616*	.526*
	Significance	.000	.001	.000	.000	.064	.000	.000	.000	.000	.000
	N	49	49	49	49	49	49	49	49	49	49
Patient Report of Attachment	Pearson Correlation	.557*	.413*	.482*	.546*	.405*	.626*	.535*	.525*	.492*	.546*
	Significance	.000	.003	.000	.000	.004	.000	.000	.000	.000	.000
	N	49	49	49	49	49	49	49	49	49	49
Patient Report of Nurturance	Pearson Correlation	-.109	-.007	-.164	-.052	-.219	-.077	.011	-.160	-.072	-.058
	Significance	.457	.961	.261	.721	.130	.599	.041	.273	.621	.694
	N	49	49	49	49	49	49	49	49	49	49
Patient Report of Reliable Alliance	Pearson Correlation	.432*	.303*	.469*	.400*	.166	.333*	.360*	.203	.185	.289*
	Significance	.002	.035	.001	.004	.255	.019	.011	.162	.204	.044
	N	49	49	49	49	49	49	49	49	49	49
Spouse Total SPS score	Pearson Correlation	.452*	.339*	.423*	.409*	.312*	.576*	.573*	.433*	.477*	.352
	Significance	.001	.017	.002	.004	.029	.000	.000	.002	.001	.013
	N	49	49	49	49	49	49	49	49	49	49
Spouse Report of Guidance	Pearson Correlation	.275	.197	.306*	.251	.084	.418*	.419*	.385*	.330*	.088
	Significance	.062	.184	.037	.088	.672	.003	.003	.008	.023	.558
	N	47	47	47	47	47	47	47	47	47	47
Spouse Report of Reassurance of Worth	Pearson Correlation	.394*	.300*	.346*	.296*	.388*	.382*	.354*	.268	.354*	.313*
	Significance	.006	.038	.016	.041	.006	.007	.013	.066	.013	.031
	N	48	48	48	48	48	48	48	48	48	48
Spouse Report of Social Integration	Pearson Correlation	.549*	.400*	.507*	.503*	.393*	.654*	.671*	.457*	.526*	.396*
	Significance	.000	.004	.000	.000	.005	.000	.000	.001	.000	.005
	N	49	49	49	49	49	49	49	49	49	49
Spouse Report of Attachment	Pearson Correlation	.491*	.396*	.431*	.465*	.242	.565*	.552*	.432*	.400*	.351*
	Significance	.000	.005	.002	.001	.098	.000	.000	.001	.005	.015
	N	48	48	48	48	48	48	48	48	48	48
Spouse Report of Nurturance	Pearson Correlation	.045	-.008	.022	.130	.082	.169	.143	.155	.140	.190
	Significance	.764	.956	.860	.377	.581	.250	.332	.292	.343	.196
	N	48	48	48	48	48	48	48	48	48	48
Spouse Report of Reliable Alliance	Pearson Correlation	.365*	.296*	.372*	.266	.225	.445*	.483*	.280	.419*	.122
	Significance	.011	.041	.009	.068	.124	.002	.001	.054	.003	.409
	N	48	48	48	48	48	48	48	48	48	48

Table 11. Correlations between patient and spouse follow-up DAS scores and patient and spouse post-treatment SPS scores

		Patient follow-up DAS scores					Spouse follow-up DAS scores				
Post-treatment SPS scores		Total Score	Consensus	Satisfaction	Cohesion	Affection	Total Score	Consensus	Satisfaction	Cohesion	Affection
Patient Total SPS score	Pearson Correlation	.701*	.587*	.538*	.676*	.465*	.665*	.607*	.497*	.534*	.548*
	Significance	.000	.000	.000	.000	.001	.000	.000	.000	.000	.000
	N	49	49	49	49	49	49	49	49	49	49
Patient Report of Guidance	Pearson Correlation	.666*	.551*	.536*	.626*	.405*	.565*	.512*	.400*	.450*	.517*
	Significance	.000	.000	.000	.000	.005	.000	.000	.005	.002	.000
	N	47	47	47	47	47	47	47	47	47	47
