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Cancer patients with pain: Examination of the role of the spouse/partner relationship in mediating quality of life outcomes for the couple

Mary Ann Morgan
University of South Florida

Cancer Patients with Pain: Examination of the

Role of the Spouse/Partner Relationship

In Mediating Quality of Life Outcomes for the Couple

by

Mary Ann Morgan

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of the requirements for the degree of
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Major Professor: Susan McMillan, A.R.N.P., Ph.D.
Kristine Donovan, Ph.D.
Janine Overcash, A.R.N.P., Ph.D.
Brent Small, Ph.D.

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To my husband, friend, and life partner - Curt…

You have always been there for me through all of our adventures…Always believing in me and encouraging me to be my best…Modeling for me that attitude is everything…I wouldn't change a minute of our life together…I look forward to rest of our lives…

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ABSTRACT

A diagnosis of cancer, regardless of type or site, raises much fear and loss of control

for patients and their spouses. While being married is associated with lower mortality

from a wide range of illnesses, including cancer, the quality of marital interactions and

the relationship is the stronger predictor of health outcomes, rather than marital status.

When people are faced with their greatest life challenges, they attach great importance to

the behavior of their intimate partner, with trust being a key component of relationship

quality, thus lending stability, and emotional and practical support. The purpose of this

study was to examine vulnerable cancer patients with pain and their partners.   The

quality of the patient/partner relationships and the partners' coping styles were evaluated

as mediators in a Structural Equation Model (SEM) latent path analysis with the outcome

measures of quality of life for the individuals. Stress, coping and outcome theory guided

the questions for the study. Much of the previous dyadic research that has been done on

couples when one member has a diagnosis of cancer has centered on disease specific

populations. This study was the first to examine the couples' relationships from a

symptom defining population. Therefore, a broad range of ages, patients with different

cancer diagnoses and both genders in the roles of patients and caregivers was the

population studied. Coping was explored as a dyadic process that includes transactional appraisal of stressors that mediates the subsequent effects on quality of life outcomes. Multivariate analysis was used to determine covariates to be included in the SEM based on a review of the literature. There was no evidence of coping as a mediator. The participants in this study had good quality relationships, and this did serve as a positive mediator on the outcomes for the patient. Recommendations for future research and nursing practice, including the use of a single item global assessment of relationship quality, that nurses can incorporate in their practice is discussed.

Chapter One

Introduction

It is estimated that men will have a one in two chance and women will have a one in

three chance of lifetime cancer risk, excluding squamous and basal cell skin malignancy

(American Cancer Society, [ACS] 2008). Receiving a diagnosis of cancer has a profound

impact not only on patients, but also families. A spouse/partner is particularly affected

because of fear and uncertainty about treatment, impaired functioning, pain, and financial

threats in treatment costs and lost earnings and ultimately quality of life. More

importantly, cancer carries the expectation or possibility of a terminal prognosis

(Halford, Scott, & Smythe, 2000), and research has shown that patients' and partners'

psychological adjustments are interrelated (Baider, Koch, Esacson & Kaplan De-Nour,

1998).

A diagnosis of cancer invades the health of the patient and affects the life style of

not only the individual, but also the partner.   Social support has been examined and has

been found to have a positive effect on psychological adjustments (Schnoll, Harlow,

Stolback & Brandt, 1998). The relationship between the partner and cancer patient is a

complex dyad that differs from the general social support structure of family and friends

(Gale et al., 2001; Manne, Taylor, Dougherty & Kemeny, 1997; Bodenmann, 2005). The

reactions and coping styles of the partner and the cancer patient also are important

(Cutrona, Russell & Gardner, 2005; Manne & Schnoll, 2001; Pistrang & Barker, 2005).

Issues of partner trust and support are vital to the cancer diagnosis and treatment process (Cutrona; Banthia et al., 2003). The couple's relationship should be considered by clinicians and researchers because of its strong influence on patient outcomes (Couper et al., 2006).

A diagnosis of cancer, regardless of type or site, raises much fear and loss of control for patients and partners (Maliski, Heilemann & McCorkle, 2002; Morse & Fife, 1998). Pain has been identified to be one of the most prevalent symptoms for cancer patients (Gordon, 2005; Modonesi, et al., 2005; Stromgren, et al., 2006; Vallerand, 1997; Walsh & Ribicki, 2006). If pain is perceived as a symptom of the cancer or progressive disease, the affective dimension and the meaning of pain carries even more significance for the patient (Smith, Gracely & Safer, 1998).

Symptom burden, which includes physical symptoms and interference with life, increases with stage of cancer (Modonesi et al., 2005). Symptoms cannot be addressed from a purely biomedical perspective. They include physical intensity and emotional distress or affective components (McMillan, Tofthagen, & Morgan, 2008; Portenoy, Thaler, Kornblith, Lepore, Friedlander-Klar, Coyle, et al., 1994). Similarly, these issues are important for partners, because they are dealing with the psychological impact of a cancer diagnosis, and their quality of life will also be affected by the patient's pain and symptom burden (Ezer et al., 2006).

Gender also has been identified as an issue affecting adjustment and reaction to hardships in that females, whether patient or partner, report more distress (Ben-Zur, Gilbar & Lev, 2001; Gilbar & Zusman, 2007; Hagedoorn , Sanderman, Bolks, Tuinstra and Coyne, 2008). Spouses/partners are at increased risk for both physical and

psychological disturbances, and this will vary depending on the quality of the marital relationship, the nature and type of illness, functional impairment, changes in family functioning, including finances and role changes, age, gender and coping style of the spouse/partner; all of these are important considerations in dyadic or couple studies (Burman & Margolin, 1992; Westman, Keinan, Roziner & Benyamini, 2008). The definition of the dyad is couples in a committed relationship who can be heterosexual or same sex partners. Henceforth in this paper, the dyad will consist of the couple and the spouse/partner will be referred to as the partner. This study involves only heterosexual couples, as does the populations in this review of the literature.

Lazarus and Folkman (1984) address negative stress as a stimulus that causes a reaction. They address three types of negative stress stimuli: (1) a cataclysmic event which affects large numbers of people, such as a hurricane; (2) disastrous events can also occur to only one person or a few person, such as a life threatening illness; and (3) daily hassles. The second stressor can be just as powerful and distressing to the individuals involved as a major disaster. The level of threat or vulnerability determines the coping response. When fear is involved, emotional coping style can impact cognitive functioning and positive problem-solving abilities. However, high emotional and intact cognitive functioning can both be present in individuals, even under the most difficult circumstances.

Problem-focused coping involves not only efforts focused on a situation with alternative actions and objectives, it also includes strategies that are directed inward. These strategies may include shifting levels of aspiration, reducing ego involvement,

exploring alternative channels of gratification and developing new skills and procedures (Lazarus & Folkman, 1984).

Emotion-focused coping can include reappraisal, avoidance or seeking outside emotional support. Denial can be part of this type of coping and can be helpful or harmful if deceptive rather than temporarily protective. Confusion and misunderstanding may be the result if this strategy is predominant (Lazarus & Folkman, 1984).

The construct of dyadic coping involves both partners, usually in a marital or committed relationship, and it involves the communication between stress signals of one partner and subsequent coping reactions of the other partner. This coping can include everyday communication, interpersonal conflict, joint problem solving, giving and receiving emotional support and dealing with life stressors as a couple rather than as two individuals (Bodenmann, Pihet, & Kayser, 2006).

Dyadic coping has both positive and negative natures. A partner's adjustment to the patient's diagnosis of cancer is a critical component of how the patient adjusts to the disease (Manne, et al., 1997; Northouse, Templin, Mellon & George, 2000). Psychological distress is predicted by dyadic adjustment and coping styles following cancer diagnosis for both patients and partners (Banthia et al., 2003; Ko et al., 2005) and if one partner becomes distressed the other is likely to follow (Gilbar & Zusman, 2007; Bishop et al., 2007). One partner's awareness of poor health of the other partner may lead to crossover of distress in the caregiving partner through empathy. In the context of health outcomes, this increased risk for the caregiving partner may result in poorer health as a consequence of the increased burden (Westman et al., 2008). Partners may be at as great or greater risk for distress and compromised health as patients, because their own

lives are forced into new and unpredictable situations (Baider, Walach, Perry &

Denour,1998; Hinnen, Hagedoorn, Sanderman, & Ranchor, 2007).

Positive supportive coping occurs when partners assist or help the other partner via a

variety of mechanisms including: words of wise counsel, communicating belief in the

other partner's capabilities, and expressions of solidarity (Bodenman, 2005). Support also

may include self-sacrifice, such as taking on more tasks or household duties that are

normally divided (Cutrona et al., 2005). Empathy or an emotional connection has been

regarded as particularly important for cancer patients (Carlson, Ottenbreit, St. Pierre &

Bultz, 2001). Positive coping results in a feeling of mutual trust, reliability,

commitment, and the perception of a promise that despite difficult circumstances, support

is available. Efforts that support one partner also help to reduce the supporting partner's

own stress and sustain the relationship as well (Bodenman, 2005).

Negative forms of dyadic coping can affect the process of a cancer diagnosis and

treatment (Schmaling & Sher, 2000). Negative forms of coping include hostile,

ambivalent and superficial coping, in that, help is provided, but in a way that is perceived

as being sarcastic, unwilling or insincere (Bodenmann, 2005). Characteristics of negative

support or lack of support include: physical avoidance of the patient, avoidance of open

communication with the patient, engaging in forced cheerfulness, or minimization of the

illness and its consequences that result in patients' feeling rejected or abandoned (Hinnen

et al., 2007; Manne et al., 1997). Patients who use avoidance coping techniques tend to

report greater distress and poorer adjustment to cancer diagnosis and treatment (Ben-Zur

et al., 2001). Partners' patterns of coping affect their level of distress, such that those who

use avoidant or impulsive styles are more distressed (Couper et al., 2006). Banthia et al.

(2003) reported that dyadic strength moderated the effects of avoidant coping and intrusive thinking (considered maladaptive) on mood disturbance. However, members of stronger dyads reported less distress, despite maladaptive coping behaviors compared to dyads that were in dysfunctional relationships.

With the mapping of the human genome, research is producing insights and advances into the causes and cures for cancer. It is hoped that with increased understandings of mechanisms of disease, we will be able to use targeted therapies to individualize care to be most effective with the least toxicities (Feetham, Thomson, & Himshaw, 2005; Tranin, Masny, & Jenkins, 2003). This will have implications for patient/partner dyads and families because genetic information affects generations (Tranin, Masny & Jenkins, 2003). Spouses of women who have not yet been diagnosed with breast cancer but who are BRCA1 or BRCA2 mutation carriers have lower quality of life than husbands of wives who do not carry these mutations (Mireskandari et al., 2006). Even though there is an emphasis on genetic research, the resultant quality of life, including familial implications, symptoms, treatment effects and side-effects of the disease with its cancer-related symptom distress, including pain, continue to be challenging and the focus of needed research to be addressed according to the National Institutes of Health State-of-the Science Panel (NIH, 2002).

Statement of the Problem

Being married is associated with lower mortality from a wide range of illnesses, including cancer, but the *quality* of marital interactions and relationship is the stronger predictor of health outcomes, rather than the marital status (Ren, 1997; Halford et al., 2000; Schmaling & Sher, 2000). Mutual support that is experienced by the partners

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predicts well-being for patients and partners (Halford).   Demonstrations of the partner's support are critical during times of stress, when people feel most vulnerable (Cutrona et al., 2005; Hinnen et al., 2007; Manne, Ostroff, Sherman et al., 2004). Northouse and colleagues (2000) reported, in a study of colon cancer patients, that patients who had higher marital satisfaction had lower hopelessness and fewer adjustment problems.

Most of the studies examining couples who have been impacted by cancer include breast and prostate patients (e.g. Banthia, et al., 2003; BenZur et al, 2001; Bultz, Speca, Brasher, Geggie & Page, 2000) with a few in the gastrointestinal, colon, hematopioetic stem-cell transplant and lung cancer patient populations (e.g. Badr & Taylor, 2006; Northouse et al., 2000; Porter, Keefe, Hurwitz & Faber, 2005). A meta-analysis of distress studies of couples coping with cancer by Hagedoorn and colleagues (2008) considered these cancer specific studies a major limitation in generalization of results. No studies that have reported the quality of the marital or dyadic relationship and adjustment have included cancer patients' symptom burden, symptom distress, or pain. No studies included a wide range of cancer diagnoses. With so many genetic implications and familial concerns, the quality and impact of the partner relationship takes on even greater importance in caring for cancer patients.

The purpose of this dyadic study was to examine the effects of pain and symptom burden, including physical and emotional components, on physical and mental health of the cancer patients and partners. Seeing a loved one endure pain and other distressing symptoms has implications for distress and quality of life for both members of the dyad. The role of the dyadic relationship, the partners' resourcefulness or coping style, and

quality of life outcomes of distress, physical and mental health for the patient and partner were analyzed.

<center>*Aims and Questions*</center>

Aim 1

To examine patients and their partners when challenged by stressors of pain and symptom burden and its effect on their QOL.

Question 1. Are covariates such as age, gender, financial concerns and length of the marriage related to the relationship quality or quality of life outcomes?

Question 2. Is pain or symptom burden related to the dyadic committed relationship?

Question 3. Does pain or symptom burden impact quality of life for the patient and partner in terms of emotional distress and overall mental and physical health?

Question 4. Does the quality of the relationship mediate the outcomes of emotional distress and overall mental and physical health of the individuals?

Question 5. Are the patient's and partner's distress related to each other and are there any differences for gender?

Aim 2

To examine the coping style of the partner when challenged by the patient's pain or symptom burden.

Question 6. Does pain or symptom burden have a relationship to the coping style of the partner?

Question 7. Does the coping style of the partners impact their own or the patients' distress and mental and physical health?

Question 8. Does the partner's coping style mediate the QOL outcomes for the patient and partner?

Definition of Terms

For the purpose of this study, the following terms were defined. Latent constructs and indicators used in the structural equation model that was recommended for dyadic study analysis (Kenny, Kashy & Cook, 2006) were included.

Vulnerability

Vulnerability is the latent construct that is defined as the readiness of a person to react to a situation or stressor. This is closely linked with commitment in that, the more a person is committed or cares, the more vulnerable he or she is to a particular threat (Lazarus & Folkman, 1984). For this study, pain and symptom distress, interference, and symptom burden from having cancer are the stressors or triggers that make the dyad vulnerable.

Financial Concerns

A diagnosis of cancer includes added stressors and role alterations that may include financial impacts due to illness treatment, loss of employment and insurance issues (Pasacreta, Barg, Nuamah & McCorkle, 2000). This stressor is measured with a single indicator constructed of four items.

