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**Marital reciprocal support in the context of cancer**

**Douglass, Lillian Gearldian, Ph.D.**

**The University of Arizona, 1990**

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MARITAL RECIPROCAL SUPPORT IN  
THE CONTEXT OF CANCER

· by

Lillian Gearldian Douglass

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A Dissertation Submitted to the Faculty of the  
COLLEGE OF NURSING  
In Partial Fulfillment of the Requirements  
For the Degree of  
DOCTOR OF PHILOSOPHY  
In the Graduate College  
THE UNIVERSITY OF ARIZONA

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THE UNIVERSITY OF ARIZONA  
GRADUATE COLLEGE

As members of the Final Examination Committee, we certify that we have read  
the dissertation prepared by Lillian Gearldian Douglass  
entitled Marital Reciprocal Support in the Context of Cancer

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\_\_\_\_\_

and recommend that it be accepted as fulfilling the dissertation requirement  
for the Degree of Doctor of Philosophy.

Alice J. Longman  
Alice J. Longman, Ed.D.

5-21-90  
Date

Suzanne Van Ort  
Suzanne Van Ort, Ph.D.

5-31-90  
Date

Rose M. Gerben  
Rose M. Gerben, Ph.D.

5-31-90  
Date

Richard Boetzin  
Richard Boetzin, Ph.D.

5/31/90  
Date

Lee Sechrest  
Lee Sechrest, Ph.D.

5/31/90  
Date

Final approval and acceptance of this dissertation is contingent upon the  
candidate's submission of the final copy of the dissertation to the Graduate  
College.

I hereby certify that I have read this dissertation prepared under my  
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Alice J. Longman  
Dissertation Director

5-21-90  
Date

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A handwritten signature in cursive script, appearing to read "J. E. Glass", is written over a horizontal line. The signature is fluid and somewhat stylized, with a large initial "J" and a long, sweeping underline.

DEDICATION

FOR MOM

whose faith and love  
are a constant source of support

---

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## ABSTRACT

The purpose of this study was to examine the relationship between mutual spouse support and the psychological status of spouses whose mates were being treated for cancer. The conceptual framework was developed from a literature review in which empirical studies and interpersonal theories suggested the importance of social support to health promotion and maintenance in stressful life situations.

A descriptive cross-sectional correlational design was used. A convenience sample consisted of 146 individuals (73 couples) one of whom was being treated for cancer. Subjects completed adapted versions of Tilden's Interpersonal Relationships Inventory and Braden's Disease Course Graphic Scale, Rosenberg's Self-Esteem Scale, and the Center for Epidemiological Studies -- Depression Scale.

Study findings indicate that:

- 1) Well spouses perceived less support in the marital relationship than did spouses with cancer.
- 2) Well spouses' depression was lower and self-esteem higher when both spouses perceived high levels of interpersonal support.
- 3) When both spouses perceived low levels of interpersonal support depression was higher and self-esteem lower in the well spouse.

- 4) When one spouse perceived high and the other low levels of interpersonal support depression was higher and self-esteem lower in the well spouse.
- 5) Well spouses' self-esteem was higher when both spouses perceived high levels of marital reciprocal support.
- 6) When both spouses perceived low levels of marital reciprocal support self-esteem was lower in the well spouse.
- 7) When one spouse perceived high and the other low levels of marital reciprocal support self-esteem was lower in the well spouse.
- 8) The greater the absolute difference in dyadic perception of interpersonal support the greater the well spouses' depression.
- 9) The more well spouses perceived marital reciprocal support the higher was their self-esteem and lower their depression.

Research is needed that identifies whether health outcomes are better when spouses support each other than when the well spouse supports the patient without perceiving support in return. Results of this study provide a beginning point from which to pursue theory development, testing, and intervention studies to assist both spouses with optimal management of the cancer experience.

## CHAPTER I

### INTRODUCTION

Within the last decade the concept of social support has moved to the fore as an appealing, desirable and promising area of study (House & Kahn, 1985; Tilden, 1985; Wortman, 1984). Under the rubric of social support, several hundred research articles have been published in a number of fields, including nursing, behavioral medicine, and the behavioral sciences (Norbeck, 1988).

The notion of reciprocity is integral to the concept of social support (Cobb, 1976; Shumaker & Brownell, 1984; Tilden, 1985). Reciprocity refers to mutual responsiveness on the part of each individual involved in social exchanges or transactions (Cobb, 1976; Kahn & Antonucci, 1980). Failure to experience reciprocity due to limited resources, constraints of time or energy may result in the cessation of helping behaviors (Becker, 1986). The reciprocity aspect of social support is focal to this study and is examined in the context of married dyads, one member of whom has a cancer diagnosis. The relationship between marital reciprocal support (MRS) and the psychological status of the well spouse is central to the study.

Despite the plethora of social support literature, precise delineation of the parameters of any one conceptualization of support has failed to emerge. Lack of definitional clarity and consensus are issues in social support research. Dimond and Jones (1983) did a

comparative analysis of social support definitions developed by Cobb (1976), Mitchell (1969), and Weiss (1974). The strongest area of definitional agreement was "communication of positive" affect (Dimond & Jones, 1983, p. 238), an expression of warmth and caring toward another. The supported individual is accepted without judgment -- loved, respected, and validated as a worthwhile and credible human being. The second area of agreement concerned "social integration" (Dimond & Jones, p. 238) or social networks. Inclusion in networks conveys a sense of belonging, as well as, a legitimate and obligatory interpersonal sharing of resources and common experiences in time of need. The third area, "instrumental behavior" (Dimond & Jones, 1983, p. 238), for which there was less definitional consensus, referred to the receipt of material goods or tangible forms of assistance. Reciprocity, an element of supportive relationships, was the fourth area.

Interest in the social forces that impact health maintenance and promotion is traceable to 19th century sociology (Brownell & Shumacker, 1984; Patrick, Morgan & Charlton, 1986). Durkheim (1951), of that era, was a strong proponent of the existence of a relationship between health and environment. He proposed that "anomie" arises from social isolation precipitated by societal instability associated with change. According to Durkheim (1951), lack of inclusion in a socially supportive context jeopardizes the psychological health of individuals. Without an integrating context, they find it difficult to retain their social moorings. Individuals not only lose touch with people, but also with principles that guide social behavior and give it meaning. An apparent serious outcome of this socially disconnected existence is

suicide, which Durkheim (1951) found to be most prevalent among those who lacked close social ties.

Social support research focuses primarily on support as a moderator or buffer on the effects of life stress events on health and support as a direct or main effect in determining health status (Broadhead, Kaplan, James, Wagner, Schoenbach, Grimson, Heyden, Tibblin & Gehlbach, 1983; Cobb, 1976; House, Umberson & Landis, 1988; Kahn & Antonucci, 1980). The benefits of social ties on health and well-being are well documented; however, the underlying mechanism and its effect are not well understood (Gottlieb, 1983; House, et al., 1988; House & Kahn, 1985).

The most valid sources of social support are informal, natural, or nonprofessional (Caplan, 1974; House, 1981). These sources eliminate the need for professional services while "reducing stress, improving health, and buffering the impact of stress on health" (House, 1981, p. 24). Recognized informal support sources are family, friends, and co-workers (House, 1981). Family is a particularly significant source of support, and members tend to turn first to family in times of stress (Caplan, 1976; Korte, 1984). Support specifically provided through marital ties is also substantiated by empirical research (Kern & Turk, 1984; Maruta, Osborne, Swanson & Halling, 1981; Stetz, 1987). Therefore, it is not surprising to find that patients with chronic life-threatening illness, such as cancer, draw upon the supportive resources of family members in their management of this particular critical event.

Suspicion or confirmation of cancer is accompanied by severe stress that upsets the patient's psychological equilibrium (Greer, 1979). Diseases that are equally threatening to one's biological welfare and may not be as amenable to treatment, evoke less negative emotional responses in the patient than does cancer (Senescu, 1963; Weisman & Worden, 1976). Stress is also experienced by those who are closely related to the patient, especially spouses (Dunkel-Schetter, 1984; Stetz, 1987).

The impact of cancer on the psychosocial experience of individuals is well documented in the literature. Patients are likely to experience social isolation when significant others are uncomfortable in their presence. Family-member discomfort may be associated with fear of making inappropriate comments, contracting the disease, or being forced to face their own mortality (Spiegel, 1986). Heavy demands on the family occur at various stages of the disease trajectory, as ill members contend with anxiety and concerns about prognosis, treatment, and disease impact on their appearance or ability to function (Wortman & Dunkel-Schetter, 1979; Wortman, 1984). Besides stress associated with life threat, adjustment to changes in roles and financial demands evoke stress in patients and their significant others. The literature suggests that support which moderates the impact of these stressors promotes psychosocial functioning. Therefore, an investigation of mutual support available to spouses within the marital relationship may uncover an untapped resource that is related to improved psychological health and functioning for the well spouse and the spouse with cancer.

### Statement of the Problem

The American Cancer Society (1990) estimated that 1,040,000 individuals would develop, and 510,000 would die, of cancer in 1990. Approximately 40% of those contracting cancer in 1990 can expect to be alive in five years.

In conjunction with the biologically based treatment of the person with cancer, there is evidence of increasing concern for the psychosocial health of the patient. Weisman (1979) draws a parallel between tumor staging and psychosocial staging in cancer and contends that both are significant in treating patients with cancer. The wisdom of Weisman's position is reflected in the fact that, in spite of more effective treatment methods and extensive efforts to educate the public, a cancer diagnosis is a crisis event for the patient (Carol, 1981; Kaplan, 1983; Krouse & Krouse, 1982). McCorkle and Quint-Benoliel (1983) view cancer as a "catastrophic experience" (p. 431), owing to the major life changes associated with it. The optimism inherent in the slogan "Cancer can be beaten" is tempered for those who retain the belief that the ultimate outcome of cancer is a painful death. Fiore (1979), Greer (1979), and Welch-McCaffrey (1985) observed that a dismal outcome characterizes the thinking of many cancer patients. The dread of cancer may appear exaggerated in light of advances in treatment and improved survival rates. Nonetheless, many patients with cancer are confronted by such frightful possibilities "as debilitating illness, pain, disfigurement, loss of physiological function and death" (Greer, 1979, p. 174).

The literature repeatedly indicates that the burden of long-term illness is also simultaneously borne by families of the patient. Chronic illness, as exemplified by cancer, is an undeniable hardship for the patient. Foxall, et al. (1985), however, assert that learning to live with a chronically ill person is tantamount to learning to live with the pathological condition. They also posit that the family response to chronic illness has an impact on efficacy in health matters and ongoing life quality. Families are subjected to a severe acute threat to their psychosocial and physical well-being when a family member has cancer (McCorkle & Quint-Benoliel, 1983).

In marital dyads where one spouse has cancer the well spouse tends to assume a supportive role toward the patient. Demands on the well spouse's resources can be expected to vary with the patient's psychosocial and physical functioning level over the course of the disease (Stetz, 1987). Besides the stress of heavy physical demands and witnessing the gradual demise of a loved one in the advanced stages of disease, finances can be of considerable concern to the well spouse. Insurance reimbursement policies and the high cost of health care affect an individual's ability to afford extended institutional health care services (McNaull, 1981; Parker, 1989; Stetz, 1987). Those unable to afford insurance are in more serious straits. The diagnostic-related group (DRG) prospective system of hospital reimbursement mandates that hospitals admit patients for elective treatment at the latest possible moment and discharge them as early as possible in their convalescent period (DiVestea, 1985). Consequently, the family support system may

increasingly play a major role in the care of ill members during the early and late stages of the disease.

The importance of caregiver contributions to the physical and psychosocial health of ill family members raises a question about positive contributions made by ill persons to their caregivers' psychological health status. Despite the substantial volume of social support literature, little focuses specifically on the reciprocity component of social support (Tilden, 1985). The literature's predominantly unidirectional social support focus is surprising, given the conceptualization of socially supportive relationships as a two way process of sharing resources (Albrecht & Adelman, 1987; Cobb, 1976; Kahn & Antonucci, 1980). In addition, the supportive behaviors most often studied flow from the significant other toward the individual who directly experiences the disruptive or stressful event.

A dearth of nursing research is particularly evident in the area of reciprocal support between spouses in dyadic relationships. Only one study was found that suggested marital reciprocal support in an illness context (Northouse, 1988). The principal focus of that study was not reciprocity. Adjustment of the husband to the wife's breast cancer was associated with support from a variety of sources, including the wife, who in turn perceived her husband to be supportive (Northouse, 1988).

The study of marital reciprocal support in conjunction with its impact on the health of the well spouse is timely and appropriate for nurses. The well spouse may have his or her usual roles extended to include the provision of vital emotional and/or physical support

to the patient with cancer. Caregiving demands may become excessive and prolonged due to improved survival rates and the nature of the therapeutic methods necessary to sustain them. Based upon literature related to well-being in the recipients of support, it is logical to suspect that support exchanged within the marital relationship may bolster the caregiver spouse in terms of health, quality of life, and ability to care. Studies investigating congruence between behavioral traits of families and infants suggested that interaction and mutual adjustment outcomes may be significantly compromised by incongruent demands and expectations existing between the two parties (French, Rogers & Cobb, 1974; Mueller, 1980; Sprunger, Boyce & Gaines, 1985). A lack of congruence between the perceptions of support given and received between spouses might also be deleterious to the psychological status of both spouses. It is therefore feasible to conduct a study to examine the relationship between marital reciprocal support and psychological health outcomes.

#### Purpose of the Study

The purpose of this study was to describe the relationship between marital reciprocal support and the psychological status of the spouse whose mate has cancer. The following research questions addressed this purpose statement:

1. Do the well and ill spouse perceive marital reciprocal support as equal (congruent) or unequal (incongruent)?
2. Is the interpersonal support perceived by the well and ill spouse equal (congruent) or unequal (incongruent)?

3. If well and ill spouses differ in the level of perceived marital reciprocal or interpersonal support, how does that difference relate to the psychological status of the well spouse?
4. What is the relationship between congruence in dyad perception of marital reciprocal support and the psychological status of the well spouse?
5. What is the relationship between congruence in dyad perception of interpersonal support and the psychological status of the well spouse?
6. What relationship exists between the well spouse's psychological status and selected variables?

#### Significance to Nursing

Kaplan (1982) asserts that failure to extend professional care beyond a seriously ill patient to their close family members may permanently disrupt or even destroy the stress-buffering role a family is expected to provide for its members. Nursing seeks to assist both patients and families to optimize their health potential over their life span. The prevalence of cancer and its potentially devastating impact on the patient and his or her spouse justifies an investigation of natural, stress-moderating resources that have the potential to protect the psychosocial health of either spouse.

Research that emphasizes the patient as the sole recipient of support potentially overlooks a significant health-promotion resource for family members. Moreover, a more complete examination of the role

of social support in health promotion is possible when research designs address the mutual dimension of support.

If found, a significant relationship between marital reciprocal support (MRS) and the psychological status of the well spouse would influence future research, theory building, and testing. When generated and tested, theory provides nurses with a scientific basis for anticipating needs and formulating interventions at various stages of both spouses' experience with cancer. If MRS congruence is significantly related to psychological status, mutual spouse support may be stronger than support from either spouse alone in determining health outcomes. Nurses would then need to consider MRS congruence in family functioning assessments, while noting constraints on either spouse's capacity to reciprocate. In the event that a couple was at risk regarding MRS, efforts could be made by nurses to help spouses understand their own and their mate's needs so that each might interact in mutually supportive ways. Based on tested and confirmed theory, one focus of nursing intervention would be those behaviors that influence support congruence, rather than each spouse's support separately. Antecedents identified as affecting MRS congruence would become a particular target for intervention. Any resulting MRS congruence could be expected to play a part in the maintenance and promotion of psychological health status. Should the psychological status of either spouse suffer from persistent perceptions of support incongruence within the marital relationship, the nurse might explore supplemental or "surrogate support" (Norbeck, 1988) sources with that spouse. The importance of supplemental support

is suggested by the apparent link between depression and low support experienced by long-term caregivers to mentally impaired elders (Baillie, Norbeck & Barnes, 1988). Supplemental support may come from the couple's family, friends, informal community support groups, and from nursing and other professional disciplines.

#### Summary

This chapter included a discussion of social support in the context of marriage relationships where one spouse has cancer. Earlier social support research failed to specifically address the reciprocity component and its impact on the psychological status of the well spouse. Justification for research in this area is based on a dearth of research, the prevalence of cancer, the impact of cancer on the patient's family, and the commitment of nursing to include the family within its scope of care.

Chapter Two includes the conceptual framework and related literature review. Subsequent chapters describe the research design, analysis, and discussion of findings.

## CHAPTER II

### CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

This chapter discusses the conceptual framework of the study and relevant social support literature. Concepts within the framework are defined as seen in Table 1. Relationships among concepts and extraneous variables are also addressed in this chapter.

#### Conceptual Framework

The conceptual framework depicted in Figure 1 is first discussed in terms of its theoretical underpinnings and then its structural parameters. The framework reflects two theoretical perspectives, symbolic interactionism and social support, as a stress buffer. Symbolic interactionism is theoretically linked to marital transactions, and social support to marital reciprocal support (MRS) and interpersonal support.

#### Theoretical Underpinnings

The marital dyad and support foci of the study justify the use of a conceptual framework based on social interaction theory. The founding of the symbolic interactionist tradition, attributed to the social psychologist George Herbert Mead is anchored in the notions of "human groups or societies, social interaction, the human being as actor, human action, and the interconnection of lines of action" (Blumer, 1972, p. 70).

Table 1. Definitions of Conceptual Concepts in the Framework

Concepts	Conceptual Definitions
Marital Transactions	Favorable or non-favorable exchanges that arise spontaneously between interacting spouses (Rook & Dooley, 1985).
Interpersonal Support	"..interpersonal transactions that include one or more of the following key elements: affect, affirmation and aid" (Kahn & Antonucci, 1980, p. 267), and that are perceived to be helpful.
Marital Reciprocal Support	Spouse perceptions that helpful psychological or tangible goods and services (resources) have been given and received or are available for exchange through the marital relationship (Kahn & Antonucci, 1980; Tilden, personal communication, 1988).
Severity of Illness	Level of infliction due to characteristics of the cancer disease course (Braden, 1989) as perceived by the well spouse.
Psychological Status of the Healthy Spouse	Self-perceived state of the emotional health of the spouse without cancer.

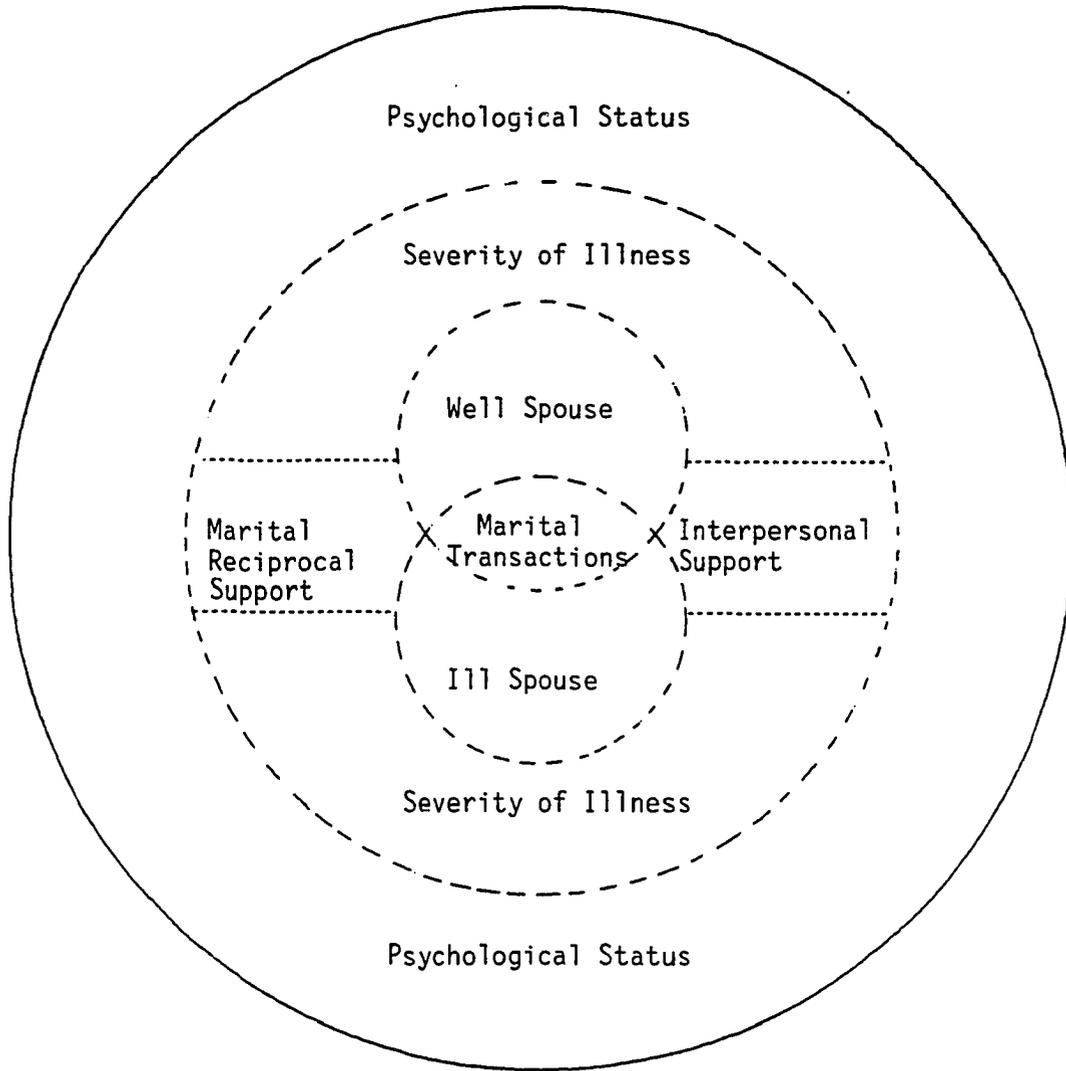


Figure 1. Conceptual Framework: Perceived Marital Reciprocal Support in the Context of Cancer

Symbolic interactionism may be regarded as a conversation of verbal and nonverbal gestures (Mead, 1934). Actors engaged in social processes rely on the interaction of symbols for self expression. Actors receive and interpret messages delimit situations, anticipate actions of others, devise plans, determine decisions, and revise plans based on the receipt of new information (Blumer, 1972). As a result of judgments reflected by significant others in interactional contexts individuals also acquire self-awareness and a notion of self-worth (Schellenberg, 1978). Fulfillment of an expected social response can give rise to a personal sense of pride and a failed response to self-criticism (Mead, 1934).

Three basic premises anchor symbolic interactionism (Blumer, 1972). The first premise is that humans relate to physical, social, and abstract objects on the basis of meanings that these objects hold for them. A chair, human being, honesty, or a daily life situation all qualify as environmental objects. The second premise is that meanings of objects are generated through social interactions with fellow human beings. The ways that others act toward a person, relative to objects, give rise to the meaning the object acquires for that person. The third premise states that meanings are managed and altered through a process of intra- and interpersonal interpretation used by individuals to deal with environmental objects. Meanings are therefore seen to derive from interactional processes in which individuals take into account the things others are saying and doing. The meaning ascribed to another's behavior is achieved in part through selecting, checking, suspending, regrouping and transforming meaning according

to the situational context in which actors find themselves (Blumer, 1972).

McCall and Simmons (1978) argue that each actor modifies the other's behavior in ways which permit the interaction to persist without marked cost to either actor. Moreover, in interpersonal communication the unique identity, goals and problems of each person in the interaction must be considered by the other party. If neither party feels disadvantaged by the benefit gained by the other, interaction is fostered.

The symbolic interactionist perspective applies in this study. A cancer diagnosis involving one spouse introduces a novel object or stressor, to be managed largely within the marital relationship. As the spouses use symbols in the process of action, reaction, interaction and transaction, the meaning of the cancer experience emerges for both of them. The derived meaning leads to interpretations that may be used in problem-solving approaches and management of the cancer experience. Spouse perceptions of each other, consisting of worth, needs, attractiveness, or burden, can also be generated through symbolic interaction. One spouse's perception of the other's attitude toward and treatment of him or her orients the focal spouse to his/her status in the relationship (Vanfossen, 1986).

Perceptions and interactional behaviors would be partially influenced by past and/or present identity, goals, and problems that each spouse perceives. Interactional behaviors that do not simultaneously address concerns of either spouse can threaten the adequacy of the relationship (McCall & Simmons, 1978), and hence social support.

The more congruent that symbolic meaning is between spouses, the better each party understands the other (Blumer, 1972), which is fundamental to supportive behavior.

The literature suggests that social support is both a byproduct of interpersonal relationships and predicated upon them (Gottlieb, 1983). As such uncertainty is "reduced about the self, the other or the relationship", a sense of competence in life situations is enhanced (Albrecht & Adelman, 1987, p. 18), and health and well-being are promoted (Cobb, 1976). The significance of the association between supportive relationships and health is captured by symbolic interactionist tradition and reflected in the statement, "all living organisms are bound up in a general social environment or situation, in a complex of social interrelationships and interactions upon which their continued existence depends" (Mead, 1934, p. 238).