Patient Report of Reassurance of Worth	Pearson Correlation	.629*	.523*	.511*	.512*	.486*	.435*	.313*	.375*	.415*	.384*
	Significance	.000	.000	.000	.000	.000	.002	.029	.008	.003	.006
	N	49	49	49	49	49	49	49	49	49	49
Patient Report of Social Integration	Pearson Correlation	.635*	.552*	.400*	.639*	.482*	.685*	.645*	.514*	.510*	.533*
	Significance	.000	.000	.004	.000	.000	.000	.000	.000	.000	.000
	N	49	49	49	49	49	49	49	49	49	49
Patient Report of Attachment	Pearson Correlation	.652*	.495*	.583*	.608*	.462*	.618*	.489*	.584*	.490*	.547*
	Significance	.000	.000	.000	.000	.001	.000	.000	.000	.000	.000
	N	47	47	47	47	47	47	47	47	47	47
Patient Report of Nurturance	Pearson Correlation	.085	.119	.017	.173	-.068	.159	.231	.049	.130	.017
	Significance	.560	.417	.910	.235	.641	.275	.110	.736	.372	.907
	N	52	49	49	49	49	49	49	49	49	49
Patient Report of Reliable Alliance	Pearson Correlation	.468*	.352*	.388*	.451*	.414	.486*	.470*	.294*	.392*	.500*
	Significance	.001	.013	.006	.001	.003	.000	.001	.040	.005	.020
	N	49	49	49	49	49	49	49	49	49	46
Spouse Total SPS score	Pearson Correlation	.594*	.484*	.475*	.522*	.478*	.601*	.553*	.539*	.486*	.343*
	Significance	.000	.001	.001	.000	.001	.000	.000	.000	.001	.020
	N	46	46	46	46	46	46	46	46	46	46
Spouse Report of Guidance	Pearson Correlation	.381*	.333*	.315*	.294*	.276	.477*	.432*	.468*	.373*	.205
	Significance	.008	.022	.031	.045	.060	.001	.002	.001	.010	.167
	N	47	47	47	47	47	47	47	47	47	47
Spouse Report of Reassurance of Worth	Pearson Correlation	.493*	.393*	.366*	.450*	.459*	.532*	.491*	.457*	.448*	.342*
	Significance	.001	.009	.016	.002	.002	.000	.001	.002	.003	.025
	N	43	43	43	43	43	43	43	43	43	43
Spouse Report of Social Integration	Pearson Correlation	.632*	.521*	.469*	.553*	.551*	.672*	.659*	.581*	.446*	.407*
	Significance	.000	.000	.001	.000	.000	.000	.000	.000	.002	.006
	N	44	44	44	44	44	44	44	44	44	44
Spouse Report of Attachment	Pearson Correlation	.461*	.350*	.450*	.427*	.232	.480*	.396*	.520*	.358*	.299*
	Significance	.001	.018	.002	.003	.125	.001	.007	.000	.016	.046
	N	45	45	45	45	45	45	45	45	45	45
Spouse Report of Nurturance	Pearson Correlation	.188	.196	.065	.189	.198	.079	.042	.044	.182	.092
	Significance	.210	.191	.670	.209	.187	.600	.783	.773	.227	.541
	N	46	46	46	46	46	46	46	46	46	46
Spouse Report of Reliable Alliance	Pearson Correlation	.387*	.317	.292	.380*	.313*	.426*	.415*	.381*	.374*	.123
	Significance	.009	.034	.052	.010	.036	.004	.005	.010	.011	.422
	N	45	45	45	45	45	45	45	45	45	45

Table 12. Correlations between patient and spouse follow-up DAS scores and patient COPE scores

		Patient pre-treatment DAS scores					Spouse pre-treatment DAS scores				
Patient Report of Patient Coping		Total Score	Consensus	Satisfaction	Cohesion	Affection	Total Score	Consensus	Satisfaction	Cohesion	Affection
Action against stressor	Pearson Correlation	.248	.195	.216	.310*	.051	.288*	.344*	.189	.130	.048
