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Factors affecting the psychological stress of cancer patients and spouses of cancer patients

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FACTORS AFFECTING THE PSYCHOLOGICAL STRESS OF CANCER PATIENTS AND SPOUSES OF CANCER PATIENTS

by

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APPROVAL PAGE

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The purpose of this research was to examine the effect of an accumulation of stressful demands on the psychological stress of cancer patients and spouses of cancer patients, and the intervening roles of spiritual resources, family strengths, and sense of coherence. The research model emerged from the Double ABCX theory of family stress.

Self-report data were collected from 42 patients receiving chemotherapy treatments and 32 spouses of patients. Identical path models, tracing the relationships between variables, were constructed for each sample. It was predicted that higher levels of accumulated demands would be associated with higher levels of psychological stress, and that higher levels of each intervening variable would be associated with lower levels of psychological stress.

The results indicated that sense of coherence (SOC) was the most powerful predictor of psychological stress for both samples. It had the only statistically significant direct effect on the criterion variable. Higher levels of SOC were associated with lower levels of psychological stress. Sense of coherence was also the variable through which most of the indirect effects of the other predictors were transmitted. Accumulated demands had the lowest total effect on psychological stress in both samples. Family strengths and spiritual resources both had positive

associations with SOC, and substantively significant total effects on psychological stress. Higher levels of spiritual resources and family strengths were both related to higher levels of SOC, and in turn lower levels of psychological stress.

The study provided further evidence for the development of family stress theory by examining the interlocking relationships between demands, resources, and adaptational outcomes. The resource variable sense of coherence received support as a parsimonious dimension of psychologically adaptive patients and spouses. Spiritual resources and family strengths were important antecedents from which sense of coherence emerged.

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TABLE OF CONTENTS

	Page
APPROVAL PAGE	ii
ACKNOWLEDGMENTS	iii
LIST OF TABLES	vii
LIST OF FIGURES	ix
CHAPTER	
I. INTRODUCTION	1
Double ABCX Model of Psychosocial Stress	3
Problem Statement	4
Purpose of the Study	5
Definition of Constructs	6
Accumulated Demands	7
Spiritual Resources	9
Family Strengths	13
Sense of Coherence	15
Psychological Stress	18
Statement of Hypotheses	20
Primary Hypotheses	20
Secondary Hypotheses	21
II. REVIEW OF LITERATURE	22
Psychosocial Crises of Cancer Patients and Spouses	24
Psychosocial Symptomatology	26
Prevalence of Psychosocial Distress	30
Factors Influencing Adaptation	32
Family Adjustment to Cancer	38
Family Stress Theory and Research: An Overview	41
Family Stress Theory	41
Coherence: A Bridge between Demands and Adaptation	45
Research from Family Stress Theory	47
Hypothesized Model of Present Research	59
III. METHODS AND PROCEDURES	64
Sample	66
Data Collection Procedures	69

Instruments..... 71
Accumulated Demands..... 71
Spiritual Resources..... 72
Family Strengths..... 74
Sense of Coherence..... 75
Psychological Stress..... 76
Data Analysis Procedures..... 77

IV. RESULTS AND DISCUSSION..... 80

Correlations between Theoretical and Demographic Variables for Patient and Spouse Samples..... 82
Psychological Stress..... 82
Sense of Coherence..... 84
Family Strengths..... 87
Spiritual Resources..... 87
Accumulated Demands..... 88
Predictors of Psychological Stress: Patient Sample..... 89
Hypothesis One: Accumulated Demands and Psychological Stress..... 93
Hypothesis Two: Resource Variables and Psychological Stress..... 94
Hypothesis Three: Effects of Accumulated Demands on Spiritual Resources, Family Strengths, and Sense of Coherence..... 98
Hypothesis Four: Effects of Spiritual Resources on Family Strengths and Sense of Coherence..... 101
Hypothesis Five: Effect of Family Strengths on Sense of Coherence..... 101
Decomposition of Effects: Patient Sample... 104
Predictors of Psychological Stress: Spouse Sample..... 110
Hypothesis One: Accumulated Demands and Psychological Stress..... 110
Hypothesis Two: Resource Variables and Psychological Stress..... 114
Hypothesis Three: Effect of Accumulated Demands on Spiritual Resources, Family Strengths, and Sense of Coherence..... 116
Hypothesis Four: Effects of Spiritual Resources on Family Strengths and Sense of Coherence..... 120
Hypothesis Five: Effects of Family Strengths on Sense of Coherence..... 120
Decomposition of Effects: Spouse Sample.... 121
Discussion of Trimmed Models..... 127

Patient Trimmed Model..... 127
Spouse Trimmed Model..... 135

V. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.... 143

Summary and Conclusions..... 143
Recommendations..... 149

BIBLIOGRAPHY..... 152

APPENDIX A CONSENT FORM..... 160

APPENDIX B MEASURES OF EMOTIONAL STRESS AND STRESS COPING RESOURCES..... 161

APPENDIX C SCATTERPLOT OF RESIDUALS..... 177

LIST OF TABLES

Table		Page
1	Correlates of Vulnerability to Emotional Stress	36
2	Means and Standard Deviations of Demographic Variables for Patients and Spouses	68
3	Means and Standard Deviations of Theoretical Variables for Patients and Spouses	83
4	Correlation Matrix for Demographic Variables and Theoretical Variables: Patient Sample	85
5	Correlation Matrix for Demographic Variables and Theoretical Variables: Spouse Sample	86
6	Predictors of Psychological Stress: Patient Sample	91
7	Relationship between Predictor Variables and Psychological Stress when Intrafamily Strains is the Independent Variable: Patient Sample	95
8	Bivariate Regressions of the Predictors of Sense of Coherence and Its Subscales: Patient Sample	103
9	Decomposition of Effects of Predictors on Psychological Stress: Patient Sample	105
10	Predictors of Psychological Stress: Spouse Sample	112
11	Relationship between the Predictors of Psychological Stress when Intrafamily Family Strains is the Independent Variable: Spouse Sample	119
12	Bivariate Regressions of the Predictors of Sense of Coherence and Its Subscales: Spouse Sample	122

13 Decomposition of Effects of Predictors on Psychological Stress: Spouse Sample..... 123

14 Relationship between the Predictors of Psychological Stress: Patient Sample, Trimmed Model..... 130

15 Relationship between the Predictors of Psychological Stress: Spouse Sample, Trimmed Model..... 137

LIST OF FIGURES

Figure		Page
1	Hill's Roller Coaster Model of Crisis.....	23
2	The Double ABCX Model of Family Stress.....	43
3	Hypothesized Causal Model of Double ABCX Variables (Lavee, McCubbin and Patterson, 1985).....	53
4	Revised Causal Model of Double ABCX Variables...	54
5	Hypothesized Path Model (Lavee, McCubbin and Olson, 1987).....	56
6	Revised Path Model.....	57
7	Hypothesized Path Model of Present Research.....	59
8	Path Diagram of Mediation.....	60
9	Coping Resources as Mediating Variables.....	61
10	Path Analytic Model of the ABCX Model.....	63
11	Path Model for the Predictors of Psychological Stress: Patient Sample.....	90
12	Path Model for the Predictors of Psychological Stress: Spouse Sample.....	111
13	Trimmed Path Model for the Predictors of Psychological Stress: Patient Sample.....	129
14	Trimmed Path Model for the Predictors of Psychological Stress: Spouse Sample.....	138
15	Re-trimmed Path Model for the Predictors Psychological Stress: Spouse Sample.....	141

CHAPTER I

INTRODUCTION

From a holistic perspective cancer is a nonnormative stressor event that can be expected to generate not only physical dysfunction, but psychological, spiritual, and social crises for patients and their families. The traditional approach to studying these crises has been to document psychosocial aberration in patient and family responses to the stressor event.

The patient's experience of psychosocial crisis has attracted much attention. Psychosocial disruption has been attributed to low self-esteem (Hunter, Linn and Harris, 1982, acute anxiety (Jamison, Wellisch and Pasnov, 1978), the experience of loss (Blocher, 1976), self-directed rage (Sutherland, 1981), learned helplessness (Solomon, 1982), and decreased capacity for role performance and social involvement (Shanas and Maddox, 1976).

Spousal response to a mate's cancer has been frequently investigated. Grief reactions often follow the onset of illness (Blocher, 1976). Spouses may become a repository for stress. Trying to be available but not overbearing, and often denying their own needs, well spouses may become overextended to a point of significant emotional and cognitive distress (Oberst and James, 1985).

Marital interaction is often disrupted by a spouse's cancer. Leiber and Plumb (1976) found that 50 percent of the couples they studied manifested moderate to severe degrees of marital tension. Difficulties in communication, increased dependence of the sick partner, and decreased abilities to meet each other's affectional needs often contribute to the tension.

Investigators have studied the disequilibrium that occurs within the family unit in response to a family member's cancer. In studies of leukemic children and their families, Kaplan et al. (1973), Lascari (1973), and Koch (1985) have documented the psychosocial trauma of families in the effort to cope with this disease.

In contrast to the traditional approach of studying psychosocial pathology in the responses of cancer patients and their families, recent investigators have followed a different trend. Many researchers are shifting away from dysfunctional analyses to study salutogenic, adaptational responses. Psychological stress theorists such as Lazarus (1966), Pearlin (1982), Moos (1982), Wheaton (1985) and Antonovsky (1987) have developed paradigms that emphasize the role of stress mediating and stress buffering variables in the adaptation process. Family stress theorists have used Hill's (1949) ABCX model for the development of a Double ABCX model of family behavior in response to stress (McCubbin and Patterson, 1983).

Double ABCX Model of Psychosocial Stress

McCubbin and Patterson's (1983) model provides a comprehensive framework for analyzing the process of patient and family adaptation in response to serious illnesses such as cancer. In sum, the model includes Hill's original factors as a set of pre-crisis family variables, and adds four post-crisis variables that influence family adaptation over time: (a) the pile-up of stressors and strains following the onset of a major stressor such as cancer (aA Factor), (b) the personal, family and social resources families acquire and use in managing the crisis (bB Factor), (c) the definition and meaning families develop to understand the crisis (cC Factor), and (d) the coping strategies families use in an effort to achieve positive adaptation.

According to the Double ABCX theoretical framework, adaptation is a central concept which varies from maladaptation to bonadaptation. Positive outcomes occur when individual and family growth is promoted through balanced family functioning. Adaptation is achieved through reciprocal relationships where demands (stressors and strains) are met by capabilities (resources, definition, and coping), so as to achieve a "balance" in functioning (McCubbin, Needle, and Wilson, 1985). The greater an individual's and family's capabilities, the more likely they will achieve positive adaptational outcomes.

A considerable body of research has begun to document the effectiveness of resources and coping abilities in lessening people's stress and enhancing adaptation during crises such as cancer. These studies have examined various personal, family, and social resources as buffers or mediators of severe stressor events. Wheeler and Frank (1988) conducted a review of major journals publishing results of stress research in the past ten years and found sixty-three articles about stress buffers. Forty-nine of these were reports of original research. Social support has been documented most frequently as a key resource in buffering stress (Cobb, 1976; Girdona and Everly, 1979). Self-esteem (Brammer and Albrego, 1981; Lefcourt, Martin, and Ebers, 1981; McCrae, 1984), locus of control (Pearlin and Schooler, 1978), psychological hardiness (Kobasa, Maddi, and Kahn, 1982), and cognitive restructuring (Lazarus and Folkman, 1984) are personal resources that have been frequently examined as buffers to stress. Individuals with relatively high levels of self-esteem, psychological hardiness, internal locus of control, and the cognitive ability to appraise demands as manageable and meaningful seem less vulnerable to the stressor events they encounter.

Problem Statement

In contrast to these numerous studies on social support and personal resources, very little research has focused on

the role of spiritual resources as a mediating variable between stressful events and adaptational outcomes. Even less research was available on the spiritual resources of cancer patients and their families.

Despite a proliferation of research on the various components of the stress process (demands, resources, and outcomes), limited knowledge remains about the linkages that connect the variables and their relative importance (Cronkite and Moos, 1984). Lavee, McCubbin, and Olson (1987) suggested that further research is needed to clarify the relations among the variables of the Double ABCX model. Research was needed to estimate the mediating roles of resources and their interrelationships. Research was also needed to examine the relationships among variables in different populations. McCubbin (1988) has confirmed the need for ongoing research to unravel the linkages among variables in family stress theory. An examination of the relationships among key variables in family stress theory and their predictive power in a population under potentially severe strain was suggested by these studies.

Purpose of the Study

The major purpose of this study was to examine the influence of an accumulation of demands (stressful life events and family strains) on the perceived levels of psychological stress of cancer patients and their spouses.

A second purpose was to examine the intervening roles of spiritual resources, family strengths, and a sense of coherence in the adaptation process. To gain empirical evidence to examine the roles of these variables on stress and adaptation, three objectives were planned: (a) to test the influence of accumulated demands on perceived levels of psychological stress, (b) to test the influence of spiritual resources of cancer patients and their spouses as an intervening, mediating variable, and (c) to study the linkages of accumulated demands, spiritual resources, family strengths, and a sense of coherence in the adaptation process of this population.

Definitions of Constructs

There appears to be consensual agreement that the process of stress combines three conceptual domains: the sources of stress, the mediators of stress, and the manifestations of stress (Pearlin et al., 1981; McCubbin and Patterson, 1983; Cronkite and Moos, 1984; Lazarus and Folkman, 1984). Dimensions of each component were examined in this study. The sources of stress were conceptualized as an accumulation of demands including stressful life events and various strains. The mediators of stress were conceptualized as three adaptive resources within McCubbin and Patterson's (1983) Double ABCX framework: spiritual resources, family strengths, and a sense of coherence. The

manifestations of stress were defined as the level of psychological stress reported by cancer patients and spouses of cancer patients. The research findings presented for each of the constructs was the background for the directional hypotheses listed at the end of this chapter.

Accumulated Demands

Pearlin (1982) theorizes that stress appears to arise out of two broad circumstances: the occurrence of discrete events and relatively continuous life strains. Eventful experience includes scheduled events such as transitions across the life cycle and unscheduled events that are not built into people's expectations (e.g. divorce, illness, job loss, premature death). Chronic strains are built into the fabric of daily life. They include persistent tensions of family relations and occupational experience that are closely associated with various indicators of stress.

Pearlin et al. (1981) suggested that the two sources of stress converge in the production of psychological stress. Their co-occurrence seems to have a synergistic effect. Lazarus and Folkman (1984) argued that in addition to stressful life events and chronic events, daily "hassles" are a key factor in generating psychological stress.

McCubbin and Patterson (1983) contended that in the aftermath of a major stressor such as serious illness families often experience an accumulation of stressful life events and chronic strains. Lavee, McCubbin, and Olson

(1987) classified stressful events as normative and nonnormative occurrences. Normative life events consist of expected, scheduled changes associated with developmental transitions (e.g. marriage, bearing children, launching children, retirement). Nonnormative events occur relatively unexpectedly, are undesired, and are usually associated with severe effects. They hypothesize that both types of events converge in heightening chronic strains.