The second theoretical perspective, support as a stress buffer underlies most social support research (Berkman & Syme, 1979; Bloom, 1982; Cassel, 1976; Dean & Lin, 1977; Wethington & Kessler, 1986). This perspective proposes a moderating effect of social support upon stress, which in turn fosters positive outcomes for the distressed individual (Norbeck, 1988). The fundamental relationships among the theoretical concepts, suggested by empirical research, are that social support is negatively related to stress, positively related to health, and a buffer between stress and health (Norbeck, 1988).

### Structure of the Framework

The structural components of the MRS conceptual framework (Figure 1) correspond to essential concepts in the theories of symbolic interactionism or support as a stress buffer. Transactions (marital) are present in the former theory: marital reciprocal support (social support), severity of illness (stress), and psychological status of the well spouse (health outcomes) are present in the latter.

Perforations in the structural boundaries of Figure 1 symbolize the openness of variables in associating with other variables. Two interlocking circles are central to the structure and symbolize interdependent spouses in the marital dyad. The area between the overlapping boundaries of the circles represents transactions between interacting spouses. Spouse perceptions of interpersonal support and marital reciprocal support emerge through marital transactions. Severity of illness is a stressor inherent in the current life situation of both the ill and well spouse. The stressor is related to the spouses, their interactional behavior, perceptions, and the psychological status of the well spouse.

The conceptual framework depicts an exploration of the relationships among severity of illness as perceived by the well spouse, spouse perceptions of marital reciprocal support, and the psychological status of the well spouse.

### Social Support

Social support within which reciprocity is conceptualized is presented as background to a subsequent discussion of marital reciprocal

support. In this study, social support was defined as "interpersonal transactions that include one or more of the following key elements: affect, affirmation, and aid" (Kahn & Antonucci, 1980, p. 267). The concept was operationalized by Tilden's Interpersonal Relationships Inventory (IPRI) subscale, Interpersonal Support (IPS). The subscale was adapted for this study. The importance of social contact with significant others has been suggested since antiquity as exemplified in "it is not good that man should be alone" (Scofield, 1967) and a companion was subsequently created for Adam. One can infer from Durkheim's (1951) work that the exclusion of the individual from a supportive social milieu increases risk to life.

The origin, prevention, and consequences of communal attachment breakdown, addressed by Durkheim (1951) are suggested by the work of Caplan (1974, 1976), Cassel (1976) and Cobb (1976). The latter three authors based their theoretical positions regarding the role of social ties in health promotion on extensive critical reviews of the empirical literature. Cassel (1976) suggested that the strength of an individual's significant social supports in primary relationships and the availability of relevant feedback, contributed to resistance to disease-producing stressors. Caplan (1974) proposed that the stress-buffering potential of support is mediated through patterns of spontaneous, continuous, or episodic ties in time of need or crisis. Furthermore, emotional burdens can be mastered and lightened through supportive subgroup ties. Based upon the potential health-protection role of social support, Cobb (1976) advocated that the giving and receiving of support should be taught by health professionals to the sick and the well.

Kin, or family, are a particularly significant source of support (Douglass, 1974; Korte, 1984). Mutuality and expressive functions of the family are considered the principal assets which afford, "support, affection, security and response" (Dean & Lin, 1977, p. 407). Caplan (1974) values family as a:

..haven for rest and recuperation...a group in which each member has the possibility of being understood and dealt with as his own unique self and in which his idiosyncratic needs are recognized, respected, and satisfied to the degree that it is possible within the limits of available resources (p. 28).

The significance of a family context is affirmed in Litman's (1966) exploratory study of 100 orthopedically disabled patients engaged in rehabilitative therapy. The study revealed that subjects tended to look to immediate family members for comfort and encouragement, which they did receive. Seventy-five percent of Litman's subjects cited family as their "primary source of strength and assurance" (p. 215) while in therapy. In addition, family-oriented reasons were most frequently given for subject persistence in regaining wellness and surmounting treatment difficulties.

The literature also suggests the significance of the spouse in times of need (Gove, Hughs & Style, 1983; Shultz & Rau, 1985). Trust and intimate exchange, apparently basic to emotional forms of support, are most likely found in primary relationships such as marriage. From their research with 50 married patients in treatment for chronic pain management, Maruta, Osborne, Swanson and Halling (1981) concluded that spouses who participate actively in and discuss their feelings as needed play a crucial role in the treatment of patients

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with long-term pain. In another study of 30 marital dyads in which the husband had chronic pain, patient ratings of wife support and wife ratings of her own supportiveness to the husband were obtained. Wife support, as measured by reports of a "helpful attitude, attentiveness, concern and lack of a negative or critical attitude, "had a slight inverse relationship with pain level and depression in husbands (Kerns & Turk, 1984, p. 851).

#### Social Support Issues

Despite the rapid proliferation of research over the past two decades, conceptual, theoretical and methodological issues confront the social support field. Consensus regarding the conceptualization of social support is not apparent (Broadhead, et al., 1983; Brown, 1986; Depner, Wethington & Ingersoll-Dayton, 1984; Sarasan & Sarasan, 1983; Tilden, 1985), although commonalities exist among selected definitions (Lindsey, Norbeck, Carrieri & Perry, 1981). The absence of an integrated theory negates the possibility of standardizing measurements and comparing research findings (Lin, Woelfel & Light, 1985). Further issues relate to what constitutes support (Barrera, 1986; House, Umberson & Landis, 1988; Mitchell, 1969), determines it (Rook & Dooley, 1985), serves as indicators of it (House & Kahn, 1985; Wilcox, 1981), and the best approaches to measure it (House & Kahn, 1985). The following issues also need to be resolved: how social support functions to sustain health (main effect) or buffer stress (interactive effect) (Rook & Dooley, 1985; Thoits, 1982), and whether it has a negative or "dark side" (DiMatteo & Hays, 1981; Gottlieb,

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1983; Kane, 1988; Lenz, 1987; Pagel, Erdly & Becker, 1987; Shumaker & Brownell, 1984; Tilden, 1987).

In spite of the number of issues associated with social support investigations, continued research is warranted. First, there is general agreement that the social support concept is significantly related to an individual's ability to respond to potentially harmful life events and situations (Jacobson, 1986). Second, critical reviews of the social support literature (Barrera, 1986; Broadhead, Kaplan, James, Wagner, Schoenbach, Grimson, Heyden, Tibblin & Gehlbach, 1983; Dean & Lin, 1977; Norbeck, 1988; Rock, Green, Wise & Rock, 1984; Shumaker & Brownell, 1984; Thoits, 1982; Tilden, 1985, 1987) have served to not only identify issues, but provide direction and impetus toward issue resolution. Progress is being made in refining social support in terms of conceptual and operational definitions (Gottlieb, 1981). Social support instruments have also improved substantially (Barrera & Balls, 1983). The need for systematic instrument development, complete with detailed psychometric properties, is being addressed in the excellent work of several social support researchers, such as Barrera, Sandler and Ramsay (1981), Norbeck (1988), McFarlane, Neal, Norman, Roy and Steiner (1981), Procidano and Heller (1983), Tilden (1985) and Weinert (1987). Improved instruments will accelerate legitimate movement toward longitudinal designs, with their causal inference potential. The majority of research designs are correlational and cross-sectional. These designs should now only be used where new concepts or approaches are under investigation (Norbeck, 1988).

## Reciprocity

In the literature, reciprocity is considered integral to, or a "subfacet" (Tilden, 1985, p. 203), of social support. For example, Kahn and Antonucci (1980) refer to social support as a resource given and received within a personal network. Cobb (1976) couches his definition of social support in terms of a communication network characterized by "mutual obligation" (p. 300). Central to Shumaker and Brownell's (1984) definition of social support is resource exchange between a minimum of two persons.

Reciprocity denotes mutual responsiveness in formal or informal relationships, the essence of which is giving and receiving on the part of both parties in the particular exchange or transaction. Acts of love (Becker, 1986) and transactions of love, status, information, money, goals and services (Foa & Foa, 1980) are illustrative of exchanges or interpersonal transactions. Reciprocity is also exemplified in such simple daily exchanges as a smile for a smile, a greeting for a greeting, or an invitation to dine for a favor experienced (Befu, 1980). Befu asserts that a universal normative principle of reciprocity exists, and that individual behavior is to some extent governed by it. As a norm that entails moral obligation and virtue, individuals disposed to reciprocate should return good for good, not evil for evil. In addition, what is returned or given in restitution is fitting and proportional to that received (Becker, 1986).

An attractive feature of reciprocity is its psychological link with what is considered to be an essential good. For example, reciprocity is believed to foster equilibrium or balanced mutually productive

social interaction, self-esteem or worth associated with the ability to perform one's reciprocative role as expected by self and others, and reliable expectations. The latter permits the individual to confidently plan, choose, and perform intentions while assured of the behavior of those in the social context (Becker, 1986).

In social relationships, it is likely that unreciprocated helping behaviors will cease in time since the pleasure component generated by reciprocation is not sustained. Costs tend to be incurred when reciprocation of resources is limited due to scarcity and constraints on time or energy (Becker, 1986). Money is not usually the medium of exchange in social transactions, nor is the reciprocation necessarily immediate or in kind. Horowitz and Shindleman (1983) explored the influence of affection and reciprocity on the caregiving behavior of younger family members toward frail elders. The findings suggested that commitment to elder caregiving was influenced in part by the services given to the caregiver by the elder at an earlier point in time. Elders had made sacrifices, loaned money, helped with child care, shared their home, or given care in time of illness. Becker (1986) corroborates the finding that reciprocal support is not bound by time or kind of reciprocated behavior. He states that a son may return his mother's gifts with kind or obedient behaviors, or later by looking after her when she is old.

Becker (1986) argues that equity of exchange is desirable but not essential as long as participants view the exchange as balanced to their satisfaction. Equity in reciprocity was found to be especially important to working spouses of marital dyads. Imbalances resulted

in these wives experiencing a decreased sense of mastery and increased depression (Vanfossen, 1986).

The notion that mutual contribution in primary relationships is a need and/or expectation is extended by DiMatteo and Hays (1981) to situations where a family member is ill. These authors state that the support received from an ill member may affect the extent to which the family member is supportive. DiMatteo and Hays (1981) advocate that an attempt be made by the ill member to return emotional gratification to those from whom he or she receives support. The ill member's contribution is apparently significant, even though limited to expressions of understanding, gratitude or encouragement (DiMatteo & Hayes, 1981).

Reciprocity can operate in the intense or intimate relationships found in some marriages. Primary relationships exemplified by marriage are unique for their "importance apart from instrumental benefit, endurance over time, and informal nature" (Pearlin, 1985, p. 45). Marital reciprocity is unlike that found in economic or superficial relationships, in which close or regular monitoring of exchanges can be expected to occur. Instead, the couple behaves in ways that promote mutually advantageous exchanges (Becker, 1986). Spouses might, however, take stock of reciprocated transactions retrospectively and on a sufficiently regular basis to avert hurtful imbalance leading to marital disharmony and strain. Becker notes that where love is operating in a marriage, accounting for each transaction could destroy the "obscure, spontaneous, and benevolent" (p. 186), nature of transactions associated with intimate relationships. Further, in intimate relationships

participants may be unable or unwilling to calculate transaction costs and rewards (McDonald, 1981).

Marriages characterized by mutual trust, intimacy, understanding, empathic communication or emotional gratification are most likely to be resistant to stress when concerns and problems arise (Pearlin, 1985; Wills, 1985). Much of the literature regarding reciprocal exchanges in marriage relationships attempts to show that the resources of each spouse and their distribution in the marital context influence the balance of power, costs, and rewards experienced by the couple. Marital quality, happiness, adjustment, and communication tend to be associated with the nature of the reciprocal exchanges in the relationship (Bagarozzi & Wodarski, 1977; Lewis & Spanier, 1982; Nye, 1982).

#### Psychosocial Aspects of Cancer

An extensive review of cancer-related statistics by Fobair and Cordoba (1982) attests to the magnitude and scope of cancer. Estimates placed new cases of cancer for the 1980s at 6,500,000, with 1,000,000 receiving treatment for the disease (Fobair & Cordoba, 1982). Given these figures, it is readily apparent that the number of persons affected directly and indirectly by cancer is "enormous" (Fobair & Cordoba, 1982). Roughly two out of three families are expected to experience cancer over the years. The preceding authors note that cancer is an important cause of death throughout the world and the second leading cause of death in industrialized countries. Of the various sites of cancer, malignancies with the highest incidence rates are lung and bronchus, colon-rectal, breast and prostate (Fobair & Cordoba, 1982).

The quest for the etiology of cancer has been long and arduous, implicating a variety of causal factors such as "environmental, genetic, and acquired causal agents" (Martin, 1982, p. 1). Much is known about the destructive physiological impact of cancer and the physical consequences of treatment on the organism (Fobair & Cordoba, 1982). Therapeutic modalities generated by scientific effort encompass "surgery, radiation and chemicals", which are used to eradicate or prevent the growth of cancer cells (Martin, 1982, p. 1).

From a medical perspective, Martin (1982) argues that psychosocial issues are equal to if not more complex than the biomedical assessment and management of cancer. Interest in the patient's ability to derive enjoyment and fulfillment, despite cancer, has increased, with an acknowledgement of the chronic nature of the disease and concern for the toll of treatment side effects. Interest is reflected in the psychosocial research focused on mediators that affect a patient's ability to adjust, cope, or adapt to changes imposed by the impact of cancer. Empirical research repeatedly suggests that social support, as a mediator, plays a significant role in adjustment to stressful life events (Ostrow, et al., 1986). Despite an inability to determine how social support achieves its effect, suggestions are that self-esteem is heightened as a result of being a part of a social network, or that social support may act as a buffer to modify the effects of life stress, respectively (Ostrow, et al., 1986).

The paucity of research linking cancer, social support, and the psychological health of family members warrants investigation. The need for research is particularly critical given family systems

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theory, which posits that illness in one family member resounds throughout the entire family structure (Northouse, 1984; Okun & Rappaport, 1980). Tringali (1988) cites literature addressing the role of family and significant others in the adjustment of patients with cancer. She asserts that statements abound in the nursing, sociological, and psychological literature regarding family contribution to patient stress reduction and health promotion in chronic illness such as cancer. Tringali (1988) observes, however, that attention to the needs of family is much less apparent. Research on the relationship of social support and husband adjustment in breast cancer is virtually nonexistent (Northouse, 1988). Northouse (1984) categorized problems encountered by family members during three phases of patient illness. In the first phase, a sense of isolation is experienced as staff focus on the patient, excluding family from access to care or participation in it. Further problems in phase one relate to obtaining information from staff, knowing how much to share with others, and dealing with emotional tensions. Phase two centers on problems, with adaptation to change in roles and lifestyles, attending to well family member needs, and uncertainty. Talking about death, serving as supportive caregiver and managing feelings of separation and loss characterize problems of the third and terminal phase.

The literature establishes the impact of chronic illness on the family unit as a whole. However, in life-threatening illness the spouse is particularly affected (Cozac, 1988). The supportive role of the spouse and/or costs are repeatedly cited. For example, spouses confronted by their mates' coronary bypass surgery responded by "putting

up a front, acting strong". They hid fears and fatigue that might prove upsetting to the patient if acknowledged, and undertook added roles and responsibilities (Cozac, 1988, p. 69). Vachon, Freeman, Formo, Rogers, Lyall and Freeman (1977) discovered that widows of mates with cancer maintained pretense out of love and concern that reality not upset him. In another study, the psychosocial effects of husbands' myocardial infarctions on wives were profound. In the first few weeks after discharge, wives experienced "anxiety, depression, fatigue, irritability, poor concentration and insomnia" as commonly and intensely as their husbands (Mayou, Foster & Williamson, 1978, p. 699). Mishel and Murdaugh (1987) investigated the adjustment of families of heart transplant patients. They determined that the dedicated partners were totally absorbed in the patient and protected, monitored, or substituted in various roles, leaving no time for personal consideration. Constant unpredictability, from diagnosis to recovery, challenged family resources; extreme levels of stress threatened family integrity. Northouse (1984) noted that meeting the needs of a family member with cancer sometimes caused family resentment and anger as their personal needs went unmet. She also found in her study of patient and husband adjustment to breast cancer (1989) that the distress levels of each spouse were not significantly different over time. Qualitative research by Vachon, et al. (1977) compared the perspectives of widows (n=73) of mates who had died of cancer with widows of mates who had other chronic ailments, particularly cardiovascular disease (n=51). The study revealed that widows who had lived with their mate's cancer over months or years experienced psychophysiological deterioration of their personal

health. In addition, widows of mates with cancer seemed to perceive more stress in dealing with that terminal illness than widows of mates with cardiovascular disease. Distress was related to helplessness in the face of pain, deterioration, and threat of death. These spouses were also distressed over anger toward the patient for being ill, attention the mate required, guilt feelings associated with the perception they were not giving their mate enough emotional support, and wishing death would intervene to terminate suffering for them both. The stress of living with a terminally ill spouse with cancer was perceived as greater than that of widowhood. Some spouses who used the time before death for increased intimacy did so at the expense of suffering, after the mate's death, a great void and sense of isolation from previously satisfying social network ties.

Numerous general and specific experiences and needs of spouses who provide social support to mates with cancer are documented in the literature. Stressors are multiple and related to life-threat, chronicity, unpredictable disease course (remissions, exacerbations), disease manifestations, treatment, role and lifestyle changes, family and professional communications, physical and financial burdens, personal health, and life after the mate's death (Chekryn, 1984; Gotay, 1984; Holing, 1986; Krant & Johnston, 1978; Leiber, Plumb, Gerstenzang & Holland, 1976; Oberst & James, 1985; Stetz, 1987; Wellisch, Jamison & Pasnau, 1978; Woods, 1989).

### Description of Concepts and Relationships

#### Severity of Illness

The diagnosis of cancer is a stressor (Bloom, 1982b) having the potential to create a variety of further stressors for the patient and those closest to him or her. In this study severity of illness is conceptualized as a stressor and is defined as level of infliction due to characteristics of the cancer disease course (Braden, 1989, 1990), as perceived by the well spouse. Severity of illness was operationalized with Braden's Disease Course Graphic Scale (DCGS), which was adapted for use with well spouses in this investigation. Stressors make mental, physical, and emotional demands on individuals (Schafer, 1978). The wear and tear experienced by the individual who is responding mentally, physically, and sometimes behaviorally to stressors is referred to as stress (Schafer, 1978; Selye, 1974, 1976). A stressor may be pleasant, intense, chronic, familiar or the converse, and arise from an individual's internal or external environment (Schafer, 1978).

Where an evaluation of the stressor suggests the likelihood of personal harm or loss and inadequate resources to deal with the demands of the situation, a sense of threat and psychological distress are probable (Lazarus, 1982; Lazarus & Folkman, 1984). Social support is considered an environmental coping resource in the stress-resource-coping model (Lazarus, 1982; Wheaton, 1985).

Cancer diagnosis precipitates a crisis, posing a need for major alterations in family circumstances (Kaplan, 1982). The psychological impact of cancer on family is compounded by multifaceted stressors.

These occur before and during diagnosis, as well as through treatment and rehabilitation (Baider & De-Nour, 1984). Cherished dreams, hopes, and values may need to be laid aside to accommodate these alterations (Kaplan, 1982). Family members may appraise change in lifestyle, new roles, protracted illness, patient prognosis, and financial demands as threat-provoking stressors. Fobair and Cordoba (1982) point out the stress impact of cancer costs for the patient and family. They attribute increases in overall family distress and psychosocial deterioration to financial burden. The threat of bankruptcy in obtaining the best patient care or in covering the cost of a protracted illness can have long-term, deleterious consequences for family members, whose needs have been sacrificed in the process. Based on the findings of the Stanford Leukemic Family Studies, Kaplan (1982) concluded that a "poverty of social supports within the nuclear family" (p. 225) and not moral or personality deficiencies resulted in the poor parental management of stress precipitated by leukemia in a child.

#### Marital Reciprocal Support (MRS)

MRS is defined as spousal perceptions that helpful psychological or tangible goods and services (resources) have been given and received, or are available for exchange through marital relationships in time of need (Kahn & Antonucci, 1980; Tilden, 1988). MRS is operationalized as the summated scores on Tilden's Interpersonal Relationships Inventory (IPRI) Reciprocity subscale. The subscale was adapted for this study.

No empirical research was found with a primary focus on mutually supportive behaviors of spouses and psychological outcomes for the

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spouse without cancer. This deficit was partially addressed through a qualitative pilot study (Douglass, 1988). The convenience sample consisted of six couples, including four with a spouse with breast or colorectal cancer. The spouse with colorectal cancer was male. Two couples were "healthy". Time since cancer diagnosis was one to five and one-half years. No subject with a diagnosis of cancer was receiving treatment at the time of the study. Couples in which one spouse had cancer ranged in age from 36 to 72 years, with a mean age of 64.25 years. Length of each couple's relationship ranged from two to 46 years, with a mean of 31 years. Spouses of the two healthy couples ranged in age from 24 to 31 years, with a mean age of 28 years. Length of relationship for the healthy couples ranged from two to eight years, with a mean of five years. All subjects were ambulatory and were interviewed in their home or a place convenient for them. A semi-structured questionnaire and interview were used to elicit spouse perceptions of supportiveness within the relationship, adequacy of support given and received, and the balance between support given and received.

Content analysis to elicit themes, categories and relationships indicated the presence and meaningfulness of MRS to the subjects. Spouses did not mention keeping track of their supportive behaviors vis-a-vis the other, although there were indications that each was aware of mutual contributions to supportiveness in the relationship. For example, when asked to comment on the equity of supportive contributions to the relationship, responses were: "Equal I hope; 60% spouse, 40% me; it balances out; or, he is less selfish than I am" (p. 24).

Spouses diagnosed with cancer recalled the influence of perceived support from their partner. It inspired confidence; motivation to try harder to succeed under difficult circumstances; self-love, self-respect, self-care, self-acceptance; and compliance with treatment regimens. Well spouses indicated that the supportiveness of their mate made a difference in the decisions they made, financial investments, and how they felt about themselves. Despite the limitations associated with self-report, recall of past events and sample size, the study strongly suggested that MRS was beneficial and even expected.

The notion and significance of reciprocity in primary relationships as observed in the pilot study were validated in the literature. Becker (1986) viewed reciprocity in intimate relationships as moral and normative; mutually advantageous; pleasurable; and variable in terms of kind or immediacy of reciprocation.

In an exploratory study of the adjustment of patient and spouse following cancer surgery, Oberst and James (1985) found that the spouse expressed a need to be included in care and to receive returns for contributing to it. Spouses indicated repeatedly in a variety of ways that no one understood what they were going through. The spouse, although progressively feeling worse while the patient was feeling better, received no commendations like the patient did. Besides feeling their needs were neglected, well spouses experienced a lack of appreciation from others, including the patient, for their helping contributions.

Northouse (1988) studied 50 mastectomy patients and their husbands at three and 30 days postoperatively. The purpose of the

study was to determine the relationship between social support of the husband and wife and their respective adjustment to mastectomy. A unique feature of the study by Northouse was an investigation of the husband's support and its relationship to his adjustment to mastectomy. Northouse (1988) found that empirical studies of social support and husband adjustment were virtually nonexistent in the literature. Her findings suggested the need to assess both patient and husband support, given the relationship between support and adjustment. Findings also revealed that husbands received as much support from the patients as patients received from their husbands. In contrast, Vanfossen's (1986) study of sex differences in social support and stress related to work, finances, and parenting revealed a small significant difference when comparing the amount of support each spouse reported receiving from the other. The concept Interpersonal Support is included under Social Support above.

#### Psychological Status

How well individuals accommodate to the cancer experience is commonly referred to in the literature as adjustment, coping, or adaptation. In this study the extent to which the well spouse was able to manage living in the context of the mate's cancer was assessed in terms of his or her psychological status.

Psychological status is defined as the emotional state of the spouse without cancer, as perceived by the individual. The concept was measured by Rosenberg's Self-Esteem Scale summated score and the Center for Epidemiological Studies--Depression (CES-D) scale summated score. Cohen's (1982) distinction between healthy and unhealthy

responses of patients to cancer served as a means to characterize "healthy" responses of family members to the cancer situation. For example, a "healthy" psychological status is fostered through behavioral responses to cancer that permit effective management of situational realities, and protect from overwhelming anxiety and other forms of emotional distress. A perception that a stressor is potentially harmful arouses such negative emotions as fear, anxiety, and anger (Lazarus & Folkman, 1984). Extreme emotional reactions interfere with the efficacy of thinking and performance (Lazarus, 1982). An unhealthy response to the cancer diagnosis is associated with self-defeating emotional responses and a decrease in life quality (Cohen, 1982).