Pain

Pain is a subjective and multidimensional experience that is determined by patient's self-report. It should include intensity (severity of physical sensation), timing, quality, distress (emotional), and interference with daily functioning (Shin, Kim, Kim, Chee &

Im, 2007; Vallerand, 1997; McMillan & Small, 2002; Portenoy, Thaler, Kornblith, Lepore, Reiedlander-Klar & Kiyasu, 1994).

Distress

Distress is the degree or quantity of physical or mental upset, worry or suffering that is experienced or perceived. This includes the subjective meanings of the disease/treatment for the individual or dyad (Rhodes, McDaniel & Matthews, 1998).

Interference

The ability of patients to continue to participate in activities that are meaningful to them affects quality of life. Pain and distress can interfere with mood, walking or other physical activity, work, social relations, activity and sleep (Vallerand, Templin, Haenau & Riley-Doucet, 2007).

Symptom Burden

The prevalence of symptoms, frequency, severity (intensity) and distress resulting from the disease of cancer or its treatment is termed symptom burden (Gapstur, 2007).

Patient-Partner/Relationship

Patients' and their partners' subjective evaluations of the quality of their bond is the patient/partner relationship. Marital interaction or adjustment is the way members of the dyad communicate, behave, engage in activities together, express affection and the degree of satisfaction with the state of their marriage or partnership (Manne, Alfieri, Taylor, & Dougherty, 1999; Spanier, 1976). For this study, the participants are assumed to be in heterosexual, committed, intimate relationships.

Partner Coping Style

This construct includes the partners' style of problem-solving, or coping, based on the situation of having a partner with cancer who has pain or distress from symptoms. Individuals use many styles of dealing with life stressors, including problem or emotion focused coping. Positive problem-solving and emotion focused coping or negative coping, such as avoidance and/or impulsive styles were examined in this study. Positive coping is associated with greater psychological adjustment and less mood disturbance while negative coping is associated with greater distress and adjustment (Ben-Zur et al., 2001; Romero, Lindsay, Dalton, Nelson & Friedman, 2007). This was limited to measurement from the partner only with the theoretical supposition that transaction or crossover of coping for the dyad occurs. Other dyadic studies have used the only the partner's coping style as a mediator of distress in patients and partners (Ko, et al., 2005).

The construct of Dyadic Coping has specific instruments developed to measure dyadic participants involved in an intimate committed relationship which involves both partners and where the transmission of stress in one partner signals coping reactions of the other partner or a genuine experience of joint coping with the emphasis on the dyad rather than the individual (Revenson, Kayser & Bodenmann, 2005). Other researchers have used data from the COPE scale collected from both patient and partner and used a dyadic coping model by comparing emotional and problem focused means of the individuals and calculated absolute differences to assess dyadic coping (Ben-Zur, 2001). Because this was a secondary analysis, this dyadic coping measure was not available, but believed to be operant in the indirect measure of the partner's coping style.

Health Related Quality of Life for Patient and Partner

A multidimensional assessment of health is necessary to achieve an understanding of the impact of disease on health-related quality of life (McHorney, Ware, & Raczek, 1993). The physical and mental health and distress of the patient and partner are at risk when a patient is vulnerable from a diagnosis of cancer and has pain or symptom burden. This construct included outcome measures for patient and partner for this study.

Significance to Nursing

Cancer impacts not only the individual, but the entire family. The role of the partner relationship has been identified as the most important one for many patients. Couples should be incorporated in research and in planning nursing assessments and interventions as the dyad adjusts to treatment and life style changes resulting from a diagnosis of cancer. Partners have as much or more distress than patients.

Pain has both physical intensity and emotional distress dimensions. Social support can facilitate emotional healing. The significance of the partner dyad in the arena of communication, distress, and adjustment has been examined in breast and prostate patients because of the intimacy issues involved with these cancers. There have been some studies in gastrointestinal and colon cancer patient partner dyads. Most of the research has been disease specific. No studies have been reported that examine cancer patients with pain or symptom burden and the role of the partner relationship. This study may help provide knowledge of the importance of the dynamics of this role in outcomes and support nursing assessments and interventions that include partners.

Chapter Two

Review of the Literature

This chapter includes a discussion of the conceptual framework that guided the study and a review of the literature. The conceptual framework that was presented is based on the theory of individual stress, appraisal and coping by Lazarus and Folkman (1984) and then incorporates the theory of dyadic coping. Dyadic coping as developed by Revenson, Kayser, and Bodenmann, (2005) is an expansion of Lazarus and Folkman's original theory and includes or focuses on patients and their partners, as dyads, who are in an intimate committed relationship.

The review of the literature focused on the key concepts of cancer, distress, pain, dyads and partner relationships. The following data bases were searched: Pub Med, CINAHL, JSTOR and related sources. The research studies are discussed under the topics of stressors and covariates, mediators, and outcomes. Vulnerability due to pain and symptom burden, functional impairment and interference, financial impacts and role adjustments are discussed. Covariates are gender and age. Mediators that are discussed are partner relationships, dyadic adjustment/communication, and coping styles. Outcomes include quality of life as physical and mental health and emotional distress for the patient and partner. A summary then concludes this chapter.

Conceptual Framework

The Transactional Model of Stress and Coping by Lazarus and Folkman (1984) was the framework that guided this study. This model evaluated the processes of coping with

stressful events. Stressful experiences consisted of person-environment transactions.

Primary appraisal consisted of the person's appraisal of the significance, vulnerability or

potential harm that resulted from the stressor. A diagnosis of cancer, pain intensity,

distress and its subsequent interference with life activities for the dyad, and symptom

burden were stressors for this study. Age, gender, length of the relationship and financial

impacts were covariates with these stressors. Secondary appraisal was the evaluation of

the controllability of the stressor and the individuals' available resources that included

social or cultural support. This lead to the initiation of coping or the strategies that were

used to manage or deal with the stressor in an attempt to eliminate or minimize negative

outcomes. These coping strategies consisted of problem focused or emotion focused

approaches. Outcomes that were measured included physical, mental and emotional

health indicators.

Figure 1. Conceptual Model
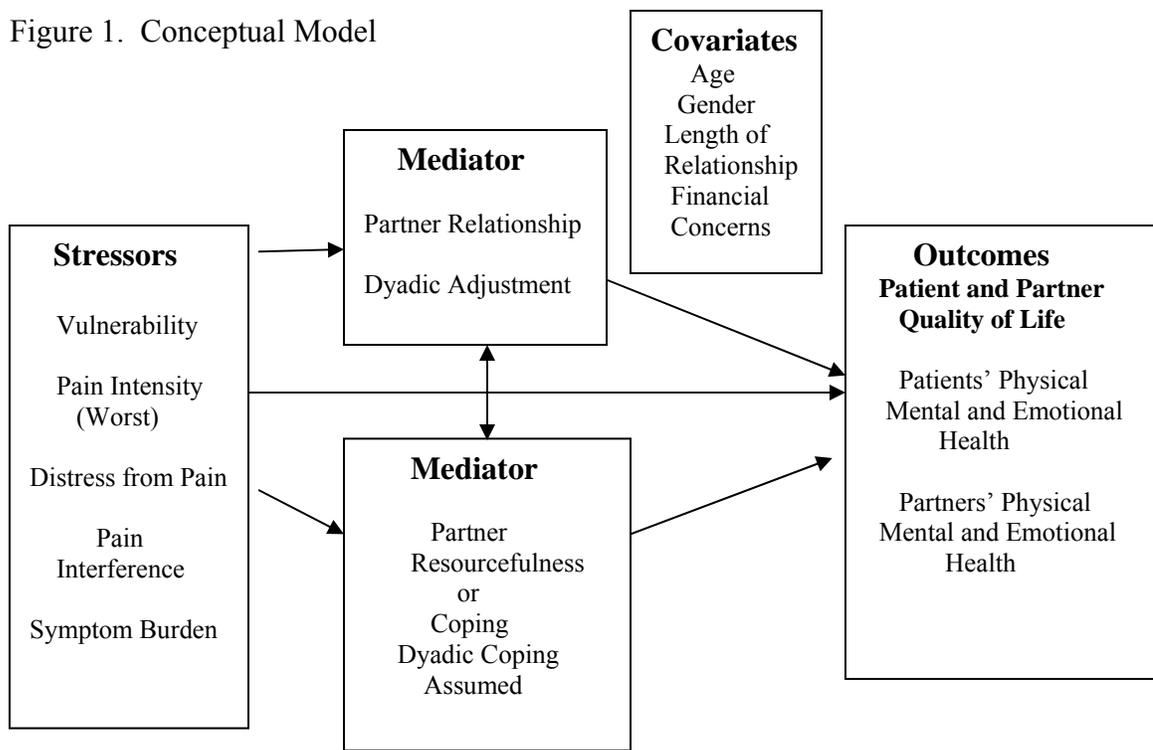
The theory of Dyadic Coping (Revenson, Kayser et al., 2005) is an expansion of individual stress and coping by Lazarus and Folkman (1984). Two mechanisms of dyadic coping have been postulated. The first sees individuals using coping strategies that are problem or emotion focused. The individuals examine the congruency and discrepancy of their partners' strategies and the association with their marital or relationship satisfaction and personal well-being. The second approach views coping as a genuine dyadic phenomenon in that there is a systemic-transactional or crossover of coping between the dyad. This crossover is termed dyadic coping. Both mechanisms see dyadic coping as a process in which coping reactions of one partner takes into account stress signals of the other partner with results impacting both individuals (Bodenmann et al., 2006).

Stressors and Other Covariates

Vulnerability

For purposes of this study, patients and their partners are vulnerable from having a diagnosis of cancer, pain and symptom burden. Vulnerability (strength of commitment, caring or readiness to react to a stressor) influences the flow of events. A qualitative study using semi-structured interviews in focused groups of prostate cancer patients and their wives elicited four themes when interviewing dyads together, and patients and caregivers separately, with the same themes emerging from each group indicating congruency of the couples' understanding of the impact of the cancer diagnosis (Harden et al., 2002). Similar themes were elicited in a focused qualitative study for partners of patients with colon cancer and a stoma (Persson, Severinsson, & Hellstrom, 2003). The combined themes of these two studies are summarized as follows: (1) enduring

uncertainty that included struggling with choices, interruption of life and an emotional roller coaster (2) living with treatment effects or the altered body (3) coping with change that included closer family relationships and less socialization, shifting roles, anger at the unexpected intrusion of cancer, control issues with communication and (4) needing help that involved professional caring or lack of feeling cared for by busy health practitioners, and lack of tailored information for their situation (Harden et al., 2002; Persson et al., 2003).   In addition, Shands, Lewis, Sinsheimer and Cochrane (2006) also identified worries about the children as a core concern for women with early stage breast cancer and their husbands.

Carlson et al. (2001) assessed emotional distress in prostate and breast cancer patients' using the Profile of Mood States (POMS). The POMS was completed by patients and then completed by spouses as if they were the patients. Partners of breast cancer patients had less accurate understanding of their wives' distress than wives of prostate cancer patients. Female partners showed more congruence with their husbands' answers than male partners had of women's breast cancer experiences. Investigators questioned whether gender, age and length of time dyads were together may have been a factor in the disparate congruencies.   Male patients were older and the dyads had, on average, been married much longer. This could be attributed to gender, but also may be influenced by length of time the couples were together. Partners did not complete the POMS to assess their own distress. Hagedoorn et al. (2008) also warn in dyadic studies men with prostate cancer are generally older than women with breast cancer. This makes for guarded generalizations, and age is an important consideration.

Cancer may change the way spouses communicate with each other and can affect

marital satisfaction and stability with added stressors including role adjustments and

financial impacts. Partner and patient dyadic studies have not shown definitive

relationships between age, stage of disease and adjustment to the diagnosis of cancer

(Northouse et al., 2000: Northouse, Templin & Mood, 2001). Most couple studies have

been with homogeneous populations and have not considered these as variables. Some

researchers assessing individual patients, not dyads, have found older patients have more

distress, particularly if they also had serious medical problems and physical impairments,

while younger patients had more financial strains and role adaptations, particularly if

there was a loss of income due to illness (Mor, Allen & Malin, 1994; Vinokur, Threatt,

Caplan & Zimmerman,1989). Schnoll and colleagues (1998) found that the relationships

of age and stage of disease to the patients' psychological adjustment, in a non-dyadic

study, was mediated through the individual's own style of coping.

Symptom Burden

The symptoms that cancer patients experience have been evaluated as the person's

perception and response to the occurrence and the amount of distress or degree of

emotional upset that the symptoms produce (Rhodes & Watson, 1987). This symptom

burden is multidimensional and impacts quality of life (Portenoy, Thaler, Kornblith,

Lepore, Friedlander-Klar & Kiyasu, 1994). Treatment related side effects that affect

physical and mental well-being of prostate cancer patients include fatigue, incontinence,

and sexual dysfunction (Hawes et al., 2006; Knoll, Burkert, Rosemeier, Roigas & Gralla,

2007). Various treatment side effects can lead patients to rely more heavily on their

spouses or partners. This can challenge the caregivers' ability to adapt to an

unpredictable and complex illness journey (Hawes et al., 2000).

Interference

Cancer is often accompanied by multiple problems, including pain, and as the

disease progresses, with physical deterioration.   This frequently leads to social

restrictions for patients and their partners and higher distress than for those who are

newly diagnosed or in first remission (Manne et al., 1999; Morse & Fife, 1998). Female

patients who had high physical impairment and partner active engagement (positive

coping) interactions or mutual constructive communication have higher relationship

satisfaction despite the additional burden (Hagedoorn, Kuifer et al., 2000; Manne et al.,

2006). Female patients reported more negative feelings when partner behavior was rated

as overprotective (*protective buffering)* (Hagedoorn). The relationship quality and

communication, not physical impairment, seem to be key to relationship satisfaction and

subsequent distress. It is possible that physical impairment results in a greater sensitivity

to the reactions of others, or it may increase the quality of communication between

partners (Manne).   For those patients and spouses who had poorer quality relationships,

caregiving can be perceived as burdensome (Kim & Carver, 2007).

Manne et al. (1999) reported in a study that included 111 male and 108 female

patients with advanced stage breast and gastrointestinal cancers that wives had higher

levels of interference in or restriction on their personal and social activities than

husbands.   For participants with high dyadic satisfaction, the quality of the relationship

moderated the association between functional impairment, interference in partner

activities, partner negative mood and patient perception of partner negative behaviors

toward them as impairment worsened. For participants with less satisfying relationships, interference was associated with partner distress and patients' perception of critical attitudes toward them. Negative partner responses in close relationships have a stronger impact on patient psychological distress and well-being than positive responses for patients with disease-related functional impairment (Manne et al., 1997). Symptom burden should be considered particularly in lower quality marital relationships.