According to Lavee, McCubbin, and Olson (1987) strain is a condition of felt tension or difficulty. Strains do not have a discrete onset, like stressor events, but gradually emerge in the family. Their sources include unresolved tension connected to prior stressors or to ongoing interpersonal relationships among family members. They found that an increase in intrafamily strain is often indicated by increased difficulty in performing family roles and by increased interpersonal conflicts.

Pearlin (1982) asserted that marital partners change at different rates and in different directions over the life cycle. Adult role transitions yield inevitable changes. These changes produce strains that tax the adaptive capacity of the partners. Strains also occur in parent-child relations. Child-rearing practices produce inevitable conflict between parental and children's conceptions of what is desirable. Relationships between adult children and aged parents is often a source of strain. When aged parents face

debilitating illness, a decline in physical self-sufficiency, or a depletion of economic resources, strain is likely to emerge in the parent-child relationship. Adult children may experience a drain on energy, emotional reserves, and resources. Aged parents may find that new dependence violates their desire for autonomy. Under a pile-up of stressful events and strains, Cicerelli (1985) suggested that the potential for filial anxiety emerges.

Intrafamily strain may be treated either as a dependent variable influenced by stressful events or an independent variable affecting stress outcomes (Lavee, McCubbin, and Olson, 1987). Hill (1949) and Burr (1973) theorized a causal relation betweeen stressful events and intrafamily strain. Others have found that life events and chronic strains are most clearly understood by observing them together rather than as separate antecedents to stress (Pearlin et al., 1981; Cronkite and Moos, 1948). In this study an accumulation of stressful life events and chronic strains were considered together as an independent variable affecting the level of psychological stress of cancer patients and spouses of cancer patients.

Spiritual Resources

Spiritual resources of cancer patients and their spouses were defined in this study by presence of intrinsic religiosity. It is a construct similar to spiritual well-being, which the National Interfaith Coalition on Aging

(1975) defined as "the affirmation of life in a relationship with God, self, community and environment that nurtures and celebrates wholeness." While this definition lacks precision, it is consistent with the theorizing of Moberg (1979) and Paloutzian and Ellison (1982).

Moberg (1979) conceptualized spiritual well-being as two-faceted, encompassing a vertical dimension, or one's sense of well-being in relation to God, and a horizontal dimension, or one's sense of life purpose and satisfaction. Paloutzian and Ellison (1982) operationalized spiritual well-being through a series of factor analyzes. Their study produced three factors that were used as bases for two scales -- Religious Well-Being (RWB) and Existential Well-Being (EWB) -- and a composite Spiritual Well-Being (SWB) measure.

According to the National Interfaith Coalition on Aging (1975), religious well-being is defined by the quality of people's relationships with God. People with religious well-being are those who acknowledge their dependence on God. Their relationships with God permeate and give meaning to all areas of their lives. They have a sense of personal connection to the source of life, God the Creator, in contrast to a sense of spiritual isolation and fragmentation. God is also viewed as the ultimate source of power who wills well-being and who acts for good on behalf of people. People with religious well-being

typically are able to affirm life in spite of its negative and painful circumstances. A trust that God will work for good in their lives provides a sense of underlying security and guiding purpose to life.

Allport's (1960) notion of intrinsic religiosity is conceptually similar to Paloutzian and Ellison's (1982) definition of religious well-being. It was defined as a spiritual resource in this study. According to Allport (1960),

> intrinsic religion marks the life that has interiorized the total creed of a person's faith without reservation, including the commandment to love one's neighbor. A person of this sort is more interested in serving religion than in making it serve him (or her). (p. 257)

Allport and Ross (1967) suggested that persons with intrinsic orientations find their "master motive" in religion. They stated that

> other needs, strong as they may be, are regarded as of less ultimate significance, and they are, insofar as possible, brought into harmony with religious beliefs and prescriptions. Having embraced a creed, the individual endeavors to internalize it and follow it fully. It is in this sense that (one) lives (one's) religion. (p. 434)

Allport (1960) contrasted intrinsic religious orientation with extrinsic religion. He stated that, "Extrinsic religion is a self-serving, utilitarian, self-protective form of religious outlook which provides the believer with comfort and salvation at the expense of

outgroups" (p. 257). Allport and Ross (1967) suggested that persons with this orientation "turn toward God without turning away from self" (p. 434). Their embraced religious creed is lightly held or selectively shaped to fit more primary needs. Extrinsically religious persons use their religion to provide security and solace, sociability and distraction, and status and self-justification. Donahue (1985) suggested that extrinsic religiousness is a religion of comfort and social convention. According to Meadow and Kahoe (1984) these individuals frequently have a need to identify themselves with some creed or church. However, they usually meet these needs by nominal church membership and irregular attendance. In sum, Allport and Ross (1967) state, "the extrinsically motivated person uses his (or her) religion, whereas the intrinsically motivated lives his (or her) religion" (p. 434).

Allport originally considered intrinsic and extrinsic orientations as ends of a bipolar continuum measured by his Religious Orientation Scale. When empirical research began to cast doubt on this conceptualization (Feagin, 1964; Allport, 1966; Hunt and King, 1971), Allport expanded his original bipolar approach into a fourfold typology: (a) intrinsics, (b) extrinsics, (c) indiscriminately proreligious, and (d) indiscriminately nonreligious (Donahue, 1985).

Family Strengths

In his original ABCX model Hill (1949) stated that ". . . whether a given event becomes a crisis for any given family . . . [is partly determined by] . . . the resources of a family, its role structure, flexibility, and previous history with crisis." Family system resources became a major component of Hill's B factor and McCubbin and Patterson's (1983) bB factor in their models of family adaptation to stress.

According to McCubbin and Patterson (1983) family system resources refer to traits in the family system that render the family less vulnerable to stress. Such traits also facilitate recovery from crisis by enhancing the family's regenerative power (Burr, 1973).

Olson (1982) suggested that these resources typically have been referred to as family strengths. Such strengths usually refer to qualities which promote healthy family relationships and enable families to endure normative and nonnormative stressful events. Numerous family theorists have articulated the dimensions of strong families (Stinnet, 1981).

Burr's (1973) synthesis of family stress theory produced a comprehensive definition of a family system's internal resources. He hypothesized that the regenerative power of families positively influences the level of reorganization after a period of crisis. He enumerated

several variables which influence the family's regenerative power: (a) family integration, (b) family adaptability, (c) the amount of extended familism, (d) the amount of similarity of sentiment in a family, (e) the amount of marital adjustment, (f) the amount of consultation in decision making, (g) the amount of social activity outside the home, and (h) the amount of anticipatory socialization for changes in the family system.

In their decade review of family stress literature McCubbin et al. (1980) stated that only adaptability and cohesion have received empirical attention among the resources Burr defined. Olson, Russell and Sprenkle (1979) used these dimensions and added communication skills to develop an integrative, Circumplex model of the family.

Olson et al. (1983) reviewed the literature on family strengths and summarized their findings into seven conceptual domains: family pride, family support, cohesion, adaptability, communication, religious orientation, and social support. Olson, Larsen, and McCubbin (1982) contended that the broad range of descriptors of family strengths has made the concept difficult to measure. To facilitate empirical research they limited the definition and operationalized the concept. They used the work of Davis (1980) who identified family pride as a measurable variable contributing to strength. Davis (1980) defined family pride as an "individual family member's perception

that his or her family is a worthy group." "Worthiness" involved a group of competent members who usually do things well and regard the family as a source of satisfaction.

Olson, Larsen, and McCubbin's (1982) conceptual organization of family strengths consists of two dimensions: pride and accord. Pride consists of attributes such as family pride, loyalty, trust, and respect. Accord consists of items which measure a family's sense of competence.

This study used Olson, Larsen, and McCubbin's (1982) operational definition of family strengths. It conceptualized the construct within the framework of the Double ABCX model. The construct was viewed as a mediating variable between a pile-up of stressful demands and the level of psychological stress of cancer patients and spouses of cancer patients.

Sense of Coherence

The role of cognitive appraisal in the stress-coping process has received considerable attention in family stress and psychological stress theories. In his ABCX formula Hill (1949) suggested that a family's definition of stressor events (the C factor) determined, in part, the emergence and degree of crisis. In a post crisis situation McCubbin and Patterson (1983) emphasized the role of family perception of the total situation, and the meaning attributed to it, in predicting family adaptation. They stated that

> the cC factor is the meaning the family gives to the total crisis situation which includes the stressor believed to have caused the crisis, as well as added stressors and strains, old and new resources, and estimates of what needs to be done to bring the family back into balance. (p. 16-17)

Pearlin and Schooler (1978), Cohen (1984) and Lazarus and Folkman (1984) have conceptualized cognitive appraisal as a mediating factor in the stress-response process. Lazarus and Folkman (1984) suggest that people judge the seriousness of stressful situations (i.e. primary appraisal), and evaluate the adequacy of their resources for coping with them (i.e. secondary appraisal). These cognitive appraisals are of paramount importance in affecting how people cope and their emotional, physiological, and behavioral responses to stressor events (Lazarus, 1966).

Antonovsky (1979, 1987) has developed the concept of <u>coherence</u> as a cognitive coping resource. The sense of coherence (SOC) appeared to be useful as a bridging concept between a family's stress buffering resources and their adaptation to stress. He defined the sense of coherence as a "global orientation that expresses the extent to which one has a pervasive, enduring, though dynamic feeling of confidence that (a) the stimuli deriving from one's internal and external environments are structured, predictable, and explicable; (b) the resources are available to one to meet the demands posed by these stimuli; and (c) these demands

are challenges, worthy of investment and engagement" (Antonovsky, 1987, p. 19).

Antonovsky suggested that the sense of coherence is not a unitary construct, but consists of three core components. Comprehensibility refers to the extent to which people perceive that internal and external stimuli make cognitive sense. People with a high sense of comprehensibility expect that the stimuli they encounter will be predictable, orderable, clear, and explicable. While the stimuli may be undesirable, such as illness, war, or failure, such individuals can make sense of them.

Manageability, the second component of coherence, was defined as the extent to which people perceive that resources at their disposal are adequate to meet the demands imposed by the stimuli they encounter. Those with a high sense of manageability tend not to feel victimized nor treated unfairly by events of life.

The third component of coherence, meaningfulness, referred to the extent to which people feel that life makes sense emotionally. People with a strong sense of meaningfulness have areas of life that are important to them and worthy of emotional investment and commitment. They feel that problems and demands posed by living are worthy of commitment and engagement. They seek meaning in problems and do their best to overcome them with dignity. People with a weak sense of meaningfulness often report that little

in life seems to matter to them. Problems tend to be viewed as posing wearisome burdens and unwelcome demands.

Antonovsky suggested that the three components of the SOC are of unequal centrality. He stated that the motivational component of meaningfulness seems most crucial. Without this dimension, being high on comprehensibility or manageability is likely to be temporary. Comprehensibility seems next in importance, as high manageability is contingent on understanding. Manageability remains important, for if people do not believe that adequate resources are available, meaningfulness and coping efforts will be weakened. Thus, successful coping depends on the SOC as a whole. This study used Antonovsky's conceptualization of a sense of coherence and his operational definition of the construct.

Psychological Stress

A fundamental assumption of the stress process is that the antecedents of stress lead to stress outcomes because the organism is basically intolerant of change. This assumption is rooted in the seminal studies of Cannon (1929) and Selye (1974). They viewed the normal state of the organism as one of equilibrium or homeostasis. When a change occurs in any level of the organism it creates disequilibrium among the other levels. This requires a period of readjustment during which the organism struggles to reestablish homeostasis. The struggle for readjustment

can be wearing and exhausting, leaving the organism vulnerable to stress and its physical and psychological consequences (Pearlin et al., 1981; Cronkite and Moos, 1984).

Pearlin et al. (1981) contended that the most difficult issue in understanding the stress process is clarifying the meaning and measurement of stress itself. Widely divergent stress outcomes appear to create much of the conceptual ambiguity. There is little agreement about which of the many outcomes represent the "real" manifestation of stress. Ambiguity exists about the level of an organism in which stress is most clearly reflected: in a single cell, throughout the entire system; in biochemical, physiological, or psychological functioning. Pearlin (1982) argued that the manifestations of stress are found at every level of organismic functioning, from the microbiological to the emotional.

The present study was limited to a multiple item, global indicator of psychological stress. According to Lazarus and Folkman (1984, p. 19), "Psychological stress is a particular relationship between the person and the environment that is appraised as taxing or exceeding his or her resources and endangering his or her well-being." As Pearlin et al. (1981) suggested, symptom scales such as the one used in this study distinguish reasonably well people who differ with regards to levels of perceived psychological

stress. As in the current study, such scales typically include indicators of emotional, cognitive, and behavioral dimensions of psychological stress.

According to Cronkite and Moos (1984) the work of Adolf Myer, who focused on the importance of environmental influences in health and disease, began the interest in the role of stressful events in the etiology of psychological stress. They asserted that subsequent research has found a consistent relationship between the antecedents of stress and psychological stress. Vulnerability to the symptoms of psychological stress was determined by complex interactions among coping resources and physiological predispositions. This study conceptualized psychological stress as a response of cancer patients and their spouses to a perceived pile-up of demands (and the unmeasured event of cancer). It also examined the complex interactions of various coping resources in determing vulnerability.

Statement of Hypotheses

The hypotheses for this study are stated in the direction of the expected findings, given the findings from previous research reported above.

Primary Hypotheses

H_1 Patients and spouses with higher levels of accumulated demands will report higher levels of psychological stress.

H_{2a} Patients and spouses with higher levels of sense of coherence will report lower levels of psychological stress.

H_{2b} Patients and spouses with higher levels of family strengths will report lower levels of psychological stress.

H_{2c} Patients and spouses with higher levels of spiritual resources will report lower levels of psychological stress.

Secondary Hypotheses

H_{3a} Patients and spouses with higher levels of accumulated demands will report lower levels of spiritual resources.

H_{3b} Patients and spouses with higher levels of accumulated demands will report lower levels of family strengths.

H_{3c} Patients and spouses with higher levels of accumulated demands will report lower levels of sense of coherence.

H_{4a} Patients and spouses with higher levels of spiritual resources will report higher levels of family strengths.

H_{4b} Patients and spouses with higher levels of spiritual resources will report higher levels of sense of coherence.

H_5 Patients and spouses with higher levels of family strengths will report higher levels of sense of coherence.