#### Extraneous Variables

Extraneous variables thought to impact the study were determined from a review of social support-related literature. Extraneous variables may confound the relationship between independent and dependent variables unless controlled and analyzed for their influence. Controlled extraneous variables in a study enhance internal validity, or the extent to which confidence is placed in the independent variable as the cause of observed changes in the dependent variable (Polit & Hungler, 1989).

Two potentially confounding variables, spirituality and mastery, were not measured in this study due to a concern that numerous variables would increase error and reduce the power of statistical tests given the small sample size (Munro, Visintainer & Page, 1986). Potentially poor stamina of the ill spouses, and hence their ability to complete several instruments, was also a concern. Comments made by subjects

which suggested that these variables may be important in their management of the cancer experience were recorded.

Individuals faced with stressful events have reported benefit from drawing upon religious beliefs and practices at such times. In life-threatening illnesses, such as cancer prayer and religious beliefs were related to coping with the disease (Chekryn, 1984; Cozac, 1988; Gotay, 1984; Oberst & James, 1985). Fehring, Bremmam and Keller (1987) conducted studies to investigate the relationship between spirituality and the affective states of college students in response to life change. These researchers assert that there is some relationship between stress responses and spiritual phenomena. Caplan (1974) states that a religious person enmeshed in a local congregation is powerfully buffered against noxious stressors in the general population, especially in times of crisis. The importance of spirituality is not consistently reported in the literature. Reed (1986) compared religiousness in healthy and terminally ill subjects. She found an inverse relationship between religiousness and well-being for the ill group and a positive one for the well group. In their study of women with cancer and their mates, Oberst and James (1985) did not find that religious beliefs were mentioned frequently by couples when the stage of cancer was early.

Mastery is a personal resource that people may be able to draw on to counteract threatening events and objects in their environment (Pearlin & Schooler, 1978). Individuals who perceive that they have control over forces affecting their lives experience less distress than those who view personal life-chances as governed by fate (Pearlin

& Schooler, 1978). Lazarus and Launier (1978) argue that a conviction that resources needed to master a situation are lacking is likely to lead to feelings of threat, accompanied by anxiety. Vachon's (1986) study to compare the impact of breast cancer and bereavement determined that personality factors served as predictors of long-term outcomes. Her findings suggested that those who fared less well ultimately were probably lower in self-esteem and mastery. Mercer and Ferketich (1988) designed a study to test the effect of stress, social support, self-esteem and mastery on depression and anxiety during pregnancy. One finding was that in high-risk mates, an inverse relationship existed between both perceived support and sense of mastery and level of depression and anxiety. Generally speaking, results of studies indicate that where individuals perceive an ability to do something to improve the negative aspects of stressful experience, the better their affect and the more functional their behavior (Albrecht & Adelman, 1987). McFarlane, Norman, Streiner, Roy and Scott (1980) hypothesize that in the face of escalating stress, those who perceive themselves to be in control are less likely to experience demoralization.

Interpersonal conflict was the extraneous variable that was controlled through measurement in this study. It was conceptualized as perceived discord or stress in relationships caused by enacted behavior of others or the absence of it when needed (Tilden, personal communication, 1988). Interpersonal conflict was operationalized by the summated scores on Tilden's IPRI Interpersonal Conflict subscale (IPC) which was adapted for this study. The literature suggests that the more conflict is inherent in interpersonal relationships the less

likely the relationship will serve as a vehicle for supportive transactions. Dunkle-Schetter (1984) asserts that the presence of interpersonal problems will probably be a significant determinant of whether support is provided and if provided, how. Crawford (1985) reviewed studies where conflict existed in support networks during crisis situations. Study results provided some evidence for a relationship between network conflict and negative affect. Sandler and Barrera's (1984) study of the stress-buffering effects of support on college students revealed that conflict in support networks was positively related to psychological symptoms. The notion that social relationships are both beneficial and distressful or costly has received considerable attention in the literature (DiMatteo & Hays, 1981; Gottlieb, 1983; Nye & McLaughlin, 1982; Shinn, Lehmann & Wong, 1984). Relational costs, according to Tilden and Stewart (1985), include "the effort, energy, time, affiliation, or goods expended in establishing and maintaining important relationships" (p. 381).

#### Demographic Variables

A number of demographic variables with potential importance in social support research were mentioned in the literature. For example, Korte (1984) noted that the traditional view of urban centers as generally unresponsive to the formal and informal support needs of their members did not hold true. Higher levels of social support were found, however, among blacks than among whites. Dean and Lin (1977) identified socioeconomic status variables as education, employment and income. They found that instrumental variables (income, occupation, unemployment and job satisfaction) correlated with physical and

psychiatric illness. Sociodemographic variables that were found to correlate with illness included age, sex, and migration (Dean & Lin, 1977). House, Umberson and Landis (1988), as well as Turner and Noh (1983), acknowledge the significance of sociodemographic variables in social support research. House, Umberson and Landis (1988) state that these attributes are related to "differential exposure to structural barriers and opportunities in society" (p. 311). Society is structured in such a way that women are more likely to shoulder responsibility for providing support than males. House, Umberson and Landis (1988) provide evidence for this assertion in citing the caregiving roles of women in the home, with members in the social network, and in work situations such as nursing. Vaux's (1985) literature review comparing social support across groups also revealed that support availability and its effects varied according to the gender, ethnicity, and age of individuals. Vaux (1985) implicates cultural norms in variations of social support level since cultural norms dictate what is appropriate behavior for individuals of a "particular age, gender, socioeconomic status, or ethnicity" (p. 90). Vaux (1985) posits that the social support resources of females are superior to male peers and that females are also better at giving and receiving social support. Further, the greater amount of support that women receive than men may not reduce the amount of distress they report. Broadhead and his colleagues' (1983) findings from an extensive review of social support literature lead them to state the need to consider support sources as well as "role situational contexts" (p. 530). The context within which one spends the majority of time (home, work, hospital) may affect

the availability and meaningfulness of support. Kahn and Antonucci (1980) point out that social support in the form of attachment is a necessity throughout the life course, although type, source, quantity, and quality can be expected to change.

#### Summary

This chapter includes a description of the conceptual framework in terms of its theoretical underpinnings of symbolic interactionism and support as a stress buffer, as well as its structural parameters. Concepts are defined, and their relationships in the framework are also discussed. The framework is composed of four measurable concepts: marital reciprocal support, social support, severity of illness, and psychological status of the well spouse. The framework depicts an investigation of the relationship between marital reciprocal support when one spouse has cancer, and the psychological status of the healthy spouse. The concepts and their relationships are mainly based on theory rather than empirical evidence, owing to the lack of empirical studies reported in the literature.

## CHAPTER III

### METHODOLOGY

The procedural aspects of the study, research design, sample setting, protection of human subjects, instruments to operationalize the concepts, reliability and validity estimates of the instruments, data collection protocol, and analysis approaches are described in this chapter. Results of an instrument pilot test and limitations of this study are also addressed.

#### Research Design

The research method used in this study was a cross-sectional, non-experimental, correlational, descriptive design. Cross-sectional approaches entail the collection of data at one point in time. No consideration is given to changes (past or future) in the dependent variable that might occur over time (Brink & Wood, 1988; Polit & Hungler, 1989). The design permits an estimate of the magnitude and direction of the linear relationship between an outcome variable and one or more independent variables (Cohen & Cohen, 1983). Consequently, variance in the dependent variable can be assessed in terms of the unique and combined contribution to it by each independent variable. Cause-and-effect relationships are not established by correlational procedures, although they may narrow causal alternatives and thus strengthen arguments for causal inference (Cohen & Cohen, 1983).

### Sample and Setting

The nonprobability convenience sample for this study consisted of 146 married or cohabitating individuals. One member of each dyad had a cancer diagnosis. Only eight subjects were cohabitating in a relationship that had not been legalized, even though they had lived together for some time. Minuchin and Fishman (1981) argue that the legal aspects of a relationship do not rule out the significance of the agreement to live together when the purpose of the union is to form a family. Selection criteria for all subjects included a common residence with their significant other, the ability to read and understand English, as well as willingness and ability to meet privately with the investigator to complete four study instruments and a background information sheet in a 40- to -60 minute interview. An equal proportion of wives and husbands with cancer was not anticipated.

Selection criteria specific to the spouse with cancer were a diagnosis of lung, breast, colorectal or prostate cancer, and receiving cancer treatment on an outpatient basis. Given the effect of sample size on error and power of a statistical test (Munroe, Visintainer & Page, 1986), a suitable subject-variable ratio was sought. In order to achieve a correlation of 0.20 using a two-tailed test and statistical significance of 0.05, a sample of 100 was required. Based on Munro, et al.'s (1986) criterion, the number of dyads (n=73) for this project was small. Research settings included oncology treatment clinics in two tertiary care university teaching and research hospitals, two private physician offices, and a multidisciplinary cancer center, all of which were located in the southwestern United States. Permission

to collect data in the clinical settings was granted based on documented evidence of human subject approval and written and/or oral description of the research project.

#### Protection of Human Subjects

Approval to implement the study was obtained from the University of Arizona Human Subjects Committee (Appendix A). A disclaimer (Appendix B) was given to well spouse potential subjects and a consent form (Appendix C) to ill spouse counterparts. The consent form was required to access medical records. Disclaimer and consent forms described the study, risks, and benefits. Subjects were informed that their participation in the study was entirely voluntary.

Subject anonymity was assured through the use of confidential numerical codes on questionnaires and responses to interview questions rather than subject names. Raw data were scored using numerical codes, and only grouped data are used in the report of the study. The investigator will destroy names, addresses, and telephone numbers of subjects after providing study abstracts to subjects who requested them.

#### Data Collection Approach

The majority of prospective subjects were identified by nurses or physicians in the clinical setting. At their treatment appointment, couples were given a standard written introduction to the study (Appendix D) by a clinic nurse or the investigator. The written form explained the purpose of the study, its significance, and the criteria for participation. Benefits, costs, risks and confidentiality provisions

for subjects were also explained. Interested couples could detach the lower portion of the form to provide the investigator with a stub containing their names and telephone number. If only the spouse receiving treatment came to the clinic or couples wanted more time to consider the invitation to participate in the study, stubs were returned at a later time to the investigator or a clinic nurse. A follow up phone call was made approximately one week after receiving the stub to confirm the couple's interest and to arrange an interview at a time and place convenient to them. Subjects were given a disclaimer to read or a consent form to read and sign prior to participating in the study. If spouses were interested but had difficulty participating due to travel arrangements, work schedules or a setting preference requiring out-of-city travel by the investigator, they were instructed to complete the study instruments independently at home. The investigator also talked in private with individual spouses on the phone and/or for a brief time on their next visit to the clinic. Questionnaires were returned in person or by mail. The investigator was the sole data collector for the study and arranged for each subject to participate in the interview and complete the instruments independent of their spouse.

A packet consisting of four self-report questionnaires and a background information form was prepared for each subject. Packets for the well (Appendix E) and ill (Appendix F) spouse groups differed, as required, to accommodate collection of medical information for the ill spouse and measure severity of illness from the perspectives of members of each spouse group. All subjects were asked for demographic

data regarding age, marital status, education, employment status, income, health benefits, and chronic illnesses. Subjects were free to respond to as many items as they wished or to withdraw their participation at any time.

Demographic, health, and medical data were collected using the Subject Background Information Form (Appendices E and F). Medical information included date of cancer onset, type of cancer, primary site, stage of cancer, current treatment regimen, and pain control. Data were also collected about the ill spouse's activity level (performance status) and ingestion of nutritional supplements.

### Instruments

Four concepts in the MRS framework, illustrated in Figure 1, were operationally defined to empirically measure relationships between them. Operationalization of the concepts is summarized in Table 2.

1. Marital reciprocal support (MRS) was the summated score for each spouse on the reciprocity (RECI) subscale items of Tilden's Interpersonal Relationships Inventory (IPRI). The subjects' responses were coded so that on a scale of 1 to 5, the higher the score, the higher a spouse's perception of marital reciprocal support. The IPRI reciprocity subscale (Table 3) was developed by Tilden (1987) and adapted by the investigator for this study, as shown in Appendix E. Scores on the 13-item subscale could range from a low of 13 to a high of 65.

2. Interpersonal Support (IPS) was the summated score for the ill or the well spouse on the interpersonal support subscale of Tilden's

Table 2. Instruments Used to Operationalize Framework Concepts

Concept	Instruments
Marital Reciprocal Support	Interpersonal Relationships Inventory (IPRI) Reciprocity (RECI) subscale summated scores.
Interpersonal Support	Interpersonal Relationships Inventory (IPRI) Interpersonal Support (IPS) subscale summated scores.
Severity of Illness	Disease Course Graphic Scale (DCGS) treatment subscale and DCGS symptom subscale summated scores.
Psychological Status	Rosenberg's Self-Esteem (RSE) summated score and Center for Epidemiological Studies -- Depression (CES-D) scale summated scores.

Table 3. Instructions and Reciprocity (RECI) Subscale Items From Tilden's Interpersonal Relationships Inventory (IPRI)

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Most relationships with people we feel close to are both helpful and stressful. Below are statements that describe close personal relationships. Please read each statement and mark an X in the box that best fits your situation. There are no right or wrong answers.

2. Within my circle of friends I get just as much as I give.
  4. I'm available to my friends when they need to talk.
  5. When I have helpful information I try to pass it on to someone who can use it.
  6. I think I put more effort into my friends than they put into me.
  8. I don't mind loaning money if a person I care about needs it.
  10. I'm satisfied with the give and take between me and the people I care about.
  13. I'm happy with the balance of how much I do for others and how much they do for me.
  15. When I need help, I get it from my friends and when they need help, I give it back.
  26. I let people I care about know that I appreciate them.
  28. Some people come to me for a boost in their spirits.
  31. I tell others when I think they're great.
  34. Some people I care about come to me for advice.
  39. I let others know I care about them.
- 

Source: Tilden (1988)

(May not be used without permission of the author)

IPRI instrument (Table 4). The IPS was adapted for use with spouses in this study (Appendix E). Items were coded in a way that the higher the score, the higher the perception of interpersonal support. The possible range of scores was from a low of 13 to a high of 65.

3. Severity of Illness was operationalized by the summated scores on the Disease Course Graphic Scale (DCGS) developed by Braden (1986, 1988). This instrument measures symptoms and treatment efficacy in patients with chronic illness. Items were coded such that the higher the score, the more serious the perception of illness. The possible range of responses was from a low of 6 to a high of 48.

4. Psychological Status was indexed by the summated scores on Rosenberg's Self-Esteem (RSE) scale and the Center for Epidemiologic Studies--depression scale (CES-D). Rosenberg's (1979) scale measures feelings associated with self-worth. Items were coded in such a way that the higher the summated score, the greater the perceived self-worth. Responses could range from a low of 10 to a high of 40. The CES-D (1977) scale measures feelings and behaviors associated with depression. Items were coded so that the higher the summated score, the higher the level of perceived depression. Scores could range from a low of zero to a high of 60.

Where indicated permission was obtained from authors to use their instrument in this study (Appendix G). Discussion of the instruments used to index framework variables proceeds from the inner to outer aspect of the framework depicted in Figure 1. Each instrument is described below in terms of its content and psychometric properties of reliability and validity.

Table 4. Instructions and Interpersonal Support (IPS) Subscale Items From Tilden's Interpersonal Relationships Inventory (IPRI)

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Most relationships with people we feel close to are both helpful and stressful. Below are statements that describe close personal relationships. Please read each statement and mark an X in the box that best fits your situation. There are no right or wrong answers.

1. I know someone who makes me feel confident in myself.
  3. Some people I care about share similar views with me.
  7. There is someone I can turn to for helpful advice about a problem.
  9. I can talk openly about anything with at least one person I care about.
  11. There is someone I could go to for anything.
  14. I can count on a friend to make me feel better when I need it.
  17. It's safe for me to reveal my weaknesses to someone I know.
  18. Someone I care about stands by me through good times and bad times.
  19. I have the kind of neighbors who really help out in an emergency.
  21. If I need help, all I have to do is ask.
  22. I have enough opportunity to talk things over with people I care about.
  23. I have enjoyable times with people I care about.
  37. At least one person I care about lets me know they believe in me.
- 

Source: Tilden (1988)

(May not be used without permission of author)

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Tilden's Interpersonal Relationships Inventory (IPRI) is a multi-dimensional measure of interpersonal relationships consisting of three aspects: network structure, network function, and a demographic data sheet. The IPRI network function used in this study has three subscales: reciprocity (RECI), interpersonal support (IPS), and interpersonal conflict (IPC), each composed of 13 items. Subscale items are dispersed throughout the network function aspect of the IPRI. The Reciprocity subscale items are 2, 4, 5, 6, 8, 10, 13, 15, 26, 28, 31, 34 and 39 (Table 4). The interpersonal support subscale consists of items 1, 3, 7, 9, 11, 14, 17, 18, 19, 21, 22, 23, and 37 (Table 5). The interpersonal conflict subscale items are 12, 16, 20, 24, 25, 27, 29, 30, 32, 33, 35, 36, and 38 (Table 5). The IPRI gives a score for each of the subscales. Each network function item has five response options on a scale of one to five. Two different anchor styles are used to accommodate item clusters related to perceptions and enacted behaviors. Items numbered one to 22 measure perceived states and are anchored with agree-disagree. The remaining 17 items deal with enacted behaviors and are anchored with often-never.

Tilden used social exchange theory by Cook (1987) and equity theory by Messick and Cook (1983) as the basis for the IPRI. According to Tilden, the premise underlying the combined theories is that social network relationships depend upon the mutual exchange of tangible and emotional resources. Moreover, network relationships accrue costs and benefits, imply reciprocity, and entail conflict.

The IPRI has been in the process of conceptual and technical development since 1983. Instrument development and psychometric testing

Table 5. Instructions and Interpersonal Conflict (IPC) Subscale  
Items From Tilden's Interpersonal Relationships Inventory  
(IPRI)

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Most relationships with people we feel close to are both helpful and stressful. Below are statements that describe close personal relationships. Please read each statement and mark an X in the box that best fits your situation. There are no right or wrong answers.

12. Some people in my life are too pushy.
16. There is someone in my life that gets mad if we have different opinions.
20. There is someone I care about that I can't count on.
24. I spend time doing things for others when I'd really rather not.
25. Some people I care about invade my privacy.
27. I am embarrassed by what someone I care about does.
29. Someone I care about tends to take advantage of me.
30. Some people I care about are a burden to me.
32. I wish some people I care about were more sensitive to my needs.
33. People I care about make me do things I don't want to do.
35. There is tension between me and someone I care about.
36. I have trouble pleasing some people I care about.
38. Some people I feel close to expect too much of me.

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Source: Tilden (1988)

(May not be used without permission of author)

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appear in published and unpublished documents (Tilden, 1985; Tilden & Galyen, 1987; Tilden & Nelson, 1988; Tilden, Nelson, May & Mejo, 1988; Tilden & Stewart, 1985). Items were initially generated from qualitative interview data with 44 adults experiencing a variety of stressful situations. Psychometric estimates were obtained with population samples of healthy and unhealthy adults dealing with life events early or late in life. Sample sizes ranged from 30 to 310 subjects. The total number of subjects sampled in the process of instrument development was 1,195 (Tilden, personal communication, June 7, 1988).

Reliability coefficients using Cronbach's alpha ( $n=235$ ) for each 13-item subscale were .83 for reciprocity, .92 for interpersonal support, and .91 for interpersonal conflict. The correlation coefficient for test-retest ( $n=97$ ) was .84 for reciprocity, .91 for interpersonal support, and .81 for interpersonal conflict. The average interitem correlation ( $n=235$ ) was .47 for interpersonal support, .28 for reciprocity, and .42 for interpersonal conflict. Cronbach alpha coefficients met the criterion of .80 or above for a mature instrument (Nunnally, 1978). Hence, the internal consistency or overall homogeneity of each subscale was quite acceptable. Test-retest reliability estimates suggested a stable instrument.

Tilden used contrasted groups, theory testing, and multitrait-multimethod approaches to assess construct validity (Tilden, Nelson, May & Mejo, 1988). A t-test analysis indicated that two contrasted groups differed significantly on the interpersonal conflict, interpersonal support, and reciprocity traits with  $p \leq .00$  for each trait.

The three IPRI subscale factors, reciprocity, interpersonal support, and interpersonal conflict, were identified by confirmatory principal components factor analysis with varimax rotation ( $n = 340$ ). The reciprocity items, however, failed to load consistently on this main factor (Tilden, personal communication, April 3, 1989).

Multiple regression analysis consistently confirmed theoretical predictions regarding the relationships among stress, interpersonal support, and interpersonal conflict. Stress had a negative influence on psychological symptoms. Interpersonal support buffered the influence of interpersonal conflict on psychological symptoms, and interpersonal conflict negatively influenced psychological symptoms.

Construct validity, estimated by a 2 X 2 multitrait-multimethod model (Campbell & Fiske, 1959), was only partially supported. In conclusion, psychometric estimates of Tilden's IPRI suggest strong internal consistency and stability across a wide variety of adult populations. Construct validity is equivocal, based on the findings of one out of the three psychometric testing methods.

Content and psychometric estimates of the Interpersonal Support subscale (IPS) are reported in the general discussion of Tilden's IPRI network function component. As indicated in that discussion, the subscale demonstrated respectable reliability and validity properties.

Braden's (1989, 1990) visual analogue Disease Course Graphic Scale (DCGS) contains six items (Table 6) and was adapted for use with the well and ill spouses in this study (Appendices E and F). The two-factor DCGS was designed to index the concept severity of illness in terms of "perception of critical junctures in the illness trajectory"

Table 6. Braden's Disease Course Graphic Scale (DCGS)

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Read the following statements and make a mark on the straight line that best describes the truth of the state today.

1. Disease symptoms have extended to previously uninvolved parts of my body in the past year.

True about me \_\_\_\_\_ Not true about me

2. None of the possible treatments, medications, and procedures for my illness work for me any longer.

Not true about me \_\_\_\_\_ True about me

3. Treatment for my illness is effective most of the time.

Not true about me \_\_\_\_\_ True about me

4. Disease symptoms have increased in their severity over the past year.

True about me \_\_\_\_\_ Not true about me

5. Treatments that used to help me don't do much good now.

True about me \_\_\_\_\_ Not true about me

6. Disease symptoms occur more often than they did a year ago.

True about me \_\_\_\_\_ Not true about me

---

Source: Braden (1989)

(May not be used without permission of author)

(Braden, 1989b). Three items measure symptom pattern and three measure treatment efficacy in chronic disease as perceived on the day the instrument was self-administered. Each 100 centimeter visual analogue line is anchored by the statements "True about me" and "Not true about me". The DCGS has been used to measure the variable severity of illness (Braden, 1985, 1986, 1988) in patients diagnosed with rheumatoid arthritis and other arthritis-related conditions.

The DCGS has undergone a number of revisions as a result of psychometric testing. Braden (1989b) reported that the DCGS was originally comprised of five items based on Forsyth, Delancy and Gresham's (1984) subsets of chronic illness experience descriptive of critical points in the experience. A pilot test of the five-item instrument revealed a standardized coefficient alpha of .68 (Braden, 1985). Following the addition of seven items, the standardized Cronbach Alpha was .73 (n = 288) (Braden, 1986). Item 12 was deleted after the 1986 study because of its failure to contribute to alpha. A further study by Braden (1988) (n = 396) generated a standardized Cronbach Alpha of .75 and an Omega of .76. Twenty-one percent of item-to-item correlation criterion of 50%, as set by Gordon (1968) and Kerlinger (1973). Eighty percent of item-to-total correlations were  $\geq$  .40. Braden used Hinshaw and Atwood's (1982) 50% criterion of acceptability for item-to-total correlation. Construct validity was estimated by principal factor analysis with varimax rotation. Six of the 11 items confirmed theoretical predictions using a single-factor solution.

Braden's (1989b) LISREL measurement model analysis indicated a two-factor structure as opposed to one with six items remaining in

the scale. Standardized coefficient alpha for the total six items was .79. The alpha for the three-item symptom factor was .70 and .76 for the three item treatment effectiveness factor. Additional internal consistency estimates were item-to-item correlations, in which 67% of the six items were within the range .30 to .70, and item-to-total correlations in which 100% were within the range of  $r \geq .40$ .

Changes were made in Braden's DCGS for this study to accommodate its use with both spouses in the marital dyad, one of whom had a cancer diagnosis. One change related to the time frame referred to in items 1, 4, and 6 (Table 7). The time frame was expanded to include month(s) as well as year. The expansion was done to create a more sensitive measure of status change in disease and treatment effect. In addition, the visual analogue response format was replaced by eight discrete numerical values under a line between two anchors. This change was expected to increase the ease of response to items and data analysis. The DCGS with these modifications was used to measure severity of illness as perceived by the spouse with cancer (Appendix F). A further modification of the DCGS was made, creating a second adapted scale, which measured severity of illness of the spouse with cancer as perceived by the well spouse. The anchors for this version of the scale were changed from "True about me" and "Not true about me" to "True about my spouse" and "Not true about my spouse" (Appendix E).