	Significance	.089	.183	.141	.032	.731	.047	.017	.198	.380	.747
	N	48	48	48	48	48	48	48	48	48	48
Planning to cope	Pearson Correlation	.233	.174	.164	.344*	.075	.245	.324*	.112	.111	.074
	Significance	.111	.237	.265	.017	.610	.093	.025	.447	.453	.616
	N	48	48	48	48	48	48	48	48	48	48
Suppress competing acts to cope	Pearson Correlation	.096	.061	-.017	.265	.085	.187	.185	.171	.030	.175
	Significance	.516	.678	.909	.069	.565	.204	.209	.264	.839	.235
	N	48	48	48	48	48	48	48	48	48	48
Restraint coping	Pearson Correlation	-.156	-.162	-.243	.076	-.055	-.028	.045	-.117	-.106	.076
	Significance	.290	.270	.097	.608	.713	.852	.762	.428	.473	.610
	N	48	48	48	48	48	48	48	48	48	48
Employment of institutional social support	Pearson Correlation	.116	.075	.056	.336*	-.134	.078	.149	-.092	.177	-.101
	Significance	.439	.617	.711	.021	.369	.604	.316	.538	.234	.499
	N	47	47	47	47	47	47	47	47	47	47
Employment of emotional social support	Pearson Correlation	.348*	.279	.228	.422*	.235	.280	.277	.208	.255	.118
	Significance	.017	.058	.123	.003	.111	.057	.060	.162	.084	.429
	N	47	47	47	47	47	47	47	47	47	47
Positive Reappraisal	Pearson Correlation	.390*	.258	.316*	.483*	.305*	.439*	.463*	.317*	.314*	.238
	Significance	.007	.080	.031	.001	.037	.002	.001	.030	.032	.107
	N	47	47	47	47	47	47	47	47	47	47
Acceptance coping	Pearson Correlation	.306*	.210	.276	.305*	.229	.247	.260	.187	.151	.195
	Significance	.036	.156	.061	.307	.122	.094	.077	.209	.312	.190
	N	47	47	47	47	47	47	47	47	47	47
Religious coping	Pearson Correlation	.290*	.284	.121	.371*	.171	.400*	.470*	.140	.347*	.276
	Significance	.045	.050	.414	.009	.245	.005	.001	.342	.016	.058
	N	48	48	48	48	48	48	48	48	48	48
Venting emotions	Pearson Correlation	.032	.040	-.073	.156	.063	.086	.027	.066	.202	.046
	Significance	.827	.789	.624	.289	.673	.560	.856	.657	.168	.755
	N	48	48	48	48	48	48	48	48	48	48
Use of disbelief	Pearson Correlation	-.249	-.143	-.376*	-.123	-.048	-.229	-.186	-.251	-.118	.182
	Significance	.088	.332	.008	.406	.748	.118	.204	.085	.424	.216
	N	48	48	48	48	48	48	48	48	48	48
Behavioral disengagement	Pearson Correlation	-.441*	-.370*	-.468*	-.290*	-.288	-.255	-.251	-.097	-.296*	-.181
	Significance	.002	.010	.001	.048	.050	.083	.089	.517	.044	.222
	N	47	47	47	47	47	47	47	47	47	47
Mental disengagement	Pearson Correlation	-.056	.002	-.146	-.018	.000	-.008	.033	-.016	-.088	.003
	Significance	.704	.989	.321	.905	.998	.955	.825	.912	.554	.984
	N	48	48	48	48	48	48	48	48	48	48
Use of alcohol/drugs	Pearson Correlation	-.120	.038	-.194	-.295*	-.015	.300*	-.291*	-.350*	-.106	.092
	Significance	.411	.798	.182	.039	.921	.036	.043	.014	.470	.530
	N	49	49	49	49	49	49	49	49	49	49

Table 13. Correlations between patient and spouse follow-up DAS scores and spouse COPE scores

		Patient pre-treatment DAS scores					Spouse pre-treatment DAS scores				