CHAPTER II

REVIEW OF LITERATURE

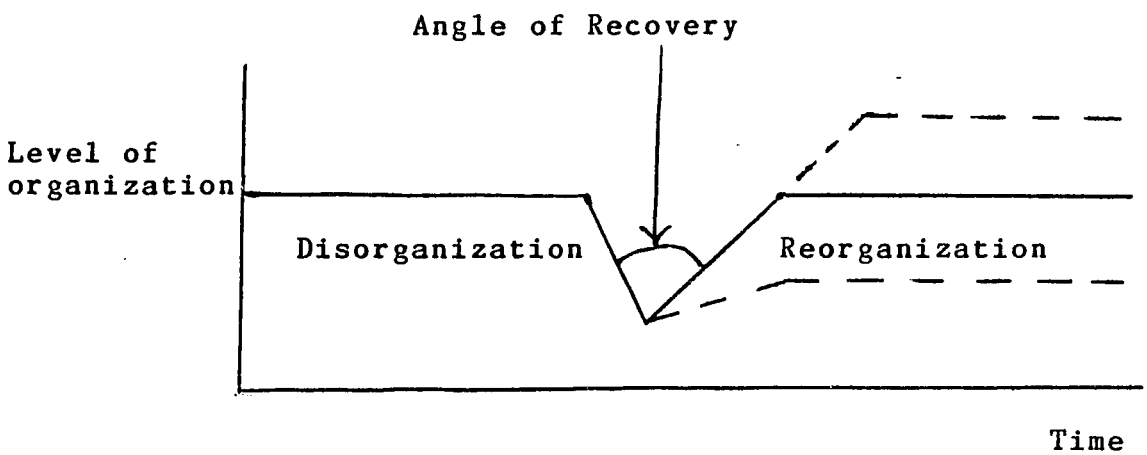
A humanized, holistic approach to the care of cancer patients and their families requires an awareness of the multi-faceted dimensions along which the disease is experienced. Hill's (1949) ABCX model of crisis, and its revisions (McCubbin and Patterson, 1983), provides a framework for examining the psychosocial experiences of these individuals. It also serves as an organizing guide for understanding the coping resources that enhance adaptation.

The original model consists of two parts. The first is a theoretical statement describing the development of a crisis in the family system:

> A (the stressor event and related hardships) - interacting with B (the family's crisis-meeting resources) - interacting with C (the family's definition of the event) - produce X (the crisis)

The second part of Hill's framework is a set of statements about the course of family adjustment after a crisis point has been reached. The adjustment includes: (a) a period of disorganization, (b) an angle of recovery, and (c) a new level of reorganization. (See Figure 1).

Figure 1. Hill's Roller Coaster Model of Crisis



Source: Boss, 1988

Serious illness such as cancer is a severe, nonnormative stressor event that can produce crisis in the family system. It can initiate such a wide array of demands, hardships, and change that the coping resources of family members are overwhelmed. Each individual, and the family as a unit, experience a predictable course of adjustment. Hill describes the pattern as a truncated roller coaster. Following the onset of the illness, the members are often shocked by the blow. As the facts of the event are assimilated, individual and family organization plunges downward. As the disorganization reaches the bottom of the downward spiral reorganization begins to occur. A new level of equilibrium gradually emerges.

The traditional approach of examining the psychosocial dynamics of people confronted by normative and nonnormative stressor events has focused on the sense of personal and family disorganization. More recent theoretical developments have begun to emphasize the role of stress-buffering and stress-mediating resources in preventing crisis and in facilitating reorganization after crises have occurred. In this review of literature research on the psychosocial disruption commonly experienced by cancer patients and their spouses is examined first. Then theory and research were reviewed from psychological stress and family stress perspectives as an organizing guide for understanding the adaptation process. Finally a stress-mediating model is presented for analyzing factors that influence the psychological stress levels of cancer patients and their spouses.

Psychosocial Crises of Cancer Patients and Spouses

Moos (1982) contended that crisis theory provides a conceptual framework for understanding psychosocial adaptation to severe physical illness such as cancer. It assumes that people's need for physiological homeostasis is paralleled by their need for social and psychological equilibrium. Experiences that upset their normal pattern of behavior are met by habitual problem-solving mechanisms until balance is regained. However, some situations are so

major that usual, habitual responses are inadequate. These experiences constitute a crisis and lead to a state of disorganization. Because people cannot remain in an extreme state of disequilibrium some new balance must be reestablished. The new level of equilibrium may represent a healthy adaptation or a maladaptive response.

Moos (1982) stated that

> the crisis of physical illness is an unusually potent stressor that may extend over a long period of time and lead to permanent changes among patients and their family members. The potency of the crisis stems from the typically sudden and unexpected onset and the pervasive threat to the essence of an individual's life and adaptation. A person may face hospitalization and separation from family and friends, overwhelming feelings of pain and helplessness, permanent changes in appearance or in bodily function, the loss of key roles, and an unpredictable future involving the prospect of an untimely death. Furthermore patients often achieve a state of tentative equilibrium in the course of an illness only to have it shattered by a complex set of new issues and circumstances. Such stages of the illness process as the perception and evaluation of symptoms, the decision to seek medical help, the assessment and diagnosis of the illness, hospitalization and attendant treatment, and convalescence and rehabilitation each involve unique adaptive tasks and the need to use new coping skills. (p. 90)

Frequent efforts have been made to describe the psychosocial impact of cancer on patients and their families. Studies have focused on defining the nature of disturbed mood states, documenting their prevalence, identifying factors associated with adaptation, and examining the impact of the disease on family relationships.

Psychosocial Symptomatology

When cancer is diagnosed anatomical staging is conducted to determine the type, location, and degree of metastases of the disease. Weisman (1979) suggested that psychosocial staging can provide a framework for understanding the coping pattern of patients and families. He postulated four stages.

Stage One covers the first 100 days after diagnosis and is defined as "Existential Plight." It begins with "impact distress" when patients first learn about their cancer. It is typically an alarming moment. Weisman stated that one-third of his patients saw death as a real possibility regardless of prognoses. This stage moves to "existential plight proper," with distress usually proportionate to the severity of physical symptoms.

Weisman (1979) labeled Stage Two as "Mitigation and Accommodation." The length of this stage is indefinite, from those with an early cure to those who worsen. Regardless of its duration the stage is measured by distress dissipated and autonomy regained. The degree of adaptation varies widely. Successful copers reinvest in life and have open time perspectives. Less successful copers withdraw from life and develop closed time perspectives.

Stage Three encompasses "Decline and Deterioration." It often begins with recurrence and relapse of the disease. It represents a secondary existential plight. Patients

typically are concerned about controlling the progression of the disease. They have guarded attitudes, restricted time perspectives, and experience increased functional impairment and a declining quality of life. At the end of this stage palliation is often introduced. Only relief can be offered when patients reach a point of no return regardless of treatment.

Stage Four is defined as "Preterminality and Terminality." It begins with signs of accelerating irreversibility. It is when dying begins. Patients may experience some or all of Kubler-Ross' five stages of dying (denial, anger, bargaining, depression, acceptance). Patients often experience acceptance of death which provides a sense of distance from pressing problems. Worries about chronic problems become less important and distress is often reduced. Patients tend to yield from active responsibility and withdraw from further efforts to help themselves. Presence by caregivers becomes a key concern.

Weisman (1979) reportd that when the characteristics of distress are factor-analyzed they are sorted into four clusters around a nucleus of depression and powerlessness. Annihilation, the first cluster, is characterized by hopelessness, high anxiety, and a closed-time perspective (i.e. patients who foresee a very limited or nonexistant future). Alienation is reflected in a sense of abandonment, isolation, repudiation of support, and worthlessness.

Endangerment is seen in frustration (i.e. patients who are angry about being sick and unable to find relief), turmoil (i.e. patients who are visibly tense and agitated), and truculence (i.e. patients who are embittered and feel victimized). Denial occurs in some measure as a part of every coping strategy. Weisman suggested that the amount of distress experienced around these four clusters occurs in widely different degrees, from existential despair to relative psychological well-being.

According to Hughes (1987) the psychological distress of cancer patients exists on a continuous spectrum from unhappiness and worry to depression and anxiety. The normal difficulty in distinguishing pathological mood states from natural reactions to adverse conditions is pronounced when patients have cancer. Certain amounts of worry and unhappiness are expected and probably a prerequisite to realistic long-term adjustment. Hughes (1987) contended that a diagnosis of depression or anxiety in cancer patients is usually made if their distress seems more intense or prolonged than what is usually shown by other patients in similar circumstances, and if it is accompanied by characteristic symptoms (i.e. apathy, sleep disturbance, suicidal ideation).

When psychological distress appears in cancer patients it often represents severe reactions to the burden of the disease and its treatment (Hughes, 1987). It may arise as

a reaction to the side effects of treatment, to worry over dependent relatives, to the stigma and dread that many people associated with the word "cancer," and to restrictions of activity resulting in weakness and malaise. Biological causes often go undetected. Severe reactions may reflect organic brain dysfunction resulting from cerebral metastases or the direct effects of cytoxic agents on the brain. Distress may also be related to premorbid psychiatric conditions or an accumulation of stressful life events.

Anxiety, with or without depression, is common for cancer patients (Hughes, 1987; Sutherland, 1981; Bahnson, 1975). It is often aroused by fears of unacceptability to other people, by a loss of activities through which patients have usually released anxiety, by an increase in family tension, and by an inability to perform well at usual roles (Bahnson, 1975). Vettese (1976) stated that cancer patients' anxiety involves fear of mutilation, fear of uncertainty of one's future, fear of progressive pain, and fear of death. Anxiety is often manifested through reactive dependency on physicians and somatic symptoms such as insomnia, nightmares, restlessness, crying, weight loss, or tachycardia (Sutherland, 1981). Mental symptoms of anxiety can be seen in patients who appear worried, haunted by dread, irritable, and unable to concentrate (Hughes, 1987).

Depression often occurs as a reactive disorder in

response to disruptions of one's basic adaptive patterns and to losses of significant roles and functions (Bahnson, 1975). It is frequently manifested through mental symptoms such as lowering of mood, dysphoria, loss of interest, sense of emptiness, an inability to feel any emotion, and withdrawal. Physical symptoms include loss of appetite and weight, fatigue and weakness, and loss of sexual energy (Hughes, 1987; Sutherland, 1981; Bahnson, 1975).

Krant (1981), Sutherland (1981) and Bahnson (1975) agreed that a common reaction of cancer patients is flaring anger and hostility. Anger is often expressed by patients who say "Why me?" and perceive that the disease is an injustice done to them by some external source. Bahnson (1975) reported that anger is occasionally combined with paranoid reactions. Heightened suspiciousness may be projected onto physicians who are perceived to be "at fault" for misdiagnosis or negligence. Sutherland (1981) suggests that such patients often believe that they have brought the disease on themselves by some forbidden activity. As a way of dealing with self-directed rage patients may project their guilt onto figures in their environment.

Prevalence of Psychosocial Distress

Patients' psychological reactions to cancer have attracted considerable empirical research. Many studies have focused on the prevalence of psychiatric disorders.

It appears that many, but not the majority, of patients develop identifiable psychiatric symptoms (Goldberg and Cullen, 1985). Most of these cases of disorder are moderate rather than severe (Hughes, 1987). As a comparison base for these studies psychiatric prevalence rates, developed from general medical populations, tend to be consistently in the 12% to 30% range (Derogatis et al., 1983).

Using the Self-Report of Symptoms Inventory in a study of 30 consecutive admissions to an oncology inpatient unit, Craig and Abeloff (1974) found that 53% of their sample evidenced "moderate to high" levels of depression. Thirty percent appeared to have significant anxiety.

Bukberg, Penman and Holland (1984) found that 42% of a sample of 62 oncology inpatients had non-bipolar major depression using DSM-III diagnostic criteria. Derogatis et al. (1983) found that 47% of a sample of 215 randomly selected oncology inpatients and outpatients received a DSM-III diasnosis. They were assessed by the Self-Report of Symptoms Inventory and by psychiatric interview. Eighty-five percent of the patients with a positive psychiatric condition experienced anxiety or depression as the central symptom. In contrast, Plumb and Holland (1977) found that only 23% of 97 oncology patients exhibited depression as measured by the Beck Depression Inventory.

Hughes (1987) observed that about 50% of cancer patients in most studies report that they are free of

anxiety, depression, or any other form of distress at any one time. Equanimity occurs in patients who are able to accept their disease realistically and in others who use denial mechanisms to ignore the disease's threatening implications. A minority of patients report psychological benefits from having cancer. The illness has given them a fuller appreciation of life, clarified their priorities, changed their lifestyles, and strengthened their relationships with people they value.

Factors Influencing Adaptation

Several studies have focused on factors of the personal and social situation of cancer patients that are conceivably associated with psychosocial adaptation. Most studies have shown no consistent association between age and psychosocial problems (Derogatis et al., 1983; Schmale et al., 1982; Sobel and Worden, 1982). According to their review of evidence, Goldberg and Cullen (1985) found that most studies have shown no association between sex, socioeconomic status, site of disease and psychosocial problems. Leiber and Plumb (1976) did find sex differences in levels of depression (Beck Depression Inventory). In a study of 75 cancer patients and their spouses, women patients were more depressed than their husbands, male patients or the spouses of male patients. Weisman (1979) reported that lower socioeconomic status was associated with higher levels of distress.

Stavraky (1968) studied the psychosocial adaptation of 204 cancer patients using the MMPI, Wechsler Verbal IQ Scale, and the Differential Diagnostic Technique. She found that above average IQ and hostility were associated with favorable outcomes. Patients with strong hostile drives without loss of emotional control had more positive outcomes than those with "hopeless" and "giving up" reactions.

Derogatis (1979) studied the relationship between psychological reactions and length of survival in patients with mestatic breast cancer. Long-term survivors (those who survived a year or longer) showed higher elevations on measures of anger, anxiety, depression, and guilt. They appeared to be more capable of externalizing their distress than short-term survivors. The latter appeared less able to communicate dysphoric emotions, tended to cover negative feelings with superficiality, and reported higher levels of positive mood. They were more polite, apologetic, and acquiescent than were long-term survivors.

Krant (1979) also suggested a relationship between emotional expressiveness and length of survival time in cancer patients. He stated that greater ability to express anger is consistently related to longer survival times.

Cobliner (1977) interviewed 300 women with gynecological or breast cancer to examine variables associated with positive adjustment. Correlates of

adjustment included high self-image, high faith in doctors and in the efficiency of treatment, desire and opportunity to confide their worries to another, good relationships with significant others, involvement in a satisfying occupation, congruence between life expectations and degree of attainment, and success with previous crisis resolution.

Social support has been positively associated with adjustment to cancer. Weisman and Worden (1975) reviewed the survival patterns of 45 terminal cancer patients. They were assessed by interviews and a battery of psychological tests. Multiple regression equations were used to predict survival times. Expected survival times for 35 of the patients who died were compared to actual length of survival. They found that social support was positively related to length of survival.

Weisman and Worden (1975) stated that

> longer survivals are associated with patients who have good relationships with others and manage to preserve a reasonable degree of intimacy with family and friends until the very last. They ask for and receive much medical and emotional support. . . . Shorter survivals occur in patients who report poor social relationships, starting with early separations from their families of origin, and continuing throughout life. They talk about repeated mutually destructive relationships with people throughout the years. (p. 71)

Holland (1977) studied patients with advanced cancer and found that emotional support and reassurance were more effective than medication in relieving depression and anxiety. It appears that patients who maintain close

relationships with significant others demonstrate better adjustment to their illness than those who do not have supportive relationships.

Contrary to a growing body of research on the stress-buffering qualities of social support, Revenson, Wollman, and Felton (1983) found that supportive relationships were not related to psychological adjustment of 32 adult cancer patients. They found that social support was related to poorer adjustment for patients with many physical limitations. They suggest caution in assuming that social supports are universal stress buffers.