Rosenberg's (1979) Self-Esteem Scale (RSE) consists of 10 items and measures the self-acceptance aspect of self-esteem. The scale was constructed as a unidimensional measure. The scale has been used in both a Guttman and Likert format with comparable results. The

instrument was developed originally with high school student populations. A total of 5,024 high school juniors and seniors randomly selected from 10 New York schools constituted Rosenberg's main reported sample (Crandall, 1973). The scale has been used with many and varied samples since then (Crandall, 1973).

The RSE (Guttman format) reproducibility coefficient reported by Crandall (1973) was .92. Test-retest correlation over a two week period ( $n=28$ ) was .85 (Silber & Tippett, 1965). Construct validity was assessed in two ways (Rosenberg, 1979). The first was by examining the degree to which the scale performed according to theoretical expectations. From a theoretical perspective, it was conceivable that the scale would empirically relate to depressive affect, anxiety, and peer-group reputation (Rosenberg, 1979).

Rosenberg (1979) reported that results of the New York State study revealed a clear-cut relationship between the RSE and a six-item Guttman scale of depressive affect. Four percent of those with highest self-esteem scores in contrast with 80% with lowest self-esteem scores, tested as highly depressed ( $r = .300$ ).

Silber and Tippett (1965) and Tippett and Silber (1965) used the multitrait-multimethod approach of Campbell and Fiske (1959) to assess convergent and discriminant validity. Evidence of construct validity was supported with the multitrait-multimethod approach.

The Center for Epidemiological Studies--Depression (CES-D) self-report scale consists of 20 items (Appendix E). The CES-D was developed by the National Institute of Mental Health to identify symptoms of

depression in community adult populations. Items for the scale were taken from previously validated instruments, including the depression scale by Zung, depression inventory by Beck, and depression scale of the Minnesota Multiphasic Inventory (MMPI) (Craig & Van Natta, 1976; Markush & Favero, 1974). Items of the CES-D scale deal with symptoms of depressed mood, insomnia, and loss of energy and appetite. The CES-D scale score is the summed number of symptoms, weighted by their frequency and duration. Four scale response categories range from "less than once a day" to "most or all of the time". Weightings were zero if no days with the symptom were reported, one if the symptom persisted one to two days, two if three to four days, and three if five to seven days (Craig & Van Natta, 1976). A CES-D score greater than 16 was arbitrarily set as an indication of depression. The higher the score, the more and persistent the symptoms. Potential scale scores range from zero to 60.

Field tests of the CES-D scale were done with probability samples of households in Kansas City, Missouri ( $n = 1173$ ) and Washington County, Maryland ( $n = 1673$ ). Numbers refer to the completed interviews. Reliability estimates were done with coefficient alpha, Spearman-Brown, and split halves correlation methods (Zeller & Carmines, 1980). In the general population, the average coefficient alpha for three groups was approximately .85, Spearman-Brown approximately .87, and split halves approximately .77. In the clinical population, coefficient alpha was .90, Spearman-Brown was .92, and split halves was .85 (Radloff, 1977). The test-retest correlation ( $r = .54$ ) for subjects

with no reported occurrence of potentially confounding life events in the test-retest interval were thought to best represent CES-D stability reliability (Radloff, 1977).

Content, concurrent, and discriminant validity were confirmed (Radloff, 1977; Weissman, Sholomskas, Pottenger, Prusoff & Locke, 1977). Radloff (1977) reported that CES-D scores differentiated well between the inpatient psychiatric and general population samples. Seventy percent of the clinical group in comparison with 21% of the community group had CES-D scores equal to or greater than 16. Correlation patterns between the CES-D scale and other self-report scales showed reasonable evidence of discriminant validity across several samples. Significant differences (Radloff, 1977) were found at  $p < .05$  and  $p < .01$  for the community ( $n > 1000$ ) and patient groups ( $n = 70$ ).

Principal components factor analysis of the CES-D scale consistently demonstrated four factors (depressed affect, positive affect, somatic and retarded activity, and interpersonal). The high internal consistency of the scale, however, suggested the wisdom of using a summated score to estimate the extent of depressive affect (Radloff, 1977).

Features of the scale with particular relevance to this study are validity and reliability in both clinical and general adult populations. Few exceptions to these findings occurred in population subgroups controlled for age, gender, race (black/white), and socioeconomic status. There is also sensitivity to life events and the ability to measure current mood states. With respect to life events, Radloff (1977) found that vacations were associated with low CES-D scores,

and separation was more highly related with depression than divorce. Radloff (1977) points out that the relationship of illness to significant negative life events is corroborated by others (Dohrenwend & Dohrenwend, 1974).

Conflict was a control variable measured in the study. It was operationalized as the summated scores on Tilden's IPRI Interpersonal Conflict subscale (Table 6). The subscale was adapted for this study (Appendix E). Psychometrics for the Conflict subscale are included in the general discussion of Tilden's IPRI network function and indicate that the subscale has acceptable reliability and validity estimates.

#### IPRI Pilot Test

Tilden's Interpersonal Relationships Inventory (IPRI) was adapted for the study. The adaptation retained the intent of each subscale item but redirected the focus to relationships with spouses as opposed to a friend or unspecified other. For example, the first item of the IPRI states, "I know someone who makes me feel confident in myself". The adapted version read, "my spouse makes me feel confident in myself". Item number six, "I think I put more effort into my friends than they put into me", was changed to "I think I put more effort into my spouse than (s)he puts into me".

The convenience sample for the pilot test consisted of 20 white married couples (40 subjects), who were predominantly university students, faculty, or staff, homemakers, and retirees. Neither spouse had cancer. Subject age and number of years married varied widely. Each subject was asked to comment at the end of the IPRI about the

clarity of the items and anything else about the instrument, whether positive or negative. Following a minimal interval of two weeks, the subjects again completed the IPRI. The retest interval was approximately three and one-half weeks because the investigator encountered delays in return of the instrument.

Reliability estimates generated by the pilot test indicated that the performance of the adapted IPRI network function favorably compared with the strong performance of the original instrument. Standardized coefficient alphas were .88 for the Reciprocity subscale: .93 for the Interpersonal subscale and .88 for the Conflict subscale. The alpha coefficient for the combined scores of the Reciprocity and Interpersonal Support subscales was .95.

Item analysis for the Reciprocity subscale revealed an inter-item correlation mean of .37, with a minimum and maximum of  $-.136$  and  $.80$  respectively. Criterion of adequacy was .30 to .70. The item mean was 4.036, with a minimum and maximum of 3.570 and 4.600 respectively. Item-total statistics indicate that the alpha coefficient is consistently above .85 when any of the 13 subscale items are deleted. The high item means of this subscale indicate that scores tended to cluster toward the positive end of the scale, which suggests that a social desirability bias may be operating.

The Interpersonal Support subscale had a mean inter-item correlation of .53, with a minimum and maximum mean of  $.076$  and  $.84$  respectively. Item means were 4.25, with a minimum and maximum of 3.65 and 4.55 respectively. Alpha was consistently above .90 with the deletion of any of the 13 subscale items. A social desirability

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bias may be operating with this scale; however, despite this possibility, correlation between the Interpersonal support and conflict subscales was in the theoretically expected inverse direction. Therefore, although scores could be somewhat inflated, the underlying construct is apparently being tapped. The mean inter-item correlation for the interpersonal conflict subscale was .37, with a minimum and maximum correlation  $-.18$  and  $.64$  respectively. Item 20 was poorly correlated with a number of other items in the scale. Deletion of the item raised the alpha from  $.84$  to  $.89$ . The item-subscale total for this item is  $.178$  (criterion was  $.60$  to  $.80$ ). The item may be ambiguous and not clearly tap the conflict element. The item read, "I can't count on my spouse". The conflict element may be captured better if the item was, "I can't count on my spouse when I need to". Item means were  $1.980$ , with a minimum and maximum of  $1.425$  and  $2.525$  respectively. Alpha was consistently above  $.84$  with the deletion of any of the 13 subscale items.

Subject reaction to the IPRI in terms of clarity and format was generally favorable. Items eight and 33 were slightly altered in wording as a result of subject feedback. Item eight states, "I don't mind loaning money to my spouse if (s)he needs it". This item was thought to be inappropriate by subjects who had joint bank accounts. The item was changed to "I don't mind sharing money with my spouse for things only (s)he needs". Item 33 states, "My spouse makes me do things I don't want to do". One or two subjects stated that the item did not fit their situation because what happened to them was of their

own choosing. The item was changed to, "My spouse puts pressure on me to do things I don't want to do". A final change was made to offset the potential of response bias. The first 11 items were all phrased in a positive direction. Item four was changed from "I'm available to my spouse when (s)he needs to talk" to "I'm not available to my spouse when (s)he needs to talk". Based upon the pilot test results, the adapted version of Tilden's IPRI network function was considered suitable for use in this study.

#### Data Analysis Approach

The data analysis is discussed in terms of the research questions and data collection instruments. Descriptive statistics were used to obtain a background profile of the sample and characteristics of the variables in the conceptual framework (Figure 1).

Research question one asked: Do the well and ill spouse perceive marital reciprocal support (MRS) as equal (congruent) or unequal (incongruent)? A paired t-test was used to determine the statistical significance of any difference between the well and ill spouse on MRS as indexed by RECI.

Research question two asked: Is the interpersonal support perceived by the well and ill spouse equal (congruent) or unequal (incongruent)? A paired t-test was the analytic procedure used to determine the statistical significance of any difference between the means of the interpersonal support (IPS) scores for the well and ill spouse.

Research question three asked: If well and ill spouses differ in the level of perceived reciprocal or interpersonal support, how

does that difference relate to the well spouse's psychological status? One by three one-way analysis of variance procedures (Tabachnick & Fidell, 1989) were used to determine if there was any statistically significant difference among spouses who perceived different levels of reciprocal or interpersonal support, in terms of the well spouses' depression and self-esteem. Inspection of the distribution of the depression variable revealed a substantial positive skew. Although ANOVA has been shown to be fairly robust to violations of its underlying assumptions (Munro, Visintainer & Page, 1986), a square root transformation (Tabachnick & Fidell, 1989) was done on this variable to increase the normalcy of its distribution. Both parametric (ANOVA), using transformed depression scores, and nonparametric (Kruskal-Wallis) analysis of variance procedures (Kerlinger, 1986) were done to establish whether they produced equivalent results. Comparable results between the two analysis techniques justified the use of ANOVA, and associated post hoc tests. Where a significant difference between groups was found, the Scheffe post hoc test was done to determine which group(s) was responsible for the significant finding. The Scheffe test is one of the more conservative post hoc tests requiring that two means be far apart before a significant difference is indicated (Huck, Cormier & Bounds, 1974).

The first analysis of variance procedure dealt with the categorical variable reciprocity (RECI) in conjunction with the outcome variable depression (CES-D). Three groups were formed for the procedure in a way to maximize equal numbers per cell. Group one (n = 23) was comprised

of well and ill spouses who both perceived low levels of reciprocal support (consistency low, LL). Group two (n = 26) was composed of well and ill spouses who differed in their perception of reciprocal support. One spouse perceived low and the other high reciprocal support in the relationship or the converse (inconsistency LH and HL). Group three (n = 24) was composed of well and ill spouses who both perceived high levels of reciprocal support (consistency high, HH). The second analysis of variance procedure used the same three groupings to investigate reciprocity (RECI) with self-esteem (RSE). The third analysis of variance procedure dealt with the categorical variable interpersonal support (IPS) in conjunction with depression (CES-D). Group one (LL), group two (LH and HL), and group three (HH) contained 28, 27, and 18 spouses respectively. The same three groupings were used in the fourth analysis of variance procedure to investigate the categorical variable interpersonal support (IPS) with self-esteem (RSE).

Research question four asked: What is the relationship between congruence in dyad perception of marital reciprocal support and the psychological status of the well spouse? A two-step analytical procedure was done to address this question. First, a new variable was created to enable the calculation of a dyadic reciprocity congruence index (DRCI). Marital reciprocal support (MRS) as perceived by the healthy spouse was considered one unit of analysis and was operationalized as RECI, variable one (V1). MRS as perceived by the ill spouse was operationalized as RECI, variable two (V2). A third variable (V3) was created from the difference between variables one and two ( $V1 - V2 = V3$ ). Variable three, the DRCI, measured congruence between

the well and ill spouses' perception of marital reciprocal support.

The dyadic reciprocity congruence index (DRCI) was calculated in terms of the absolute difference between the reciprocity scores of the well and ill spouse (Sprunger, et al., 1985; Uphold & Strickland, 1989). The absolute score was to indicate the magnitude of the difference. If the absolute score was high, it would indicate a large discrepancy between support as perceived by the well spouse and that perceived by the ill spouse. A small number would indicate little discrepancy between spouse perceptions of support (Sprunger, et al., 1985). A zero value would reflect spouses' perception of total MRS congruence.

The second step to answer question number four was the use of Pearson product moment correlations to test the significance of correlations between the dyadic reciprocity congruence index (DRCI, V3), and the outcome variables self-esteem and depression as indexed by RSE and CES-D respectively.

Research question five asked: What is the relationship between congruence in dyad perception of interpersonal support and the psychological status of the well spouse? The same two step analysis procedure used to answer question four was used for this question. A new variable was first created to enable the calculation of a dyadic interpersonal support congruence index (DIPSCI). Interpersonal support as perceived by the well spouse was considered one unit of analysis perceived by the ill spouse was operationalized as IPS, variable five (V5). A sixth variable (V6) was created from the difference between variables four

and five ( $V4 - V5 = V6$ ). Variable six, the dyadic interpersonal support congruence index (DIPSCI), measured congruence between the well and ill spouse's perception of interpersonal support.

The dyadic interpersonal support congruence index (DIPSCI) was calculated in terms of the absolute difference between the interpersonal scores of the well and ill spouse (Sprunger, et al., 1985). The absolute score was to indicate the magnitude of the difference. If the absolute score was high, it would indicate a large discrepancy between interpersonal support as perceived by the healthy spouse and that perceived by the ill spouse. A small number would indicate little discrepancy between spouse perceptions of interpersonal support (Sprunger, et al., 1985). A zero value would reflect spouses' perception of total interpersonal support congruence.

The second step to answer question five was the use of Pearson product moment correlations to test the significance of correlations between the dyadic interpersonal support congruence index (DIPSCI, V6), and the outcome variables self-esteem and depression as indexed by RSE and CES-D respectively.

Research question six asked: What relationship exists between the well spouse's psychological status and selected variables? A correlation matrix was generated to assess relationships among these variables for the well spouse.

An alpha level of  $p \leq .10$  was preselected to determine statistical significance for all data in this study. The choice of alpha

level was based on the new area of social support investigation and the relatively small sample size. Two-tailed tests of significance were used because the theoretical base of the study did not warrant directional hypothesis (Munro, et al., 1986). Distributions of the data were first examined to determine whether it was appropriate to use parametric or nonparametric statistical tests. Cronbach alpha coefficients served as criteria to estimate the reliability of instruments used to operationalize concepts (Table 3) in the conceptual framework (Figure 1). The conceptual framework shown in Figure 1 was operationalized according to Table 3 and presented as Figure 2.

#### Limitations of the Study

Limitations of the study were related to the design, instrumentation and sampling. A cross-sectional correlational descriptive design was fitting for this investigation given the lack of empirical research about the study problem. Correlational designs, however, preclude causal inferences, assessment of stability in outcome variables over time, and determination of conditions under which outcome variables are likely to change.

Social support issues discussed in Chapter Two have implications for the measurement of interpersonal support and marital reciprocal support in this study. Tilden (personal communication, April 3, 1989) advocated caution in making inferences regarding reciprocity using her IPRI Reciprocity subscale. Psychometric estimates indicated that the subscale had less strength and raised more questions than either

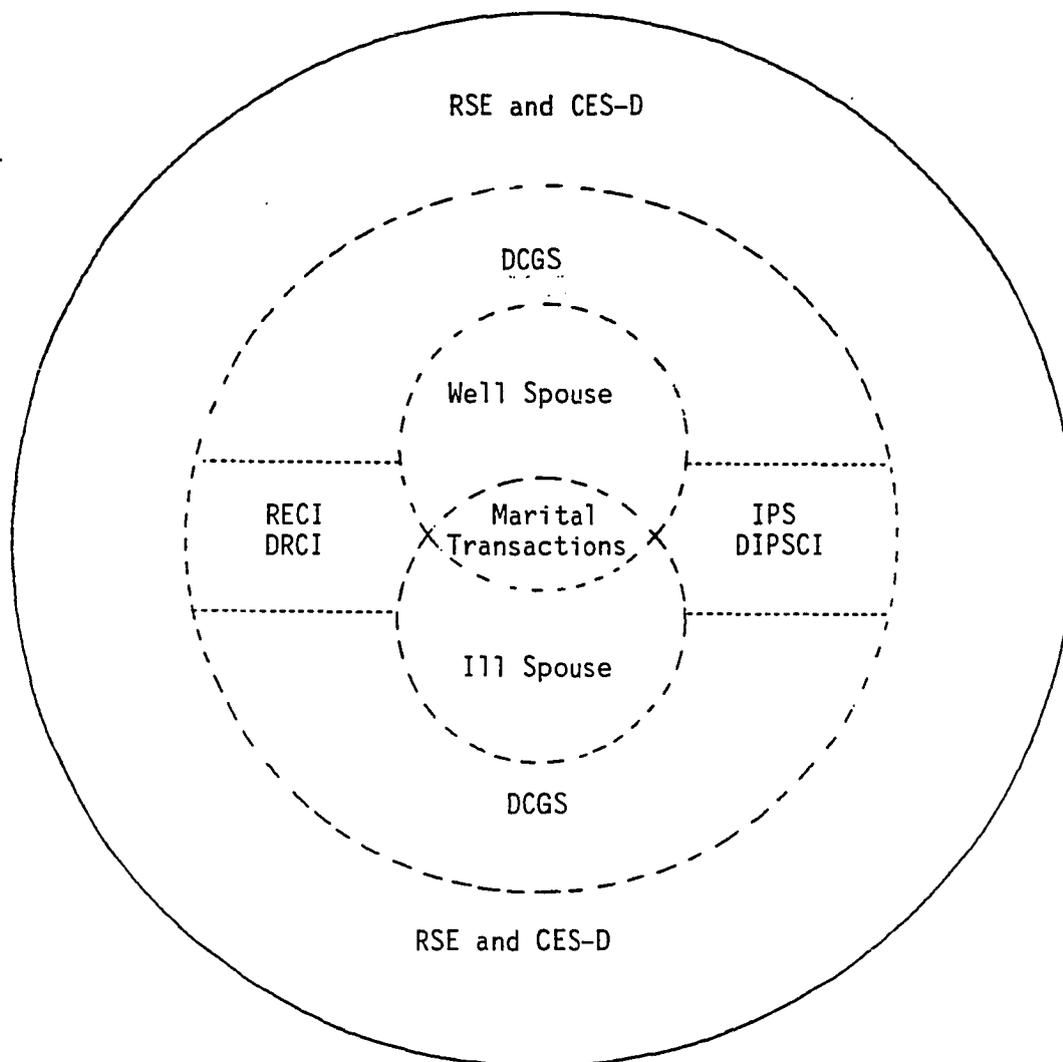


Figure 2. Operational Framework: Perceived Marital Reciprocal Support in the Context of Cancer

KEY

RECI	= Marital reciprocal support	DCGS	= Severity of illness
DRCI	= Dyadic reciprocal support	RSE	= Self-Esteem
IPS	= Interpersonal support	CES-D	= Depression
DIPSCI	= Dyadic interpersonal support		

the Interpersonal Support or Conflict subscales. A further consideration is that spouses may be unable or unwilling to calculate transaction costs and rewards (McDonald, 1981).

The Disease Course Graphic Scale (DCGS) performs as an immature instrument, according to Nunnally's (1978) criterion of coefficient alpha of .80 or above for a mature scale. Another limitation was the possibility that unidentified extraneous variables might be responsible for changes observed in the outcome variable, thus confounding measurement results.

Selection of the sample was the final area of limitation. Study constraints affected sample selection. For example, characteristics of the population from which the convenience sample was drawn could be unequally distributed in the sample. Consequently, generalization of findings from the sample to the population are not possible. Study constraints also precluded manipulation of independent variables or the random assignment of subjects to the well or ill spouse categories all of which increased the chances of error. The homogeneity of the sample was further compromised by recruiting ill spouses with other tumor sites besides lung, breast, prostate and colorectal to meet the data collection time frame of September to December 1989.

Efforts were made to minimize study limitations and enhance the chances of detecting an effect. For example, selected demographic and situational variables cited in the literature as potentially confounding study results were accounted for in the study's methodology. Their impact on the outcome variables was measured where permitted.

Measurement precision was enhanced by selecting instruments with acceptable psychometric properties and ease of instrument administration. Probability levels in the analysis of all the data were set at  $p \leq .10$  to improve the chances of detecting the smallest change in the dependable variable. These levels do, however, increase the risk of Type I errors (Munro, Visintainer & Page, 1986).

#### Summary

Chapter Three included a discussion of the study design, encompassing descriptions of sample selection criteria, setting, human subjects protection, data collection methods, data analysis procedures, and limitations of the study. A cross-sectional, descriptive, correlational design was the approach used. Study instruments were described in terms of their content and psychometric properties.

## CHAPTER IV

## RESULTS OF DATA ANALYSIS

The purpose of this study was to describe the relationship between marital reciprocal support (MRS) and the psychological status of the spouse whose mate is being treated for cancer. Results of the data analysis include the following: 1) psychometric properties of the scales; 2) description of the sample; and 3) relationships among selected variables.

Instrument Reliability Estimates

Internal consistency of the instruments was assessed by Cronbach's coefficient alpha ( $\alpha$ ). Coefficient alpha is a conservative estimate of reliability and assumes that "the inter-item correlation accurately estimates all the correlations in the item matrix" (Carmines & Zeller, 1979, p. 47). An additional underlying assumption of coefficient alpha is that items equally measure a single underlying property of the particular scale (Armor, 1974). These assumptions are violated when items measure one property in an unequal manner or "measure two or more independent properties either equally or unequally" (Armor, 1974, pp. 24-25).

Estimates of internal consistency, using coefficient alpha, are presented in Table 7 and then compared with those reported in the literature and by instrument authors (Table 8). The criterion value of acceptable internal consistency for the study instruments was set

Table 7. Reliability Estimates, Cronbach's Coefficient Alpha for Scales and Subscales (n=142-146)

Instrument	Alpha	Standardized alpha
IPRI Subscales:		
Reciprocity (RECI)	.8860	.8919
Interpersonal Support (IPS)	.9359	.9386
Interpersonal Conflict (IPC)	.8893	.8967
Severity of Illness (DCGS)	.8419	.8488
DCGS Subscales:		
Symptoms	.7723	.7728
Treatment	.7586	.7598
Depression (CES-D)	.9648	.9703
Self-esteem (RSE)	.8644	.8690

Table 8. Comparison of Cronbach's Coefficient Alphas Generated in This Study to Alphas Reported in the Literature or by Instrument Developers

Instrument	Study alpha	Reported alpha
IPRI Subscales:		
Reciprocity (RECI)	.89	.83
Interpersonal Support (IPS)	.94	.92
Interpersonal Conflict (IPC)	.89	.91
Severity of Illness (DCGS)	.84	.79
DCGS Subscales:		
Symptom	.77	.70
Treatment	.76	.76
Depression (CES-D)	.96	.85*
Self-esteem (RSE)	.86	.92

\* $\alpha = .90$  for clinical (depressed) population

at .70 (Nunnally, 1978). All instruments exceeded this criterion value. The high degree of homogeneity ( $\alpha = .9648$ ) in the CES-D scale items suggests that redundancy exists in the items. Instrument psychometric characteristics were comparable to those reported in the literature and by instrument authors (Table 8).

Item analysis using Pearson correlation coefficients indicated that some instruments did not meet the inter-item correlation criterion  $r = .30 \leq .70$  (J. R. Atwood, personal communication, July, 1987). Mean inter-item correlations and the minimum and maximum values for each scale were: reciprocity ( $\bar{x} = .3883$ , minimum = .0977, maximum = .7857); interpersonal support ( $\bar{x} = .5403$ , minimum = .3478, maximum = .7857); interpersonal conflict ( $\bar{x} = .4005$ , minimum = .1963, maximum = .6430); depression ( $\bar{x} = .6201$ , minimum = .3006, maximum = .8837); and self-esteem ( $\bar{x} = .3987$ , minimum = .1381, maximum = .6430). The severity of illness scale met the criterion with a mean inter-item correlation of .4834 and minimum and maximum of .3301 and .6342 respectively. All of the mean inter-item correlations fell within the inter-item criterion range of  $.30 \leq .70$ .

A social desirability response set is suggested by high item means on the reciprocity subscale (4.1481 out of 5); interpersonal support subscale (4.3863 out of 5); interpersonal conflict (1.8099 out of 5); depression (.7965 out of 3); and self-esteem (3.2923 out of 4). Tilden reported evidence of social desirability in tests of the reciprocity and conflict subscales. They were correlated (about .2) with the short version of the Marlowe-Crowne Social Desirability Index.