Gender

Associations between perceived partner support and well-being differ across genders. Most studies have examined distress of female patient/partner and male patient/partner at a group level (Manne, 1998; Hagedoorn, Buunk et al., 2000; Northouse et al., 1998). Because there have been no clear patterns identified, Hagadoorn et al., (2008) conducted a meta-analysis examining distress in dyads coping with cancer. This led to the conclusion that individuals' levels of distress were determined by gender. Women reported more distress than men regardless of their role. The authors found that there was a modest distress within couples that provided further support to the idea that dyads react as an emotional system rather than as individuals. Because male partners of women who have a diagnosis of cancer have reported less distress than female partners (Baider et al., 1998; Gilbar & Zusman, 2007; Hagedoorn, Buunk et al., 2000; Hagedoorn, Kuijer et al., 2000; Kornblith et al., 1994; Soloway et al., 2004), some researchers have proposed that men are more reluctant to acknowledge threatening experiences and respond to distress using repression and distancing strategies (Lutzky & Knight, 1994). Male patients were more distressed than healthy controls; thus men were able to acknowledge they had distress (Hagedoorn, Buunk et al., 2000). Therefore, Hagedoorn,

Buunk et al. (2000) argued that womens' greater distress regardless of role, was due to their being more relationship oriented than men, thus were more influenced by their partners' condition than male counterparts. Women in North American cultures focus more attention on relationships than men do (Acitelli & Badr, 2005) and tend to be care-givers even when they are ill (Revenson, Abraido-Lanza et al., 2005). Men tend to be less likely than women to seek outside support and are more apt to rely on their partners for assistance (Banthia, et al., 2003; Knoll et al., 2007) thus, not surprisingly, regardless of whether women were the partner or patient they reported more distress and assumption of nurturing roles (Baider et al., 1998; Couper et al, 2007; Northouse, et al., 2000; Soloway, Soloway, Kim & Kava, 2004). Baider and Bengel (2001) question the meaning of reported findings of women having more distress than men and suggest the possibility of male bias implying this may be indicative of women's introspective and self-reflective nature, rather than emotional overreaction and instability.

Northouse et al. (2000) examined gender and role differences in distress for patients with colorectal cancer in a longitudinal study at three time periods, one-week post diagnosis, 60 days (T2) and one year post surgery (T3). Male partners had higher levels of distress than male patients at baseline, but at 60 days there were no differences in distress, indicating that male partners have most distress at diagnosis. They found low intracouple correlations for the total sample (r = .09 to r =.28), male-patient and female-patient dyads over time, but female-patient dyads were more similar and had higher depression at T2 and T3.

When examining disclosure of thoughts and feelings of gastrointestinal cancer patients to their partners, Porter et al. (2005) reported they were underpowered to detect

any gender differences. Female patients reported more cancer-related communication problems than their partners but it was unclear if this difference was due to gender or role (Kornblith et al., 2006). Female patients who had emotional support from their partners had a greater sense of well-being while male patients did not show association of emotional support affecting their psychological outcome. Both males and females had significant correlations with negative behaviors from spouses leading to a lower sense of well-being and greater distress, indicating that negative partner responses were not moderated by gender (Manne et al., 1997).

Mediators

Patient/Partner Relationship

The quality of marital relationships has been used as a predictor in the future health and well-being of individuals with little emphasis placed on the development of illness, such as cancer, after the relationship has been established (Ren, 1997). In a summary of an analysis of the association between marital relationships and health problems, Burman and Margolin (1992) recommend that data suggests that partners should be considered important elements in health outcomes, and it is the relationship quality, not status that should be addressed. Adaptation to stressful events is facilitated by adequate social support, and in particular if there is a strong marital relationship built on trust. Trust is critical to quality and stability in intimate relationships and this is linked to mental and physical health outcomes (Baider et al., 1998; Cutrona et al., 2005). Gale et al. (2001), reported a study among women being evaluated for breast cancer, that the greatest distress was in women who were in low-quality relationships compared to women without partners or women in high quality marital relationships. Patient/partner

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relationships that demonstrate high marital quality frequently attribute negative behaviors to stress, and this can counteract any destructive impact. In contrast, when trust is low, undesirable behaviors are attributed to enduring characteristics of the partner, and negative interactions may occur at high rates of frequency and intensity (Cutrona et al, 2005; Manne et al., 1997; Manne et al., 1999).

Bultz et al. (2000) reported a randomized controlled trial of a brief psychoeducational support group for partners of stage I and II breast cancer patients. The men discussed coping strategies, challenges, feelings about their anxieties and fears, communication with partners about cancer and sexuality, how to provide emotional support, body image issues, genetic risks for daughters and the dying process. They were able to ask the physician questions they had not previously asked (or had been afraid to ask in the presence of their partners). There was deterioration in dyadic satisfaction and level of support for the control group while the intervention group remained stable. They concluded that through more open communication, the partners in the intervention group may have been able to avert some of the cancer-stress related challenges for patients.

As part of a larger intervention study for prostate cancer patients and their partners (Hawes et al., 2006), four specific types of problems were identified by partners to be worked on in individual problem solving sessions. The issues that were selected as the first and second priorities included: responsibility of financial matters if the patient dies, continuing with women's hobbies, and balance of women's illness with patient's illness. Then, priorities in decreasing order were patient issues, which addressed: patient's lack of action or sloppiness, patient's temper or verbal abuse, and patient's smoking, exercise or

eating habits. They linked these to patient's depression, dysfunctional communication

and lack of demonstrating affection.

Northouse, Templin, Mood and Oberst (1998) evaluated marital satisfaction in a

longitudinal study examining malignant breast cancer versus benign breast disease effects

on dyads. The groups were formed based on their diagnosis of benign vs. malignant

masses. Both groups reported fairly high levels of dyadic satisfaction and family

functioning at diagnosis. There were greater decreases for the couples in the malignant

group, secondary to the greater number of illness-related demands experienced by the

breast cancer patients and partners, more negative moods and poorer quality of dyadic

relationships. However, for the dyads in the malignant group who had the highest scores

on dyadic satisfaction at the beginning of the study, scores were maintained at each

assessment time.

A group of colon cancer patients with higher dyadic satisfaction were found to have

lower hopelessness and indirectly had less emotional distress and role problems with

adjustment. Partners' relationship satisfaction had a direct effect on emotional distress

(Northouse et al., 2000).

Dyadic Adjustment/Communication

Although it is generally recognized that couples' communication about cancer-

related issues and concerns plays a valuable role in both partners' adaptation to cancer,

this has received little empirical attention (Manne et al., 2006). Northouse and Peter-

Golden (1993) identified three concerns as universal to partners of patients with cancer:

(1) dealing with the fear and threat associated with a cancer diagnosis, (2) helping their

partners cope with the emotional consequences of cancer and (3) managing the

adjustments in daily life caused by the disease. Couples often feel lost and confused about how to respond to their partners' distress (Pistrang & Barker, 2005). Hilton (1994) found two basic communication patterns when dealing with emotional problems for patients with early stage breast cancer: (1) couples who shared the view that talking was important talked openly and (2) couples who did not share this view had more difficulties with their communication. Reciprocal self-disclosure and humor between partners in a study of early stage breast cancer patients led to less distress during videotaped discussions of cancer-related issues (Manne, Ostroff, Sherman et al., 2004). Kornblith et al., (2006) reported that as cancer-related communication problems increased for patients and partners, their dyadic relationship worsened and distress increased.

Manne et al. (2006) used the communication patterns questionnaire (CPQ) and adapted it to be cancer-specific. This consists of three subscales that classify communication strategies: *constructive communication, mutual avoidance communication* and *demand-withdrawal communication* (occurs when one partner pressures the other partner to talk about the issue while the other partner withdraws or becomes passive or defensive). *Constructive communication* was associated with higher relationship satisfaction and lower distress for patient and partner. *Mutual avoidance communication* was associated with greater distress for patient and partner, although the dyadic relationship satisfaction remained high. *Demand-withdrawal communication*, considered maladaptive, was consistent with higher distress for both patient and partner and lower dyadic satisfaction. If one person in the dyad wants to talk about cancer, and the other does not, this mismatch causes the greatest problems with adjustment (Kornblith et al., 2006). Preexisting spousal communication problems do not disappear

when the couple is facing a life-threatening illness and may even exacerbate a crisis (Hawes et al., 2006).

Manne et al. (2005) reported a randomized controlled couple-focused group intervention for women with early stage breast cancer stage I to III.   The intervention was designed to support communication exchanges and coping skills. Couples who were in the intervention group had lower levels of depressive symptoms, and women who initially had unsupportive partners and greater physical impairment in the intervention group had the most benefit, reporting lower depression scores over 6 months when compared to the control group.

Partners are often the communication conduit between patients and health professionals and key advocates during diagnosis and treatment (Davison, Goldenberg, Gleave & Degner, 2003; Harden et al., 2002). Soloway et al. (2004) examined prostate cancer couples' issues of sexual function and psychological distress and reported that partners had higher levels of psychological distress. The wives were reticent about addressing sexual issues because they believed that by not openly communicating their distress, they were protecting their partners' anxiety about their prostate cancer. This is an example of *protective buffering*. Similar findings were reported by Ezer et al., (2006).

Erectile dysfunction is the most common long-term side effect of prostate cancer treatment and can have implications for the partner relationship (Soloway et al., 2004). This can lead to emotional distancing and protective behaviors attempting to protect each others' dignity. Partners rated patients lower in ability to gain erections and sexual performance than patients rated themselves, but despite difficulties with erectile dysfunction identified in the study, if dyads continued to communicate during diagnosis,

treatment and recovery on critical sexual issues, the dyad was able to adjust to the sexual function outcomes of treatment. Open communication between couples may lessen distress. Researchers/clinicians do and should advocate that dyads need to communicate during diagnosis, treatment and the recovery process for the best outcomes (Badr & Taylor, 2006; Bultz et al., 2000; Maliski et al., 2002; Soloway et al., 2004).

Examining patients with breast, prostate, colon, stomach, melanoma and non-Hodgkin's lymphoma, partners have been found to be as distressed as patients, particularly with spousal wives reporting more distress than husbands. (Baider et al., 1998; Gilbar & Zusman, 2007; Hagedoorn, Buunk, Kuijer, Wobbes & Sanderman, 2000; Kornblith, Herr, Ofman, Scher & Holland, 1994; Soloway et al., 2004). Interestingly, when comparing dyads in which both partners had a diagnosis of cancer, there was no significant difference in psychologic distress than when just one partner had cancer (Baider, Walach, Perry & De-Nour, 1998).

Coping Styles

Coping styles have been classified in many ways, but primarily two categories are identified as overarching, problem-focused (positive) and emotion-focused (negative), with other patterns designated as subcategories (Ben-Zur et al., 2001; Gilbar & Zusman, 2007; Lazarus & Folkman, 1984). Problem-focused coping involves actions that are responses that are directed at an external event. This includes planning, seeking instrumental social support, suppression of competing activities, and positive reinterpretation. Emotion-focused coping responses are attempts to control the individual's emotional reactions or internal state. This includes ventilation, intrusive thoughts and avoidance strategies (Banthia et al., 2003). Avoidant coping is denial or

shunning the stressor. Problem focused coping has been more effective at preservation of social functioning and sense of well-being (Ben-Zur et al., 2001). Coping is an ongoing process, not just an isolated event (Gilbar & Zusman, 2007). In assessing dyadic relationships, coping strategies that have been identified are active engagement and protective buffering. *Active engagement* involves the patient dyad in a discussion, exploring thoughts, emotions, and initiating positive efforts at problem solving. This is seen as positive or supportive coping (Bodenmann, 2005; Hinnen et al., 2007). *Protective buffering* involves hiding ones concerns, denying worries, and yielding to the partner to avoid disagreements. This type of coping is intended to reinforce or strengthen the efforts, psychological, physical and social functioning of the other partner or to increase dyadic satisfaction (Bodenmann, 2005) but it can also increase the user's own distress. Some authors see this strategy as a strength (Bodenmann, 2005; Revenson, Abraido-Lanza, Majerovitz & Jordan, 2005) while others see it as generally unsupportive or maladaptive (Hinnen). *Protective buffering* and *active engagement* are unrelated constructs and should be evaluated independently. More often the older patient dyad uses *protective buffering* whereas younger or more highly educated patient dyads use *active engagement*. Distress is also strongly and positively related to *protective buffering* and less distress was associated with more *active engagement* (Hinnen).

Avoidance coping is significantly associated with mood disturbance while positive coping shows no relationship to mood (Romero et al., 2007). Romero et al. found that husbands' and wives' perceptions of the impact of a diagnosis of breast cancer on them as a unit was incongruent for those who used avoidant coping, thus leading to higher levels of distress. Because partners can be as distressed as patients, they may hold back

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from disclosing their own thoughts and feelings, especially when there is fear of disease progression, financial concerns or their own emotions (Baider et al., 1998; Porter et al., 2005). Regardless whether patient or partner, holding back from disclosure led to more distress. Dyads who had more disclosure between them also had better communication with health care providers (Porter) emphasizing the benefits of dyadic cohesion.

Women breast cancer patients reported more distress than their husbands although there was a close association between patient/partners' distress (Ben-Zur et al., 2001; Gilbar & Zusman, 2007). When both spouses used emotion-focused strategies, there was greater distress and poorer functioning (Ben-Zur).

Ko et al. (2005) assessed partners' problem solving skills as positive problem solving and dysfunctional problem solving. Positive problem solving included positive problem orientation and rational problem-solving measures, while dysfunctional problem-solving included a negative orientation, carelessness/impulsiveness and avoidance style. They examined partner distress as measured by the POMS as a mediator on patient distress, also measured by the POMS. Dysfunctional problem solving had a negative effect on both patient and partner. Constructive problem-solving indicated less patient distress.

Posttraumatic growth is described as positive changes an individual may experience after a traumatic event, and it is relatively common among adults with cancer, particularly for younger patients (Manne, Ostroff, Winkel et al., 2004). Thornton and Perez (2006) found that men treated for prostate cancer and their partners reported modest and similar levels of posttraumatic growth, similar to Maliski et al. (2004). This growth was accounted for by coping strategies that used information-seeking, positive

reframing and emotional support. Cognitive and emotional processes demonstrated as caring feelings contributed to increases in patient psychological growth, and patients had more growth when partners had expressed more caring sentiments and communication (Manne, Ostroff, Winkel et al., 2004).

<center>*Outcomes*</center>

Health Related Quality of Life for Patient and Partner

Couper et al. (2004) in a review of the literature of psychological outcomes for men with prostrate cancer found very few studies that sought data directly from partners. The POMS has been used as an outcome and mediator in multiple couple studies; some with the partners as if were the patients (Romero et al., 2007) and some with both patients and partners (Bultz et al., 2000; Carlson, et al., 2001; Hawes et al., 2006; Ko et al., 2005; Soloway et al., 2004).