Weisman (1979) studied the psychosocial characteristics of cancer patients who had higher and lower levels of emotional distress. He studied patients at the time of initial diagnosis and at intervals up to six months after completing treatment. Table 1 shows his findings about the contrast between higher and lower levels of emotional stress and correlates of vulnerability. He found that psychosocial issues are most likely to occur during transitions in the illness process, such as during the emotional impact of diagnosis, early convalescence, relapse or recurrence, and the time of progressive decline and deterioration.

Weisman (1979) also examined the coping patterns of patients experiencing high and low levels of psychological distress. Patients experiencing the most distress coped by

Table 1

Correlates of Vulnerability to Emotional Stress

Higher Emotional Stress	Lower Emotional Stress
1. Pessimistic in general, including outcome of illness	1. Optimistic in general
2. Regrets about past	2. Fewer regrets
3. History of psychiatric treatment	3. Less psychiatric treatment, if any
4. High anxiety, low ego strength strength (MMPI)	4. Low anxiety, high ego strength
5. Marital problems prior to cancer	5. Few marital problems, if any
6. Lower socioeconomic status	6. Higher socioeconomic status
7. More alcohol abuse	7. Abstinence or use, not abuse
8. Many problems in family of origin	8. Few problems in family of origin
9. Little or no church attendance	9. Church attendance
10. More physical symptoms	10. Fewer physical symptoms
11. Cancer at advanced stage	11. Less advanced cancer
12. Expects little support from others	12. Expects adequate support
13. Doctor viewed as less helpful	13. Doctor viewed as helpful
14. More current concerns of all kinds	14. Fewer current concerns
15. Feels more like giving up	15. Fewer giving up feelings
16. Poor problem resolution	16. Better problem resolution

Source: Weisman, 1979, p. 67

suppression and passivity, fatalistic submission, isolation and withdrawal, blaming self and others, and excessive use of alcohol and drugs to reduce tension. Four coping patterns were used by patients with less distress: (a) Clarification and control (confront salient problems and take action, give and receive information, redefine or reduce problems to manageable portions, consider alternative solutions); (b) Collaboration (constructive sharing of concern, trust problems to judgment of others, prevent impulsive behavior, direct and active alliance with caregivers); (c) Directed relief (ventilation of feelings, temporary avoidance and suppression, use of diversions that worked in past, find new tactics that relieve); (d) Cooling off (modulate emotional extremes, build morale through increasing self-esteem, distract, realistic resignation, be in silence).

Herth (1989) investigated the relationship between hope and coping responses in 120 adult cancer patients undergoing chemotherapy in hospital, outpatient, and home settings. She found a significant relationship between level of hope and level of coping in all three settings. She also found that religious conviction positively influenced hope and coping responses. Patients with strong religious faith had a higher level of hope and a higher level of coping response than those who had a weak faith or were without faith.

Family Adjustment to Cancer

While much research has focused on psychosocial adjustment of patients fewer studies have examined the impact of cancer on families of patients. Doherty and Campbell (1988) suggested that families and patients both experience psychosocial crisis. They stated that

> . . . the literature on families and cancer indicates that in the early, post diagnosis phase of cancer, many families experience shock and disbelief. Their energies during the initial period are focused on the physical survival of the cancer patient. Family members, particularly spouses and mothers, experience much fatigue during the hospitalization period. Once the acute crisis phase is over, families differ in how they handle the initial adjustment to living with cancer and its treatment. . . . Many families have difficulty communicating openly with one another about their intense feelings of fear, worry, anger, and resentment. These problems notwithstanding, some families appear to become more cohesive and satisfied with their family ties through coping with the experience of cancer. (p. 88)

Oberst and James (1985) studied the pattern of crisis experienced by patients and spouses after surgery for bowel and genitourinary cancer. Forty patients and spouses were interviewed about major concerns and coping issues on four occasions (one to two days before discharge after surgery, 10, 30, and 60 days postdischarge. Twenty-six of these couples were interviewed 90 and 180 days after discharge.

During hospitalization about 50% of the spouses complained of the disruption in their lives associated with trips to and from the hospital, such as interruptions in normal work or household schedules, changes in childcare

patterns, and curtailment of social activities. These problems remained significant for about 33% of the spouses for the first three months. The problems were accompanied by increased anger and resentment by two months after discharge.

During hospitalization and 10 days after discharge the primary concern of patients and spouses was the patients' health. This remained the dominant concern of patients through the first two months. By one month after discharge spouses' primary concern had shifted from the patients' health to their <u>own</u> health. Between 30 and 90 days after discharge the spouses' major concern was the impact of the illness on their own lives.

Regarding symptom distress during hospitalization spouses reported difficulty with fatigue and an inability to eat. Between 30 and 60 days after discharge the number of somatic complaints had escalated for spouses. While spouses worried much about the patients' symptoms, the patients seemed largely unaware of their spouses' symptom distress. Many of the spouses were hesitant to "burden" patients with their problems and tried to hide their distress.

Regarding emotional reactions Oberst and James (1985) found that spouses' anxiety was significantly higher than patients' anxiety in the predischarge period. They struggled with the "suddenness" of disease onset like

patients did, but did so with lowered emotional reserves elicited by exhaustion. Spouses frequently reported the need to believe that "everything will be okay" and the need to sustain a cheerful demeanor when with the patient.

In comparison to patients spouses had consistently higher incidence of emotional distress at each postdischarge interview. At 10 days they felt fairly positive. But they experienced steadily rising emotional distress that peaked at 60 days and continued to be troublesome for over 50% of them six months after discharge. Many spouses seemed to experience an "exhaustion crisis." They functioned effectively under prolonged conditions of stress, until their emotional reserves were depleted. Quite suddenly many spouses no longer had the strength or resources to deal with the situation and their whole coping structure became "unglued."

In contrast to Oberst and James (1985) other researchers have found evidence of greater coping capacity among families of cancer patients. Wellisch, Jamison, and Pasner (1977) studied the reactions of 31 males partners of newly diagnosed mastectomy patients. They found that 58 percent of the men reported no work difficulties due to preoccupation with thoughts about their partners. However, a majority of the men did experience psychosomatic symptoms such as sleep disorders, loss of appetite, weight gain, and general feelings of fatigue. Cella (1987) studied family

relationships of young adults with Hodgkin's disease and reported that only 10% to 15% said the illness had led to deterioration in family relationships. Twenty-five percent of the subjects believed it had improved relationships by bringing family members closer together and helping members appreciate each other.

Cella (1987) stated that in most studies there appears to be little if any lasting decrease in marital satisfaction of cancer patients and their spouses. Hughes (1987) found that 61 of 67 patients with breast or lung cancer thought that quality of their marriages were either the same or improved during the months following diagnosis. Hinton (1981) found that 30 of 60 married cancer patients in a terminal care unit reported that their marriages had become closer as a result of the illness.

The present study is part of a growing body of research that examines factors affecting the adaptation of cancer patients and spouses. Recent developments in family stress theory have provided a theoretical framework for analyzing not only psychosocial disruption but the factors leading to successful adaptational outcomes.

Family Stress Theory and Research: An Overview

Family Stress Theory

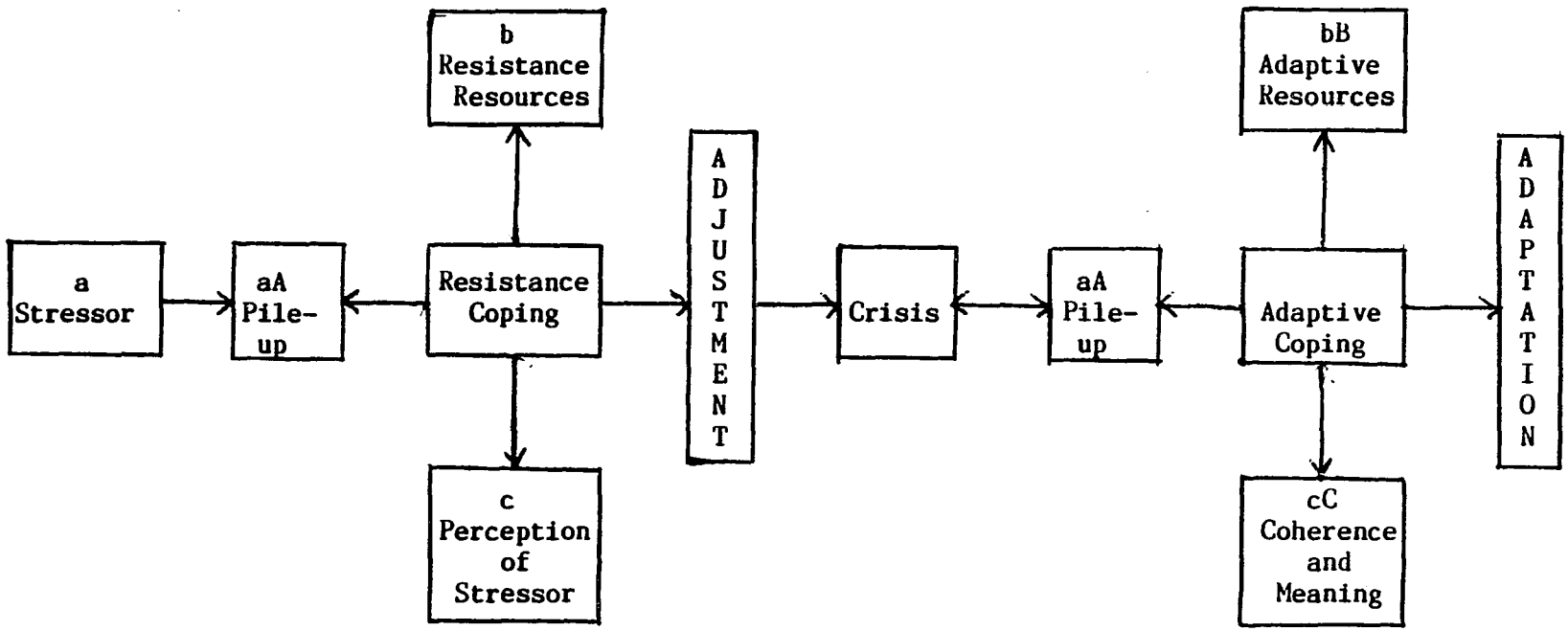
McCubbin and Patterson (1983) used Hill's original ABCX model as a foundation to advance a Double ABCX model

of family behavior (see Figure 2). Their model was originally developed from a longitudinal study of 216 families in crisis precipitated by a husband/father held captive or unaccounted for in the Vietnam War. They found that Hill's (1949) four factors continue to influence the course of adaptation in the aftermath of a major stressor. However, the difference in theirs and Hill's model is the additive effect of changing conditions over time. Instead of following Hill's model of tracking (a) one stressor event with its accompanying (b) resources and (c) interpretations as antecedents to (d) the level of crisis, McCubbin and Patterson propose the following four factors.

The aA Factor represents a pile-up of demands and the clustering, cumulative effect of pre- and post-crisis stressors and strains. It builds upon Hansen and Johnson's (1979) contention that stress is a process involving a set of changing conditions over time rather than a single, short-term stimulus. This factor includes: (a) the initial stressor and its hardships; (b) normative transitions such as family life cycle changes; (c) prior strains which may be the result of unresolved hardship from earlier stressors or transitions such as parent-child conflicts; (d) consequences of family efforts to cope; and (e) intrafamily uncertainty such as boundary ambiguity (Boss, 1988) within the family system (i.e. rules concerning who is inside and who is outside the family system).

Figure 2

Double ABCX Model of Family Stress and Adaptation



Source: McCubbin and Patterson, 1985

The family's adaptive resources are the bB Factor. They consist of existing resources and expanded family resources. Existing resources serve to lessen the impact of the initial stressor. Expanded resources (B of bB Factor) are new individual, family, and community resources that are either strengthened or developed in response to the additional pile-up of demands. These resources mediate between the pile-up of demands and adaption. They can either lessen the impact of demands on the family and/or help the family adapt to necessary changes.

The cC Factor is the meaning or definition the family gives to the total crisis situation. It includes the initial stressor, added stressors and strains, old and new resources, and estimates of how to restore balance to the family. McCubbin and Patterson (1983) found that when families can successfully redefine a crisis situation and give it new meaning, it involves (a) clarifying the hardships to render them more manageable, (b) decreasing the intensity of the emotional burden, and (c) encouraging the family unit to continue its basic tasks.

According to McCubbin and Patterson (1983) coping is a bridging concept that allows one to simultaneously examine the roles of family resources and perceptions. Family coping efforts may seek to (a) eliminate or avoid stressors and strains, (b) manage the hardships of the situation, (c) maintain the family system's integrity and morale, (d)

acquire and develop resources to meet demands, and (e) make structural changes in the family system.

Family adaptation, the xX Factor, is the concept McCubbin and Patterson (1983) use to describe the outcome of the family stress process. It is achieved through balanced relationships where demands are met by capabilities. According to Lavee, McCubbin, and Patterson (1985) it is conceptualized as a continuous variable which ranges from bonadaptation to maladaptation. Maladaptation results from continued imbalance between a pile-up of demands and family capabilities for meeting demands. It is marked by a deterioration of family integrity, and of individual members' physical health and psychological well-being. Bonadaptation results from minimal discrepancy between a pile-up of demands and family capabilities, allowing a balance in family functioning. It is marked by maintenance or strengthening of family integrity and family members' sense of physical and psychological health.

Coherence: A Bridge Between Demands and Adaptation

In the adaptation process families confront the reality that no "perfect" fit exists where demands and resources are absolutely balanced. Successful adaptation requires an orientation by the family involving a sense of acceptance that they are doing the best they can under the circumstances (McCubbin and Patterson, 1983).

Antonovsky (1979) described this orientation as a

sense of coherence. Family stress theory has incorporated this construct as a bridge between stressor events and adaptation. It is based on the family's ability to balance control and trust. Coherence is the ability to differentiate what people can control through their own efforts from when they should trust the legitimate authority and/or power of other sources (i.e. God, institutions, persons) to act with their best interests in mind. A realistic balance between trust and control leads to coherence and moves a family toward bonadaptation, even when resources are not adequate to meet all demands (McCubbin and Patterson, 1983).

Antonovsky (1987) theorized that confrontation with stressors results in a state of tension for individuals. The adequacy of tension management determines whether the outcome will be pathological, neutral, or salutary. He contended that analyzes of the factors determining tension management has become a central question of health sciences. The researchers with a pathological orientation try to explain why people get sick. Those with a salutogenic orientation seek to explain why people move toward the positive end of the health-disease continuum.

Antonovsky (1979, 1987) has conducted research to uncover the factors of effective adaptation. His first answer to the salutogenic question was found in the concept of generalized resistance resources (GRR's). Intrapersonal

GRR's include (a) cognitive resources such as knowledge and intelligence, (b) emotional resources such as an integrated, stable, and flexible ego identity, (c) rationality (i.e. the ability to accurately and objectively assess stressors, and (d) flexibility (i.e. the ability to develop contingency plans). Interpersonal GRR's center in the adequacy of social supports. Antonovsky (1987) theorized that GRR's provide experiences that generate, develop, and maintain the sense of coherence. He contended that the sense of coherence is the core determinant of maintaining one's position on the health-disease continuum and of moving one toward healthy outcomes.