Significant Pearson correlations ( $n=142-144$ ) were found among the variables reciprocity, interpersonal support, depression, self-esteem and severity of illness. Correlations were in the logical direction and where reports were available from the literature or instrument authors, the instruments performed according to theoretical predictions.

#### Missing Data Management

For the 146 subjects, three questions were missed on the self-esteem (RSE) and depression (CES-D) scales respectively; five on the IPRI interpersonal conflict subscale (IPC); three on the IPRI interpersonal support subscale (IPS); 18 on the severity of illness (DCGS) treatment subscale; and four on the DCGS symptom subscale. No data were missing on the IPRI reciprocity subscale (RECI).

Missing data on individual scale items were managed by computing and substituting the subject's subscale or scale mean if the missing data were  $\leq 10\%$ . Where missing data on an individual's scale or subscale exceeded 10% the case was not included in the analysis. It was assumed that mean substitution for 10% of missing data on a subject's instrument would not significantly affect the data analysis results. Subjects reported difficulty answering DCGS treatment subscale items when the cancer was newly diagnosed and/or the treatment regimen was in the early phase. One well spouse refused to answer any questions on the DCGS scale as she did not think she had enough knowledge to answer the questions accurately at this stage of the illness and treatment.

### Description of the Sample

The sample for this study consisted of married (n=138) or cohabitating (n=8) individuals. One member of each dyad had been diagnosed with cancer (Table 9) and was receiving treatment on an outpatient basis in a hospital, physician's office or cancer center setting (Table 10). Approximately 24 potential subjects did not participate in the study because too many things were going on in their lives right then; information asked for was too personal; it was too upsetting to do anything that would remind them of the diagnosis; a job kept them busy; or a marital relationship was in the process of terminating. Other reasons spouses did not participate in the study were that one member of the marital dyad did not want to participate, one spouse was illiterate, one spouse felt too ill, or both spouses had cancer.

Subjects were interviewed in their homes, treatment setting or other convenient locations. Fourteen subjects returned the questionnaires by mail and five sent them with spouses returning for treatment. The investigator was in contact with these subjects in person and/or by telephone to ask questions about their experience living with cancer and to ensure that concerns about the instruments or study were addressed.

Demographic data on the sample (n=146) revealed that most subjects (n=86, 58.9%) were from the local area and living at their usual residence. Subjects (n=60, 41.1%) residing outside the local metropolitan area came from other regions within the state or other states (n=10, 6.8%). Subjects (n=32, 21.9%) for whom the distance between

Table 9. Primary Cancer Site of Patients (n=73)

Cancer Site	n	%
Breast	26	35.6
Colon	13	17.8
Lung	8	11.0
Prostate	6	8.2
Skin	4	5.5
Bone	3	4.1
Pancreas	3	4.1
Abdomen	3	4.1
Ovary	1	1.4
Tonsil	1	1.4
Ureter	1	1.4
Shoulder	1	1.4
Esophagus	1	1.4
Gall Bladder	1	1.4
Retroperitoneal	1	1.4
Total	73	100

Table 10. Settings Where Patients Received Treatment (n=73)

Treatment Setting	n	%
Radiation Oncology Clinic (Hospital)	36	49.3
Hematology/Oncology (Physician's Clinic)	23	31.5
Multidisciplinary Cancer Clinic (Cancer Center)	13	17.3
Oncology Clinic (Hospital)	1	1.4
Total	73	100

their usual residence and treatment setting was too far relocated temporarily to the metropolitan area until the treatment was completed.

Husbands tended to be older than their wives. The mean age of the 73 wives was 57.1 years (s.d. = 11.9) and of the 73 husbands 60.7 years (s.d. = 11.2). On the average, ill husbands were older than ill wives. The mean age of 37 ill wives was 53 years (s.d. = 12.1) and of the 36 ill husbands 66 years (s.d. = 8.5). The number of ill wives (n=37) and ill husbands (n=36) in the sample was about equal (Table 11).

The ethnic origin of the sample was predominantly Caucasian (n=138, 90.4%). There were 13 (8.9%) Hispanic subjects and one Hawaiian.

The sample (n=146) tended to be well educated. Seventy-nine (54.1%) had a college degree or some college education and 60 (41.1%) had completed a high school education (Table 12). Thirty subjects (20.5%) of the 145 subjects reporting had more than 16 years of education (Table 13). The employment background of subjects varied widely. Some subjects were employed or retired truck drivers, secretaries, teachers, professors, executives, civil servants, realtors, nurses, librarians, postal workers, social workers, and pilots. The employment status of subjects was considered under seven categories: currently employed full time (n=35, 24%); part time (n=7, 4.8%); unemployed (n=4, 2.7%); retired (n=66, 45%); homemaker (n=26, 17.8%); disabled (n=7, 4.8%); and one student (.7%). Subjects who described their employment status as "homemaker" were categorized as full time.

Table 11. Age in Years of Spouses

Subjects	n	%	Mean	s.d.
<u>Spouses (Total)</u>				
Husbands	73	50	60.7	11.2
Wives	73	50	57.1	11.9
Total	146	100		
<u>III Spouses</u>				
Husbands	36	49.3	65.9	8.5
Wives	37	50.7	52.8	12.1
Total	73	100		

Table 12. Level of Education of Subjects (n=146)

Level of Education	n	%
College Degree	49	33.6
Some College	30	20.5
Business School	1	.7
High School	60	41.1
Grade School	4	2.7
Other	2	1.4
Total	146	100

Table 13. Years of Education of Subjects (n=145)

Years of Education	n	%
08 - 12 years	70	48.0
13 - 16 years	45	30.8
16+	30	20.5
Missing	1	.7
Total	146	100

Income for subjects (n=144) ranged between the \$00 - 10,000 category and the over \$60,000 category. Sixty-five subjects (45.1%) had an income between \$00 and 10,000 (Table 14). The number of subjects in the \$00 - \$10,000 category is reflective of the large number of homemakers or retired women in the sample.

One hundred and forty-two subjects had health benefits; only four reported none and they were self-employed or spouses of self-employed subjects. Sixty-two subjects (41.5%) had more than one source of coverage. Four (2.7%) low income subjects qualified for health benefits through the State Health Care Cost Containment System (AHCCCS) (Table 15). Subjects on AHCCCS were 37, 47, 55, and 60 years of age respectively.

The majority (n=138, 94.5%) of the sample was married. Eight (5.5%) were cohabitating and in this study their relationship was considered equivalent in significance to legalized relationships. Number of marriages for each subject, married or currently cohabitating, ranged from one (n=78) to five (n=1). Seventy-eight (55%) reported they had been married once; 46 (32%) twice; 14 (10%) three times; three (2%) four times; and one (< 1%) had had five marriages. Length of the current dyadic relationship ranged from one to 61 years. The mean length of the relationship was 26.7 (s.d. = 15.4) years.

The health status of well and ill spouses revealed (Table 16) that the most common current health problem was arthritis (n=39) with allergies, the second most reported problem (n=38). Overweight, gastrointestinal, and cardiovascular states, although not as frequently

Table 14. Income in Dollars for Sample (n=146)

Income in Dollars	n	%
0 - 10,000	65	44.5
11 - 20,000	33	22.6
21 - 30,000	21	14.4
31 - 40,000	10	6.8
41 - 50,000	7	4.8
51 - 60,000	3	2.1
Over 60,000	5	3.4
Missing	2	1.4
Total	<u>146</u>	<u>100</u>

Table 15. Health Benefits Reported by Sample (n=146)

Health Benefits	n
AHCCCS (State Subsidized)	4
Health Insurance	130
Medicare	54
None	4
Missing	2

Note: Some subjects had multiple health benefits

Table 16. Current Health Problems Reported by Subjects (n=144-146)

Health Problem	n	%
Diabetes Mellitus	9	6.2
Chronic Obstructive Lung Disease	7	4.8
Allergies	38	26.0
Oral Cavity Problems	5	3.4
Broken Bone	2	1.4
Arthritis	39	26.7
Overweight	37	25.2
Underweight	9	6.2
Gastrointestinal Problems	22	15.1
Cardiovascular	36	24.7
Urinary Problems	15	10.3
Other (Unspecified)	30	20.8

Note: Percentages are based on the number of subjects reporting in each category

reported as arthritis or allergies, were among the more commonly identified current health problems. Fifty-five subjects (37.7%) indicated that they were using one or a combination of treatment sources to deal with their general health problems. Treatments were physician prescribed, over the counter and commercial unscientific remedies.

Seven ill spouses (9.6%) took multivitamins and six (8.2%) augmented their dietary intake with a commercial food supplement such as Ensure. Eighteen (24.7%) ill spouses took medications regularly or as required to control symptoms associated with cancer, or treatment sequelae. Pain control medications reported by ill spouses included Tylenol, Percocet, morphine sulphate, codeine, and Dilaudid. Some ill spouses chose not to take pain medication as prescribed rather than experience side effects. One subject had an intra coeliac block to control pain. Time since diagnosis for the 73 spouses with cancer ranged from less than one month to 159 months or approximately 13 years. The average time interval was 24 months (s.d. = 35.4).

Spouses (n=73) were being treated with radiation, chemotherapy or hyperthermia (Table 17). Fifty-nine (81%) had received two or more of the current modalities of cancer treatment; radiation, chemotherapy, hyperthermia, and surgery. Fifty-five subjects (75%) had experienced surgical interventions to remove cancer. Lumpectomy, modified radical, and bilateral mastectomies; temporary or permanent colostomies; and ileal conduit for urinary tract cancer exemplify surgical intervention modalities. Chemotherapy included antimetabolites such as 5-Fluorouracil (5FU), the latter in combination with Leucovorin, a potentiator,

Table 17. Patient Cancer Treatment (n=73)

Treatment	n	%
Radiation Therapy	29	39.7
Chemotherapy	41	56.2
Other	3	4.1
Total	<u>73</u>	<u>100</u>

antitumor antibiotics such as Adriamycin, antihormone drugs such as Tamoxifen (anti-estrogen) and biological response modifiers such as Interleukin and interferon. CIS-Platinum, a chemotherapy classified as miscellaneous (Carter, Bakowski & Helmann, 1987), was also used in treatment. Hyperthermia, an experimental form of treatment in one setting, used ultrasound waves to deliver heat to the tumor site. Computers created an image of the size, shape and location of the tumor and directed heat to it (Arizona Cancer Center Newsletter, 1987).

An objective assessment of the extent of cancer in patients was done by identifying three disease categories based on oncologist advice, patient medical records and cancer staging literature (Bearhrs, Henson, Hutter & Myers, 1988; Calabresi, Schein & Rosenberg, 1985). The first category, local disease, was defined as cancer confined to the site of origin without direct extension to surrounding structures or tissues (muscle, bone, skin, organ, nerves, arteries, nodes). Regional disease was the second category and referred to disease that had progressed beyond the primary site to involve adjacent or surrounding structures. The third category, disseminated disease, was extension of cancer to distant organs or tissue sites (lungs, skeleton, liver, brain, skin or nodes). According to this method of classifying cancer disease, 54 (74%) of the 73 spouses had progressed beyond local disease (Table 18). A one-way analysis of variance was done to determine divergence in perception of reciprocal and interpersonal support between spouses in each category. The results (Tables 19 and 20) were not statistically significant. Means for the three groups in terms of

Table 18. Extent of Cancer in Patients (n=73)

Category	n	%
Local	19	23.0
Regional	23	31.5
Disseminated	31	42.5
Total	<u>73</u>	<u>100</u>

Table 19. Analysis of Variance Among Group 1 (Local Disease), Group 2 (Regional Disease), and Group 3 (Disseminated Disease) on Ill Spouse Perception of Marital Reciprocal Support (n=73)

Source of Variance	df	MS	F	p
Marital Reciprocal Support				
Between Groups	2	58.82	1.53	.22 (ns)
Within Groups	70	38.45		
Total	72			

Table 20. Analysis of Variance Among Group 1 (Local Disease), Group 2 (Regional Disease), and Group 3 (Disseminated Disease) on Ill Spouse Perception of Interpersonal Support (n=73)

Source of Variance	df	MS	F	p
Interpersonal Support				
Between Groups	2	46.58	1.20	.31 (ns)
Within Groups	70	38.78		
Total	72			

ill spouse reciprocal support indicate higher values for group 2 (regional disease;  $\bar{x} = 55.95$ , s.d. = 6.4) and group 3 (disseminated disease;  $\bar{x} = 55.38$ , s.d. = 6.0) than for group 1 (local disease;  $\bar{x} = 52.78$ , s.d. 6.2). A similar pattern was found for the three groups in terms of ill spouse interpersonal support. Group 1 had the lowest group mean ( $\bar{x} = 56.9$ , s.d. = 5.4). The means for group 2 ( $\bar{x} = 59.5$ , s.d. = 7.4) and group 3 ( $\bar{x} = 59.4$ , s.d. = 5.7) were similar. The results would seem to indicate that the more advanced the disease the more spouses perceived reciprocal or interpersonal support.

Thirty-four (47.9%) ill spouses (Table 21) had experienced symptoms as a result of their cancer or its treatment but were fully ambulatory. Four spouses (5.6%) were symptomatic and in bed more than 50% of the day. No spouses were bedridden.

#### Results of Research Questions

Results of research question one, Do the well and ill spouse perceive marital reciprocal support (MRS) as equal (congruent) or unequal (incongruent) were analyzed using a paired t-test. As shown in Table 22 the t-value for difference between ill and well spouse groups' perception of reciprocal support was not statistically significant ( $p \leq .10$ ).

Results of research question two, Is the interpersonal support perceived by the well and ill spouse equal (congruent) or unequal (incongruent) were analyzed using a paired t-test. There is a statistically significant difference ( $p = .01$ ) between well and ill spouse

Table 21. Patient Performance Status (n=73)

Status	n	%
Asymptomatic	23	31.5
Symptomatic, fully ambulatory	34	46.6
Symptomatic, in bed < 50% of the day	10	13.7
Symptomatic, in bed > 50% of the day	4	05.5
Bedridden	0	00.0
Missing	2	02.7
Total	71	100

Table 22. Difference Between Well and Ill Spouse Scores on Marital Reciprocal and Interpersonal Support Using t-test Analysis (n=73 per group)

Variable	Groups	Mean	s.d.	t-value	Probability (Separate Variance Estimate)*
Marital Reciprocal support	Well Spouses	53	9.0	-1.50	.136 (ns)
	Ill Spouses	54.9	6.2		
Interpersonal support	Well Spouses	55.5	9.7	-2.63	.010**
	Ill Spouses	58.8	6.3		

\*\*  $p \leq .01$

\* For marital reciprocal support  $F = 2.10$  and  $p = .002$

\* For interpersonal support  $F = 2.42$  and  $p = .000$

perceptions of interpersonal support in the marital relationship (Table 22). A comparison of the group means would seem to indicate that ill spouses ( $\bar{x} = 58.8$ , s.d. = 6.3) perceived more support than the well ( $\bar{x} = 55.5$ , s.d. = 9.7).

Research question three was, If well and ill spouses differ in the level of perceived marital reciprocal or interpersonal support, how does that difference relate to the well spouse's psychological status? A square root transformation (Mosteller, Fienberg & Rourke, 1983; Tabachnick & Fidell, 1989) was first done on well and ill spouse depression scores to decrease a positive skew in these distributions. Results between parametric (ANOVA) and nonparametric (Kruskal-Wallis, Kerlinger, 1986) analysis of variance procedures were more comparable using transformed depression scores with the ANOVAs than when not. The transformation decreased the skew from .633 to .374 (well spouse) and .487 to -.229 (ill spouse). Based upon comparability of parametric and nonparametric analysis of variance results four one by three, one-way analysis of variance procedures were used to answer the question. An additional four ANOVAs were done to analyze differences from the perspective of the ill spouse. The Scheffe post hoc test was used when a significant difference occurred between groups, to determine which group(s) contributed to the significant finding. The Scheffe test is conservative and requires that two means be far apart before a significant difference between them is indicated (Huck, Cormier & Bounds, 1974).

The first ANOVA (Table 23) was used to examine well spouse depression when spouse groups diverged on the level of reciprocal support they perceived. Group 1 (n=23) consisted of well and ill spouses who both perceived low levels of marital reciprocal support (consistency low, LL). Group 2 (n=26) was composed of well and ill spouses who differed in their perception of marital reciprocal support (inconsistency, LH or HL), and group 3 (n=24) was composed of well and ill spouses who both perceived high levels of marital reciprocal support (consistency high, HH). The three groups were arbitrarily selected to maximize equal numbers per cell. A statistically significant difference was not found between groups ( $p = .234$ ) who were divergent for level of perceived marital reciprocal support, relative to well spouse depression. Group means would seem to indicate that when both spouses perceived high marital reciprocal support ( $\bar{x} = 2.95$ , s.d. = 2.15) the well spouse had lower levels of depression than when both perceived low ( $\bar{x} = 3.88$ , s.d. = 1.88), or one perceived high and the other low marital reciprocal support ( $\bar{x} = 3.73$ , s.d. = 1.95).

Results of the second ANOVA (Table 24) revealed a statistically significant difference ( $p = .0385$ ) between spouse groups who were not alike for perceived level of marital reciprocal support in terms of well spouse self-esteem (Group 1, LL,  $n = 23$ ; Group 2, HL or LH,  $n = 26$ ; Group 3, HH,  $n = 24$ ). The Scheffe post hoc test did not indicate any two groups that were significantly different at  $p \leq .05$ . Group means suggest that when both the ill and well spouse perceived low levels of marital reciprocal support ( $\bar{x} = 31.4$ , s.d. = 5.2) well spouse self-esteem was lower than when one perceived low and the other high

Table 23. Analysis of Variance Among Group 1 (LL), Group 2 (HL or LH), and Group 3 (HH) for Marital Reciprocal Support on Depression of the Well Spouse (n=73 pairs)

Source of Variance	df	MS	F	p
Depression				
Between groups	2	5.93	1.47	.234 (ns)
Within groups	70	4.00		
Total	72			

Note:

- LL = Both ill and well spouse perceive low levels of marital reciprocal support
- HL or LH = One spouse perceives high, other low marital reciprocal support or the converse
- HH = Both ill and well spouse perceive high levels of marital reciprocal support

Table 24. Analysis of Variance Among Group 1 (LL), Group 2 (HL or LH) and Group 3 (HH) for Marital Reciprocal Support on Self-Esteem of the Well Spouse (n=73 pairs)

Source of Variance	df	MS	F	p
Self-esteem				
Between groups	2	70.4	3.41	.038*
Within groups	70	20.6		
Total	72			

\*  $p \leq .05$

Note:

LL = Both ill and well spouse perceive low levels of marital reciprocal support

HL or LH = One spouse perceives high, other low marital reciprocal support or the converse

HH = Both ill and well spouse perceive high levels of marital reciprocal support

( $\bar{x} = 34.2$ , s.d. = 4.1), or both perceived high levels of marital reciprocal support ( $\bar{x} = 34.6$ , s.d. = 4.3). Well spouse self-esteem would seem to be more when both spouses perceived high marital reciprocal support than when one spouse perceived high and the other low.

Results of the third ANOVA revealed no statistically significant difference in means between spouses grouped according to various levels of perceived marital reciprocal support, relative to ill spouse depression ( $F = 1.5$ ,  $df = 2/70$ ). Difference in group means suggest that when both spouses perceived high levels of marital reciprocal support (HH) the ill spouse was less depressed ( $n=24$ ,  $\bar{x} = 2.87$ , s.d. = 1.97) than when both perceived low (LL) levels ( $n=23$ ,  $\bar{x} = 3.71$ , s.d. = 1.95) or one spouse perceived high and the other low (HL or LH,  $n=26$ ,  $\bar{x} = 3.68$ , s.d. = 1.83) marital reciprocal support. Depression was greater when one spouse perceived high and the other low marital reciprocal support as opposed to when both perceived low.

Results of the fourth ANOVA revealed statistically significant ( $p < .05$ ) differences between spouse groups who perceive diverse levels of marital reciprocal support in terms of ill spouse self-esteem ( $F = 5.4$ ,  $df = 2/70$ ,  $p = .006$ ). The Scheffe post hoc test indicated that group 1 (LL,  $n=23$ ) and group 2 (HL or LH,  $n=26$ ) when compared with group 3 (HH,  $n=24$ ) were different from it. Group 1 ( $\bar{x} = 31.2$ , s.d. = 3.9) and group 2 ( $\bar{x} = 31.4$ , s.d. = 4.2) had lower means in terms of ill spouse self-esteem than spouses in group 3 ( $\bar{x} = 34.7$ , s.d. = 4.1). Group 3 had higher self-esteem scores than groups 1 and 2. The findings would seem to indicate that when perceptions of marital

reciprocal support were very similar, but low, or one spouse perceived high levels of marital reciprocal support when the other perceived low, self-esteem was lower than when both spouses perceived high levels of marital reciprocal support.

Results of the fifth ANOVA (Table 25) indicated a statistically significant difference ( $p = .0045$ ) between spouse groups who had different levels of interpersonal support in terms of well spouse depression. Results of the Scheffe post hoc test indicated that both group 1 (LL,  $n=28$ ) and group 2 (HL or LH,  $n=27$ ) when compared with group 3 (HH,  $n=18$ ) were different from it. Group 1 ( $\bar{x} = 4.01$ ,  $s.d. = 1.97$ ) and group 2 ( $\bar{x} = 3.89$ ,  $s.d. = 1.69$ ) had higher means in terms of well spouses' perception of depression than spouses in group 3 ( $\bar{x} = 2.20$ ,  $s.d. = 2.04$ ). Group 3 had lower depression scores than groups 1 and 2. The findings suggest that when the difference in perceptions of interpersonal support was very similar, but low, or one spouse perceived high levels of interpersonal support when the other perceived low, depression was greater than when both spouses perceived high levels of interpersonal support.

Results of the sixth ANOVA (Table 26) indicated a statistically significant difference ( $p = .0028$ ) between spouse groups who perceive diverse levels of interpersonal support in terms of well spouse self-esteem. The Scheffe post hoc test indicated that group 1 (LL,  $n=28$ ) when compared with group 3 (HH,  $n=18$ ) was different ( $p \leq .05$ ) from the latter. Group 1 ( $\bar{x} = 31.4$ ,  $s.d. = 4.9$ ) had a lower mean in

Table 25. Analysis of Variance Among Group 1 (LL), Group 2 (HL or LH), and Group 3 (HH) for Interpersonal Support on Depression of the Well Spouse (n=73 pairs)

Source of Variance	df	MS	F	p
Depression				
Between groups	2	20.88	5.83	.0045*
Within groups	70	3.58		
Total	72			

\*  $p \leq .05$

Note:

- LL = Both ill and well spouse perceive low levels of interpersonal support.
- HL or LH = One spouse perceives high, other low interpersonal support or the converse.
- HH = Both ill and well spouse perceive high levels of interpersonal support.

Table 26. Analysis of Variance Among Group 1 (LL), Group 2 (HL or LH), and Group 3 (HH) for Interpersonal Support on Self-Esteem of the Well Spouse (n=73 pairs)

Source of Variance	df	MS	F	p
Self-esteem				
Between groups	2	122.4	6.4	.0028*
Within groups	70	19.1		
Total	72			

\*  $p \leq .05$

Note:

- LL = Both ill and well spouse perceive low levels of interpersonal support.
- HL or LH = One spouse perceives high, other low interpersonal support or the converse.
- HH = Both ill and well spouse perceive high levels of interpersonal support.

terms of well spouses' self-esteem than spouses in group 3 ( $\bar{x} = 36.0$ , s.d. = 3.7). Group 3 had higher self-esteem scores than group 1. The findings would seem to indicate that well spouse self-esteem was less when both spouses perceived low levels of interpersonal support than when both spouses perceived high levels.

Results of the seventh ANOVA revealed no statistically significant difference between spouses, grouped according to diverse levels of perceived interpersonal support, relative to ill spouse depression ( $F = 1.32$ ,  $df = 2/70$ ). Differences in group means suggests that when both spouses perceived high levels of interpersonal support (HH,  $n=18$ ), the ill spouse was less depressed ( $\bar{x} = 2.78$ , s.d. = 1.90) than when both perceived low levels (LL,  $n=28$ ,  $\bar{x} = 3.67$ , s.d. = 1.91) or when one spouse perceived high and the other low (HL or LH,  $n=27$ ,  $\bar{x} = 3.59$ , s.d. = 1.94). Results suggest that depression was higher when one spouse perceived high and the other low levels of interpersonal support as opposed to when both perceived low levels of marital reciprocal support.

Results of the eighth ANOVA revealed no statistically significant difference between spouses grouped according to diverse levels of perceived interpersonal support, relative to ill spouse self-esteem ( $F = 1.43$ ,  $df = 2/70$ ). Differences in group means indicate that when both spouses perceived high levels of interpersonal support (HH,  $n=18$ ,  $\bar{x} = 33.7$ , s.d. = 4.2) the ill spouse had higher self-esteem than when both spouses perceived low interpersonal support (LL,  $\bar{x} = 31.5$ , s.d. = 2.5) or when one spouse perceived high and the other low interpersonal support (HL or LH,  $n=27$ ,  $\bar{x} = 32.6$ , s.d. = 5.7). It appears

that ill spouses perceived less self-esteem when spouses were both low on interpersonal support than when one spouse perceived high and the other low levels of interpersonal support. Table 27 summarizes question three ANOVA results for well and ill spouses.