Many of the studies that involve cancer patients and partners examine psychological outcomes that include depression as a measure of distress, such as the CES-D (Davison et al., 2003; Tuinstra et al., 2005; Hagedoorn, Kuijer, Buunk et al., 2000). Hagedoorn and Kuijer used it for patients alone along with the Rand SF-36 Physical limitations scale looking at partner support. Hagedoorn, Buunk et al. (2000) in another study used the CES-D for both patients and partners, along with a Visual Analog Scale of Quality of Life on a scale of 0 (worst imaginable life) to 10 (best imaginable life). Female patients, female partners and male patients reported more psychological distress and lower quality of life when compared to healthy controls. In contrast, male partners were similar to healthy controls in distress and QOL.

A study by Wagner, Bigatti and Storniolo (2006) compared quality of life (QOL) for husbands who had wives with breast cancer to husbands of healthy wives. Husbands of wives with breast cancer scored lower on general health, vitality, role-emotional, and mental health subscales of the Medical Outcomes Study (MOS-SF36) than those with healthy wives. Higher QOL for the partners of patients with breast cancer was associated with less caregiver burden, lower use of emotion focused coping and higher social support. Stage of disease and time since diagnosis were not related to QOL in husbands. Age and education were not different for the husbands of wives with breast cancer and healthy wives groups.

Examining post-traumatic growth in prostate cancer survivors and their partners and its subsequent affect on quality of life (QOL), Thornton and Perez (2006) reported modest degree in post-traumatic growth in both patients and partners with similar means. They used the Rand Health Survey (Rand-36) and found no relationship in post-traumatic growth to QOL for patients or partners. The Rand-36 (1992) is another version of the MOS-SF-36 (Ware, 1976) with identical subscales.

Some longitudinal studies have examined breast cancer patients and colorectal cancer patients and their spouses to address the correspondence or transmission of distress between patient and spouse couples administering questionnaires to both individuals in the dyad using the BSI and PAIS or CES-D. Results indicated that if both partners are in a high-high distress group, they are likely to remain there one year later (Northouse et al., 1998; Tuinstra et al., 2004).

A study that included gastrointestinal patients/partners used the shortened version of the Impact of Events Scale (IES) and the Functional Assessment of Cancer Therapy

(FACT) as outcome measures to examine whether disclosure of concerns between patients and partners affected their quality of life (Porter, et al., 2005). They reported that high levels of holding back and less levels of disclosure were associated with increased distress for both patient and partner.

Another outcome measure in couple studies that has been used was the Mental Health Inventory (MHI) used by Manne, et al. (1997). It has positive well-being and psychological distress subscales. Data was collected from patients in married relationships. No data was collected directly from spouses. They found associations between spouse support and psychological outcomes in patients, particularly that negative responses have a stronger impact on well-being.

Galbraith, Pedro, Jaffe and Allen (2008) reported a descriptive study that compared patients/partners ranking of their quality of life with their general physical and mental health (SF-36) and marriage quality (DAS). They related these for both members of the dyad at four time intervals over an eighteen month period. Their findings showed that patients' and partners' quality of life was affected by the patients' treatment, particularly for the emotional role at each time sequence. They concluded that partners' feel the effects of the patients' experiences empathetically as they go through treatment.

Summary

Chapter II has established that the lives of both patients and their spousal/partners' are affected by a diagnosis of cancer, and the quality of the partner relationship can be the most significant social and emotional support for patients. Partners can be just as distressed or more distressed than patients. The dyad can be vulnerable from the disease and its treatment or side effects of either. For purposes of this study, patients and their

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partners are vulnerable or have stressors from having a diagnosis of cancer, which includes pain and symptom burden. Vulnerability (defined as how strong the commitment, caring or readiness to react to a stressor) influences the flow of events. Ideally, dyadic coping or the recognition of stress in one partner initiates coping reactions in the other partner to lessen distress in both and preserve the relationship. Patient/Partner relationship satisfaction and styles of problem-solving by the partner are examined as mediators in the health quality of life for both the patient and partner.

The quality of the marital relationship has been shown to influence the adjustment of both patient and spouse. Age, gender, financial impacts, and functional limitations are variables that have been identified to influence the outcomes or quality of life as measured by distress for the dyad. General and mental or emotional health outcomes for both the patient and spouse/partner have not been examined.

Most of the studies that have examined patient/partner relationships with regard to a cancer diagnosis have been with disease specific populations, namely prostate, breast, colon and a few other cancers. Because this study was a secondary analysis of an interventional pain study for caregivers, many varieties of cancer diagnoses, and partners' and patients' roles from both genders are included. Distress or mood states for both patient and spouse were compared and quality of life for the dyad for both the patient and partner's mental and general health were examined.

Chapter Three

Methods

This chapter presents the sample, instruments used for data collection, Institutional

Review Board exemption, procedures, and data analysis plan. The purpose of this cross-

sectional study was to examine the stressors of vulnerability from a cancer diagnosis,

pain and symptom burden on the mental and physical well-being of the patients and their

partners. The role of the partner relationship and dyadic coping (as a crossover of the

partner's coping style), were considered mediators for the outcome of quality of life for

the patients' and partners' general physical, mental or emotional health. This was a

secondary analysis of data from a larger National Institutes of Health (NIH) funded

interventional study (5R01NR008270) and a standard dyadic design (Kenny, 2006) in

that each person is linked to one, and only one, other person in the study.

Sample

The sample consisted of patients and their partners accrued at a National Cancer

Institute (NCI) designated comprehensive cancer center in the southeastern United States.

For this secondary analysis, the patients had to be in a committed partner relationship.

Patients had to have a diagnosis of cancer in any stage, and a pain intensity level of at

least 3 on a 0 to 10 scale. Patients had to be at least 18 years of age, have at least a sixth-

grade education, and have no documented neurologic or psychiatric disorders that would

interfere with self-report. Patients were excluded if they did not have a partner, or if they

had psychiatric problems or were unable to read or understand English. Only

heterosexual partners were included in this study since the Dyadic Adjustment Scale was normed with heterosexual couples, and, like many of the studies including partners, there was low participation of same sex couples.

<p align="center">*Instruments*</p>

A group of instruments was used to assess aspects of the conceptual framework. The demographics include covariates of age and gender. Instruments that assess stressors are: the Brief Pain Inventory (BPI), Memorial Symptom Assessment Scale (MSAS), and Caregivers Demand Scale (CDS). Mediators are included as the Dyadic Adjustment Scale (DAS) and the Social Problem-Solving Inventory-Revised (SPSI-R). Instruments that measured the outcomes are: Profile of Mood States (POMS) and the Medical Outcomes Study Short Form Health Survey (MOS SF-36). Some instruments were completed by the dyad and some by individual members of the dyad. (Table 1).

Demographic Questionnaire: (patient) and (partner)

Demographic variables were assessed by self-report. Variables reported in this study were: age, race, ethnicity, gender, education, occupation, religion, income and length of marriage/relationship.

Medical Characteristics of the Patient

The medical characteristics were obtained from the chart audit that was conducted from the electronic medical record. Type of cancer was utilized for this study.

Brief Pain Inventory

The purpose of the Brief Pain Inventory (BPI) was to assess pain in cancer patients using self-report. It measures pain at its worst, its least, average and current level. It includes a checklist of adjectives to describe pain. The instrument is scored on a 0 to 10

scale with general interpretation as follows: 1-3 (mild pain); 4-6 (moderate pain); and 7-10 (severe pain). Additional information was collected on the role pain has on interference with daily functioning for the patient with a range of 0-70. This is a subscale that asks patients to rate how much pain interferes with seven functional areas using a series of 0-10 point scales. Evidence of validity was presented by Serlin, Mendoza, Nakamura, Edwards, and Cleeland, (1995). They reported significant correlations of the Interference Subscale with mood disturbance items from the (Profile of Mood States) POMS. Serlin et al. (1995) reported reliability as Cronbach alphas ranging from 0.86-0.91. Test-retest reliability was strongest for pain at its worst (r=0.93). Pain at its worse and pain interference subscale total were indicators used for stressors or vulnerability.

Memorial Symptom Assessment Scale

Symptom intensity and frequency is different from symptom distress (McMillan & Small, 2002; McClement, Woodgate, & Degner, 1997; Portenoy, Thaler, Kornblith, Lepore, Friedlander-Klar, Coyle, et al., 1994). The Memorial Symptom Assessment Scale (MSAS) is a self-report measure that assesses a group of diverse symptoms that are common in cancer patients by differentiating frequency, intensity and distress. Distress items are scored from 0 (no distress) to 3 (worst distress). Patients score distress for each of the 25 symptoms that they endorse as being present. A summation of all the items or total score gives the Global Distress Score (GDS). The revised version (Portenoy, Thaler, Kornblith, Lepore, Friedlander-Klar, Kiyasi, 1994) was used for this study. Factor analysis confirmed two factors that distinguish three groups of symptoms as Psychological, High Prevalence Physical Symptoms and Low Prevalence Physical Symptoms. Reliability coefficients have been reported as indicating strong internal

consistency for the subscales (alphas = 0.83-0.92). Individual symptoms also provide a

detailed description that includes severity, frequency and distress that can be particularly

relevant in some circumstances (Portenoy, Thaler, Kornblith, Lepore, Friedlander-Klar,

Kiyasi, 1994). The Global Distress Score (GDS) was used as an indicator of symptom

burden. Pain severity and pain distress were indicators of vulnerability from the specific

symptom pain in the SEM model for this study.

Caregiver Demands Scale

The Caregiver Demands Scale (CDS) (Stetz, 1987) is a 46 item self-report measure

of demands that caregivers may experience along two dimensions (physical caregiving

and role alterations). Four questions under the subscale Financial Alterations will be

utilized for this study. The spouse/partner first answers "yes" or "no". If "yes", then

they rate the demand on a 5 point Likert-type scale (1= "not at all" to 5 "extremely

stressful"). The total score is summed, with higher scores representing greater perceived

demands. Internal consistency reliability (Cronbach's alpha) has been reported as 0.87.

This instrument has been used in cancer populations (Pasacreta, Barg, Nuamah &

McCorkle, 2000).

Dyadic Adjustment Scale

The Dyadic Adjustment Scale (DAS) is a thirty-two item scale that is designed to

assess marital satisfaction for couples married or in a committed relationship (Spanier,

1976). This instrument measures dyadic consensus, dyadic satisfaction, affectional

expression and dyadic cohesion that directly assess general communication between

couples and multiple items in which communication patterns are undercurrent. Higher

scores indicate greater marital satisfaction. Alpha coefficients have been reported from

0.92 to 0.95 (Northouse et al., 1998). Construct and criterion validity and reliability were reported by Spanier (1976). Patient DAS and Partner DAS scores were used as indicators for both SEM models.

Social Problem-Solving Inventory Revised

The Social Problem-Solving Inventory-Revised (SPSI-R) (D'Zurilla, Chang, Nottingham & Faccini, 1998) is a measure that consists of 52 items that use a five-point Likert-type scale that assesses problem-solving skills. There are five subscales: (1) Positive Problem Orientation; (2) Negative Problem Orientation; (3) Rational Problem Solving; (4) Impulsivity/Carelessness Style; and (5) Avoidance Style. A total score is calculated to reflect overall problem-solving ability with higher scores indicating better problem-solving ability. Construct validity was reported ($r = 0.33$ to 0.75) with subscales from other problem-solving measures. Internal consistency using alpha coefficients have ranged from 0.69 to 0.96. This instrument has been used with cancer patients. The Positive Problem Orientation, Impulsiveness/Carelessness and Avoidance subscales were used as indicators in the SEM model.

The Profile of Mood States

The Profile of Mood States (POMS) (McNair, 1992) is a 65 item Likert-type scale that evaluates six affective states: (1)Tension-Anxiety; (2) Depression-Dejection; (3)Anger-Hostility; (4) Vigor-Activity; and (6) Confusion-Bewilderment. Internal consistency has been reported as 0.87 to 0.95 within these subscales. Test-retest reliability ranged from 0.65 to 0.74 over a three-week interval. A global measure of affective state, or total mood disturbance score can be calculated by summation of the six subscale scores. High scores except for the Vigor-Activity subscale indicate worse mood

with lower scores indicative of better mood. This global score was used for the patient and partner as a quality of life outcome.

Medical Outcomes Study Short Form Health Survey

The Medical Outcomes Study Short-Form Health Survey (MOS SF-36) (Ware et al., 1993) is a thirty-six item self-report multidimensional rating scale that measures eight health-related concepts: (1) physical functioning; (2) role limitations due to physical health problems; (3) bodily pain; (4) general health; (5) vitality (energy/fatigue); (6) social functioning; (7) role limitations due to emotional problems; (8) mental health (psychological distress and psychological well-being). The items use Likert-type scales with five or six points and a few with two or three points. Construct validity correlations range from $r = 0.52$ to 0.78 for subscales with other quality of life measures. Test-retest reliability coefficients for the subscales range from 0.68 to 0.93. Factor analytic studies identified two summary scores: the Physical Health Component Score and the Mental Health Component Score. In the original proposal, the Physical Health Component Score and the Mental Health Component Score were to be used as indicators for Quality of Life for the patient and partner. Due to difficulties with the lambda loadings in the Structural Equation Model, the General and Mental Health subscales were substituted to give a broad overview of the couples' well-being.

Table 1

Measures Completed by Each Member of the Dyad

Variables	Measures	Patient	Partner
Covariates (Demographics)	Demographic Questionnaire	x	x
Age	Demographic Questionnaire	x	x
Gender	Demographic Questionnaire	x	x
Income	Demographic Questionnaire	x	x
Length of Relationship	Demographic Questionnaire	x	x
Stressors (Vulnerability)			
Worst Pain	BPI	x	
Distress	MSAS	x	
Interference	BPI (interference subscale)	x	
Financial Concerns	CDS (financial concerns subscale)		x
Potential Mediators			
Relationship Quality	DAS	x	x
Partner's Resourcefulness	SPSI-R		x
Outcomes (QOL)			
Emotional Distress	POMS	x	x
Physical Health	SF-36	x	x
Mental Health	SF-36	x	x

The parent interventional study received approval by the Protocol Review and Monitoring Committee of the H. Lee Moffitt Cancer Center and received approval from the University of South Florida Institutional Review Board (IRB Number 100675). No further patient/partner contact nor chart review was made, thus no harm was done to participants. No new IRB approval was needed for this study.

Procedures

Patients were invited to participate in the study while attending regularly scheduled outpatient appointments at the cancer center. The study was explained to both the patients and their partners, questions were answered and written consent was obtained. Questionnaires were then completed individually by each participant and given to the research team to be entered into the data bank.

For this study, the data set was obtained from the Principal Investigator. The data was cleaned. Five same sex partners were eliminated from the study. Four dyads had large sections of missing data. These were also deleted. The remaining dyads had less than 95% missing data characterized as missing completely at random. Mean substitutions were made for the missing values (Tabachnick & Fidell, 2007).