Lavee, McCubbin, and Patterson (1985) stated that coherence is shaped by family resources such as perceived internal strength and by the cumulative effect of positive and negative experiences in the external environment. Coherence, in turn, shapes the meaning the family gives to the total crisis situation. Thus, coherence is an intervening factor between crisis and adaptation. The stronger the sense of coherence the greater is the family's adaptive power.

Research From Family Stress Theory

The Double ABCX theoretical framework has spawned numerous empirical studies to test its explanatory power. Olson, McCubbin et al. (1983) used a cross-sectional, multivariate design to study normative processes of a

nationwide random sample of 1140 couples and 412 adolescents. Families at seven stages of the family life cycle were sampled. They studied five theoretical variables: types of families (FACES II), family stress and changes (FILE and A-FILE), family resources (Family Strengths), family coping strategies (F-COPES), and marital and family satisfaction (ENRICH).

Olson, McCubbin et al. (1983) analyzed the use of family resources across the life cycle. They found that family strengths showed clear differences across the seven stages. The differences were primarily due to changes in family pride rather than family accord. The latter did not reveal stage or sex differences. Wives apparently felt more family pride than did husbands in stages one through four, less in stage five, and equal amounts in stages six and seven. Another consistent pattern emerged on family strengths. Wives' scores began declining for families with children (stage three) and reached a low point with families launching children (stage five). Husbands' scores followed a similar pattern, but their scores increased when adolescents were still at home.

Religious orientation was examined as a marital strength by the ENRICH inventory. The Religion Orientation subscale consists of 10 items that assess couples' attitudes about the importance of religion, involvement in church activity, and the expected role that religious belief will

have in the marriage. High scores indicate a traditional view that religion is an important component of marriage. Low scores reflect an individualistic, less traditional view of the role of religion. They found that older couples scored significantly more traditionally on religion than did younger couples, and that wives were more traditional than their husbands. They also found that younger couples participated in church activities significantly less than older couples.

The role of spiritual support was assessed as a family coping resource. It was measured by the Seeking Spiritual Support subscale of F-COPES. Families who use this coping strategy when confronting problems seek advice from ministers, attend church services and activities, and have faith in God. Significant sex differences were found, as wives emphasized this coping strategy more than their husbands did. Significant differences were also found at various stages of the life cycle. Significantly less spiritual support was reported during the two earliest stages than during the five later stages. Wives reported more stage differences than their husbands did, using this strategy more in the last two stages. The findings indicate a greater reliance on religious beliefs to cope with the increasing probability of illness and loss at later stages. A cohort effect might also account for the findings.

McCubbin and Lester (1977) and McCubbin, Dahl et al.

(1976) also examined the role of spiritual support as a family coping strategy. They found that it was a critical factor in managing long-term family separation. They contended that spiritual support helped maintain the family unit and individual self-esteem.

Olson, McCubbin et al. (1983) also studied the relationship between a pile-up of family demands and family resources. They grouped families into four stages of the life cycle (young families without children, families with young children, families with adolescents, and older couples). At each stage families were classified into high-stress and low-stress groups based on couple scores on the FILE scale. They used discriminant analysis to determine whether low-stress families used different types and amounts of resources than high-stress families did. This review tracks the reported use of family strengths (pride and accord), religious orientation, and seeking spiritual support.

In stage one family accord emerged as a critical resource of low-stress families ($p<.0005$). In stage two family accord ($p<.0000$), religious orientation ($p<.0128$), and social support ($p<.0372$) discriminated low-stress families. In stage three family accord ($p<.0000$) and religious orientation ($p<.0109$) were key resources of low-stress families. In stage four none of the tracked resources were significantly related to low-stress families.

McCubbin, Needle, and Wilson (1985) applied the basic concepts of the Double ABCX model in a three year panel study of 505 families with 12 to 13 year old adolescents. They examined family stressors and strains, adolescent coping strategies, and their relationship to adaptational outcomes of health risk behaviors (cigarette smoking, liquor drinking, and marijuana smoking). A pile-up of stressors and strains was measured by self-report scores on the Adolescent Family Inventory of Life Events and Changes (A-FILE). Adolescent coping strategies were measured by self-report scores on the Adolescent Coping Orientation for Problem Experiences Inventory (A-COPE). It includes subscales such as seeking spiritual support, seeking social support, close friendship support, ventilating feelings, and family problem solving.

McCubbin, Needle and Wilson (1985) found that a pile-up of demands appeared to positively influence the initiation or maintenance of each adolescent health risk behavior. Adolescents' coping strategy of family problem-solving was the strongest negative predictor of health risk behaviors. It appeared that the stronger the adolescent coping repertoire in resolving family problems the lower was the probability of adolescent involvement in health risk behavior.

Patterson (1985) used the Double ABCX model to examine the influence of demands, resources, family definition, and

coping on family compliance with home treatment regimens among 72 families with cystic fibrosis children. Using these variables she accounted for 51 percent of the observed variability in the outcome variable.

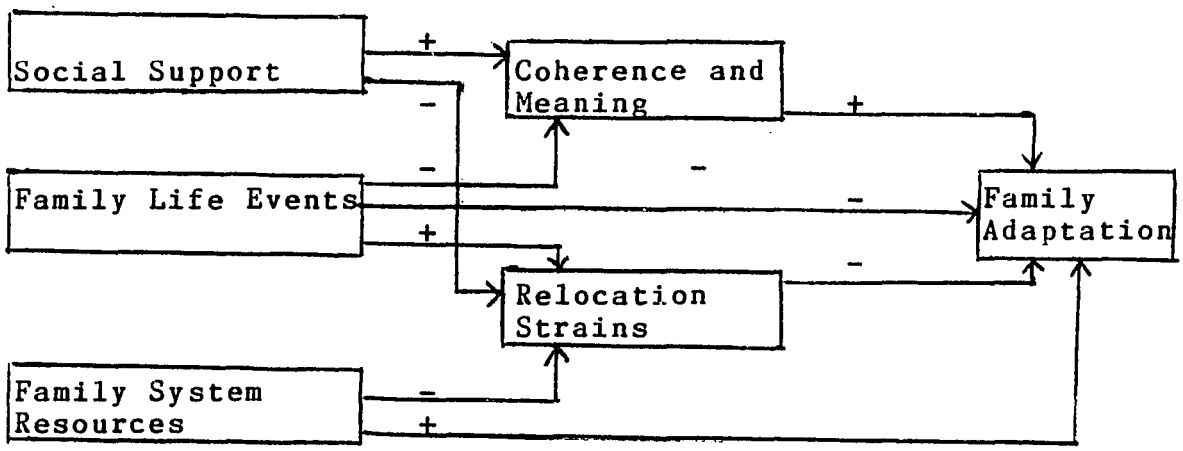
Lavee, McCubbin and Patterson (1985) developed an empirical model to test the simultaneous relationships among the major variables of the Double ABCX theory. Their study was based on self-report data on 15 measures from 288 couples who participated in an Army Family Survey. Data was analyzed by the LISREL VI program.

Lavee, McCubbin and Patterson (1985) stated:

> The model allows us to test the hypothesis that the level of adaptation is positively influenced by family system resources, social support, and coherence and negatively influenced by stress experiences (relocation strains and family life events.) (p. 895)

They specifically sought to unravel the way in which resources mediate between stress and adaptation (i.e. Do resources have a direct influence on adaptation or on indirect, buffering impact?). The hypothesized model appears in Figure 3. On the basis of their data analyzes a

Figure 3. Hypothesized Causal Model of Double ABCX Variables

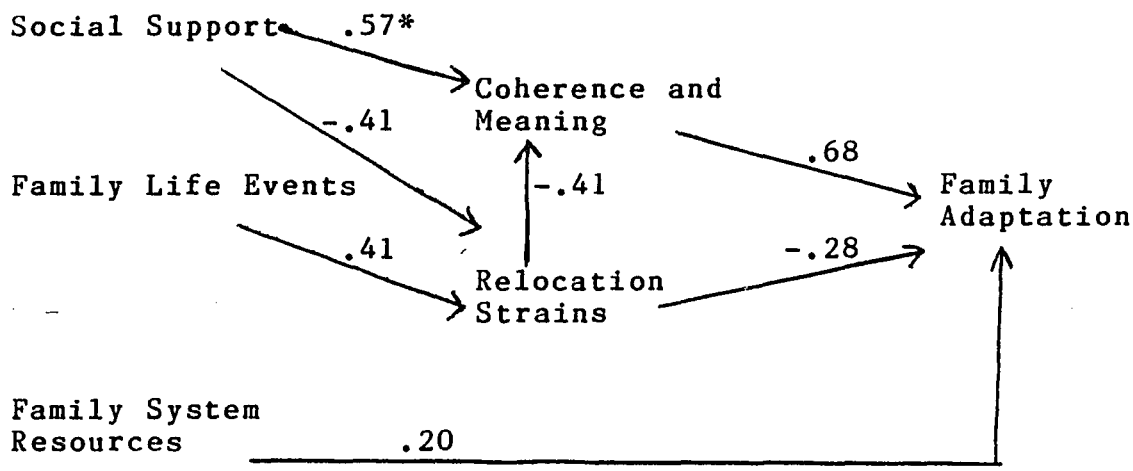


Source: Lavee, McCubbin and Patterson, 1985

revised causal model was developed, with nonsignificant paths deleted (see Figure 4).

The results indicate that family adaptation appears to be directly and positively influenced by family system resources (B = .20) and coherence (B = .68) and directly and negatively influenced by relocation strain (B = -.28). Adaptation was affected indirectly and positively by social support and indirectly and negatively by stressful life events. Coherence was positively affected by social support (B = .57), negatively affected by relocation strain

Figure 4. Revised Causal Model of Double ABCX Variables



Source: Lavee, McCubbin and Patterson, 1985
* Standardized path coefficient

(B = -.41), but unaffected by family resources and stressful life events.

According to Lavee, McCubbin and Patterson (1985) the results confirm that a pile-up of demands negatively influences the level of adaptation. The greater the accumulation of stressors and resulting amplification of strains, the less is the personal well-being and greater is the probability of physical, emotional, and relational problems in the family.

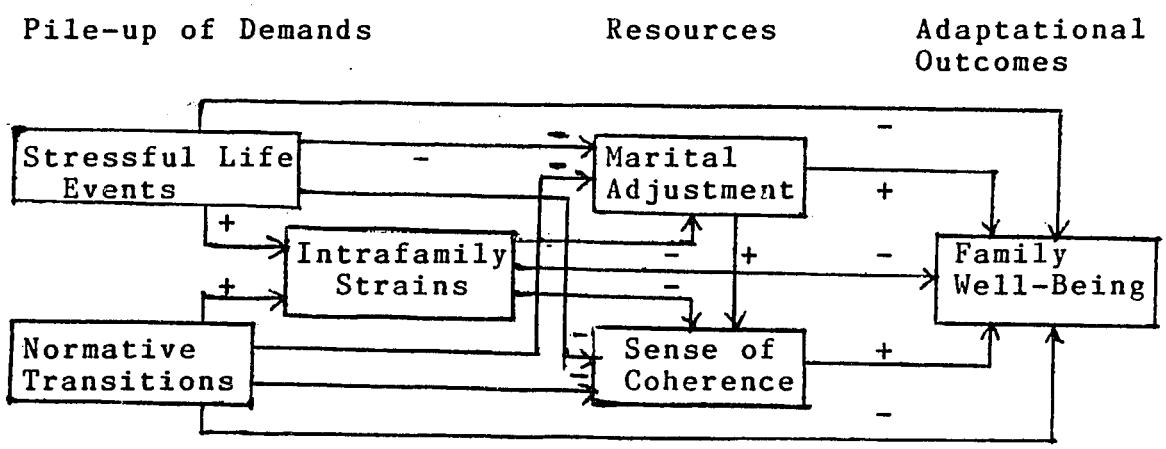
They found that the negative effect of pile-up of demands appears to be buffered by certain resources. Social support seems to have a buffering impact reflected

in its significant indirect role in family adaptation to stress. Social support lessens the perceived stressfulness of the situation and enhances the sense of coherence. Family system resources were a part of the family's adaptive power by directly enhancing adaptation. Families who are more cohesive, more flexible, and who communicate better support appear better able to adapt to the pile-up of demands. Family system resources were not found to have a buffering effect. Coherence, defined as the ability to "make sense" of the overall situation, appeared to be of great value in facilitating family adaptation.

Lavee, McCubbin and Olson (1987) examined a multivariate model of factors that affect family response to a pile-up of demands including normative transitions, nonnormative stressful life events, and intrafamily strains. They studied the mediating role of two types of resources: strength of the marital unit as a family system resource and sense of coherence as a coping resource. A stratified random sampling approach was used to collect data from 1,251 couples from 31 states across the United States. The hypothesized model appears in Figure 5.

Pile-up of demands was operationally defined by summing and combining couple scores on the FILE scale. Strength of the marital unit was defined by husband and wife self-report of marital adjustment on the ENRICH scale. Separate, individual scales were maintained for husbands

Figure 5. Hypothesized Data Model



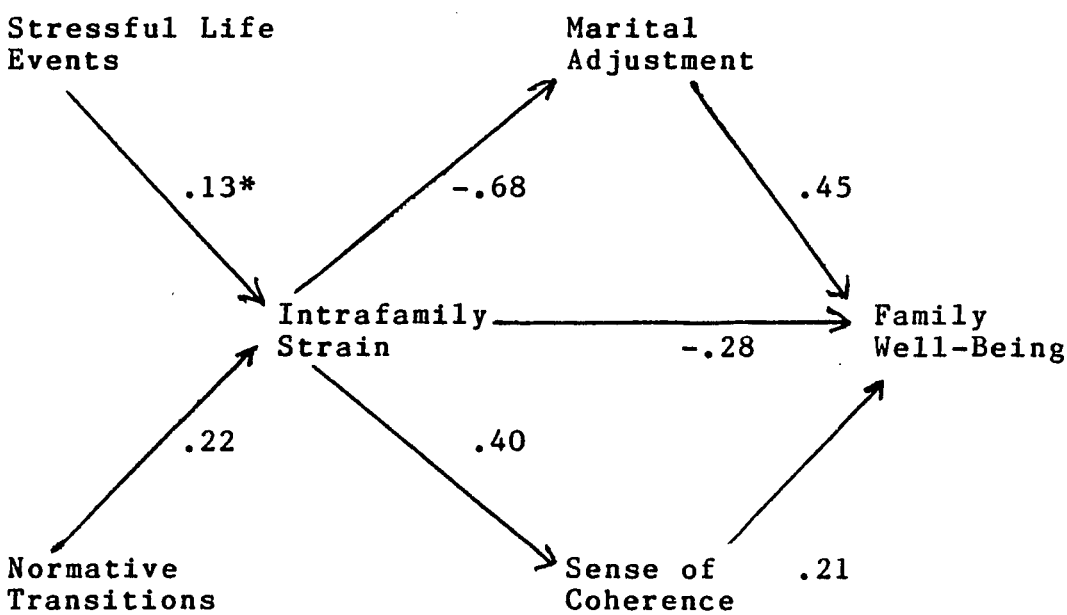
Source: Lavee, McCubbin and Olson, 1987

and wives because they were asked to report attitudes toward themselves and feelings toward spouses. Sense of coherence was defined by seven items selected from the F-COPES inventory. Two scales were formed to approximate dimensions of the sense of coherence: confidence and acceptance. Because sense of coherence was viewed as shared family behavior husbands and wives' perceptions were combined by averaging their scores on each scale. They note that it is unclear whether families have a shared sense of coherence. Family well-being was the major outcome variable and was selected on the basis of a salutogenic model. It was defined by an 11 item scale selected from the Quality of Life inventory (Olson and

Barnes, 1982). Because the inventory asks subjects for personal self-report, separate, individual scales were maintained for husbands and wives.