Research question four, What is the relationship between congruence in dyad perception of marital reciprocal support and the psychological status of the well spouse was analyzed in two steps. The first step generated a new variable, the dyadic reciprocity congruence index (DRCI), by subtracting ill spouse reciprocity scores from well spouse reciprocity scores using absolute values. The second step used Pearson correlation coefficients to test the statistical significance of correlations between the dyadic reciprocity congruence index (DRCI) and the well spouse's self-esteem and depression. Correlations in terms of the ill spouse were also performed.

The results of correlating the DRCI with both the well spouse's depression and self-esteem scores are presented in Table 28. No statistically significant relationship was found between the dyadic reciprocity congruence index (DRCI) and depression ( $r = .1349$ ,  $p = .255$ ). The direction of the relationship suggested the greater the difference in dyadic perception of marital reciprocal support congruence, the greater the depression in the well spouse. No statistically significant relationship was found between the dyadic reciprocity congruence index (DRCI) and well spouse self-esteem ( $r = -.08$ ,  $p = .497$ ). The direction of the relationship suggests the greater the difference in dyadic perception of marital reciprocal support congruence, the less the well spouse perceived self-esteem (Table 28).

Table 27. Analysis of Variance Results for Well and Ill Spouse Levels of Marital Reciprocal and Interpersonal Support on Depression and Self-Esteem (n=73 pairs)

ANOVA Investigation	F Ratio and Probabilities	
	Well Spouse	Ill Spouse
Level of marital reciprocal support on depression	F = 1.479 p = .2347	F = 1.506 p = .2288
Level of marital reciprocal support on self-esteem	F = 3.414 p = .0385*	F = 5.400 p = .0066*
Level of interpersonal support on depression	F = 5.834 p = .0045*	F = 1.322 p = .2730
Level of interpersonal support on self-esteem	F = 6.402 p = .0028*	F = 1.437 p = .2445

\*  $p \leq .05$

Table 28. Pearson Correlation Coefficients for the Dyadic Reciprocity Congruence Index (DRCI) and Interpersonal Support Congruence Index (DIPSCI) with Well Spouse Depression and Self-Esteem (n=73)

Variables	Depression	Self-Esteem
DRCI	.134 (p=.256) ns	-.080 (p=.497) ns
DIPSCI	.215 (p=.067)*	-.167 (p=.157) ns

\*  $p \leq .10$

The results of the correlation (Table 29) of the DRCI with ill spouse depression scores revealed no statistically significant relationship between the dyadic reciprocity congruence index (DRCI) and depression ( $r = .121, p = .307$ ). No statistically significant relationship was found between the DRCI and ill spouse self-esteem ( $r = .100, p = .399$ ). The direction of the relationship suggests the greater the difference in dyadic perception of reciprocal support congruence, the less self-esteem the ill spouse perceived.

Research question five, What is the relationship between congruence in dyadic perception of interpersonal support and the psychological status of the well spouse, was answered in the same two step analysis procedure as used for research question four. A new variable, the dyadic interpersonal support congruence index (DIPSCI), was first created by subtracting ill spouse interpersonal support scores from well spouse interpersonal support scores using absolute values. The second step used Pearson correlation coefficients to test the statistical significance of correlations between the dyadic interpersonal support congruence index (DIPSCI) and self-esteem and depression of the well spouse. Correlations in terms of the ill spouse were also performed.

The results presented in Table 28 reveal a statistically significant ( $p \leq .10$ ) relationship ( $r = .215, p = .067$ ) between the DIPSCI and well spouse depression. The direction of the correlation suggests that the greater the difference in dyadic perception of congruence in interpersonal support, the greater the depression in the well spouse.

Table 29. Pearson Correlation Coefficients for the Dyadic Reciprocity Congruence Index (DRCI) and the Interpersonal Support Congruence Index (DIPSCI) with Ill Spouse Depression and Self-Esteem (n=73)

Variables	Depression	Self-Esteem
DRCI	.121 (p=.307) ns	.100 (p=.399) ns
DIPSCI	.180 (p=.126) ns	-.097 (p=.413) ns

There was no statistically significant relationship between the dyadic interpersonal support congruence index (DIPSCI) and self-esteem ( $r = -.167$ ,  $p = .157$ ). The direction of the correlation suggests that the greater the difference in dyadic perception of interpersonal support congruence, the lower the well spouse's self-esteem.

No statistically significant relationship was found between the DIPSCI and ill spouse depression ( $r = .1807$ ,  $p = .126$ ) or the DIPSCI and ill spouse self-esteem ( $r = -.097$ ,  $p = .413$ ). The direction of the relationship between the DIPSCI and ill spouse depression suggests that the greater the difference in dyadic perception of interpersonal support congruence, the greater the ill spouse's depression. The direction of the relationship between DIPSCI and self-esteem suggests that the greater the difference in dyadic perception of interpersonal support congruence, the lower the ill spouse's self-esteem.

Research question six investigated the relationship between the well spouse's psychological status and selected study variables. Pearson correlation coefficients were used to determine statistically significant relationships. Correlation coefficients for well and ill spouses are presented for comparison in terms of conceptual framework variables and selected demographic variables. The results presented in Tables 30 and 31 indicate that statistically significant relationships exist between self-esteem and years of education for both spouses. Time since diagnosis and severity of illness variables are positively correlated and statistically significant for the well but not the ill spouse. The longer the time since diagnosis the higher the well

Table 30. Pearson Correlation Coefficients Between Variables in the Conceptual Framework and Selected Demographic Variables for the Well Spouse (n=71-73)

Variables	Length of Relationship	Number of Marriages	Years of Education	Inter-Personal Conflict	Time Since Diagnosis	Patient Performance Status
Marital reciprocal support	-.06	.08	.18	-.87*	.09	.08
Interpersonal support	-.06	.01	.13	-.88*	.03	.03
Severity of illness	.08	-.12	.02	.06	.21*	.43*
Depression	-.16	.11	-.09	.38*	-.21*	.19*
Self-Esteem	.13	-.17	.31*	-.24*	.03	-.06

\*  $p \leq .10$

Table 31. Pearson Correlation Coefficients Between Variables in the Conceptual Framework and Selected Demographic Variables for the Ill Spouse (n=71-73)

Variables	Length of Relationship	Number of Marriages	Years of Education	Inter-Personal Conflict	Time Since Diagnosis	Patient Performance Status
Marital reciprocal support	-.12	.14	.02	-.58*	.22*	-.12
Interpersonal support	-.24*	.23	-.01	-.68*	.23*	-.16
Severity of illness	-.01	-.03	-.11	.02	.13	.49*
Depression	.05	.06	-.19	.13	-.06	.47*
Self-Esteem	-.04	-.11	.25*	-.16	.12	-.29*

\*  $p \leq .10$

spouse's perception of the mate's illness severity. An inverse statistically significant relationship ( $r = -.21$ ) existed between time since diagnosis and depression scores for the well spouse, but not for the ill. It would appear the longer the time since diagnosis the higher the well spouse depression. Association between reciprocal support and time since diagnosis ( $r = .22$ ) was statistically significant ( $p \leq .10$ ) for the ill but not the well spouse. Results suggest the longer the time since diagnosis the higher the ill spouse's perception of reciprocal support. The same relational pattern was evident between time since diagnosis and interpersonal support for the ill spouse ( $r = .23$ ) but not the well.

Patient performance status was highly correlated with severity of illness for both the well ( $r = .43$ ) and ill ( $r = .49$ ) spouse. The relationship between ill spouse performance status and depression was not as high for the well spouse ( $r = .19$ ) as it was for the ill ( $r = .49$ ). The inverse relationship between ill spouse performance status and ill spouse self-esteem was ( $r = -.29$ ) and statistically significant ( $p \leq .10$ ). Findings suggest the higher the performance status of the ill spouse the higher the self-esteem. The relationship between ill spouse performance status and well spouse self-esteem was not statistically significant. The correlation between number of marriages and interpersonal support was  $r = .23$  and statistically significant ( $p \leq .10$ ) for the ill spouse only. Results suggest that as the number of marriages increased so did interpersonal support. The association between length of dyadic relationship and interpersonal support ( $r = -.24$ ) was statistically significant ( $p \leq .10$ ). The results

of the correlation suggest that the longer the relationship the lower the interpersonal support perceived.

Analyses, using independent t-tests, were done to determine whether perceptions diverged on marital reciprocal support, interpersonal support, depression, and self-esteem based on the gender of the well or ill spouse. As presented in Table 32, the t-value for difference in perception between male and female well spouses on these variables was not statistically significant ( $p \leq .10$ ). The mean values between the male and female well spouses were similar in magnitude. The results suggest that gender is not a factor in spouse perceptions of marital reciprocal support, interpersonal support, depression and self-esteem.

No statistically significant results were found between male and female ill spouses on these same variables with the exception of self-esteem ( $p = .024$ ). An inspection of the means (Table 33) indicates that mean values for ill females are higher than for ill males on self-esteem.

Correlations between variables in the conceptual framework (Figure 1) are presented in Table 34. An inspection of these data reveals statistically significant associations ( $p \leq .10$ ) between marital reciprocal support and the variables interpersonal support ( $r = .88$ ,  $n=146$ ), self-esteem ( $r = .35$ ,  $n=146$ ) and depression ( $-.19$ ,  $n=146$ ). Findings suggest the higher the marital reciprocal support, the higher both interpersonal support and self-esteem, and the lower the depression. An inverse correlation ( $r = -.03$ ,  $n=146$ ) was found between marital reciprocal support and severity of illness. It was not statistically

Table 32. Difference Between Well Wife and Husband Scores on Marital Reciprocal Support, Interpersonal Support, Depression, and Self-Esteem Using t-test Analysis (n=73)

Variable	Groups	Mean	s.d.	t-value	Probability (Pooled Variance estimate)
Marital Reciprocal Support	Wives	52.72	9.91	-.22	.887 (ns)
	Husbands	53.18	8.24		
Interpersonal Support	Wives	55.44	10.87	.17	.866 (ns)
	Husbands	55.05	8.60		
Depression	Wives	16.73	13.00	.19	.846 (ns)
	Husbands	16.12	13.89		
Self-Esteem	Wives	34.00	4.67	1.04	.303 (ns)
	Husbands	32.87	4.69		

Table 33. Difference Between Ill Wife and Husband Scores on Marital Reciprocal Support, Interpersonal Support, Depression, and Self-Esteem using t-test Analysis (n=73)

Variable	Groups	Mean	s.d.	t-value	Probability (Pooled Variance Estimate)
Marital Reciprocal Support	Wives	55.45	5.99	.79	.434 (ns)
	Husbands	54.30	6.52		
Interpersonal Support	Wives	59.51	6.40	.99	.324 (ns)
	Husbands	58.06	6.08		
Depression	Wives	13.99	11.01	-.96	.342 (ns)**
	Husbands	16.90	14.64		
Self-Esteem	Wives	33.54	3.73	2.31	.024*
	Husbands	31.25	4.66		

\*  $p \leq .05$

\*\* Separate variance estimate ( $F = 1.77, p = .093$ )

Table 34. Pearson Correlation Coefficients Between Variables in the Conceptual Framework: Marital Reciprocal Support, Interpersonal Support, Severity of Illness, Self-Esteem and Depression (n=142-146)

Variables	Marital Reciprocity Support	Inter-personal Support	Severity of Illness	Self-Esteem	Depression
Marital Reciprocal support	1.00	.88 (p=.000)*	-.03 (p=.70)	.35 (p=.000)*	-.19 (p=.02)*
Interpersonal support		1.00	-.06 (p=.49)	.24 (p=.004)*	-.20 (p=.02)*
Severity of illness			1.00	-.20 (p=.02)*	.46 (p=.000)*
Self-esteem				1.00	-.45 (p=.000)*
Depression					1.00

\*  $p \leq .05$ \*

significant. Results suggest that as severity of illness decreased marital reciprocal support increased. The same correlation pattern as seen with marital reciprocal support was evident (Table 34) between interpersonal support and the variables marital reciprocal support ( $r = .88$ ,  $n=146$ ), self-esteem ( $r = .24$ ,  $n=146$ ), depression ( $r = -.20$ ,  $n=146$ ) and severity of illness ( $r = -.06$ ,  $n=142$ ).

Associations between severity of illness and self-esteem ( $r = -.20$ ,  $n=142$ ), and severity of illness and depression ( $r = .40$ ,  $n=142$ ) were statistically significant ( $p \leq .10$ ). Results suggest that as severity of illness increased, self-esteem decreased and depression increased. Self-esteem has a statistically significant inverse relationship with depression ( $r = -.45$ ,  $n=146$ ) and severity of illness ( $r = -.20$ ,  $n=142$ ). It would appear that as severity of illness and depression increased, self-esteem decreased. The relationship between severity of illness and marital reciprocal support ( $r = -.03$ ,  $n=142$ ) and severity of illness and interpersonal support ( $r = -.06$ ,  $n=142$ ) was not statistically significant.

The fundamental relationships among the conceptual framework concepts, insofar as assessed, are consistent with relationships suggested by empirical research (Broadhead, et al., 1983; Norbeck, 1988). Social support (marital reciprocal support and interpersonal support) was negatively associated with stress (severity of illness), and positively related to health (self-esteem). Social support as a buffer between stress (severity of illness) and health (self-esteem and depression) was not addressed in the present study.

Six statistically significant relationships ( $p \leq .10$ ) were observed between conceptual framework variables and selected demographic variables ( $n=138-146$ ). Table 35 indicates that age was inversely associated with depression ( $r = -.15$ ). Results suggest the older the person the lower the depression score. Years of education were inversely related to depression ( $r = -.15$ ) and positively related to self-esteem ( $r = .27$ ). Results suggest the more years of education the lower the depression and higher the self-esteem.

In summary, the answer to research question one revealed no statistically significant difference ( $p \leq .10$ ) between ill and well spouse perceptions of marital reciprocal support. Research question two analysis revealed a statistically significant difference ( $p = .01$ ) between well and ill spouse perceptions of interpersonal support in the marital relationship.

Analysis relative to research question three indicated no statistically significant difference ( $p \leq .10$ ) between spouse groups who were not alike in perceived level of reciprocal support relative to well spouse depression. Statistically significant differences ( $p \leq .10$ ) were found between spouse groups who were not alike in perception of reciprocal support level relative to well spouse self-esteem ( $p = .038$ ); and spouse groups diverse in perception of interpersonal support level relative to well spouse depression ( $p = .0045$ ) and self-esteem ( $p = .0028$ ).

The analysis for research question four revealed no statistically significant association ( $p \leq .10$ ) between congruence in dyadic

Table 35. Pearson Correlation Coefficients Between Variables in the Conceptual Framework and Selected Demographic Variables (n=139-146)

Variables	Length of Relationship	Number of Marriages	Years of Education	Inter-personal Conflict	Age
Marital reciprocal support	-.08	.09	.12	-.79*	.07
Interpersonal support	-.13	.07	.08	-.82*	.06
Severity of illness	-.04	-.07	.05	.06	.003
Depression	-.05	.12	-.15*	.26	-.15*
Self-esteem	.05	-.13	.27*	-.21*	.07

\*  $p \leq .10$

perception of marital reciprocal support (DRCI) and well spouse depression or self-esteem. The relationship between the DRCI and depression and the DRCI and self-esteem were not statistically significant for the ill spouse.

Research question five analysis indicated a statistically significant relationship ( $p \leq .10$ ) between congruence in dyadic perception of interpersonal support (DIPSCI) and well spouse depression ( $p = .067$ ); and no statistically significant relationship between congruence in dyadic perception of interpersonal support (DIPSCI) and well spouse self-esteem. The relationships between the DIPSCI and depression and the DIPSCI and self-esteem were not statistically significant for the ill spouse.

Research question six analysis revealed a number of statistically significant relationships ( $p \leq .10$ ) between conceptual framework and demographic variables for the well spouse. Reciprocal support was inversely related to interpersonal conflict ( $p = -.87$ ) as was interpersonal support ( $r = -.88$ ). Severity of illness and ill spouse performance status were correlated ( $p = .43$ ), suggesting that the more serious the illness the more incapacitation. Depression was positively correlated with interpersonal conflict ( $r = .38$ ); negatively correlated with time since diagnosis ( $r = -.21$ ); and positively correlated with ill spouse performance status ( $r = .19$ ). Self-esteem was positively associated with years of education ( $r = .31$ ) and negatively correlated with interpersonal conflict ( $r = -.24$ ).

Results of correlations ( $p \leq .10$ ) between conceptual framework and demographic variables for the ill spouse reveal: an inverse relationship between interpersonal conflict (IPC) and marital reciprocal support ( $r = -.58$ ) and IPC and interpersonal support ( $r = -.68$ ); a positive relationship between marital reciprocal support and time since diagnosis ( $r = .22$ ); an inverse relationship between length of relationship and interpersonal support ( $r = -.24$ ); a negative correlation between interpersonal support and length of relationship ( $r = -.24$ ); a positive correlation between severity of illness and patient performance status ( $r = .49$ ); and a positive relationship between depression and patient performance status ( $r = .47$ ). Self-esteem was correlated with years of education ( $r = .25$ ), and patient performance status ( $r = -.29$ ).

#### Summary of Conceptual Framework Empirical Relationships

Relationships in the conceptual framework (Figure 1) were not empirically demonstrated between marital reciprocal support and severity of illness nor between interpersonal support and severity of illness for the well spouse. Those variables depicting a relationship between dyadic reciprocal support congruence (DRCI) and well spouse depression were not statistically significant nor was the relationship between DRCI and self-esteem. The relationship between dyadic interpersonal support congruence (DIPSCI) and well spouse depression was statistically significant ( $p = .067$ ) but not statistically significant between the DIPSCI and self-esteem. Based on the empirical conceptual framework there is statistically significant ( $p \leq .10$ ) evidence to suggest; the

more the well spouse perceives reciprocal support in the marital relationship the less (s)he is depressed ( $r = -.22$ ) and the higher his/her self-esteem ( $r = .33$ ); the more the well spouse perceives interpersonal support in the marital relationship the less (s)he is depressed ( $r = -.23$ ) and the higher his/her self-esteem ( $r = .30$ ); the greater the discrepancy between dyadic perception of interpersonal support (DIPSCI) in the relationship the more the well spouse is depressed ( $r = .22$ ); the greater the perception that the spouse's illness is serious the higher the well spouse's depression ( $r = .43$ ); and the lower the self-esteem ( $r = -.25$ ). Relationships in the operational framework (Figure 2) are summarized by Figure 3 in terms of their empirical validity.

The conceptual framework was partially empirically validated for the ill spouse (Figure 4). Relationships between severity of illness and the variables self-esteem, marital reciprocal support and interpersonal support, respectively, were not empirically validated. The association between marital reciprocal support and depression was not empirically validated, nor was the relationship between interpersonal support and depression. Relationships between the DRCI and the variables depression and self-esteem were not statistically significant nor were the relationships between the DIPSCI and variables depression and self-esteem.

There is empirical evidence ( $p \leq .10$ ) to suggest: the more the ill spouse perceives reciprocal support in the marital relationship the higher the self-esteem ( $r = .40$ ); the more the spouse perceives interpersonal support in the marital relationship the higher the

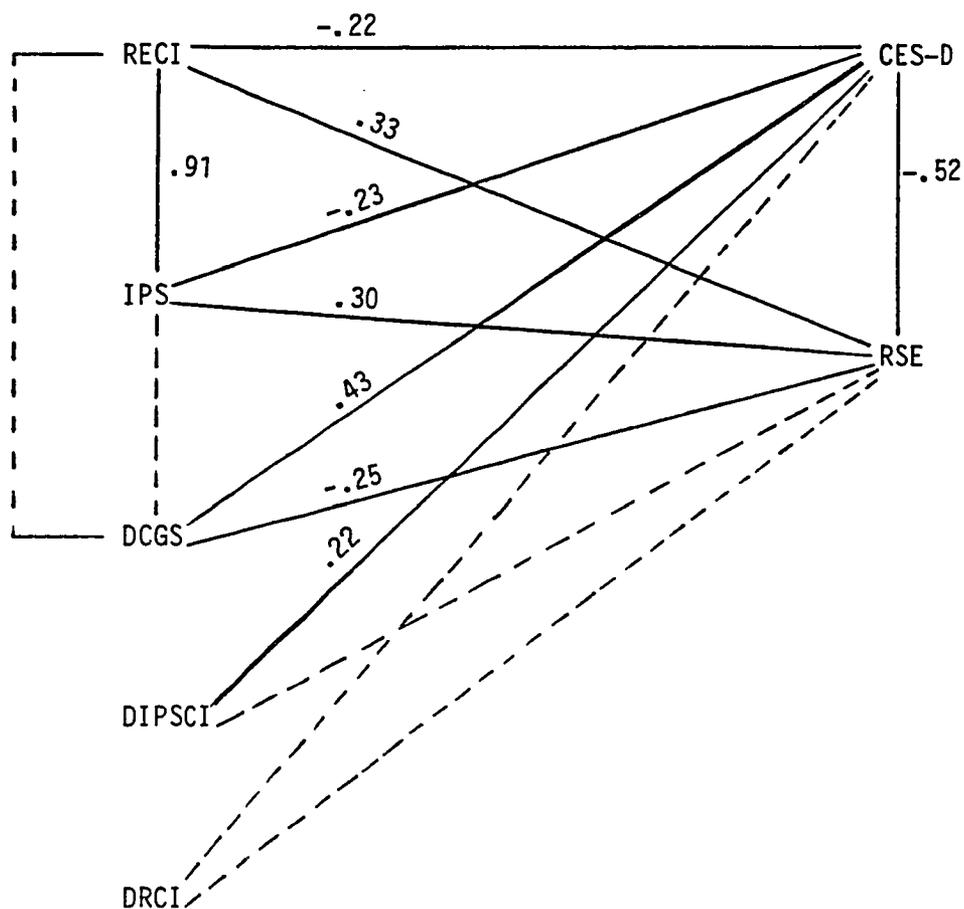


Figure 3. Pearson Correlation Coefficients Between Variables in the Operational Framework (Well Spouses, n=73)

— Empirically Validated ( $p \leq .10$ )

----- Not Empirically Validated

KEY: RECI = Reciprocal Support  
 IPS = Interpersonal Support  
 DCGS = Severity of Illness  
 DIPSCI = Dyadic IPS Congruence  
 DRCI = Dyadic RECI Congruence  
 CES-D = Depression  
 RSE = Self-Esteem

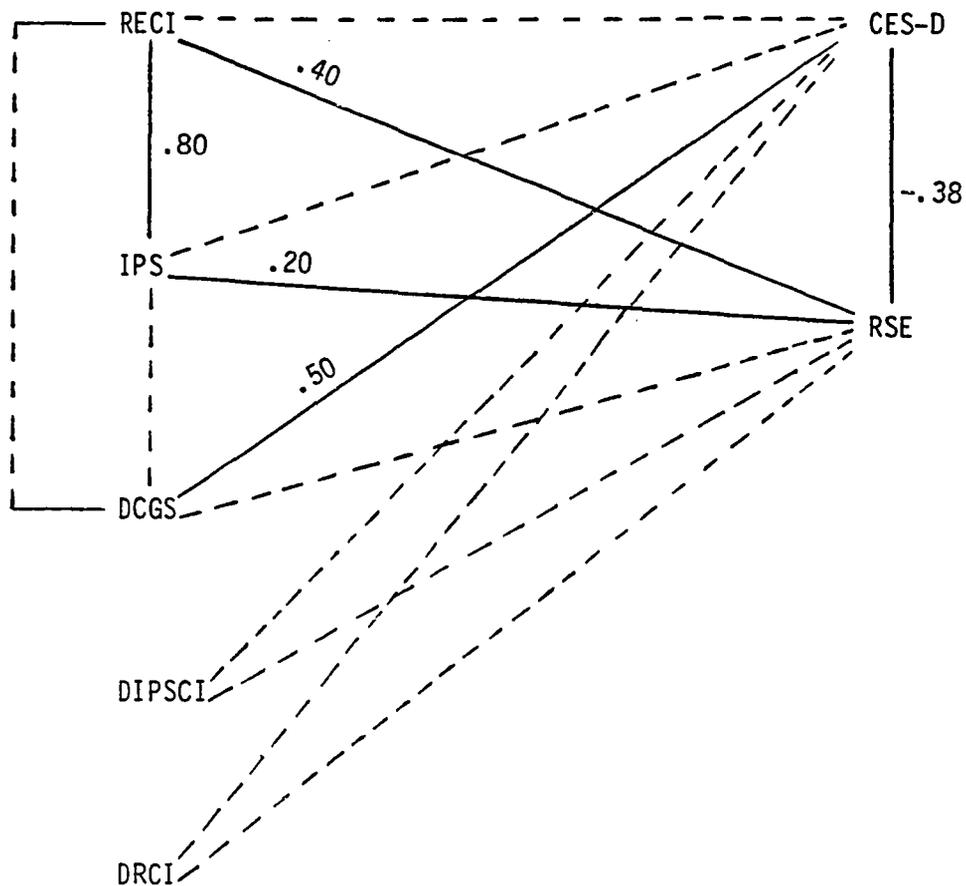


Figure 4. Pearson Correlation Coefficients Between Variables in the Operational Framework (Ill Spouses, n=73)

—— Empirically Validated ( $p \leq .10$ )

----- Not Empirically Validated

KEY: RECI = Reciprocal Support  
 IPS = Interpersonal Support  
 DCGS = Severity of Illness  
 DIPSCI = Dyadic IPS Congruence  
 DRCI = Dyadic RECI Congruence  
 CES-D = Depression  
 RSE = Self-Esteem

self-esteem ( $r = .20$ ); the higher the depression the lower the self-esteem ( $r = -.38$ ); the more the spouse perceives his/her illness as serious the greater the depression ( $r = .50$ ). Relationships in the operational framework (Figure 2) are summarized by Figure 4 in terms of their empirical validity.