Data Analysis

Demographic data, type of cancer and stage of disease are reported using descriptive statistics, including frequencies and descriptive statistics of means, ranges and standard deviations (SD). Aim 1, to examine a patient and their partner when challenged by stressors of pain and symptom burden and its affect on their QOL are addressed as follows. Question 1: Are the covariates such as age, gender, financial concerns and length

of the marriage related to the relationship quality or quality of life outcomes? This was

answered by multiple regressions analyses.   The covariates were entered with the DAS

as the dependent variable for the patient. The partner's DAS score was entered first, then

age, gender, financial concerns and length of marriage were entered. This same

procedure was then be used with the Partner's DAS score as the dependent variable and

the covariates with the Patient DAS score entered first. These same multiple regression

analyses of covariates was conducted for the dyads for the POMS, General Health and

Mental Health scores which are the outcome measures. The patient and partner both

need to be considered in each regression analysis because they are considered an

interdependent model. Patients and their partners have the same exposure within a

household, thus are not independent of one another (Tabachnick & Fidell, 2007).   The

significant covariates were then addressed in the SEM model and subsequent analysis.

Questions two through four of AIM 1 were answered by the SEM model.

Correlations, means, and standard deviations for the indicator variables were completed

using Statistical Package for the Social Sciences (SPSS) (version 16.0) and are reported.

These results were examined for significance.

Raw data sets of the indicator variables were then entered into LISREL with Prelis.

This was then used in a series of structural equation models to assess if the partner

relationship or partner resourcefulness mediated the outcomes of distress and QOL.

Latent variable path analysis uses the eight matrices of LISREL combined to consider

measurement of the variables and their structural relations (Kelloway, 1998). The fit of

the measurement model is conducted first and provides a baseline for the fit of the full

latent model. A full measurement model was created by loading the appropriate

indicators on the latent constructs with all constructs treated as endogenous.   The

indicators for each construct needs to correlate fairly highly with each other to assure

assessment of the same construct. The Positive Problem Orientation and the

Impulsiveness/Carelessness and Avoidance scales were correlated, but negatively.   The

negative indicators were reversed scored by multiplying by -1 so that the correlations

were in the same direction. Therefore, negative coping was interpreted by low scores on

these two scales. Both variables of positive problem solving and negative coping were

still present. The same procedure was done for the POMS, so that the quality of life

outcome measures were in the same direction. The LISREL program was then able to

provide calculations with few iterations and good fit indices. This full measurement

model provides correlations for all the constructs and is the best model that can possibly

be obtained with the data (Kelloway). Once that was established, further models were

structured to examine partially mediated, fully mediated and non-mediated pathways.

The structural equation model (SEM) computed significance for the direct and indirect

pathways and calculated goodness of fit indices for the mediation models. Kenny, Kashy

and Cook (2006) recommend multi-level modeling or structural equation modeling when

conducting dyadic analysis. Question 2: Is pain or symptom burden related to the

dyadic committed relationship? This was a direct pathway from the stressors to Quality

of Partner Relationship. Question 3: Does pain or symptom burden impact Quality of

Life for the patient and partner in terms of emotional distress and overall mental and

general health? This was also a direct pathway from the stressors to the patients' QOL

outcomes and a direct pathway to the partners' QOL.   Question 4: Does the Quality of

the Relationship mediate the outcomes of emotional distress and overall mental and

general health of the individuals? This is answered through the pathways set for fully

mediated, non-mediated and partially mediated models.

Aim 2 seeks to examine the coping style of the partner when challenged by the

patient's pain or symptom burden and the effect of the coping style on the outcomes for

the patient and partner. These are the questions for Aim 2. Question 6: Does pain or

symptom burden have a relationship to the coping style of the partner? This is a direct

pathway from the stressors to Partners' coping. Question 7: Does the coping style of the

partner affect their own or their partner's distress, mental and general health? This is a

direct pathway from the stressors to the QOL for each member of the dyad. Question 8:

Does the partner's coping style mediate the QOL outcomes for the patient and partner?

This theory assumes the partners' characteristics (e.g. coping style) affect his or her own

score on an outcome variable (e.g. distress, general health, mental health) and also affects

the patients' outcome scores on the same variables.

Questions 6 through 8 were also included as constructs with indicators in the SEM full

measurement model and were included in the pathways for direct effects, non-mediated,

partially mediated and fully mediated models as above. (See Figure 2. The Statistical

Structural Equation Model).

Several fit indices are reported to justify the fit of the models. These are discussed

in the results section under the *Goodness of Fit Indices* section with the discussion of

each of the latent path models.
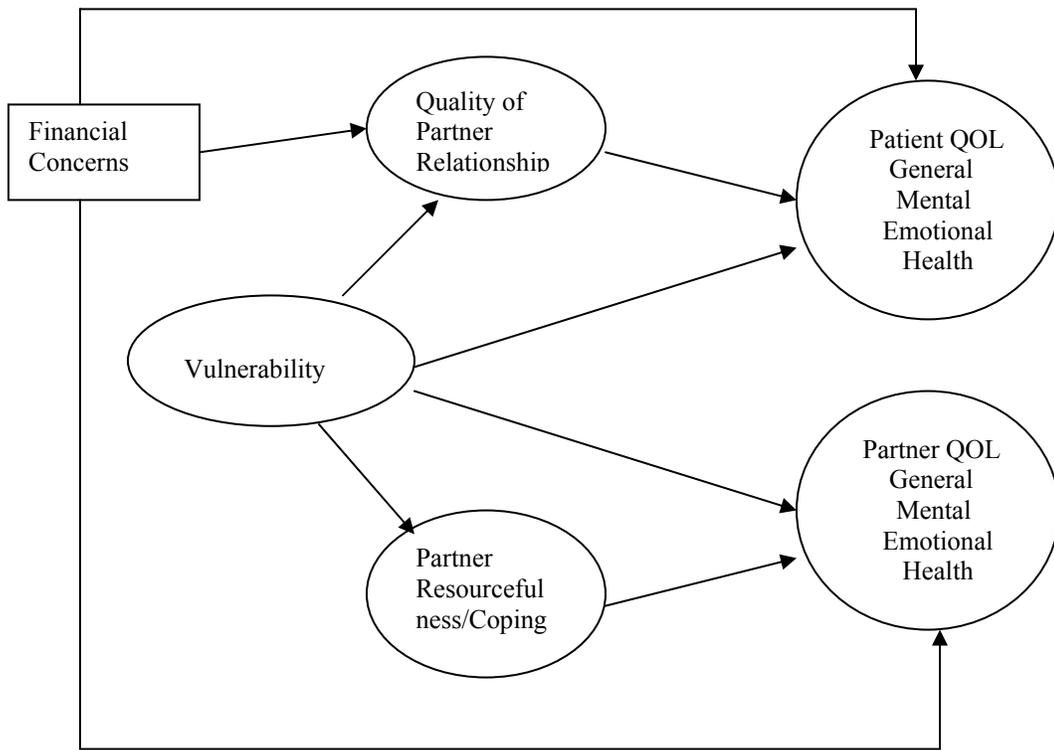
Figure 2. Structural Equation Statistical Model.

Aim 1, Question 5: Are the patient's and partner's distress related to each other and are there any differences for gender? This was answered by a multivariate repeated measures design that examined the dyad as the subject in a two by two design of role by gender. The POMS for the patient and the POMS for the partner as the within subject factor and patient gender as the between subject factor was conducted. This was repeated for the POMS of the partner and POMS of the patient as the within subject factor and the partner's gender as the between subject factor. Because patients and their partners are not independent of one another and the dyad is considered as the subject in this multivariate analysis the patients' score was time 1 and the partners' score was time 2, then vice versa (Tabachnick & Fidell, 2007).

Kelloway (1998) recommends a sample size of at least 200 in order to have sufficient power, but a ratio of sample size to parameters should be between 5:1 and 10:1. There was sufficient power for the models with all participants included, but insufficient power for the gender analysis when trying to divide the models for partner coping by gender. Because gender could not be addressed in SEM, the instruments completed by one member of the dyad were examined for differences in gender by ANOVA and the same multivariate time series analysis used to detect role and gender differences in the POMS explained in the analysis for Aim 1, Question 5 was used for the variables completed by both members of the dyad.

Chapter Four

Results

Chapter Four presents the study results. Results are organized as follows: (1) the

sample demographics, types of disease, descriptions of pain and symptoms; (2)

description of the results for the covariates for the study; (3) comparison of role by

gender for the distress measure of the POMS; (4) results of the SEM models for

mediation outcomes and (5) the results of the quality of life outcome measures for the

patient and partner.

Profile of Sample

The sample consisted of 354 participants, 177 dyads of heterosexual couples in

intimate, committed relationships. There were 102 male patients/partners and 75 female

patients/partners. The individuals in the couples were similar to each other in age,

education and socioeconomic level. The couples were in relationships for a mean of 28

years and a range of 10 months to 60 years. The mean age of caregivers' 55 years was

similar to and patients' mean age was 57 years. There was a wide range of ages of the

participants with the youngest being 22 years and the oldest 81 years. The mean income

was $40,000 to $60,000, with 30% of the sample greater than $60,000. Fifty percent of

the sample were classified as professionals or administrators/managers.   Ninety percent

of the sample was White, with only 2% Black and 6% Hispanic. They were highly

educated for a general population with the mean education level of 14 years for both

partners and patients (Table 2).

Table 2

Demographics for Patient/Partner Dyads

Variable	Patients	Partners
Age in years		
Mean	57.49	55.50
Standard Deviation	12.33	12.42
Range	24.78 to 80.75	22.46 to 79.04
Family income		
$10,001- 19,999	4%	
$20,000 – 39,999	30.7%	
$40,000 – 59,999	16.0%	
$60,000 – 100,000	29.3%	
>$100,000	5.3%	
Prefer not to answer	14.7%	
Length of Relationship in years		
Mean	28.16	
Standard Deviation	14.73	
Range	<1 to 60	

    The patients were representative of a wide spectrum of different primary cancer diagnosis. Lung cancer was the most prevalent, followed by head and neck cancer patients, then breast cancer (Table 3).

Table 3

Prevalence of Cancer Types

Type of Cancer	Frequency	Percent
Lung	45	26.2
Head and Neck	22	12.8
Breast	18	10.5
Colorectal	14	8.1
Gynecological	13	7.1
Leukemia/Lymphoma	8	5.0
Pancreatic	8	5.0
Sarcoma	8	5.0
Unknown Primary	7	4.1
Prostate	7	4.1
Bladder/Renal	4	2.2
Carcinoid	3	1.7
Melanoma	2	1.2
Multiple Myeloma	2	1.2
Gastric/Esophageal	2	1.2
Testicular	1	.6

Data for staging of cancers was difficult to obtain from the chart audits and was not considered reliable; however, the current status of cancer therapy treatment was included in the chart audit from the original study. Forty-five percent of the participants were considered stable whether they were receiving chemotherapy or radiation or just at the

center for surveillance. Thirty-seven percent of the patients with pain in the study were receiving treatment but continued to have progressive disease. Ten percent of the patients were considered to be in remission, but continued to have symptoms and pain from the cancer treatment, surgery, chemotherapy or radiation (Table 4).

Table 4.

Current Status of Cancer Therapy Treatment: Frequency and Percent of Patients

Treatment Status	Frequency	Percent
Under treatment, progressing	66	37.2
Under treatment, stable	61	34.4
No treatment, stable	20	11.2
Remission	17	9.6
Missing	7	4.1
No treatment, progressing	6	3.5

Covariates

Question 1, Aim 1 asks if the covariates age, gender, length of relationship, and financial concerns affect the quality of the relationship or the quality of life for the patient/partner. The covariates were entered into a regression model separately in step-wise regression and together as predicators for patient/partner for the variables Dyadic Adjustment Scale (DAS), POMS, General Health, and Mental Health. The results were the same regardless of entry in the equation so only the model with all the variables entered simultaneously is shown. This procedure was done to see if the covariates should be included in the SEM model. These results are reported in Table 5 and Table 6.

Table 5

Regression Model for Covariates with Patient Dyadic Adjustment Scale (DAS), POMS,

General, and Mental Health Scores from the SF-36

Models	R^2	ß	Standardized ß
Model 1 Patient DAS Dependent Variable	.335		
Partner DAS		.525	.559*
Patient age		-.074	-.061
Length of relationship		.060	.059
Financial Concerns		-.174	-.078
Gender		-2.111	-.070
Model 2 Patient POMS Dependent Variable	.177		
Partner POMS		.242	.234*
Patient age		-.045	-.018
Length of relationship		.045	.021
Financial Concerns		1.167	.253*
Gender		6.845	.110
Model 3 Patient General Health	.113		
Dependent Variable			
Partner General Health		.236	.225*
Patient age		.106	.073
Length of relationship		.012	.010
Financial Concerns		-.447	-.167*
Gender		-.595	-.016
Model 4 Patient Mental Health	.066		
Dependent Variable			
Partner Mental Health		.196	.187*
Patient age		-.059	-.037
Length of relationship		.065	.048
Financial Concerns		-.366	-.122
Gender		-3.580	-.089

*p < .05

Table 6

Regression Model for Covariates with Partner Dyadic Adjustment Scale (DAS), POMS,

General, and Mental Health Scores from the SF-36

Models	R^2	ß	Standardized ß
Model 1 Partner DAS Dependent Variable	.325		
Patient DAS		.598	.561*
Partner age		.045	.035
Length of relationship		-037	-035
Financial Concerns		-.103	-.043
Gender		-.453	-.014
Model 2 Partner POMS Dependent Variable	.228		
Patient POMS		.218	.225*
Partner age		.298	.125
Length of relationship		-.191	-.095
Financial Concerns		1.590	.358*
Gender		4.530	.076
Model 3 Partner General Health	.115		
Dependent Variable			
Patient General Health		.214	.225*
Partner age		-.055	-.040
Length of relationship		-.086	-.074
Financial Concerns		-.574	-.225*
Gender		-.174	-.005
Model 4 Partner Mental Health	.138		
Dependent Variable			
Patient Mental Health		.163	.170
Partner age		.069	.045
Length of relationship		-.072	-.056
Financial Concerns		-.693	-.243*
Gender		-6.871	-.179*

*p < .05

Because the patient and partner are not independent, the partners' or patients' corresponding variables were also entered into the equation as predictors and these were significant in each model as expected. None of these variables covaried significantly with the Dyadic Adjustment Scale. Financial Concerns did have a significant negative effect with the patients' and partners' quality of life scores. The partners' gender was also a significant negative covariate for partners' mental health outcomes with women having lower mean scores than men in subsequent analyses. Because Financial Concerns was significant for the couples' quality of life, it was included in the SEM model as a single indicator latent construct and was considered a stressor. The SEM model was also run for the partners' coping style separately for gender, but was not powered enough when the sample was split to give an adequate fit to be evaluated as a covariate in the mediation models. Because gender was considered a significant variable for the study, further analysis of gender differences was completed using MANOVA for variables completed by both members of the dyad and ANOVA for those measures completed only by one of the individuals. This is discussed further in the section headed *Gender and Role*.