The hypothesized model was analyzed by the LISREL program. On the basis of their findings a revised path model was developed, with nonsignificant paths deleted (see Figure 6).

Figure 6. Revised Path Model



Source: Lavee, McCubbin and Olson, 1987
* Standardized path coefficients

The results indicated that stressful life events and transitions had significant positive effects on the amount of intrafamily strain, although they accounted for only 7 percent of its variance. They had no direct effect on marital adjustment, sense of coherence, and family well-being. Intrafamily strain had a negative impact on marital adjustment, sense of coherence, and family well-being. Because the effect of intrafamily strain on marital adjustment (B = -.68) was greater than its direct effect on well-being (B = -.28), it appeared that intrafamily strain is controlled by marital adjustment (which had a significant, positive effect on well-being). Thus, marital adjustment acts as an intervening or mediating factor between intrafamily strain and well-being rather than as a stress-buffering variable. According to Wheaton (1985) a resource variable that is weakened by stress is consistent with a stress mediator. The total effect of family strain on well-being was not buffered by marital adjustment; rather, it is largely accounted for by its indirect effect through marital adjustment.

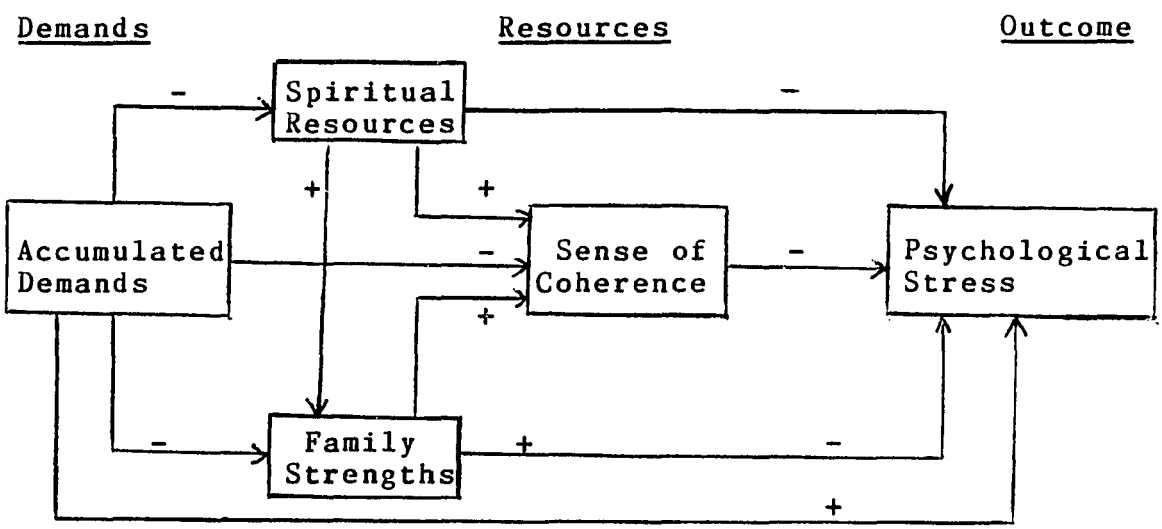
As predicted, sense of coherence was influenced positively by marital adjustment and had a positive impact on family well-being. Contrary to prediction, sense of coherence was affected positively by family strain and appears to play a stress-buffering role. That role emerges because strain enhances coherence, which positively

influenced perceived well-being. Coherence reduced the total effect of strain on family well-being.

Hypothesized Model of Present Research

The hypothesized model which guides the present research stems from the Double ABCX theoretical framework (see Figure 7). It seeks to extend family stress theory

Figure 7. Hypothesized Path Model of Present Research



through further empirical tests. It is presented within the context of stress mediation. It conceptualizes three resources as mediator variables between a pile-up of demands and adaptational outcomes: (a) spiritual resources, (b) family strengths, and (c) sense of coherence. This

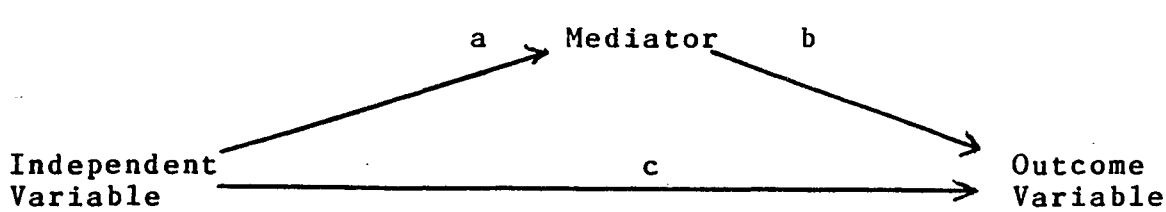
model grew out of several other paths of antecedents and consequents.

According to Baron and Kelly (1986) the role of mediator variables is found in stimulus response theory. The S-O-R model emphasizes an active organism that intervenes between stimulus and response. It is assumed that the effects of stimuli on behavior are mediated by an organism's internal processes. Baron and Kelly (1986) stated that

> in general, a given variable may be said to function as a mediator to the extent that it accounts for the relation between the predictor and the criterion. Mediators explain how external, physical events take on internal, psychological significance. (p. 1276)

A path diagram can clarify the meaning of mediation (see Figure 8).

Figure 8. Path Diagram of Mediation

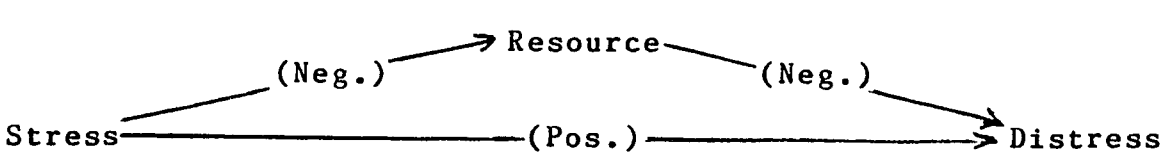


Source: Baron and Kelly, 1986

Baron and Kelly (1986) suggested that mediation occurs under the following conditions: (a) variations in the level of the independent variable significantly account for variations in the hypothesized mediator (Path a); (b) variations in the mediator significantly account for variations in the dependent variable (Path b); (c) when Paths a and b are controlled a prior significant relationship between the independent variable and dependent variable loses its significance. When Path c is reduced to zero the strongest demonstration of mediation occurs. Evidence then exists for a single mediator. As Baron and Kelly (1986) suggested, because most areas of sociology and psychology have multiple causes a realistic goal is to seek mediators that significantly decrease Path c. A significant reduction provides evidence for the potency of a given mediator.

Wheaton (1985) further clarified the role of resources as stress mediators (see Figure 9). He stated that Figure 9

Figure 9. Coping Resources as Mediating Variables



Source: Wheaton, 1985

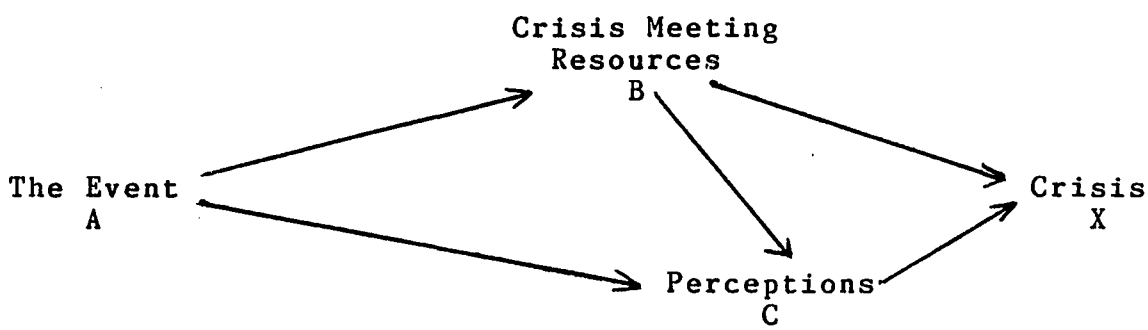
represents the classic model of an explanation of causal effect in stress research. The stress mediating resource variable is negatively affected by levels of stress and, in turn, negatively influences levels of distress. Through indirect effects a stress mediating variable increases the total effect of the independent variable on the dependent variable. In contrast, a stress buffering variable is enhanced by levels of stress according to resource mobilization theory. Through indirect effects a strong buffering variable reduces the total effects of the independent variable on the dependent variable.

Baron and Kelly (1986) suggested that mediation can be tested by estimating three regression equations: (a) regressing the mediator on the independent variable; (b) regressing the dependent variable on the independent variable; (c) regressing the dependent variable on the independent variable and the mediator. To establish mediation the independent variable must affect the mediator in equation one and the dependent variable in equation two, and the mediator must affect the dependent variable in equation three. If each effect is in the predicted direction, the effect of the independent variable on the dependent variable must be less in the third equation than in the second.

Rank and Sabatelli (1982) suggested that path analysis provides the family researcher with a means of testing

causal models and estimating direct, indirect and spurious effects among variables. It also allows the deletion of nonsignificant paths to create a more parsimonious theoretical model. He has diagrammed Hill's ABCX model in terms of path analysis (see Figure 10). Path coefficients result from regressing each endogenous variable on the variables directly impinging upon it.

Figure 10. Path Analytic Model of the ABCX Model



Source: Rank and Sabatelli, 1982

CHAPTER III

METHODS AND PROCEDURES

A cross-sectional, ex post facto type of research with a multivariate design was used in this study. The research question dealt with the predictors of psychological stress for cancer patients and for spouses of cancer patients. The independent variable was the level of accumulated stressful life events and strains reported by patients and spouses. It was hypothesized that high levels of accumulated demands would have a direct positive effect on the dependent variable, patient's and spouse's self-reported levels of psychological stress. It was also hypothesized that three intervening variables, spiritual resources, family strengths, and sense of coherence would decrease self-reported levels of psychological stress. The intervening variables were also predicted to have mediating effects between the independent and dependent variables. See Figure 7 for the model. A path analysis was used to understand how psychological stress can be predicted.

The cross-sectional design used in this study contains several limitations. Because the variables were not measured in temporal order, ambiguity about the direction of causal influence was possible. One cannot plausibly state that undebatable evidence supports the given argument for

unidirectional causal ordering. In reality, accumulated demands, spiritual resources, family strengths, sense of coherence, and the dependent variable could be reciprocally related. The internal validity of the study was threatened by this ambiguity. It was possible that a nonrecursive, bi-directional model should have been specified rather than a fully recursive, unidirectional model.

Potential problems also exist with the model's external specification. Every plausible cause of psychological stress were not included in the model (i.e. daily hassles), nor were every plausible coping resource included (i.e. personal resources such as self-esteem and locus of control, and family system resources such as adaptability and cohesion). The possibility of "third variable" causes exists.

Despite these limitations regarding interpretation of causal effects, arguments exist to support the given model. Davis (1985) stated that if the dependent variable of one's model is linked to an earlier step in a well-known sequence, based on sound theoretical reasoning, a unidirectional model can be posited. Spiritual resources, family strengths, and sense of coherence are conceptualized by stress theory as intervening factors between stressor events and adaptational outcomes.

Davis (1985) also stated that one can specify a unidirectional model if the independent variable(s) is

relatively stable and fertile, and the dependent variable is relatively volatile. Spiritual resources, family strengths, and sense of coherence seemed to be relatively fertile and harder to change in comparison to psychological stress which seems relatively loose.

Sample

The subjects for this study were 42 patients and 32 spouses of cancer patients (N = 74). Several criteria were used for excluding patients: (a) diagnosis of cancer less than three months, (b) prognosis that was imminently terminal, (c) ages less than 21 or greater than 75, (d) never married, widowed, single, separated, or divorced, (e) an inability to read or write, and (f) patients or spouses who were mentally incompetent, unconscious, or otherwise unable to give informed consent. Eligible patients who were experiencing adverse side effects from their treatments were not approached by the researcher.

Subjects fitting these parameters were receiving standard chemotherapy protocols between December 1, 1988 and March 31, 1989. Both inpatients and outpatients were used. Inpatients were purposively selected by the researcher from admissions data at a large community hospital in the southeast United States. Registered nurses on the hospital's oncology unit were consulted to determine suitable patients. Outpatients were purposively selected by registered nurses administering chemotherapy at two

oncologists' offices and at a tertiary care hospital clinic. A total of 76 patients were asked to participate in the study. Only one refused. Occasionally spouses were not present when the purpose of the study was explained, which perhaps explains their lower rate of participation.

Patients in the sample ranged in age from 31 to 75 years old, with a mean age of 57 years (see Table 2). The patient sample contained 24 females and 18 males. Nine patients had been diagnosed less than six months, 16 had been diagnosed six to twelve months, and 17 had been diagnosed a year or longer. Patients were distributed in the following income brackets: (a) less than $20,000 annual family income--11 patients; (b) $20,001 to $30,000--6 patients; (c) $30,001 to $40,000--11 patients; (d) $40,001 to $50,000--4 patients; (e) $50,001 to $60,000--6 patients; and (f) over $60,001--3 patients. Patients' length of marriage ranged from one year to 48 years, with a mean of 31 years. Thirty patients were receiving their treatments as inpatients, and twelve were outpatients.

Spouses in the sample ranged in age from 42 to 77 years old, with a mean age of 59 years. The spouse sample consisted of 21 females and 11 males. Seven were spouses of patients who had been diagnosed less than six months, 15 had been diagnosed six to twelve months, and 9 had been diagnosed a year or longer. Spouses were distributed in the following income brackets: (a) less than $20,000--5

Table 2

Means and Standard Deviations of Demographic Variables for Patients and Spouses

	Patients[a]			Spouses[b]		
	Mean	SD	Min-Max	Mean	SD	Min-Max
Age	57.11	9.78	31-75	59.03	8.13	42-77
Length of Diagnosis	2.16[c] (6-12 mos)	.76		2.09 (6-12 mos)	.73	
Income	2.92[d] $20,001-30,000)	1.61		3.09 ($30,001-40,000)	1.49	
Length of Marriage	30.90 (Years)	12.41	1-48	30.96	13.03	1-47

a N = 42
Males = 18; Females = 24

b N = 32
Males = 11; Females = 21

c Length of Diagnosis
1 = Less than 6 months
2 = 6 to 12 months
3 = More than 12 months

d Income
1 = Less than $20,000 annual income
2 = $20,001 to $30,000 annual income
3 = $30,001 to $40,000 annual income
4 = $40,001 to $50,000 annual income
5 = $50,001 to $60,000 annual income
6 = Over $60,001

spouses; (b) $20,001 to $30,000--5 spouses; (c) $30,001 to $40,000--12 spouses; (d) $40,001 to $50,000--3 spouses; (e) $50,001 to $60,000--3 spouses; (f) over $60,001--3 spouses. Spouses' length of marriage ranged from one year to 47 years, with a mean of 31 years. Twenty-two spouses had patients who were receiving their treatments as inpatients and ten were outpatients.