#### Summary

This chapter presents the results of the data analysis and includes: 1) psychometric properties of the instruments; 2) description of the sample; and 3) relationships among selected variables. The chapter concludes with a summary, for the well and ill spouse groups, of Pearson correlation coefficients between variables in the operational framework.

## CHAPTER V

### DISCUSSION AND CONCLUSIONS

A discussion of the findings from the data analysis for the investigation of marital reciprocal support (MRS) is presented in this chapter. The discussion includes: the adequacy of the conceptual framework and implications for theory building, nursing practice and further research. Methodological issues are addressed throughout the chapter.

#### Discussion of Findings

The relation of social support to health promotion and/or protection, in terms of stress, is a common theme in the literature (Caplan, 1974, 1976; Cassel, 1976; Cobb, 1976). No studies were found, however, that specifically examined an association between support given and received in marital relationships and the outcomes for the well spouse when the other has cancer. This study therefore addressed the relationship between marital reciprocal support and the psychological status of the spouse whose mate was being treated for cancer.

#### Adequacy of the Conceptual Framework of the Study

The conceptual framework (Figure 1) was based on two theoretical perspectives. The first perspective, symbolic interactionism, posits that meaning of objects (physical, social, or abstract) derives from

social interaction with fellow human beings. Hence the meaning an object acquires for an individual is essentially determined by an interpretation of what others say and do in relation to it. What others say and do concerning an object can modify the way an individual perceives and is affected by it.

The second perspective, support as a stress buffer, complements the symbolic interactionism perspective. Support moderates or buffers the negative impact of stress on health and has a positive relationship to it and a negative one to stress. Theoretically, what others say and do in interpersonal relationships modify the negative impact of stressful objects such as cancer, on the health of individuals.

Number of empirically validated relationships ( $p = \leq .10$ ) served as the criterion of adequacy for the conceptual framework. It is also acknowledged that other variables, not included in the framework, may be contributing to the variance observed in the outcome variables, depression and self-esteem. Due to sample size and concern for subject time and/or symptoms, only selected variables cited in the literature as potentially confounding were examined. These are included after the discussion of the adequacy of the conceptual framework.

Relationships in the framework that were upheld suggested that the well spouse perceived interpersonal and reciprocal support in the marital relationship and that these perceptions were negatively associated with depression and positively associated with self-esteem. Severity of illness was also significantly correlated with depression and self-esteem in the direction of the greater the severity of illness perceived the higher the depression and lower the self-esteem.

The finding that well spouses both gave support to and received support from ill spouses suggests that the cancer experience is jointly managed through mutual provisions of personal resources. DiMatteo and Hayes (1981) argue that this mutuality is essential when one individual in the relationship is ill, even if what is returned to the other is limited to expressions of gratitude. The cost of failure to reciprocate, in social relationships, is the likely cessation of helping behaviors (Becker, 1986).

The nature of supportive behaviors given and received in the marital relationship reflected the conceptualizations found in the literature (Cobb, 1976, Kahn & Antonucci, 1980). Spouses described support as expressions of warmth, caring, sensitivity, positivism, appreciation, and sharing in household or leisure activities as much as possible. Almost without exception spouses named the other as the primary source of support.

Marital reciprocal support as perceived by the well spouse, was apparently therapeutic relative to depression and self-esteem. Evidence of therapeutic relationships between social support and health in the context of stressful life events is cited repeatedly in the literature (Dean & Lin, 1977; Lindsey, et al., 1981). One function of social support is the reassurance of self-worth associated with an increase in self-esteem (Weiss, 1969). Kerns and Turk (1984) report a slight inverse relationship between pain level and depression in husbands with chronic pain when wives supported them. Northouse (1988) concluded from her study of social support provided to spouses, from

a variety of sources, that support was equally as important for husbands as for patients in adjustment to mastectomy.

Relationships in the conceptual framework that were not statistically significant were between well spouse perception of the seriousness of the mate's illness and perceptions of marital reciprocal support and interpersonal support. The direction of the relationship would suggest that as marital support or interpersonal support increases perception of severity of illness decreases. The lack of significance of these findings suggest three possibilities. The first is that there is a point beyond which interpersonal and/or marital reciprocal support lose their therapeutic impact. This finding was best exemplified with the ill spouse whose perception of marital reciprocal and interpersonal support were not significantly related to depression. The notion that severity of illness or depression may mediate the therapeutic impact of marital support is suggested by empirical studies referenced by Northouse (1981). In one such study the ability of women, with few physical post operative complications, to deal with postmastectomy depression was enhanced by social support. Social support did not help to buffer the effects of postmastectomy depression in women who had multiple post operative complications. The second possible explanation for no empirical relationship between severity of illness and marital reciprocal and interpersonal support is that when the illness is perceived as life-threatening no amount of interpersonal or marital reciprocal support can change this reality. The third possibility is that in serious stages of the disease the ill spouse may be extremely

limited in his or her ability to participate in marital reciprocal support. Results of ANOVAs to examine whether well and ill spouse perceptions of marital reciprocal and interpersonal support were equal or unequal suggested that ill spouses perceived more support than well spouses in the relationship. Well spouses reported that social or physical limitations due to cancer or the treatment made it difficult for the ill spouse to be as supportive as he or she might otherwise be.

One out of four relationships in the framework between dyadic congruence in perceptions of reciprocal (DRCI) and interpersonal support (DIPSCI) and well spouse psychological status was statistically significant. The significant relationship ( $p \leq .10$ ) was between marital dyad perception of interpersonal support (DIPSCI) and well spouse depression. The finding that discrepancies in marital dyad perception of interpersonal support (DIPSCI) was related to well spouse depression suggests the relevance to health of reciprocity in marital relationships. Balanced, mutually productive interactions and enhanced self-esteem, due to the ability to perform one's reciprocative role, are potential benefits of marital reciprocal support (Becker, 1986). The significance of being able to perform one's reciprocative role was suggested by the correlations between self-esteem and marital reciprocal support for the well ( $r = .33$ ,  $p = .005$ ) and ill spouse ( $r = .39$ ,  $p = .000$ ). Interpersonal support was less highly correlated with self-esteem for well ( $r = .29$ ,  $p = .011$ ) and ill spouses ( $r = .19$ ,  $p = .09$ ).

The relationship between dyadic perception of congruence in interpersonal support (DIPSCI) and well spouse self-esteem did not hold up in the conceptual framework. The direction of the relationship, however, suggests that imbalances in support given and received were negatively related to well spouse self-esteem.

The relationships between dyad perception of congruence in reciprocal support (DRCI) and depression did not hold up, nor did the relationship between the DRCI and well spouse self-esteem. Again, the direction of these relationships suggest that higher depression and lower self-esteem are associated with incongruent dyadic perception of marital reciprocal support.

Failure to establish statistically significant relationships ( $p < .10$ ) between the DIPSCI and self-esteem and between the DRCI and depression or self-esteem may be due to a number of factors. The first is that the discrepancy scores contain less variance than original scores, which tends to attenuate the power of subsequent statistical analysis on these scores (Uphold & Strickland, 1989). Variance, already small in the original scores for interpersonal and reciprocal support, may have compounded the attenuating effect. The preceding authors advocate the use of score transformations or weights as suggested by Cohen and Cohen (1983) to bypass the attenuation problem. Second, Tilden indicated that in psychometric tests of the IPRI instrument the reciprocity subscale was weaker than either the interpersonal support or interpersonal conflict subscales. Thirdly, the reciprocity "subfacit" of social support may be difficult for respondents to assess. Well subjects identified areas in which ill spouse reciprocity could

not occur due to the disease or its treatment effects. When asked about the equality of support given and received in the marital relationship well spouses frequently perceived it as equal or about equal even though they may have taken over various responsibilities once the domain of the ill spouse. Well spouse reports suggested that their perceptions of equality of reciprocity took into account limitations imposed by the disease and treatment. It would appear that when ill spouses demonstrated support, as physical limitations permitted and/or acknowledged the supportiveness of their spouse, equality of reciprocal support was more likely to be perceived. Given the length of time of some of the relationships, well spouses may have assessed equality in terms of past reciprocated behaviors of the ill spouse (Becker, 1986; Horowitz & Shindlerman, 1983).

Correlation coefficients were useful to demonstrate the extent to which spouse interpersonal and reciprocal support scores varied in relation to depression and self-esteem. Correlations did not, however, address distance between scores (Uphold & Strickland, 1989) providing information about the impact of different levels of reciprocal or interpersonal support on well spouse depression and self-esteem. The results of one-way ANOVAs, used to obtain this information, suggest that problems with attenuation and the reciprocity subscale may explain the non-significant relationships. The level of interpersonal support (high, low, or mixed), as perceived by well and ill spouses in each group, had an impact on well spouse depression and self-esteem. In the one out of four ANOVAs, where a significant finding was not found, the reciprocity subscale was used to determine if level of reciprocal

support had an impact on well spouse depression. The results of the ANOVAs favorably compared with the direction and/or significance of results generated by correlations between well spouse psychological outcome variables and the DRCI or DIPSCI. With both statistical procedures the results suggested that congruence between ill and well spouse perceptions of marital reciprocal or interpersonal support was important to well spouse psychological health. This was particularly the case when the congruence was in terms of high rather than low or mixed levels of support between the spouses.

A summary of empirically validated relationships is provided for the well (Figure 3) and ill (Figure 4) spouses. It would appear in comparing the two figures that marital reciprocal and interpersonal support have a greater impact on psychosocial health promotion for the well spouse than for the ill. One explanation for this observation may be the difference between the stress of sharing, as a spouse, the experience of a life-threatening disease and actually having the disease. The potential limits of social support as a stress buffer have been discussed elsewhere.

Several variables, not included in the conceptual framework, may have affected well spouse responses about their self-esteem and depression. The extent to which the ill spouse was able to participate in usual activities, may be a factor in the level of depression spouses reported. One well spouse stated that things had not really changed since the cancer diagnosis. The ill spouse could still participate with her in activities such as "going out" and "dancing". Ill spouse performance status was significantly related to depression in both spouses.

Low depression scores may also be explained in terms of the variables: survival time of the ill spouse, sense of control or mastery, religious beliefs, age, and years of education. Survivors in this study who had had a lengthy remission or disproved poor prognostications regarding their disease or treatment effect, talked about a "good track record", and beating cancer once and doing it again. Subjects reported "taking it a day at a time", "never giving up the fight". Success stories regarding survival of others with similar disease and treatment effect were reported by well spouses.

Subjects repeatedly attributed an ability to control the impact of cancer on their lives to a positive attitude in themselves or others. A number of subjects described themselves as being life long positive thinkers or having been helped by positivistic philosophies espoused by Bernie Siegel, Norman Cousins or Stephanie Symington. Activities such as exercise, healthy diet, meditation, visualization, and avoidance of intra- or interpersonal negative communication were believed to be emotionally and physically health promoting. Positivism and control are exemplified in the statement by one ill spouse:

Being sick is not part of my life plan so we make future plans, retirement plans, and we're taking steps right now to make it happen. Everything that we do seems to lead to a positive long term life.

The positive outlook of one spouse was repeatedly cited as helpful by the other in dealing with the cancer experience. This observation reflects the symbolic interactionist's position that messages exchanged about objects, physical or abstract, affect how individuals view and

react to them. Personality characteristics such as mastery and self-efficacy have been cited in the literature as mediators of stress (Litt, 1988; Murphy, 1987; Pearlin & Schooler, 1978).

Subjects frequently reported how their faith in God and its expression through prayer, masses, bible reading, church attendance, and talking with a spiritual advisor helped them to deal with the cancer experience. For some, cancer had brought about a heightened appreciation of their relationship with God or a re-ordering of life priorities with associated life enrichment. The importance of spirituality to individuals experiencing threatening life events has been cited in the literature (Oberst & James, 1985; Reed, 1986).

Acceptance of death as a natural outcome of life may have been operating to reduce depression for some of the subjects. Comments made by subjects were "everybody has to die sometime", "you could get hit by a car" and "I'm not afraid to die". Age and education may also be operating to reduce the level of depression reported by subjects. Statistically significant inverse correlations were observed between depression and both age and number of years of education. Douglass (1974) found in her qualitative study of patients with leukemia and Hodgkin's disease that young seriously ill patients tended to feel "cheated". They believed they would not live to experience such events as marriage, mother or fatherhood. Enhancing social and economic factors may facilitate access to information, ability to use it and financial security. The literature suggests that class differences in response to stress relate to psychological well-being (Cronkite & Moos, 1984; Turner & Noh, 1983).

### Implication of Study Results for Theory Building

Theory building relative to marital reciprocal support (MRS) is at a very elementary stage. The investigator was interested in exploring whether MRS was at all related to health outcomes for the well spouse. Despite the partial empirical validation of the conceptual framework, all of the potential concepts and linkages required for a MRS theoretical structure have not been specified or tested. This study serves as an initial step in theory building. The extent to which the framework was empirically upheld suggests the merit of pursuing further theory building. Qualitative research is indicated as a first step in theory building. The results of this type of research provide a basis for the conceptualization of marital reciprocal support and the refinement or development of instruments sensitive to the reciprocity subfacet of social support.

### Implications for Nursing

The impact of cancer on the psychosocial resources of individuals and families, who share the cancer experience, has become a vital area of concern to professional caregivers. Literature concerning social support, as a mediator of psychosocial stress associated with cancer, has tended to focus on the patient. Concern for the needs of family members, as primary sources of informal support to ill members, is a more recent development (Northouse, 1984, 1988, 1989; Stetz, 1986; Tringali, 1986; Woods, Yates & Primono, 1989; Woods, Lewis & Ellison, 1989). Social support is conceptualized as having a subfacet reciprocity, however, virtually no research was found that

looked specifically at reciprocal support in marital relationships and its impact on the health of either spouse when one has a serious illness. Given the number of empirical studies investigating the impact of family or professional support on the psychosocial health of patients, this study focused on marital reciprocal support and its congruence relative to well spouse psychological status. The findings introduce an expanded perspective for nursing by focusing on the reciprocal subfacet of social support in the context of marriage and cancer.

Despite the fact that the findings of this study should be interpreted with caution due to limitations already cited, there is evidence to suggest that; 1) marital reciprocal support is related to the psychological status of the well spouse when one spouse has cancer, and 2) congruence in dyadic perception of interpersonal support is also related to the psychosocial status of the well spouse. Based upon this evidence nurses need to consider concurrent assessments of the support needs of both spouses. Nursing interventions could be designed to assist spouses to establish more mutually supportive interactions as indicated. In the event that non-supportive behaviors between spouses created negative psychosocial outcomes for either spouse, sources of supplemental support may be explored with that spouse. Once antecedents that influence MRS congruence are identified through further testing, nursing interventions could be directed toward them. Community health nurses might play a role in encouraging public education systems to teach life skills in the giving and receiving of support in significant relationships.

Subjects in this study expressed uncertainty about how to manage their need for support within the marital relationship and the best way to demonstrate support to their spouse in the context of cancer. They not only expressed a need for study of this area, one or both members of 10 marital dyads requested the results of this study.

#### Implications for Future Research

Theory building and testing is warranted to help bridge the gaps in knowledge about marital reciprocal support. There is a need for longitudinal descriptive studies that assess the nature of marital reciprocal support over time and across the trajectory of cancer illness. The results of this type of study would provide information about change in the amount and nature of marital reciprocal support and the impact of such change on the psychosocial health of spouses.

The use of random sampling methods, control groups and groups that are matched on critical variables such as time since diagnosis, stage of illness, or ill spouse performance status are needed to enhance understanding of the MRS concept. Statistical analysis methods which determine the amount of variance explained in outcome variables by multiple independent variables are necessary to identify critical antecedents of congruent marital reciprocal support. The critical antecedent variables would then be available for intervention studies. Theory driven intervention studies would be the ultimate goal of marital reciprocal support investigations. The study of marital reciprocal support in terms of psychosocial outcomes could be studied

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with other populations to determine the generalizability of the theory. The concept of reciprocal support could also be investigated with other closely related groups such as between siblings, and between parents and children.

### Conclusions

Cancer impacts on the entire family system, particularly those who are closest to the ill member, such as a spouse. The results of this study on marital reciprocal support suggested that, up to a point, the more congruent the support exchanged between the well and ill spouse the better the psychological status of both spouses. The results should be viewed with caution for reasons already addressed as well as the following: 1) couples participating in the study were likely to have stable and enduring relationships based on their age and average length of marriages; 2) the requirement that both spouses participate possibly eliminated from the sample couples who had conflicted relationships; and 3) despite a high proportion of spouses with advanced disease all were ambulatory and few reported extreme levels of depression. The results of this study may be biased toward couples who are atypical in their response to cancer and support of each other. They do, however, suggest that the well spouse, as principal supporter of the ill mate, has a need for and benefits from marital reciprocal support.

### Summary

This chapter presented a discussion of the result of data analysis for the investigation of marital reciprocal support. The

adequacy of the conceptual framework underpinning the study and methodological issues were assessed. Implications for theory building, nursing practice and further research were discussed.

APPENDIX A

HUMAN SUBJECTS LETTER OF APPROVAL

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**The University of Arizona**

Human Subjects Committee  
1690 N. Warren (Bldg. 526B)  
Tucson, Arizona 85724  
(602) 626-6721 or 626-7575

5 September 1989

Lillian Douglass, R.N.  
c/o Alice Longman, R.N., Ed. D.  
College of Nursing  
Arizona Health Sciences Center

**RE: A89.113 MARITAL RECIPROCAL SUPPORT IN THE CONTEXT OF CANCER**

Dear Ms. Douglass:

We received the memorandum from Dr. Longman stating that she is your major professor. The procedures to be followed in this study pose no more than minimal risk to participating subjects. Regulations issued by the U.S. Department of Health and Human Services [45 CFR Part 46.110(b)] authorize approval of this type project through the expedited review procedures, with the condition(s) that subjects' anonymity be maintained. Although full Committee review is not required, a brief summary of the project procedures is submitted to the Committee for their endorsement and/or comment, if any, after administrative approval is granted. This project is approved effective 5 September 1989.

The Human Subjects Committee (Institutional Review Board) of the University of Arizona has a current assurance of compliance, number M-1233, which is on file with the Department of Health and Human Services and covers this activity.

Approval is granted with the understanding that no changes or additions will be made either to the procedures followed or to the consent form(s) used (copies of which we have on file) without the knowledge and approval of the Human Subjects Committee and your College or Departmental Review Committee. Any research related physical or psychological harm to any subject must also be reported to each committee.

A university policy requires that all signed subject consent forms be kept in a permanent file in an area designated for that purpose by the Department Head or comparable authority. This will assure their accessibility in the event that university officials require the information and the principal investigator is unavailable for some reason.

Sincerely yours,

*Milan Novak*

Milan Novak, M.D., Ph.D.  
Chairman  
Human Subjects Committee

MN/ms

cc: Departmental/College Review Committee

APPENDIX B

SUBJECT DISCLAIMER

(WELL SPOUSE)

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SUBJECT DISCLAIMER FORM FOR THE RESEARCH PROJECT:  
MARITAL RECIPROCAL SUPPORT IN THE CONTEXT OF CANCER

The purpose of the above-title project is to gather information about how close relationships affect the health of a spouse when one of the couple in the relationship has cancer. You are being invited to participate in this study because you speak English, reside with a spouse who is receiving radiation or chemotherapy for cancer and who agrees to participate in this project. Fifty couples will be enrolled.

If you agree to participate it will take you about 45 to 60 minutes to complete four questionnaires and a background form at a time and place convenient to you. You will be asked to answer questions about yourself, such as age, gender, years of schooling, general health and personal characteristics. You will also be asked your views on the cancer treatment program for your spouse and what you give to and receive from your close relationship.

By responding to the questionnaires you give your consent to participate in the project. Questions you raise about the project will be answered. You may withdraw your participation in the project at any time without incurring ill will.

There are no known benefits, however subjects' information can help care providers better meet the needs of individuals with concerns similar to your own. There are no risks or costs apart from your time. Confidentiality will be strictly maintained. Your name is not on the questionnaire, and reports of this project will be presented in a way that no individual subject can be identified.

Lillian Douglass, RN, MSc.(A)  
Doctoral Candidate  
University of Arizona  
Telephone: 325-8189

APPENDIX C

SUBJECT CONSENT  
(SPOUSE WITH CANCER)

SUBJECT CONSENT FORM FOR THE RESEARCH PROJECT:  
MARITAL RECIPROCAL SUPPORT IN THE CONTEXT OF CANCER

You are asked to read the following material to ensure that you are informed of the nature of this research study and of how you will participate in it. If you consent to do so, signing this form will indicate that you have been so informed and that you give your consent. Federal regulations require written informed consent prior to participation in this research study so that you can know the nature and the risks of your participation and can decide to participate or not participate in a free and informed manner.

You are being invited to voluntarily participate in the above-titled research project. The purpose of this project is to gather information about how close relationships affect the health of a spouse when one of the couple in the relationship has cancer.

You have been invited to participate because you speak English, are receiving radiation or chemotherapy, and reside with a spouse who agrees to participate in the project. Fifty couples will be enrolled in the study.

If you agree to participate, you will be asked to agree to the following: 1) to answer questions about yourself, such as age, gender, education, personal characteristics, health, treatment, and physical limitations; 2) to give your view on what you give and receive from your close relationship; 3) to permit Lillian Douglass, nurse and investigator in this project, to obtain information about your diagnosis and treatment from your medical record; and 4) to complete a background form and four questionnaires that will require approximately 45 to 60 minutes of your time.

There are no known risks or costs apart from your time. Although you will receive no known benefit from your participation in this study, subject responses will provide information that can be used by nurses and other health professionals attempting to help individuals who are in situations similar to your own.

Confidentiality of the information you provide will be strictly maintained. A subject number, not your name, is used on all questionnaires, and reports of this project will be presented in a way that no individual subject can be identified.

Before giving my consent by signing this form, the methods, inconveniences, risks, and benefits have been explained to me and my questions have been answered. I understand that I may ask questions at any time and that I am free to withdraw from the project at any time without causing bad feelings or affecting my medical care. My participation in this project may be ended by the investigator or by the sponsor for reasons that would be explained. New information developed during the course of this study that may affect my willingness to continue in this research project will be given to me as it becomes available. I understand that this consent form will be filed in an area designated by the Human Subjects Committee with access restricted to the principal investigator, Lillian Douglass, or authorized representative of the Nursing Department. I understand that I do not give up any of my legal rights by signing this form. A copy of this consent form will be given to me.

Subject Signature \_\_\_\_\_ Date \_\_\_\_\_

Investigator's Affidavit

I have carefully explained to the subject the nature of the above project. I hereby certify that to the best of my knowledge the person who is signing this consent form understands clearly the nature, demands, benefits, and risks involved in his/her participation and his/her signature is legally valid. A medical problem or language or educational barrier has not precluded this understanding.

Investigator Signature \_\_\_\_\_ Date \_\_\_\_\_

Lillian Douglass, RN, MSc.(A)  
 Doctoral Candidate  
 University of Arizona  
 Telephone: 325-8189

APPENDIX D

COUPLE INTRODUCTION TO STUDY FORM

---

Information for Couples About a Research  
Project on Close Relationships and Health

This is an invitation for you and your spouse to participate in a study about how help received through close relationships affects both spouse and patient health. This area is vital because it influences the way both the patient and spouse get through the cancer experience, but it has not been looked into very much and should receive more attention. By sharing your viewpoint you will assist nurses and others providing health care to better help patients and spouses to manage situations wimilar to your own. Permission to conduct this study has been granted to me by \_\_\_\_\_.

Your participation would involve one 45 to 60 minute meeting with you and a separate meeting with your spouse at a time and place convenient to you. All information that you provided would be treated confidentially. Your care would not be affected by whether or not you participate and no known risks are involved.

If you and your spouse think you might be interested in participating in this important project please fill in and return the lower portion of this sheet to a nurse in the treatment area or call the number below.