<div align="center">

Stressors

</div>

To be eligible to participate in the study the patients had to have had a worst pain score of at least a three on a scale of 0 to 10 at the time of consent. Fifty-five percent of the sample characterized their pain as continuous and forty-five percent described it as occasional. A summary of pain, including interference, intensity, distress and symptom burden indicators' means, ranges and standard deviations are provided. (Table 7). Two

of the patients had scores of 2 on the BPI and one had 1. They did not meet the eligibility criteria at the time of admission, but were retained in the study.

Table 7

Ranges, Means and Standard Deviations for Worst Pain, Pain Intensity, Pain Distress, Interference, and Symptom Burden

Measure N = 177	Possible Range	Mean	Standard Deviation
Worst Pain (BPI)	0 to 10	7.89	2.007
Pain Intensity (MSAS)	0 to 3	2.14	.838
Pain Distress (MSAS)	0 to 3	1.94	1.034
Interference (BPI)	0 to 70	37.667	17.618
Global Distress Score (MSAS)	0 to 60	16.57	11.95

In addition to pain, the patients also completed the MSAS that assessed the presence, intensity and distress of 25 symptoms. This is the measure used to define the latent construct Symptom Burden. Table 8 shows the frequency of the symptoms and percentage of patients affected for the most commonly reported symptoms. Pain is the primary symptom for these patients and should have been present in all 177, because it was the inclusion criteria to participate in the study. Seven of the patients did not select pain as a symptom, although they had at least a score of 3 on the BPI. This measure did ask about pain over the last week. Symptom burden was used in the SEM model, but was highly correlated ($r = 0.81$) with vulnerability from pain. It did not add to the understanding of vulnerability. Therefore, it was not used in the SEM analysis so that a more parsimonious model would be explored.

Table 8

Number and Percent of Most Frequently Reported Symptoms

Symptom	Frequency	Percent of patients affected
Pain	167	94
Muscle weakness	112	63
Sleep problems	105	59
Emotional upset	101	57
Drowsiness	101	57
Constipation	95	54
Nausea	83	47
Change in appetite	81	46
Numbess	78	44
Problems with concentration	76	43
Lightedness/Dizzyness	71	40

Mediators

The Structural Equation Model

Aim 1, questions 2 through 4 address the role of mediation of pain and financial concerns by the marital relationship, Aim 2 questions 6 through 8 address the role of mediation by the coping styles of the partners on the quality of life outcomes for the patients and partners. The structural equation model addresses both of these questions. The means, standard deviations and correlations for the variables were calculated in SPSS and are reported in tables 8 and 9. For this study, the raw data set containing the

fifteen variables were imported from SPSS into the LISREL program. The physical and mental health component scores (standardized scores from the SF-36) although not included in the model are provided for comparisons to other studies. These standardized scores were replaced by the general health and mental health subscales for better fit in the structural model, without losing the outcome measures that were sought.

SEM is a statistical procedure designed to evaluate latent constructs that have measured indicators in a multivariate model using covariance matrices. An original covariance matrix from the data set is replicated through a series of iterations to give values to the indicators and specified pathways in a reproduced covariance matrix. Error variance is also measured in the structural equation model (Ratner, Bottorff, & Johnson, 1998). LISREL output reports each parameters' effect size and the standard error of estimate for that parameter. The ratio of the parameter effect size to its standard error is a reported as a t-test. Because the sample sizes are presumed to be large (at least > 164), the t values are interpreted using critical values for the z test or standardized scores. Any value $\pm$ 1.96 was considered to be significant at the 95% confidence level (Kelloway, 1998). Each construct was made up of multiple indicators and in this study, some were completed by the patient, some by the partner, and some by the dyad.

The exogenous variables are not caused by other variables. The endogenous variables are mediating variables or outcome variables. For this study, cancer pain with three indicators and financial concerns with one indicator are both the exogenous variables. The middle endogenous or mediators are relationship quality with two indicators and coping style of the partner with three indicators. The outcomes or endogenous variables are the patient quality of life with three indicators and partner

quality of life with the same three indicators. The full measurement model and the latent

pathway models are discussed: the fully mediated model, non-mediated model and the

partially mediated model. A summary of the goodness of fit indices for each model is

reported after discussion of each individual model. Ranges, means, standard deviations

and correlations for the indicator variables are in Table 9 and Table 10. The

Impulsive/Carelessness, Avoidance and POMS are not reversed scored in these tables.

Higher scores mean higher values of negative coping and distress.

Twelve percent of the partners scored below 100 on the Dyadic Adjustment scale,

with 10% of the patients falling below 100, indicative of poorer quality relationships.

Most of the couples who scored lower did not have scores that corresponded with their

partners'. Couples who are at risk for divorce have scores in the 70's and most married

couples have a mean score of 114.8 (Spanier, 1976). Three partners and one patient had

scores below 80. Ten patients and seven partners had scores greater than or equal to 145,

indicating very high quality marriages or relationships. Two caregivers had scores on

their physical health less than the patients' corresponding scores. Twelve partners' and

twenty patients had scores greater than 70 on the POMS, indicating greater distress.

Twenty-seven patients had scores less than 0 on the POMS and thirty partners had scores

of less than 0 on the POMS. These were very low distress scores. The patients' Physical

Health Component Scores were two standard deviations below the mean on the SF-36.

The patients' and partners' Mental Health Component Scores and the partners' Physical

Health Component Scores were within one standard deviation of the mean. When

examining scores that fell well below the means for all the indicator variables, there were

no clear patterns to explain the high and low ranges of the variables.

Table 9

Means, Standard Deviations and Ranges for Indicator Variables Used in Study (N=177)

Variable	Ranges	Mean	Standard Deviation
Financial Concerns	0 to 20	5.70	6.67
Pain Distress	0 to 3	1.94	1.03
Pain at worst	1 to 10	7.89	2.01
Pain Interference	0 to 70	37.07	17.62
Patient Dyadic Adjustment	79 to 151	121.82	14.96
Partner Dyadic Adjustment	66 to 148	118.88	15.94
Positive Problem Solving	2 to 20	12.28	3.75
Impulsive/Carelessness	0 to 27	7.17	5.09
Avoidance	0 to 22	4.70	3.77
Patient POMS	-37 to 117	29.44	30.74
Patient General Health	12 to 97	51.82	17.88
Patient Mental Health	4 to 100	67.95	19.93
Partner POMS	-38 to 124	25.08	29.67
Partner General Health	17 to 97	69.69	17.00
Partner Mental Health	12 to 100	73.08	19.02
Patient Physical CS*	15.60 to 56.19	28.84	8.25
Patient Mental CS*	19.72 to 68.52	45.67	11.81
Partner Physical CS*	17.34 to 61.66	45.39	9.13
Partner Mental CS*	14.26 to 68.12	49.23	9.74

*Note: CS indicates Component Score

Table 10

Bivariate Correlations for Variables Included in SEM Model

	FC	DIS	WP	IF	PDAS	CDAS	PPO	IC
FC	1.000							
DIS	.214**	1.000						
WP	.224**	.541**	1.000					
IF	.199**	.619**	.582**	1.000				
PDAS	-.145	-.165*	-.187*	-.173*	1.000			
CDAS	-.127	-.031	-.078	-.082	.568**	1.000		
PPO	-.150*	.087	-.111	-.007	.268**	.385**	1.000	
IC	-.019	-.015	.036	-.009	-.300**	-.196	-.289**	1.000
AV	.086	-.067	.015	-.060	-.232**	-.228**	-.440**	.500**
PPOM	.394**	.314**	.347**	.471**	-.324**	-.171*	-.066	.132
CPOM	.420**	.186*	.131	.112	-.410**	-.334**	-.210**	.155*

Note. FC = Financial Concerns; DIS = Distress; WP= Worst Pain; IF = Interference;

PDAS = Patient dyadic adjustment scale; CDAS = Partner dyadic adjustment scale;

PPO = Positive problem solving; IC = Impulsive/Carelessness; AV = Avoidance;

PPOM = Patient POMS; CPOM = Partner POMS;

*Correlation significant at the 0.05 level (2 tailed)

**Correlation significant at the 0.01 level (2 tailed)

Table 10 (Continued)

	FC	DIS	WP	IF	PDAS	CDAS	PPO	IC
PGEN	-.248**	-.217**	-.283**	-.342**	.169*	.153*	.250**	.030
PMEN	-.175*	-.360**	-.315**	-.472**	.371**	.229**	.098	-.112
CGEN	-.245**	-.133	-.081	-.100	.269**	.250**	.260**	.009
CMEN	-.276**	-.081	-.108	-.047	.276**	.324**	.356**	-.089

	AV	PPOM	CPOM	PGEN	PMEN	CGEN	CMEN
AV	1.000						
PPOM	.044	1.000					
CPOM	.242**	.333*	1.000				
PGEN	-.112	-.346**	-.140	1.000			
PMEN	.004	-.716**	-.253**	.390**	1.000		
CGEN	-.123	-.219**	-.423**	.265**	.177*	1.000	
CMEN	-.184*	-.258**	-.680**	.153*	.204**	.435**	1.000

Note: FC = Financial Concerns; DIS = Distress; WP= Worst Pain; IF = Interference;

PDAS = Patient dyadic adjustment scale; CDAS = Partner dyadic adjustment scale;

PPO = Positive problem solving; IC = Impulsive/Carelessness; AV = Avoidance;

PPOM = Patient POMS; CPOM = Partner POMS; PGEN = Patient general health;

PMEN = Patient mental health; CGEN = Partner general health; CMEN = Partner mental

health

*Correlation significant at the 0.05 level (2 tailed)

**Correlation significant at the 0.01 level (2 tailed)

The correlations should be examined prior to proceeding with the SEM even though theory guides the model. Financial concerns did not correlate significantly with the Relationship quality variables, the DAS scores. Vulnerability from pain correlated with the patients' Dyadic Adjustment scores, but not the partners'. Distress and the patients' and partners' POMS were significant. Correlations from the stressors to Partner coping was weak $-r = .15$ for Financial concerns. There were no correlations from Vulnerability which was distress, intensity and interference to coping. There were significant correlations between the Quality of the relationship and the Partner coping styles. The outcome QOL variables for the patient and partner correlated significantly with relationship quality. Vulnerability has a relationship to the patients' quality of life, but only distress for the partners' was significant with pain. Financial concerns have relationships with both patients' and partners' QOL.

Goodness of Fit Indices

Models should have three aspects of fit that include a theoretical basis, empirical evidence and parsimony (Ratner, 1998). The model was conceptualized based on the review of the literature, and theory guided its construction. The goodness of fit indices are reported for each model for empirical evidence using the following goodness of fit criteria: the chi-square to degrees of freedom ratio, the root mean squared error of approximation (RMSEA), the comparative fit index (CFI) and the standardized root mean squared residual (SRMR). The chi square ratio to degrees of freedom should not be significant, indicating that the implied covariance is not different from the observed data set, but this varies with sample size and is not a definitive test (Ratner, 1998). The RMSEA is based on an analysis of the residuals and should be less than 0.10 for a good

fit and values of < 0.05 for a very good fit. The SRMR is the standardized square root of the mean of the squared discrepancies between the implied and observed covariance matrices and have 0 as a lower bound and 1 as upper bound with values <.05 considered a good fit (Kelloway, 1998). The CFI is a relative measure of fit that compares the null model to the estimated model. The CFI should be at least .95 and if it is less than .90, it is a poor fit. (Kenny, 2006). (Table 11).

Full Measurement Model

In the full measurement model each indicator is loaded on its corresponding construct and no pathways are set between constructs. Each latent construct is correlated with every other latent construct. This determines if the indicators are appropriately measuring the constructs and if the model fit is suitable to proceed for further evaluation. LISREL works better with multiple indicators than with single indicators (Diamantopoulos & Siguaw, 2000). The parameters for the full measurement model were acceptable for a good fitting model (Figure 3). This model has the best fitting indices that were possible with this data set. Statistical significance is designated for the correlations and indicators that were set to be freely estimated in the program. At least one indicator for each construct is set to 1 for a starting value, thus significance is not given for that indicator.

This allowed for the subsequent models with path analysis to evaluate for mediation of the marital relationship and coping style of the partner. Fit indices are provided for each model to assess for acceptance or rejection of the theoretical constructs. For the fully mediated, non-mediated and partially mediated models, Financial Concerns and Vulnerability from Pain are the exogenous constructs and Relationship quality, Partners'

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coping style, and Quality of Life for patient and partner are the endogenous constructs.

Direct and indirect pathways were set in LISREL to evaluate for mediation.
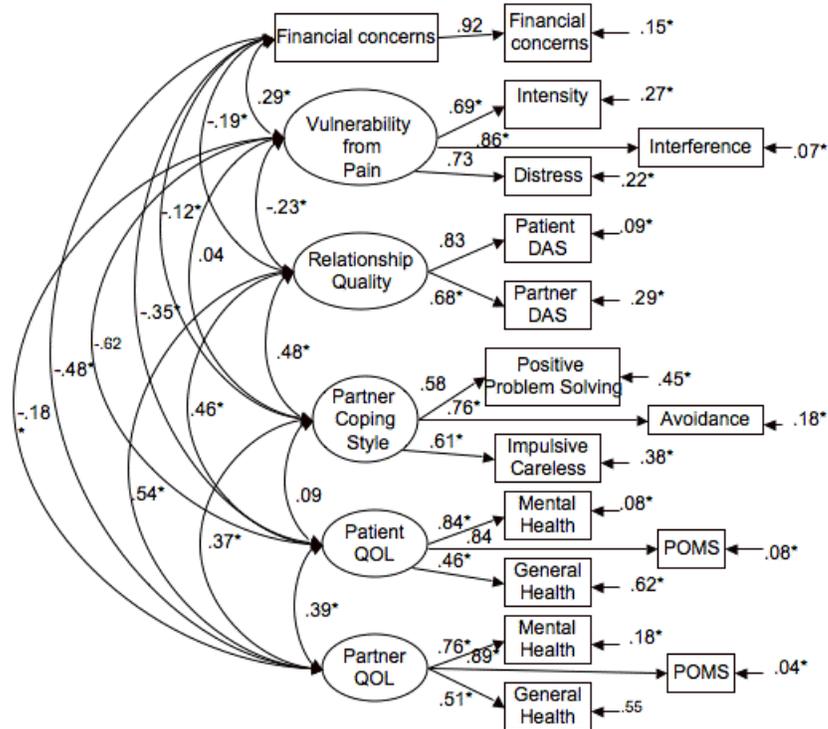
Figure 3. Full Measurement Model

Non-Mediated Model

The non-mediated model had the two exogenous constructs of Financial Concerns

and Pain to each of the endogenous variables as direct pathways. Relationship quality

and Partner coping style had no pathways set to mediate the QOL outcomes. Financial

concerns had significant direct effects on patient and partner QOL outcomes.