Limitations arose with the study's lack of simple random sampling. The purposive sample was expected to contain a large amount of random heterogeneity on the variables of interest. This potential for wide variation threatened the study's statistical conclusion validity. The purposive sample also limited the study's external validity. Nonetheless, the sample was judged to be representative of the population. With the exception of the exclusionary criteria, all of the identified subjects had an equal chance of being selected.

Data Collection Procedures

Subjects were told that the researcher was conducting a study to learn more about the emotional stress of cancer patients and their spouses and the resources that help people cope. The study was described as a survey containing psychological scales dealing with emotional stress and coping resources. Subjects were told that the study's value was its potential for a better understanding of factors that help people cope with the stress of cancer.

Subjects were also told that the survey contained 113 statements, most of which required circling a number that reflected their level of agreement, and that it required about 30 minutes to complete. Confidentiality and anonymity were emphasized (see Appendix A for consent form). Voluntary participation was emphasized, as was the freedom to withdraw at any time.

Subjects who agreed to participate were given packets containing six questionnaires and a demographic data page (see Appendix B). Subjects were told that they could complete the survey either (a) during hospitalization or in the outpatient setting, leaving it with the nurse who discharged them, or (b) when they returned home and mailing it back. Self-addressed, stamped envelopes were included.

The study's data collection strategy had limitations. The use of self-report measures presented potential problems with social desirability response sets, threatening construct validity. Part of the construct measurements were expected to contain irrelevancies, leading to the potential of increased measurement error. The lack of observational methods limited the validity of construct measurement. A 56% return rate for patients (42 of 75 patients who received questionnaires) and 42.67% return rate for spouses (32 of 75 spouses) limited the study's external validity.

Instruments

The major dependent variable was psychological stress. The major predictor of psychological stress was accumulated demands mediated by three intervening variables, sense of coherence, family strengths, and spiritual resources. Instruments used for measuring each of these variables are described below. The entire questionnaire including these five instruments is shown in Appendix B.

Accumulated Demands

An accumulation of nonnormative and normative stressful life events and strains was measured by the Family Inventory of Life Events and Changes (FILE) (McCubbin, Patterson, and Wilson, 1981). FILE is a 72 item inventory which assesses the pile-up of life events experienced by a family (i.e. aA Factor of the Double ABCX model described in Chapter Two). It was developed as an index of family stress, and provides a measure of a family's vulnerability resulting from a pile-up of demands. Four subscales containing 41 items were used in this study: Intrafamily Strains, Work-Family Transitions and Strains, Illness and Family Care Strains, and Losses. Each item was worded to reflect a change requiring adjustment in the regular pattern of interaction of family members. The items were presented in a "YES-NO" format (e.g. "During the last 12 months did the following changes happen in your family: (a) increase in conflict between husband and wife - yes, no; (b) a member lost or

quit a job - yes, no; (c) a child became seriously ill or injured - yes, no; (d) a parent/spouse died - yes, no").

Accumulated demands scores were computed by summing the "Yes" responses of each subject. ("No" was coded as 0, "Yes" was coded as 1). The total range of scores for each subject was 0-59. The ranges were 0-20 on the Intrafamily Strains subscale, 0-14 on the Work-Family Transitions subscale, 0-14 on the Illness and Family Care Strains subscale, and 0-11 on the Losses subscale. Higher scores implied higher stressful demands.

McCubbin, Patterson, and Wilson (1981) reported Cronbach alpha reliability coefficients of .73 for Intrafamily Strains, .56 for Work-Family Transitions and Strains, .60 for Illness and Family Care Strains, and .60 for Losses. They reported test-retest reliabilities (measured at 5 week intervals) of .73 for Intrafamily Strains, .80 for Work-Family Transitions and Strains, .66 for Illness and Family Care Strains, and .71 for Losses. Criterion validity has been demonstrated by the scale's moderately high correlation in the predicted direction with Moos' (1976) Family Environment Scales (-.41 to +.42, $p < .001$). The moderately low levels of alpha reliabilities threatened the study's statistical conclusion validity.

Spiritual Resources

Spiritual resources were operationally defined by patient and spouse self-report scores on Allport's (1967)

Religious Orientation Scale. The scale consists of Intrinsic (nine items) and Extrinsic (11 items) subscales. The response format was a 4-point Likert scale. For items in both subscales, scores of 4 or 5 indicated an extrinsic orientation, whereas scores of 1 and 2 indicated an intrinsic orientation. Omitted items received a score of 3. The range was 9-45 on the Intrinsic subscale, and 11-55 on the Extrinsic subscale. Specifically, the Intrinsic subscale contained items such as, "My religious beliefs are what really lie behind my whole approach to life: (a) definitely not so (5); b) probably not so (4); c) probably so (2); d) definitely so (1)." The Extrinsic subscale contained items such as, "What religion offers me most is comfort when sorrows and misfortune strike: a) I definitely disagree (1); b) I tend to disagree (2); c) I tend to agree (4); d) I definitely agree (5)."

Current research indicated that separate scores for the two subscales should be obtained in order to distinguish cases that are "indiscriminately pro-religious" from those that are consistently extrinsic or intrinsic (Meadow and Kahoe, 1985). Separate, individual scales were maintained for patients and spouses by summing their respective scores on each subscale. Following Donohue's (1985) recommendation, the theoretical midpoints of the scales (27 for Intrinsic, 33 for Extrinsic) were used to classify the respondents into a fourfold typology. Those who agreed with

items on the Intrinsic subscale and disagreed with items on the Extrinsic subscale were called "intrinsics" (code = 1). Those who disagreed with Intrinsic items and agreed with Extrinsic items were called "extrinsics" (code = 2). Those who agreed with items on both scales were called "indiscriminately pro-religious" (code = 3). Those who disagreed with items on both scales were called "non religious" (code = 4). Those with intrinsic orientations were hypothesized to possess greater levels of spiritual resources. After analyzing the classification of subjects, it was found that the Extrinsic subscale differentiated intrinsics from all others. They were low on this subscale (less than 33), and all others were high (over 33). Thus, this subscale was used to measure relative degrees of spiritual resources.

Family Strengths

Family strengths was operationally defined by patient and spouse self-report on the Family Strengths inventory (Olson, Larsen, and McCubbin, 1982). The inventory consisted of 12 items with two subscales: pride (seven items) and accord (five items). The response format was a 5-point Likert scale. Subjects checked their level of agreement from 1 (rarely or never true) to 5 (true most of the time) on items such as "We can express our feelings," "We tend to worry about many things," and "We are proud of our family." The ranges were 7-35 for the Pride subscale

and 5-25 for the Accord subscale. The total range of scores was 12 to 60, with higher scores representing higher levels of family strengths.

Separate, individual scales were maintained by summing scores for patients and spouses. Alpha reliabilities and test-retest reliabilities have been reported as .88 and .73 for the Pride subscale, .72 and .79 for Accord subscale, and .83 and .58 for the total scale (Olson, Larsen, and McCubbin, 1982).

Sense of Coherence

Sense of Coherence was operationally defined by patient and spouse self-report on Antonovsky's (1987) Orientation to Life questionnaire. This scale consists of 29 items with three subscales: comprehensibility, manageability, and meaningfulness. A 13-item shortened form of the scale was used in this study. The questionnaire's 7-point Likert scale response format was modified to a 5-point Likert scale (1, rarely or never true, to 5, true most of the time). Respondents checked their level of agreement on items such as, "In the past I have been surprised by the behavior of people whom I thought I knew well" (comprehensibility); "People whom I have counted on have disappointed me" (manageability); "Until now my life has had very clear purposes and goals" (meaningfulness).

Separate, individual scales were maintained by summing scores on each subscale for patients and spouses. The range

was 5-25 on the comprehensibility subscale, 4-20 on the manageability subscale, and 4-20 on the meaningfulness subscale. Higher scores on each subscale represented higher levels of each construct. The internal consistency of the full SOC scale ranges from .84 to .93 (Antonovsky, 1987). Concurrent validity has been demonstrated by the scale's correlation (.72) with Rumbout's SOC scale (Dana, 1985).

Psychological Stress

Psychological stress, the major dependent variable, was measured by patient and spouse self-report on the Psychological Strain and Physical Strain subscales of the Occupational Stress Inventory (Osipow and Spokane, 1986). The two subscales consisted of 10 items and used a 5-point Likert scale response format (1 equals "rarely or never true" to 5 equals "true most of the time"). Respondents were asked to rate their level of agreement on items such as, "Lately I am easily irritated," "Lately I have been worrying," "Lately I have been depressed," and "Lately I have been tired."

The possible range of scores was 20-100. Higher scores reflected more perceived psychological stress. Separate, individual scales were maintained by summing scores for patients and spouses. Osipow and Spokane (1987) have reported the subscales' internal consistency as .89. Construct validity was established by a group of experts.

They concurred that the instrument measured the major dimensions of the construct.

Data Analysis Procedures

Since the purpose of this research was to understand the predictors of psychological stress for cancer patients and for spouses of cancer patients, data for each group were analyzed separately. The major analysis was a path analysis in which the strength of the predictors of psychological stress was tested. Through estimating direct and indirect effects among the variables and deleting nonsignificant paths, the present research attempted to further extend the Double ABCX model of family stress theory. However, for further understanding of the dynamics of the predictors, separate bi-variate regressions were computed using the mediator variable sense of coherence as the dependent variable and antecedents as independent variables. For example, sense of coherence was regressed first on spiritual resources and then on family strengths.

The use of path analysis required that the basic assumptions of multiple regression be met. Given the sampling procedure, it appeared reasonable to assume that relationships would be linear and that the variance of residuals would be homogenous (Glass and Hopkins, 1984). A scatterplot of residuals versus predicted scores revealed that the residuals were adequately homoscedastic (see

Appendix C). Homoscedasticity is implied when the variance of the residuals is evenly distributed and no discernible pattern appears on the scatterplot. Given the relatively small sample, it was more difficult to assume that scores on the dependent variable would be normally distributed. The actual data appeared to have a mild to moderate positive skew. This was potentially a limiting factor in the study. However, because regression is robust against nonnormality, it was judged that the estimates were valid.

According to Kerlinger and Pedhazur (1971), the assumptions specific to path analysis include (a) interval measurement of the variables, (b) linear, additive, and causal variable relationships, (c) unidirectional causality in the model, and (d) noncorrelation of residuals. It also appeared reasonable to make these assumptions, given the limitations about unidirectional causality previously discussed.

A path model was constructed on the basis of the theoretical variables previously defined. It was a fully recursive model based on four endogenous variables (spiritual resources, family strengths, sense of coherence, and psychological stress) and one exogenous variable (accumulated demands). Following the path analysis procedures recommended by Rank and Sabatelli (1982), each endogenous variable was regressed on those variables directly impinging upon it. Path coefficients were derived

from these equations.

Alwin and Hauser's (1975) decomposition procedures for interpreting the effects of variables were used to analyze the results of the regression equations. Standardized beta coefficients were determined for all paths between each endogenous variable and their antecedent variables. This allowed for the effect of each path to be tested for statistical significance. Also, the effects of the predictor variables could be divided into direct effects, indirect effects via intervening variables, and total effects. Alwin and Hauser's (1975) recommendations for tabular presentation of these effects was followed.

CHAPTER IV

RESULTS AND DISCUSSION

The guiding hypotheses of this study were derived from the Double ABCX theory of family stress. The theory presumes that the stress process flows from a pile-up of demands to adaptational outcomes. The purpose of this study was to examine the effect of an accumulation of stressful demands on the levels of psychological stress of cancer patients and spouses of cancer patients, and the intervening roles of spiritual resources, family strengths, and sense of coherence.

The study's primary hypothesis was that psychological stress would be affected directly and positively by an accumulation of demands, and directly and negatively by sense of coherence, family strengths, and spiritual resources. Secondary hypotheses focused on the prediction of each intervening variable by its antecedents. These hypotheses allowed indirect effects of the predictor variables to be measured.

A multivariate path model was developed to test the hypothesized causal paths between the variables. The model can be described by a series of unfolding predictions: (a) psychological stress is increased by an accumulation of demands; however, (b) sense of coherence, family strengths,

and spiritual resources lessen psychological stress. (c) Sense of coherence is affected positively by spiritual resources and family strengths but negatively by an accumulation of demands. (d) Family strengths are also enhanced by spiritual resources and weakened by an accumulation of demands, but (e) spiritual resources are lessened by accumulated demands.

The results are presented in two sections. First is a comparison of the scores on the five variables between patients and spouses. Secondly, the results of the path analysis for the patient sample and then for the spouse sample are presented. The two samples are compared on their mean scores, standard deviations, and ranges on the study's theoretical variables. T-tests were performed to test for significant differences between patient's and spouse's mean scores on each theoretical variable. Correlations between demographic variables and theoretical variables within each sample are also presented.

The second section is an examination of the path models for each sample in order to show the predictors of psychological stress. The examination begins with tests of the study's primary and secondary hypotheses. It proceeds to discuss the decomposition of direct, indirect, and total effects of the predictor variables. The chapter concludes by presenting trimmed versions of the path models for both samples.

Correlations Between Theoretical and Demographic Variables for Patient and Spouse Samples

Five theoretical variables, each measured by interval level data, were used in this study. The following overview reflects relatively normal levels of psychological stress and accumulated demands and relatively high levels of sense of coherence, family strengths, and spiritual resources for both patients and spouses (see Table 3). The demographic variables used in the correlations were age, sex, length of diagnosis, income, length of marriage, and treatment setting (Refer to Table 2 for the central tendencies for the demographic variables).