Thank you.

Lillian Douglass, RN, MSc.(A)  
Doctoral Candidate  
College of Nursing  
University of Arizona  
Telephone: 325-8189 (after 6 pm)

-----

Yes I am willing for Lillian Douglass, Doctoral Candidate, to contact me about the research project on spouse and patient health.

Names: Patient \_\_\_\_\_ Spouse \_\_\_\_\_

Telephone Number: \_\_\_\_\_

APPENDIX E

WELL SPOUSE INSTRUMENT PACKET

## SUBJECT BACKGROUND INFORMATION

Subject No.: \_\_\_\_\_

Date: \_\_\_\_\_

Date of Birth: \_\_\_\_\_

Please check the appropriate answer:

## ETHNIC ORIGIN:

Caucasian \_\_\_\_\_ Black \_\_\_\_\_ Asian \_\_\_\_\_

American Indian \_\_\_\_\_

## HISPANIC:

Mexican Origin \_\_\_\_\_

Spanish Origin \_\_\_\_\_

South American Origin \_\_\_\_\_

GENDER: Female \_\_\_\_\_

Male \_\_\_\_\_

## MARITAL STATUS:

Married \_\_\_\_\_ Number of Marriages \_\_\_\_\_

Living w/someone in a conjugal relationship \_\_\_\_\_

Length of current marriage/conjugal relationship \_\_\_\_\_ (Yrs)

## USUAL RESIDENCE:

Tucson area \_\_\_\_\_

Out of Tucson Area \_\_\_\_\_

City, State \_\_\_\_\_

## CURRENT LOCATION:

Apartment, hotel  
or other temporary  
location \_\_\_\_\_My usual  
Residence \_\_\_\_\_

## LEVEL OF EDUCATION:

College degree(s) \_\_\_\_\_ Degree \_\_\_\_\_

Some college \_\_\_\_\_ Business school \_\_\_\_\_

High school \_\_\_\_\_ Grade school \_\_\_\_\_ Other \_\_\_\_\_

YEARS OF EDUCATION: (Please circle the highest grade in school you  
have completed)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 16+

EMPLOYMENT (Please check the applicable employment status)  
STATUS:

Currently employed: \_\_\_\_\_ Full-time \_\_\_\_\_ Part-time \_\_\_\_\_  
 Homemaker \_\_\_\_\_ Disabled \_\_\_\_\_ Student \_\_\_\_\_  
 Retired \_\_\_\_\_ Year retired \_\_\_\_\_  
 Former occupation \_\_\_\_\_  
 Unemployed \_\_\_\_\_ Usual occupation: \_\_\_\_\_

INCOME: (Please check the annual income applicable now)

0-\$10,000/YR \_\_\_\_\_ \$31,000-\$40,000/YR \_\_\_\_\_  
 \$11,000-\$20,000/YR \_\_\_\_\_ \$41,000-\$50,000/YR \_\_\_\_\_  
 \$21,000-\$30,000/YR \_\_\_\_\_ \$51,000-\$60,000/YR \_\_\_\_\_  
 OVER \$60,000/YR \_\_\_\_\_

HEALTH BENEFITS: (Please check the applicable health benefit)

AHCCCS \_\_\_\_\_ Medicare \_\_\_\_\_  
 Health insurance \_\_\_\_\_ What company? \_\_\_\_\_  
 Other \_\_\_\_\_

**CURRENT MEDICAL PROBLEMS:**

	NO	YES
1. Diabetes		
2. Chronic obstructive lung disease		
3. Allergies		
4. Oral cavity problems		
5. Overweight		
6. Underweight		

	NO	YES
7. Gastrointestinal problems		
8. Heart disease		
9. High blood pressure		
10. Stroke		
11. Urinary tract problems (e.g., bladder, kidney, prostate)		

**TREATMENT OF MEDICAL PROBLEMS:**

Number (from above)

What kind?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Longman, A. Atwood, J. R., Blank, J., Snow, K. & Loescher, L. (1987). Patient Background Information. Tucson, AZ: University of Arizona College of Nursing and Arizona Cancer Center.

SUBJECT NO. \_\_\_\_\_

DATE \_\_\_\_\_

DISEASE COURSE GRAPHIC SCALE (DCGS)  
(SPOUSE PERSPECTIVE)

Please read each statement and circle the number under the line that best describes the truth of the state today.

1. Disease symptoms have extended to previously uninvolved parts of my spouse's body in the past month(s) or year.

True about my spouse	<hr style="border: 0; border-top: 1px solid black; margin: 0;"/>	Not true about my spouse
	1      2      3      4      5      6      7      8	

2. None of the possible treatments, medications, and procedures for my spouse's illness work for her/him any longer.

Not true about my spouse	<hr style="border: 0; border-top: 1px solid black; margin: 0;"/>	True about my spouse
	1      2      3      4      5      6      7      8	

3. Treatment for my spouse's illness is effective most of the time.

Not true about my spouse	<hr style="border: 0; border-top: 1px solid black; margin: 0;"/>	True about my spouse
	1      2      3      4      5      6      7      8	

4. My spouse's disease symptoms have increased in their severity over the past month(s) or year.

True about my spouse	<hr style="border: 0; border-top: 1px solid black; margin: 0;"/>	Not true about my spouse
	1      2      3      4      5      6      7      8	

5. Treatments that used to help my spouse don't do much good now.

True about my spouse	<hr style="border: 0; border-top: 1px solid black; margin: 0;"/>	Not true about my spouse
	1      2      3      4      5      6      7      8	

6. My spouse's disease symptoms occur more often than they did a month(s) or year ago.

Not true about my spouse	<hr style="border: 0; border-top: 1px solid black; margin: 0;"/>	True about my spouse
	1      2      3      4      5      6      7      8	

SUBJECT NO. \_\_\_\_\_

DATE \_\_\_\_\_

ROSENBERG SELF-ESTEEM SCALE (RES)

Please show the extent to which you agree or disagree with each statement below by circling one of the following:

SA = Strongly Agree

A = Agree

D = Disagree

SD = Strongly Disagree

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

SUBJECT NO. \_\_\_\_\_

DATE \_\_\_\_\_

INTERPERSONAL RELATIONSHIPS INVENTORY (IPRI)

Most relationships with people we feel close to are both helpful and stressful. Below are statements that describe close personal relationships with spouses. Please read each statement and circle the number that best fits your situation. There are no right or wrong answers.

These first statements ask you to disagree or agree

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE
1. My spouse makes me feel confident in myself.	1	2	3	4	5
2. Within my marital relationship I get just as much as I give.	1	2	3	4	5
3. My spouse shares similar views with me.	1	2	3	4	5
4. I'm not available to my spouse when (s)he needs to talk.	1	2	3	4	5
5. When I have helpful information, I try to pass it on to my spouse for his or her use.	1	2	3	4	5
<hr/>					
6. I think I put more effort into my spouse than (s)he puts into me.	1	2	3	4	5
7. My spouse is someone I can turn to for helpful advice about a problem.	1	2	3	4	5
8. I don't mind sharing money with my spouse for things only (s)he needs.	1	2	3	4	5

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE
9. I can talk openly about anything with my spouse.	1	2	3	4	5
10. I'm satisfied with the give and take between me and my spouse.	1	2	3	4	5
11. I could go to my spouse for anything.	1	2	3	4	5
12. My spouse is too pushy.	1	2	3	4	5
13. I'm happy with the balance of how much I do for my spouse and how much (s)he does for me.	1	2	3	4	5
14. I can count on my spouse to make me feel better when I need it.	1	2	3	4	5
15. When I need help, I can get it from my spouse and when (s)he needs help, I give it back.	1	2	3	4	5
16. My spouse gets mad if we have different opinions.	1	2	3	4	5
17. It's safe for me to reveal my weaknesses to my spouse.	1	2	3	4	5
18. My spouse stands by me through good times and bad times.	1	2	3	4	5
19. I have the kind of spouse who really helps out in an emergency.	1	2	3	4	5
20. I can't count on my spouse when I need to.	1	2	3	4	5

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE
21. If I need my spouse's help, all I have to do is ask.	1	2	3	4	5
22. I have enough opportunity to talk things over with my spouse.	1	2	3	4	5

---

These next statements ask you how often something happens.

	NEVER	ALMOST NEVER	SOME-- TIMES	FAIRLY OFTEN	VERY OFTEN
23. I have enjoyable times with my spouse.	1	2	3	4	5
24. I spend time doing things for my spouse when I'd really rather not.	1	2	3	4	5
25. My spouse invades my privacy.	1	2	3	4	5
26. I let my spouse know that I appreciate him or her.	1	2	3	4	5
27. I am embarrassed by what my spouse does.	1	2	3	4	5
28. My spouse comes to me for a boost in his or her spirits.	1	2	3	4	5
29. My spouse tends to take advantage of me.	1	2	3	4	5
30. My spouse is a burden to me.	1	2	3	4	5
31. I tell my spouse when I think (s)he is great.	1	2	3	4	5

---

	NEVER	ALMOST NEVER	SOME- TIMES	FAIRLY OFTEN	VERY OFTEN
32. I wish my spouse was more sensitive to my needs.	1	2	3	4	5
33. My spouse puts pressure on me to do things I don't want to do.	1	2	3	4	5
<hr/>					
34. My spouse comes to me for advice.	1	2	3	4	5
35. There is tension between me and my spouse.	1	2	3	4	5
36. I have trouble pleasing my spouse.	1	2	3	4	5
37. My spouse lets me know (s)he believes in me.	1	2	3	4	5
38. My spouse expects too much of me.	1	2	3	4	5
39. I let my spouse know I care about him or her.	1	2	3	4	5

---

Thank you very much for your participation.

SUBJECT NO. \_\_\_\_\_

DATE \_\_\_\_\_

## CES-D SCALE

Instructions: Below is a list of the ways you might have felt or behaved. Please indicate how often you have felt this way during the past week. Please put a check (✓) in the space which most accurately describes how often you had those feelings during the past week.

<u>During the past week:</u>	<u>LESS THAN 1 DAY/NEVER</u>	<u>1 TO 2 DAYS</u>	<u>3 TO 4 DAYS</u>	<u>5 TO 7 DAYS</u>
1. I was bothered by things that usually don't bother me.	_____	_____	_____	_____
2. I did not feel like eating; my appetite was poor.	_____	_____	_____	_____
3. I felt that I could not shake off the blues even with the help of my family or friends.	_____	_____	_____	_____
4. I felt that I was just as good as other people.	_____	_____	_____	_____
5. I had trouble keeping my mind on what I was doing.	_____	_____	_____	_____
6. I felt depressed.	_____	_____	_____	_____
7. I felt that everything I did was an effort.	_____	_____	_____	_____
8. I felt hopeful about the future.	_____	_____	_____	_____
9. I thought my life had been a failure.	_____	_____	_____	_____
10. I felt fearful.	_____	_____	_____	_____
11. My sleep was restless.	_____	_____	_____	_____

	<u>LESS THAN 1 DAY/NEVER</u>	<u>1 TO 2 DAYS</u>	<u>3 TO 4 DAYS</u>	<u>5 TO 7 DAYS</u>
12. I was happy.	_____	_____	_____	_____
13. I talked less than usual.	_____	_____	_____	_____
14. I felt lonely.	_____	_____	_____	_____
15. People were unfriendly.	_____	_____	_____	_____
16. I enjoyed life.	_____	_____	_____	_____
17. I had crying spells.	_____	_____	_____	_____
18. I felt sad.	_____	_____	_____	_____
19. I felt that people disliked me.	_____	_____	_____	_____
20. I could not get "going".	_____	_____	_____	_____

APPENDIX F

ILL SPOUSE INSTRUMENT PACKET

## SUBJECT BACKGROUND INFORMATION

Subject No.: \_\_\_\_\_ Date: \_\_\_\_\_  
 Date of Birth: \_\_\_\_\_

Please check the appropriate answer:

## ETHNIC ORIGIN:

Caucasian \_\_\_\_\_ Black \_\_\_\_\_ Asian \_\_\_\_\_

American Indian \_\_\_\_\_

## HISPANIC:

Mexican Origin \_\_\_\_\_  
 Spanish Origin \_\_\_\_\_  
 South American Origin \_\_\_\_\_

GENDER: Female \_\_\_\_\_ Male \_\_\_\_\_

## MARITAL STATUS:

Married \_\_\_\_\_ Number of Marriages \_\_\_\_\_

Living w/someone in a conjugal relationship \_\_\_\_\_

Length of current marriage/conjugal relationship \_\_\_\_\_ (Yrs)

## USUAL RESIDENCE:

Tucson area \_\_\_\_\_

Out of Tucson Area \_\_\_\_\_

City, State \_\_\_\_\_

## CURRENT LOCATION:

Apartment, hotel  
 or other temporary  
 location \_\_\_\_\_

My usual  
 Residence \_\_\_\_\_

## LEVEL OF EDUCATION:

College degree(s) \_\_\_\_\_ Degree \_\_\_\_\_

Some college \_\_\_\_\_ Business school \_\_\_\_\_

High school \_\_\_\_\_ Grade school \_\_\_\_\_ Other \_\_\_\_\_

YEARS OF EDUCATION: (Please circle the highest grade in school you  
 have completed)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 16+

EMPLOYMENT (Please check the applicable employment status)  
STATUS:

Currently employed: \_\_\_\_\_ Full-time \_\_\_\_\_ Part-time \_\_\_\_\_

Homemaker \_\_\_\_\_ Disabled \_\_\_\_\_ Student \_\_\_\_\_

Retired \_\_\_\_\_ Year retired \_\_\_\_\_

Former occupation \_\_\_\_\_

Unemployed \_\_\_\_\_ Usual occupation: \_\_\_\_\_

INCOME: (Please check the annual income applicable now)

0-\$10,000/YR _____	\$31,000-\$40,000/YR _____
\$11,000-\$20,000/YR _____	\$41,000-\$50,000/YR _____
\$21,000-\$30,000/YR _____	\$51,000-\$60,000/YR _____
	OVER \$60,000/YR _____

HEALTH BENEFITS: (Please check the applicable health benefit)

AHCCCS \_\_\_\_\_ Medicare \_\_\_\_\_

Health insurance \_\_\_\_\_ What company? \_\_\_\_\_

Other \_\_\_\_\_

## PATIENT MEDICAL INFORMATION

Subject No.: \_\_\_\_\_

Date: \_\_\_\_\_

Check applicable location:

Radiation Oncology Clinic \_\_\_\_\_

Multidisciplinary Cancer Clinic \_\_\_\_\_

St. Mary's \_\_\_\_\_

1. First diagnosis of cancer:

Month	Year
-------	------

Site of cancer: \_\_\_\_\_

Circle/check applicable categories:

2. Stage:	I	3. TNM:	Tumor _____
	II	(Check)	Nodes _____
(circle one)	III		Metastases _____
	IV		
	V		

4. Treatment:	Surgery	_____	Month	_____	Year	_____
	Radiation	_____	Month	_____	Year	_____
	Chemotherapy	_____	Month	_____	Year	_____
	Other	_____	Month	_____	Year	_____

## 5. OTHER CURRENT MEDICAL PROBLEMS:

	NO	YES
1. Diabetes		
2. Chronic obstructive lung disease		
3. Allergies		
4. Oral cavity problems		
5. Broken bone		
6. Arthritis		
7. Overweight		
8. Underweight		

	NO	YES
9. Gastrointestinal problems		
10. Heart disease		
11. High blood pressure		
12. Stroke		
13. Urinary tract problems (e.g., bladder, kidney, prostate)		
14. Other		

## 6. TREATMENT OF MEDICAL PROBLEMS:

Number (from above)

What kind?

---



---



---



---



---



---



---



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## 7. CURRENT MEDICATIONS:

	DISEASE	NAME OF DRUG	DOSE/ROUTE FREQUENCY	DATE BEGUN
Pain control				
Nutritional supplement				

## 8. ECOG PERFORMANCE STATUS

- 0 \_\_\_\_\_ Asymptomatic
- 1 \_\_\_\_\_ Symptomatic, fully ambulatory
- 2 \_\_\_\_\_ Symptomatic, in bed less than 50% of day
- 3 \_\_\_\_\_ Symptomatic, in bed more than 50% of day, but not bedridden
- 4 \_\_\_\_\_ Bedridden

SOURCES:

ECOG. Eastern Cooperative Oncology Group of Zubrod Performance Status Score.

Stanley, K. E. (1980). Prognostic factors for survival in patients with inoperable lung cancer. J. National Cancer Institute, 65: 25-32.

Selected questions adapted from Block, G. (1984) Food Frequency Questionnaire. Bethesda, MD: NCI.

Longman, A., Atwood, J. R., Blank, J., Snow, K. & Loescher, L. (1987). Patient Background Information. Tucson, AZ: University of Arizona College of Nursing and Arizona Cancer Center.

SUBJECT NO. \_\_\_\_\_

DATE \_\_\_\_\_

DISEASE COURSE GRAPHIC SCALE (DCGS)  
(PATIENT PERSPECTIVE)

Please read each statement and circle the number under the line that best describes the truth of the state today.

1. Disease symptoms have extended to previously uninvolved parts of my spouse's body in the past month(s) or year.

True about my spouse	<hr style="border: 0.5px solid black;"/>	Not true about my spouse
	1      2      3      4      5      6      7      8	

2. None of the possible treatments, medications, and procedures for my spouse's illness work for her/him any longer.

Not true about my spouse	<hr style="border: 0.5px solid black;"/>	True about my spouse
	1      2      3      4      5      6      7      8	

3. Treatment for my spouse's illness is effective most of the time.

Not true about my spouse	<hr style="border: 0.5px solid black;"/>	True about my spouse
	1      2      3      4      5      6      7      8	

4. My spouse's disease symptoms have increased in their severity over the past month(s) or year.

True about my spouse	<hr style="border: 0.5px solid black;"/>	Not true about my spouse
	1      2      3      4      5      6      7      8	

5. Treatments that used to help my spouse don't do much good now.

True about my spouse	<hr style="border: 0.5px solid black;"/>	Not true about my spouse
	1      2      3      4      5      6      7      8	

6. My spouse's disease symptoms occur more often than they did a month(s) or year ago.

Not true about my spouse	<hr style="border: 0.5px solid black;"/>	True about my spouse
	1      2      3      4      5      6      7      8	

SUBJECT NO. \_\_\_\_\_

DATE \_\_\_\_\_

ROSENBERG SELF-ESTEEM SCALE (RES)

Please show the extent to which you agree or disagree with each statement below by circling one of the following:

SA = Strongly Agree

A = Agree

D = Disagree

SD = Strongly Disagree

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

SUBJECT NO. \_\_\_\_\_

DATE \_\_\_\_\_

INTERPERSONAL RELATIONSHIPS INVENTORY (IPRI)

Most relationships with people we feel close to are both helpful and stressful. Below are statements that describe close personal relationships with spouses. Please read each statement and circle the number that best fits your situation. There are no right or wrong answers.

These first statements ask you to disagree or agree

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE
1. My spouse makes me feel confident in myself.	1	2	3	4	5
2. Within my marital relationship I get just as much as I give.	1	2	3	4	5
3. My spouse shares similar views with me.	1	2	3	4	5
4. I'm not available to my spouse when (s)he needs to talk.	1	2	3	4	5
5. When I have helpful information, I try to pass it on to my spouse for his or her use.	1	2	3	4	5
<hr/>					
6. I think I put more effort into my spouse than (s)he puts into me.	1	2	3	4	5
7. My spouse is someone I can turn to for helpful advice about a problem.	1	2	3	4	5
8. I don't mind sharing money with my spouse for things only (s)he needs.	1	2	3	4	5

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE
9. I can talk openly about anything with my spouse.	1	2	3	4	5
10. I'm satisfied with the give and take between me and my spouse.	1	2	3	4	5
11. I could go to my spouse for anything.	1	2	3	4	5
12. My spouse is too pushy.	1	2	3	4	5
13. I'm happy with the balance of how much I do for my spouse and how much (s)he does for me.	1	2	3	4	5
14. I can count on my spouse to make me feel better when I need it.	1	2	3	4	5
15. When I need help, I can get it from my spouse and when (s)he needs help, I give it back.	1	2	3	4	5
16. My spouse gets mad if we have different opinions.	1	2	3	4	5
17. It's safe for me to reveal my weaknesses to my spouse.	1	2	3	4	5
18. My spouse stands by me through good times and bad times.	1	2	3	4	5
19. I have the kind of spouse who really helps out in an emergency.	1	2	3	4	5
20. I can't count on my spouse when I need to.	1	2	3	4	5

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE
21. If I need my spouse's help, all I have to do is ask.	1	2	3	4	5
22. I have enough opportunity to talk things over with my spouse.	1	2	3	4	5

---

These next statements ask you how often something happens.

	NEVER	ALMOST NEVER	SOME- TIMES	FAIRLY OFTEN	VERY OFTEN
23. I have enjoyable times with my spouse.	1	2	3	4	5
24. I spend time doing things for my spouse when I'd really rather not.	1	2	3	4	5
25. My spouse invades my privacy.	1	2	3	4	5
26. I let my spouse know that I appreciate him or her.	1	2	3	4	5
27. I am embarrassed by what my spouse does.	1	2	3	4	5
28. My spouse comes to me for a boost in his or her spirits.	1	2	3	4	5
29. My spouse tends to take advantage of me.	1	2	3	4	5
30. My spouse is a burden to me.	1	2	3	4	5
31. I tell my spouse when I think (s)he is great.	1	2	3	4	5

	NEVER	ALMOST NEVER	SOME- TIMES	FAIRLY OFTEN	VERY OFTEN
32. I wish my spouse was more sensitive to my needs.	1	2	3	4	5
33. My spouse puts pressure on me to do things I don't want to do.	1	2	3	4	5
<hr/>					
34. My spouse comes to me for advice.	1	2	3	4	5
35. There is tension between me and my spouse.	1	2	3	4	5
36. I have trouble pleasing my spouse.	1	2	3	4	5
37. My spouse lets me know (s)he believes in me.	1	2	3	4	5
38. My spouse expects too much of me.	1	2	3	4	5
39. I let my spouse know I care about him or her.	1	2	3	4	5

---

Thank you very much for your participation.

SUBJECT NO. \_\_\_\_\_

DATE \_\_\_\_\_

## CES-D SCALE

Instructions: Below is a list of the ways you might have felt or behaved. Please indicate how often you have felt this way during the past week. Please put a check ( ) in the space which most accurately describes how often you had those feelings during the past week.

<u>During the past week:</u>	<u>LESS THAN 1 DAY/NEVER</u>	<u>1 TO 2 DAYS</u>	<u>3 TO 4 DAYS</u>	<u>5 TO 7 DAYS</u>
1. I was bothered by things that usually don't bother me.	_____	_____	_____	_____
2. I did not feel like eating; my appetite was poor.	_____	_____	_____	_____
3. I felt that I could not shake off the blues even with the help of my family or friends.	_____	_____	_____	_____
4. I felt that I was just as good as other people.	_____	_____	_____	_____
5. I had trouble keeping my mind on what I was doing.	_____	_____	_____	_____
6. I felt depressed.	_____	_____	_____	_____
7. I felt that everything I did was an effort.	_____	_____	_____	_____
8. I felt hopeful about the future.	_____	_____	_____	_____
9. I thought my life had been a failure.	_____	_____	_____	_____
10. I felt fearful.	_____	_____	_____	_____
11. My sleep was restless.	_____	_____	_____	_____

	<u>LESS THAN 1 DAY/NEVER</u>	<u>1 TO 2 DAYS</u>	<u>3 TO 4 DAYS</u>	<u>5 TO 7 DAYS</u>
12. I was happy.	_____	_____	_____	_____
13. I talked less than usual.	_____	_____	_____	_____
14. I felt lonely.	_____	_____	_____	_____
15. People were unfriendly.	_____	_____	_____	_____
16. I enjoyed life.	_____	_____	_____	_____
17. I had crying spells.	_____	_____	_____	_____
18. I felt sad.	_____	_____	_____	_____
19. I felt that people disliked me.	_____	_____	_____	_____
20. I could not get "going".	_____	_____	_____	_____

APPENDIX G

APPROVAL FOR INSTRUMENT USAGE

## Permission Form

I plan to use the Interpersonal Relationships Inventory (IPRI) in the following research study entitled:

----- Marital Reciprocal Support in the Context of Life Threatening Illness -----

I agree to submit to Virginia Tilden scores from the IPRI on each subject. I understand that the data will be used for purposes of evaluating the instrument only, and that I will be personally named and my study cited in any reports that involve my data.

  
-----  
Signature

-----  
Doctoral Student  
-----  
Position

-----  
206 325-8189  
-----  
Area code Telephone #

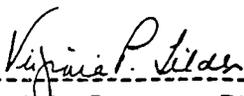
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Lillian Douglass  
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Print Name

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#22-G, 3401 N. Columbus Blvd  
-----  
Full Address

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Tucson, Arizona, 85712  
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Mental Health Nursing Department, EJSN  
School of Nursing  
Oregon Health Sciences University  
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