Vulnerability from pain had significant effects on Relationship quality and Patient QOL.

There were no significant effects on Partner coping or Partner QOL. The fit indices for

this model, though using less degrees of freedom had unacceptable fit to explain the data,

thus mediation was present. (See Figure 4).

For clarity of the diagrams, the indicators are not included. Their significance and

values are essentially the same as indicated on the full measurement model. The direct

and indirect pathways with the standardized coefficients are as illustrated.
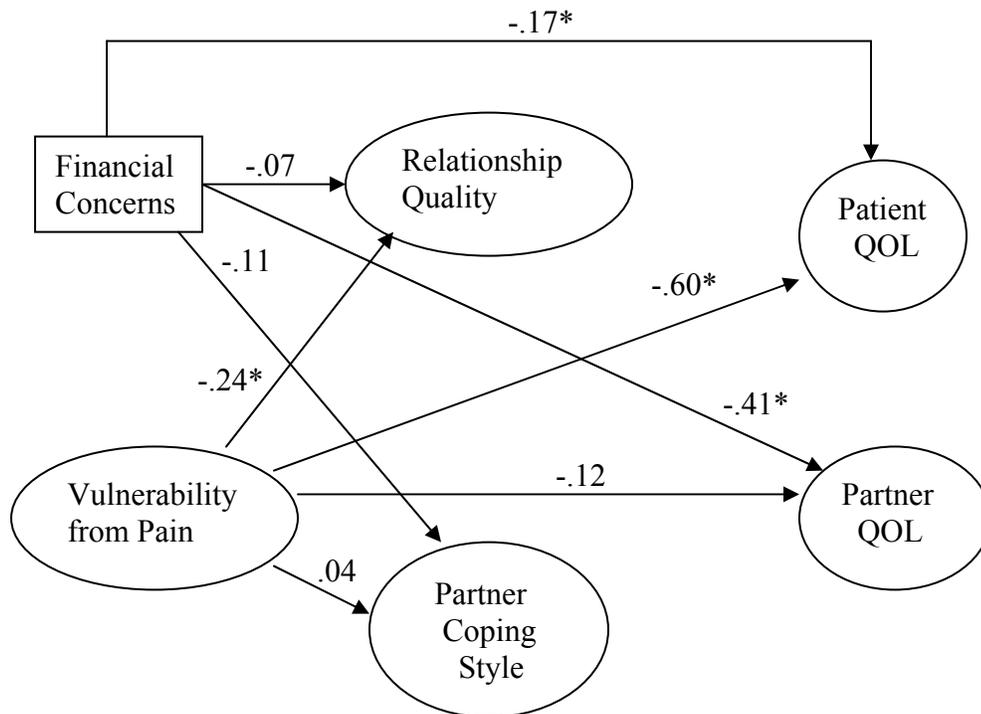
Figure 4. Non-Mediated Model

Note: Direct Effect indicated by

Fully Mediated Model

The fully mediated model had direct pathways set from the exogenous variables,

Financial concerns and Vulnerability from Pain to the mediators, Relationship quality and

Partner coping style. Then indirect pathways were set from the mediators to the outcome

variables PQOL and CQOL. There were no direct pathways set to the outcome variables.

This model also did not have good fit indices, so exclusive mediation did not explain the

relationships. (See Figure 5). There were significant direct pathways from both

Financial concerns to Relationship quality and then to both patient and partner QOL.

Vulnerability also had direct significant pathways through Relationship quality to the

QOL outcomes for the couple. Coping did not mediate either exogenous variable.
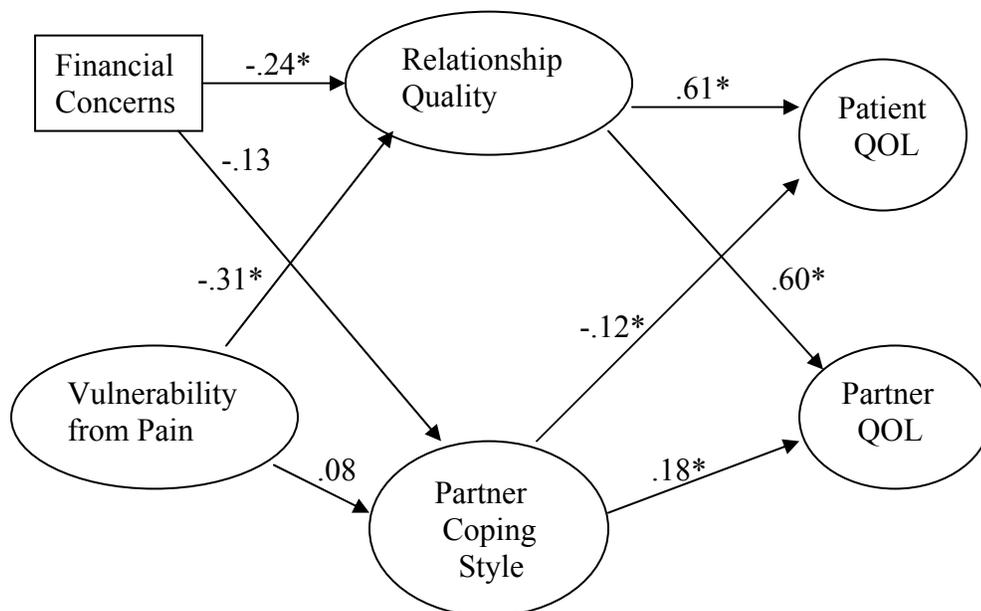
Figure 5. Fully Mediated Model

Partially Mediated Model

The partially mediated model added direct pathways in addition to the mediation

pathways. This model gave the best explanation for the relationships of the variables

with acceptable fit indices. (See Figure 6). Partial mediation was the best model

empirically and is discussed in detail. There were significant direct pathways from

Financial concerns to both PQOL and CQOL. There was a negative pathway to

Relationship quality, but it was not significant, so Relationship quality did not mediate the direct effects of Financial concerns.

The direct pathway from Pain to patients' QOL was significant, however, there was no effect on the partners' QOL directly. Pain had a significant direct effect on the Relationship quality, and an indirect effect on PQOL through Relationship quality, with a reduction of the direct effect meeting the criteria for partial mediation. In order for mediation to be present, there are three conditions: 1. variations in the independent variable have significant pathways to the presumed mediator which was the Relationship quality 2) Variations in the mediator have significant pathways to the dependent variable or patient QOL and 3) the direct pathway from the exogenous variable to the dependent variable, in this case, patient quality of life should become 0 for full mediation or decrease for partial mediation. (Baron & Kenny, 1986). There was a decrease on the direct effect from -.51 to -.58 and this was a significant total effect. Since there was no direct effect of Pain on the partner, there was no mediation for the partner.

There were no significant pathways from Pain or Financial concerns to Partner coping, thus it was not a mediator for patient or partner quality of life. There was a significant direct relationship from Partners' coping style to the partners' QOL, but not for the patients' QOL, thus indicating that the partners' coping style affected only their own QOL. There was a significant correlation for the patients' general health and positive problem solving that did not manifest in the SEM model. Changing Partner coping to an exogenous variable would eliminate pathways from Financial concerns to Relationship quality, Pain to coping, and coping to patient QOL. It would be a more parsimonious model, but then coping would not be a mediator which was the theory

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guiding the questions in Aim 2. The standardized total effects of the endogenous and

exogenous variables are summarized in Table 12.

Six percent of the variance in this model examining Financial concerns and Pain as

stressors was explained by the positive effects of the quality of the relationship in

contributing to the patients' QOL, 1% was explained from the coping by the partners

having a positive effect on their own QOL, 52% of the variance was explained by the

effects of the stressors on the patients' quality of life and 42% of the explanation was due

to the effects on the partners' quality of life.
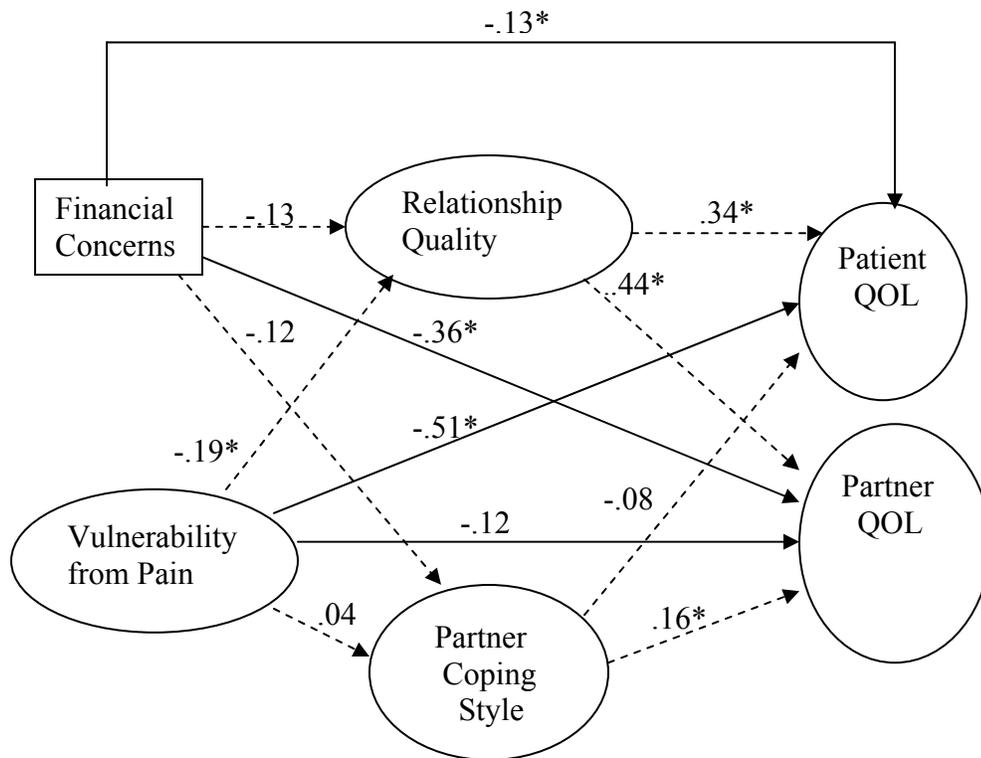
Figure 6. Partially Mediated Model

Direct Pathways are indicated by ⟶
Indirect Pathways are indicated by ------▶

Table 11

Fit Indices for Measurement Pain Models

Model	χ^2	df	RMSEA	CFI	SRMR
Full Measurement Model	135.24	76	0.06	.96	.05
Non- Mediated Model	209.78	82	0.10	..90	.12
Fully Mediated Model	223.33	82	0.10	.90	.12
Partially Mediated Model	159.13	78	0.07	.95	.09

Table 12

Summary of Standardized Total Effects Among Latent Variables

Partially-Mediated Model

	Exogenous on Endogenous		Endogenous on Endogenous			
	Financial Concerns	Vulnerability Pain	Relationship Quality	Partner Coping	Patient QOL	Partner QOL
Relationship Quality	-.13	-.19	—	—	—	—
Partner Coping	-.12	-.07	—	—	—	—
Patient QOL	-.17*	-.58*	.34*	-.03	—	—
Partner QOL	-.43*	-.08	.44*	.16*	—	—

*p $<$ .05

Gender and Role

Aim 1, Question 5 asked if the patient and partner results on the POMS were related and if there was a difference for gender.   The general linear model was used to conduct a

MANOVA as a time series analysis using the dyad as the unit of analysis (the first time was the patient and the second time was the partner). The partner/patient dyad or role was the within subjects factor and partner gender was the between subjects factor. This also gave the mirror image when run for patient gender since these were heterosexual couples, and there was a male/female for each partner relationship. There were no significant differences for role or gender on the POMS, although significance was approached at p= 0.058 with female patients having higher means (Table 13).

Table 13

Comparison of Role by Gender Means for General and Mental Health, Dyadic Adjustment and POMS

| | Role | | |
Gender	Patient	Partner	Differences
Mental Health			
Male	68.82	77.12	Role*
Female	66.77	70.12	Partner Gender by Role*
General Health			
Male	52.26	69.96	Role*, no Gender
Female	51.23	69.50	
Dyadic Adjustment			
Male	122.78	118.45	Role*, no Gender
Female	120.51	119.19	
POMS			
Male	26.93	23.41	No Role, no Gender
Female	32.85	26.30	

   * $p < .05$

Since gender could not be evaluated by the SEM model, subsequent evaluations were done with the same MANOVA time series evaluations looking for role or gender differences for the following variables: Dyadic Adjustment, General Health, and Mental

Health.   As expected, there were significant differences for the patients' general health compared to the partners, but no differences for gender. There were differences by role for marital adjustment, with male and female partners having statistically less satisfaction than patients. There was an interaction for dyad by gender only for mental health p =.015 with female partners more negatively affected. (Table 14).   There were no differences between patients by gender nor between partners by gender.

All of the eight subscales for the SF-36 were also examined with MANOVA for gender differences, with only mental health having significant results for gender. The variables that were completed individually by one member of the dyad were also examined for gender differences by ANOVA: Finance, Distress from Pain, Intensity of Pain, Interference from Pain, Positive problem solving, Impulsiveness/carelessness and Avoidance. No significant differences for gender were found on any of the variables.

Outcomes

Quality of Life for Patient and Partner

The distress levels as measured by the POMS for the patient and partner were not significantly different from each other. The patients scored less on the subscales of the SF-36 compared to same age norms in every category (Table 15). The partners had more bodily pain than the norm (higher scores indicate no pain) when self-reporting on the SF-36, lesser scores on physical role, vitality, social functioning, emotional role and mental health, however, it is unknown if these are statistical differences.   Pain measures in the SEM model were completed by the patient. There was no direct effect for pain on the Partners' Quality of Life in the SEM model that was completed by the patients, although there was a correlation of distress from the patients' pain and the POMS for the partner.