Spouse Report of Patient Coping		Total Score	Consensus	Satisfaction	Cohesion	Affection	Total Score	Consensus	Satisfaction	Cohesion	Affection
Action against stressor	Pearson Correlation	.222	.1323	.221	.213	.170	.287	.207	.323*	.258	.130
	Significance	.144	.387	.144	.159	.265	.056	.172	.030	.088	.396
	N	45	45	45	45	45	45	45	45	45	45
Planning to cope	Pearson Correlation	.027	-.045	.035	.118	.030	.096	.032	.147	.053	.085
	Significance	.859	.763	.817	.429	.840	.522	.831	.326	.724	.571
	N	47	47	.47	47	47	47	47	47	47	47
Suppress competing acts to cope	Pearson Correlation	.072	-.080	.096	.327*	.005	.174	.101	.177	.190	.082
	Significance	.631	.593	.519	.025	.972	.243	.500	.235	.202	.585
	N	47	47	47	47	47	47	47	47	47	47
Restraint coping	Pearson Correlation	.016	-.106	.008	.188	.210	.030	.034	-.007	.038	.019
	Significance	.913	.478	.958	.205	.157	.842	.819	.963	.799	.898
	N	47	47	47	47	47	47	47	47	47	47
Employment of institutional social support	Pearson Correlation	.029	-.011	.015	.031	.022	.014	-.026	-.013	.119	.007
	Significance	.845	.939	.918	.376	.883	.925	.859	.928	.422	.963
	N	48	48	48	48	48	48	48	48	48	48
Employment of emotional social support	Pearson Correlation	.119	.072	.081	.194	.057	.001	-.084	.029	.164	-.056
	Significance	.419	.628	.583	.185	.700	.993	569	.843	.265	.707
	N	48	48	48	48	48	48	48	48	48	48
Positive Reappraisal	Pearson Correlation	.142	.140	.093	.176	-.044	.169	.160	.264	.090	-.133
	Significance	.348	.355	.537	.243	.773	.262	.287	.077	.553	.379
	N	46	46	46	46	46	46	46	46	46	46
Acceptance coping	Pearson Correlation	.062	.048	.060	.028	.068	.140	.141	.137	.049	.135
	Significance	.677	.751	.688	.852	.651	.348	.343	.357	.746	.367
	N	47	47	47	47	47	47	47	47	47	47
Religious coping	Pearson Correlation	.398*	.425*	.155	.436*	.204	.455*	.468*	.238	.441*	.338
	Significance	.007	.004	.310	.003	.179	.002	.001	.115	.002	.023
	N	45	45	45	45	45	45	45	45	45	45
Venting emotions	Pearson Correlation	.026	.028	-.046	.116	.023	-.104	-.157	-.094	.099	.097
	Significance	.859	.849	.752	.427	.873	.476	.282	.522	.499	.506
	N	49	49	49	49	49	49	49	49	49	49
Use of disbelief	Pearson Correlation	-.262	-.139	-.378*	-.191	-.041	-.349*	-.319*	-.394*	-.192	-.143
	Significance	.072	.345	.008	.194	.783	.015	.027	.006	.191	.331
	N	48	48	48	48	48	48	48	48	48	48
Behavioral disengagement	Pearson Correlation	-.474*	-.378*	-.451*	-.358*	-.298*	-.377*	-.309*	-.308*	-.318*	-.386*
	Significance	.001	.009	.001	.014	.042	.009	.035	.035	.030	.007
	N	47	47	47	47	47	47	47	47	47	47
Mental disengagement	Pearson Correlation	-.296*	-.244	-.277	-.239	-.161	-.338*	-.305*	-.242	-.280	-.325*
	Significance	.046	.103	.063	.110	.286	.022	.039	.106	.059	.028
	N	46	46	46	46	46	46	46	46	46	46
Use of alcohol/drugs	Pearson Correlation	-.309*	-.286*	-.256	-.310*	.007	-.420*	-.479*	-.374*	-.199	-.078
	Significance	.031	.047	.076	.030	.963	.003	.001	.008	.170	.594
	N	49	49	49	49	49	49	49	49	49	49