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Table 14

Main Effects for Role and Gender for POMS, Dyadic Adjustment, General and Mental

Health of Patients and Partners

Source	SS	df	MS	F	P
		Within Subjects			
POMS					
Role	2190.268	1	2190.268	3.635	.058
Gender*Dyad	1678.268	1	1678.286	2.786	.097
Dyadic Adjustment					
Role	690.186	1	690.186	6.645	.011*
Gender*Dyad	51.564	1	51.564	.496	.482
General health					
Role	27973.230	1	27973.230	124.478	.000*
Gender*Dyad	47.863	1	47.863	.213	.645
Mental Health					
Role	2928.348	1	2928.348	9.968	.002*
Gender*Dyad	1770.924	1	1770.924	6.028	.015*
		Between Subjects			
POMS					
Gender	198.581	1	198.581	.162	.687
Dyadic Adjustment					
Gender	195.867	1	198.867	.522	.471
General Health					
Gender	6.978	1	6.978	0.18	.893
Mental Health					
Gender	529.965	1	529.965	1.161	.283

*p <.05

Table 15

Comparison of SF-36 Scores for Patient/Partner to Same Age Norms

Mean	PF	RP	BP	GH	VT	SF	RE	MH
Norm	76.24	73.66	67.51	64.62	60.37	81.37	80.26	75.01
Patient	34.86	15.25	38.62	51.82	31.53	48.52	50.85	67.95
Partner	77.60	71.61	55.63	69.69	56.04	79.52	72.69	69.69

(Physical Functioning (PF), Role Physical (RP). Bodily Pain (BP), General Health (GH),

Vitality (VT), Social Functioning (SF), Role Emotional (RE), and Mental Health (MH).)

Chapter Five

Discussion

The focus of this study was to examine cancer patients with pain and the role of partner relationships and partner coping style mediating the quality of life outcomes of the patient and partner. Chapter five discusses the findings, study limitations, conclusions, implications for nursing practice and education, and offers recommendations for future research.

Findings

Covariates

The strength of the study was that it included a wide range of cancer diagnoses, and both genders were represented as caregivers and patients. Fifty-five percent of the patients in the study were stable, whether under treatment, not under treatment or in remission. Prostate cancer with the highest number of new diagnoses per year (ACS, 2005), had only 4% of patients participate, possibly due to early intervention and cure, they did not require pain management, thus were not eligible for this study. The remaining 45% of the sample had progressive disease. This would imply a profound risk for a decrease in quality of life for half the patients and partners.

This study consisted of mostly white participants, and this limits ability to generalize to other ethic groups. The couples had similar education levels and age. Kenny (2006) says this is typical compositional effects that are to be expected with married couples in that couples tend to be similar in education level, age, and socioeconomic status. Aim 1,

question 1, examined covariates to be used in the model. Age and length of the

relationship were not found to be significant covariates influencing these participants.

Financial concerns were a major concern for partners and also affected the patients. The

significant standardized *B* coefficient for patients was -.13 and -.36 for partners. This

measure was completed by the partner and this may have influenced the results. Partners

probably feel more pressure financially with the uncertainty of having a loved one with

cancer, additional caregiving responsibilities and role adjustments. They may even

provide some protective buffering to patients, shielding patients in assuming more

financial burden. It is also possible that patients had changed their priorities, putting

financial concerns lower on the list. Even though the patients did not complete this

measure, it did show an effect on their quality of life through this model.

Gender was also a covariate that was identified. The original proposal stated the

intent to run the same model separately for male partners and female partners with

corresponding patients. Due to LISREL requirements of large sample sizes, the SEM

model was not suited to examine differences in gender. Gender differences were not

found in the results of the POMS, although the results approached (significance $p = .058$)

with the female patients having higher distress scores. There were significantly negative

scores for female partners on the mental health subscale compared to male partners. This

finding was consistent with the earlier covariate analysis done prior to designing the SEM

model, lending further support for the results. Mental health and the Profile of Mood

States are similar measures of mood and emotional distress. The POMS covers a wide

range of moods or emotions and gives insight into distress: anger-hostility,

depression/dejection, fatigue, vitality, confusion, and tension anxiety. The Mental health

subscale consists of only five items that give an overview of an introspective outlook on life: happy, peaceful, nervous, sad, and discouraged. Women partners were more discouraged and saddened than their male counterparts. Many of the studies that have been done were in younger women with breast cancer and their spouses, and older men with prostate cancer and their spouses.   Although there were inconclusive results demonstrating higher distress or impaired mental health well being, these results lend support to being more similar to other investigators' findings of females having higher distress whether patient or partner with a more balanced study of gender and role mix in a variety of cancer diagnoses and different stages (Baider et al., 1998; couper et al., 2007; Northouse, et al., 2000; Soloway, et al., 2004. This continues to be a variable that needs to be examined as proposed by Hagedoorn et al. (2008).

Mediators

Aim 1, questions 2 through 4 addressed the relationship quality as a mediator of financial concerns and vulnerability. Financial concerns did have an effect directly on both the patient and partner, but interestingly, it did not have a significant effect on the relationship quality. This pertinent negative finding is supportive in that even though this is a significant stressor for the couple, it did not significantly affect their relationship. Financial concerns have been cited to be a major problem for marriages and a cause for divorce (Karney, Story & Bradbury, 2005).

Vulnerability from pain had a significant negative effect on the patients' quality of life. There was no direct effect on the partners' quality of life. The relationship quality did mediate the patients' quality of life positively, despite the stress. The relationship had a direct positive effect on Quality of Life of both members of the couples and this is in

spite of disease progression and pain for 50% of the dyads. Because both members of the dyad were together when they were approached, there was open communication and cohesion even during the enrollment in the study. Several members commented that the questionnaires once completed, actually gave them stimulus for discussion. Even though partners had less satisfaction with the relationship, perhaps this was influenced by changes the illness precipitated in their own lives, the patients continued to feel support. The patient and partner mean scores were slightly higher on the DAS (mean 119 to 123) compared to scores reported in previous studies of cancer couples (mean 108 to 120) (Northouse, 1998; Manne, 1999; Solomon, 2004). Spanier (1976), who developed the Dyadic Adjustment Scale, found that mean scores for divorced persons was 70.7 and married was 114.8. Examination of the individuals with low scores in this present study provided no clear patterns with respect to pain score, age, education, disease, stage of treatment, or coping styles. With all the stress these cancer patients and partners had, for most, their relationships seemed to remain strong and supportive, a positive influence on quality of life for most couples.

Partners did have more bodily pain when self-reporting on the SF-36 compared to the norm for their age groups. The responsibilities of caregiving could have been more physically demanding than a general population would feel. They could be lifting more, carrying more, or just the amount of increased workload could have induced muscle strain and discomfort. Or, perhaps, there was some crossover of pain through empathy that was not captured in the SEM model.

Aim 2, questions 1 through 3 addressed the mediation by the partners' coping style when a couple is challenged with a patient having a diagnosis of cancer and pain. The

couple was also vulnerable from the financial concerns. There were no significant

pathways to coping from the stressors, thus, no evidence of mediation by coping. There

was no evidence of a crossover or transmittal of dyadic coping from the SEM model.

The partners' coping scores were generally more positive than negative and did affect

their own quality of life positively.   The results show there was no direct effect of the

partners' coping on the patients' quality of life directly. There were significant positive

and negative correlations between coping styles and the relationship quality. The two

theories of dyadic coping address that there is a crossover of coping as a systemic-

transaction, or the alternative hypothesis that individuals examine their partners'

strategies and then initiate their own responses to preserve relationship satisfaction in

dealing with stressors, depending on the relationship commitment. Transaction was not

demonstrated by this model.   Coping was related to the quality of the relationship, so

when the partner perceived stress, perhaps they acted through the relationship to reassure

the patient and have a positive effect on both members' quality of life. The coping

instrument was completed only by the partner and addressed items as 'I' rather than 'we',

so this may have influenced the outcome.   However, financial concerns did reflect the

patients' QOL even though it was completed by the partner. Not having a dyadic coping

measure or at least coping measures from both patient and partner may have influenced

these results. Intuitively, one would think that a partner's coping style would affect the

patients' outcomes, including pain management strategies that frequently require input

from another. In retrospect, the correlations for the stressors and coping were minimal

with only financial concerns weakly correlated. Coping probably could have been

determined as a non-mediator when examining the initial correlations.

These partner's had higher means on positive coping (mean 12.27 SD 3.74)

compared to other studies (mean 13.22 SD 3.57). They had lower scores on negative

coping indicated by the Negative Problems Solving subscale (mean 8.08 SD 6.36)

compared to (mean 10.14 SD 6.55), Impulsive-carelessness subscales (mean 7.17 SD

5.09) compared to earlier research (mean 8.86 SD 6.85) and Avoidance subscale (mean

4.70 SD 3.77) compared to earlier results (6.23 SD 4.97) (Ko, 2005).

It may also be possible that individuals who have more positive coping strategies

have better quality relationships. One of the limitations identified earlier in the study was

that these participants used more positive coping styles by the nature of self-selection for

the study. This may also have influenced the evaluation of coping style as a mediator. If

the partners' had higher negative coping skills, they may have had a negative effect on

the relationship and indirectly on the patient.

Outcomes

The distress levels as measured by the POMS for the patient and partner were not

significantly different from each other, but are higher for the patient than scores reported

in previous studies of couples (Banthia, 2003; Ko, 2005). The patient scores on the

POMS were (mean 29.89 SD 30.74) compared to other studies (mean 17.15 SD 33.22)

while the partners scores were slightly lower (mean 25.08 SD 29.67) compared to other

studies (mean 26.70 SD 37.04) (Ko, 2005). These differences suggest patients' distress

was affected by the symptom pain.

Distress, general health, and mental health indicators exhibited a decrease in their

quality of life from pain and cancer, particularly for the patient, but there was a positive

effect from the relationship. The POMS, and the SF-36 as measures of quality of life

show that cancer has impacted patients' health in all the subscales, although the patients

mental health was not as different from the norm despite great physical and role

impairment. Having a partner that has cancer did show a slight general decline in most of

the SF-36 subscales, but the partners' own general health mean was actually higher than

the norm. This may be a relative perception for the partners' self-evaluations when their

frame of reference may have been influenced by close proximity to an ill person.

Perhaps, since the marital relationships were generally strong and these were positive

copers, they found meaning and satisfaction in caring for the patients, despite the greater

burden.

<div align="center">*Limitations*</div>

This study was a secondary analysis (Glass, 1976) of dyads using baseline data

from patients and their partners from a large intervention study supported by the National

Institutes of Health (5R01NR 008270). This analysis was limited to the existing data that

had already been collected. The participants used self-report and some of the couples

may have completed their questionnaire with their partners present. The use of self-

report instruments is a known limitation bias in many research studies.

Dyadic coping instruments were not collected from the dyad, only the partner and

addressed the individual, not the couple as a unit. This construct was theoretically

inferred as a crossover from the self-report of the partner's problem-solving style, but not

supported in this study, a problem identified in the original proposal, but explored in

theory.

The original proposal included the use of the Physical and Mental Component

Scores in the SEM model rather than the General and Mental health subscales that were

utilized in the study. In a factor analysis completed by Bucholz, Krol, Rist, Nieuwkerk & Schippers (2008), there was overlap between role-physical and role-emotional on the separate component scores. Perhaps these correlations between factors contributed to poorer lambda loadings in the SEM model that attempted to use the component scores.

Couples who agreed to participate in this study had distress and pain that they actively sought to lessen by enrolling is this study. This was evidenced by the distress measured by the POMS scores for patients. By choosing to enroll in this study there was a bias toward individuals who use positive coping strategies to lessen distress.

The study may also have been biased because by agreeing to participate in the study, the participants had fairly good marital or dyadic relationships since they were hoping to improve their partners' pain. Because the patients had a diagnosis of cancer and many had progressive disease, comparison of patients' and partner s' physical and mental or emotional health outcomes were expected to differ but were still appropriate variables to study. This was a cross-sectional study that examined only one episode in time where the processes that were examined are constantly ongoing and changing. The sample included limited diversity due to eligibility criteria and requirements of being able to read and write English.

A pain score of at least a 3 on a scale of 0 to 10 was part of the inclusion criteria. One patient was accrued in the study who had a score of 1 and two participants had a score of 2 at the time of enrollment. Although these patients should not have been eligible according to strict criteria, they were retained. These dyads were enrolled earlier in the study when the patients were recruited as outpatients in the Pain and Palliative Care Clinic. These three patients all wished to eliminate or decrease their pain scores to

lower levels, so even though they did not indicate higher pain scores, their lives were affected by pain, thus they were included in the study.

Recommendations and Conclusions

Health care providers need to be aware of the both patients and partners when caring for patients if they are in committed relationships. Shamley and Cross (1982) performed a factor analysis of the Dyadic Adjustment Scale and have recommended a shortened version that consists of 6 items. Even more applicable to clinical practice, they report that using the global single item that asks for degrees of happiness with the relationship ranked on a Likert-type scale is sufficient for quick screening (Sharpley & Cross).

In this sample of strong marital relationships, the relationship quality had a positive effect on both the patients' and partners' QOL and mediated the stressor, cancer pain. It is possible that patients who are single or in low quality marital relationships may have even greater negative impacts on their quality of life, distress, general and mental health and their partners' influence may impact them negatively. Further research is needed comparing single patients with dyads.

Future studies need to continue to explore dyadic research despite the difficulties with enrollment, and large sample sizes required for data analysis. People do not live in isolation and are greatly influenced by their social environments. In particular, when examining concepts that are paramount to cancer patients, such as love, uncertainty, meaning of life, body image, and changing role status, the influence of intimate partners and close friends has great potential to influence quality of life outcomes. There should be relationship studies that include a greater proportion of the different racial and cultural concerns that were lacking in this study.

Some constructs for this study were completed by the patient, some by the partner and some by both patient and partner. SEM was still the appropriate choice of analysis (D.A. Kenney, personal communication, October 3, 2008). Despite the limitation of a coping measure by only one member of the dyad, the findings of positive influences of a good quality, committed, intimate relationship and the quality of life comparisons for patients and partners was a worthwhile study. These outcomes comparing the patient, partner and same age norms was also informative, though not a statistical analysis used in this study.

For future research, dyadic coping and dyadic relationships should be explored in quality of life outcome research. With the advent of personalized health care, that includes genetic testing and targeted therapies, there are even more implications for potential quality of life issues and decisions confronting committed partners and their children.

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About the Author

Mary Ann Morgan received a Bachelor of Science of Nursing Degree from the University of Maryland, Baltimore, Maryland in 1974, a Masters of Nursing from Louisiana State University Medical Center, New Orleans, Louisiana in 1988, and a Post-Masters' Family Nurse Practitioner Certificate from the University of South Florida, Tampa, Florida in 2002. She has worked as a staff nurse, clinical manager, research assistant on an RO1, NIH funded study and is currently a nurse practitioner at Moffitt Cancer Center.

She is an active member of the Oncology Nursing Society (ONS) and is currently the treasurer for the local chapter. She has had abstracts presented at the Southern Nursing Research Society, 4th Biennial Cancer Survivorship Conference, and the World Congress of International Union Against Cancer. She has manuscripts that have been accepted for publication in the *Oncology Nursing Forum* and *Clinical Journal of Nursing Oncology*.