Psychological Stress

The mean scores on psychological stress were 45.00 for patients and 41.91 for spouses (see Table 3). The difference between them was not significant ($t=1.03$, 72; $p<.306$). With a possible range of 20 to 100 on this scale and a median of 60, scores for both patients and spouses appeared to be positively skewed to the low side. Ninety-five percent of the patients scored between 18.72 and 71.88, while 95 percent of the spouses' scores were between 18.24 and 65.56. According to Osipow and Spokane (1981), scores below 38 indicate a relative absence of psychological stress. Scores between 38 and 45 should be interpreted as being within normal ranges. Scores between 46 and 50 reflect mild to moderate levels of psychological stress,

Table 3

Means and Standard Deviations of Theoretical Variables for Patients and Spouses

	Group[a] Patients			Group[b] Spouses		
	Mean	SD	Min-Max	Mean	SD	Min-Max
Psychological Stress (range= .20-100)	45.00	13.44	25-84	41.91	11.83	20-67
Sense of Coherence (range= (13-65)	53.79	9.11	30-65	52.94	8.45	33-65
Family Strengths (range= 12-60)	50.86	7.11	33-60	50.97	6.18	34-60
Spiritual Resources (range= 11-55)	28.73	7.24	12-43	31.34	6.71	14-43
Accumulated Demand (range= 0-59)	7.81	4.34	0-21	6.66	6.36	0-34

a Males = 18, Females = 24

b Males = 11, Females = 21

and scores above 50 indicate high levels of stress. In comparison to the inventory's normative data, scores for both groups appear to be, on average, within normal ranges. 33.33 percent of the patients and 25% of the spouses were in the normal range. 28.57 percent of the patients and 31.25% of the spouses were relatively free of psychological stress. 4.76 percent of the patients and 15.63% of the spouses reported moderate levels of psychological stress, and 33.33 % of the patients and 28.13% of the spouses reported high levels of stress. There were low, nonsignificant correlations between psychological stress and the demographic variables for both the patient sample (see Table 4) and the spouse sample (see Table 5).

Sense of Coherence

The mean scores on sense of coherence were 53.79 for patients and 52.94 for spouses (see Table 3). The difference was not significant ($t=.409$, 72; $p<.684$). The possible range of scores on the Orientation to Life questionnaire was 13 to 65, with a midpoint of 39. Ninety-five percent of the patient scores were between 35.56 and 65, and 95% of the spouse scores were between 36.03 and 65. It is apparent that scores for both patients and spouses were negatively skewed to the high side of the scale. On average, patients and spouses reported relatively strong sense of coherence. Antonovsky (1979) compiled

Table 4

Correlation Matrix for Demographic Variables and Theoretical Variables: Patient Sample

	Psyc.	SOC	FS	SR	Acc.D.
Age	.091 (.565)	.048 (.761)	.112 (.478)	.141 (.38)	-.133 (.402)
Sex	.122 (.479)	-.175 (.266)	-.216 (.169)	-.322 (.04)	-.005 (.976)
Length of Diagnosis	.100 (.529)	0.160 (.313)	-.018 (.91)	.152 (.344)	-.071 (.654)
Income	-.108 (.502)	-.004 (.982)	.109 (.497)	.162 (.319)	.034 (.834)
Length of Marriage	.076 (.634)	-.024 (.882)	-.036 (.821)	-.006 (.971)	-.081 (.61)
Psyc. Stress	———	-.772 (.0001)	-.427 (.005)	.199 (.21)	.116 (.464)
Sense of Coherence		———	.557 (.0001)	-.305 (.052)	-.151 (.341)
Family Strengths			———	-.071 (.661)	-.346 (.025)
Spiritual Resources				———	-.054 (.736)
Accumulated Demands					———

(Parentheses = p. value)

Table 5

Correlation Matrix for Demographic Variables and Theoretical Variables: Spouse Sample

	Psyc.	SOC	FS	SR	Acc.D.
Age	-.134 (.465)	.408 (.02)	.117 (.522)	.224 (.178)	-.273 (.13)
Sex	.288 (.11)	.137 (.455)	.018 (.922)	.067 (.714)	-.134 (.464)
Length of Diagnosis	-.303 (.091)	.229 (.206)	-.006 (.972)	.254 (.159)	-.317 (.077)
Income	-.142 (.447)	.174 (.349)	.079 (.672)	-.307 (.092)	.018 (.924)
Length of Marriage	.002 (.993)	.318 (.076)	.169 (.357)	.159 (.386)	-.215 (.238)
Psyc. Stress	———	-.566 (.0007)	-.280 (.121)	.349 (.05)	.245 (.177)
Sense of Coherence		———	.445 (.011)	-.309 (.086)	-.243 (.18)
Family Strengths			———	-.199 (.274)	-.237 (.191)
Spiritual Resources				———	-.186 (.307)
Accumulated Demands					———

(Parentheses = p. value)

normative data for the Sense of Coherence scale and found that mean scores were approximately 150 in a range of 29 to 203 (i.e. they were 74% of the highest possible score). In this study, mean scores were approximately 83% of the highest possible score. Sense of Coherence was significantly correlated only with spousal age ($r = .408$, $p<.02$) with older spouses having higher scores (see Table 5).

Family Strengths

The mean score for patients on the Family Strengths inventory was 50.86 and spouses had a nearly identical mean score of 50.97 (see Table 3). With a possible range of 11 to 60 and a midpoint of 35.5, scores for both patients and spouses clearly reflected high levels of reported family strengths. Ninety-five percent of patient scores were between 36.64 and 60, while 95 percent of spouses scored between 38.61 and 60. National norms for the Family Strengths inventory revealed mean scores and standard deviations of 46.58 (6.57) for husbands ($N = 1319$) and 47.01 (6.87) for wives ($N = 1280$) (Olson, Larsen and McCubbin, 1982). None of the demographic variables were significantly correlated with family strengths (see Tables 4 and 5).

Spiritual Resources

The mean score on the extrinsic subscale of the Religious Orientation Scale for patients was 28.73 and the

mean score for spouses was 31.34 (see Table 3). The difference between them approached but did not reach statistical significance ($t=-1.5777$, 71; $p<.119$). Patients tended to report lower scores or somewhat higher levels of spiritual resources than spouses.

The possible range on this scale was 11 to 55, with a midpoint of 33. Scores for both groups were on the low side of the scale, suggesting predominantly intrinsic religious orientations. Twenty-nine patients (69 percent) had intrinsic orientations, nine had indiscriminately pro-religious orientations, and three had extrinsic orientations. Sixteen spouses (50 percent) had intrinsic orientations, 12 had indiscriminately pro-religious orientations, and four had extrinsic orientations. Spiritual resources were significantly correlated with sex of patients. Females tended to report higher spiritual resources (see Table 4).

Accumulated Demands

Mean scores on accumulated demands were 7.81 for patients and 6.66 for spouses (see Table 3). The difference was not significant ($t=.926$, 72; $p<.358$). With a possible range of 0 to 59, it was clear that neither patients nor spouses reported high levels of accumulated demands. Ninety-five percent of patients reported 0 to 16 demands, and 95 percent of spouses reported 0 to 19 demands. When normative data for the FILE scale was compiled from a

nationwide sample of 980 couples, mean scores were 8.42 for husbands and 9.21 for wives (McCubbin, Patterson and Wilson, 1981). It is clear that patients and spouses were in normal ranges. Accumulated demands was significantly indirectly correlated with spousal age and length of diagnosis (see Table 5).

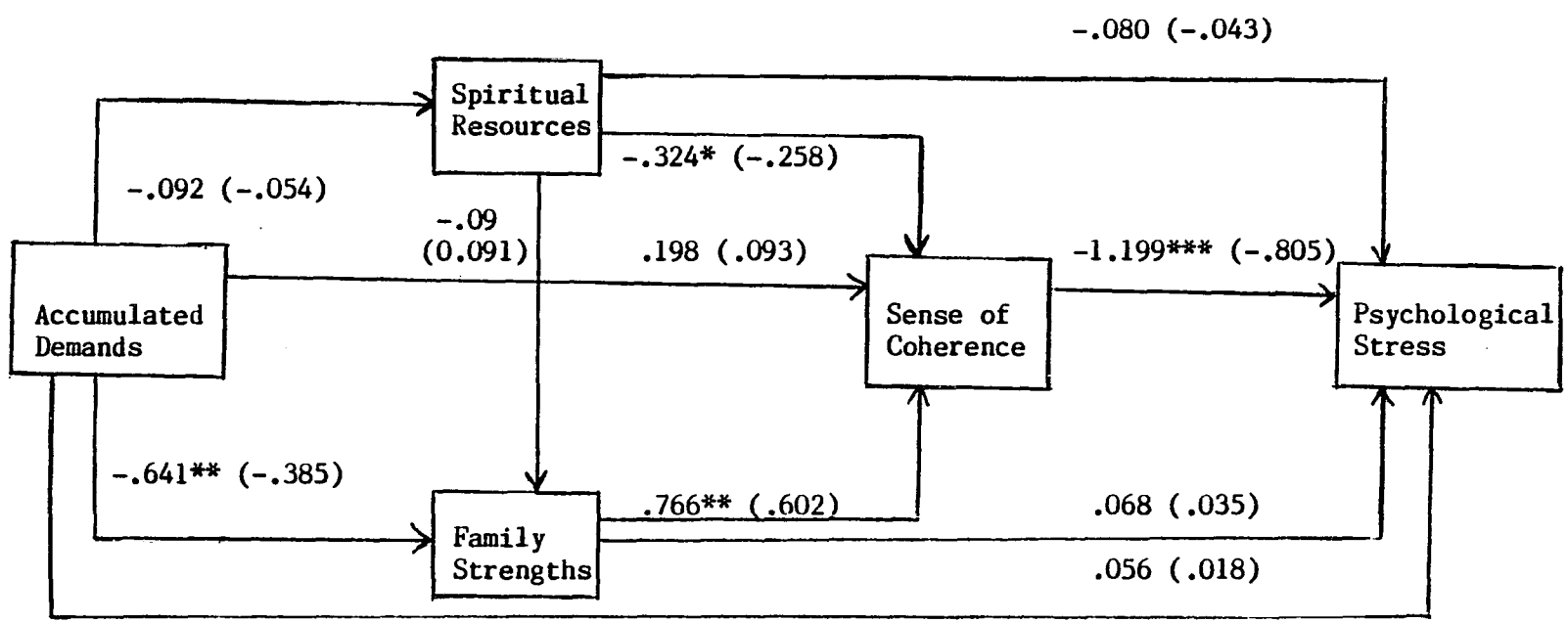
Predictors of Psychological Stress: Patient Sample

The path model and its coefficients depicted in Figure 11 and reported in Table 6 were derived through a sequence of four multiple regression equations. The sequence unfolded in the following causally hypothesized order: (a) spiritual resources was regressed on accumulated demands, (b) family strengths was regressed on spiritual resources and accumulated demands, (c) sense of coherence was regressed on family strengths, spiritual resources, and accumulated demands, and (d) psychological stress was regressed on all four predictor variables. Standardized beta weights (B) were used in the study's hypotheses. A decomposition table was developed to interpret direct effects, indirect effects, and total effects of the predictor variables. A trimmed path model was then constructed for the patient sample, deleting nonsignificant paths from the original model.

F tests were calculated to determine the overall significance levels of each regression equation. The

Figure 11

Path Model for the Predictors of of Psychological Stress: Patient Sample



* $p < .05$ (Note: Numbers in parentheses are standardized beta weights)

** $p < .01$

*** $p < .0001$

Table 6

Predictors of Psychological Stress: Patient Sample

	Intervening Variables						Dependent Variable	
Independent Variables	Spiritual Resources		Family Strengths		Sense of Coherence		Psychological Stress	
	b	B	b	B	b	B	b	B
Accumulated Demands	-.092	-.054	-.641*	-.385	.198	.093	.056	.018
Spiritual Resources			-.090	-.091	-.324*	-.258	-.080	-.043
Family Strengths					.766**	.602	.068	.035
Sense of Coherence							-1.199**	.805
Constant	29.459		58.668		22.231		107.731	
Adjusted R-square	-.023		.108		.372		.555	
F	.115		3.422*		8.912**		13.479**	

*$p < .05$

**$p < .0001$

underlying hypothesis of each F test was that all of the predictor variables in the equation collectively made a significant contribution to the prediction of the dependent variable, psychological stress. The squares of the multiple correlation coefficients (R^2) for each predictor variable in the equations were summed to report the total amount of variance explained in each endogenous variable.

Unstandardized and standardized beta weights (b,B) revealed the direct effects of the predictor variables on each endogenous variable in the model. Unstandardized regression coefficients report the expected rate of change in the predicted variable that results from a one unit increase in a given predictor variable, holding the other predictors constant. Standardized beta coefficients reflect the expected rate of change, in standard deviation units, in the predicted variable associated with one standard deviation increase in each predictor variable, holding the other predictors constant.

Standardized beta weights were used in each hypothesis as follows: the null version of each hypothesis (HO: B=0) was that a given independent variable did not make a significant contribution to the prediction of the dependent variable, in the context of the other predictors in the equation. Standardized beta weights were used because the variables were measured on different scales and were not comparable. They helped determine which independent

variables were the strongest predictors.

Hypothesis One: Accumulated Demands and Psychological Stress

H_1 tested the effects of a pile-up of demands on the adaptational outcome of psychological stress. It stated that as patients' levels of accumulated demands increased their levels of psychological stress would be higher. This hypothesis was rejected at .05 level of significance. The standardized beta weight was not significantly different from 0. Figure 11 and Table 6 show that the path between accumulated demands and psychological stress was in the predicted direction but was neither substantively nor statistically significant (b=.056, B=.018).

When the effects of spiritual resources, family strengths, and sense of coherence were controlled, accumulated demands was not a significant predictor of levels of psychological stress. The theoretical variable representing a pile-up of demands, therefore, was not significantly associated with the criterion variable.

Following the recommendations of Baron and Kelly (1986), psychological stress was also regressed on accumulated demands alone. Again, accumulated demands was not a significant predictor (b=.328, B=.104). It appears that the intervening resource variables reduced the direct effects of demands on psychological stress by 83 percent (.104-.018/.104). According to Baron and Kelly (1986), as

a group, the resource variables functioned like stress mediators. They substantially reduced the direct effects of demands on psychological stress. However, claims for statistical significance cannot be made. To establish such claims, a prior significant relationship between an independent and dependent variable must be reduced to nonsignificance when the resources are added to the regression equation. Clearly this did not occur. While the resources reduced the direct effect of demands on psychological stress, the effect of demands was not significant even when tested alone against psychological stress.

Additional analyzes were performed to examine the association between the subscales of accumulated demands and psychological stress. Intrafamily strain, a dimension of accumulated demands, showed a mild but significant correlation with psychological stress ($r=.358$, $p<.02$). This dimension indicates the degree of perceived difficulty in performing family roles and the amount of interpersonal conflicts within the family. Table 7 shows that when intrafamily strain replaced accumulated demands in the path model, it also was not a significant predictor of psychological stress ($b=.667$, $B=.096$, $p<.491$).

Hypothesis Two: Resource Variables and Psychological Stress

The second hypothesis of this study tested the effects

Table 7

Relationship between the Predictors of Psychological Stress when Intrafamily Strains is the Independent Variable: Patient Sample

	Dependent Variables							
Independent Variables	Spiritual Resources		Family Strengths		Sense of Coherence		Psychological Stress	
	b	B	b	B	b	B	b	B
Intrafamily Strains	.172	.046	-2.527***	-.685	-.136	-.029	.851	.121
Spiritual Resources			-.039	-.039	-.333*	-.265	-.082	-.044
Family Strengths					.746*	.586	.214	.113
Sense of Coherence							-1.200**	-.805
Constant	28.422		56.664		28.876		99.319	
Adjusted R-square	-.024		.445		.365		.563	
F	.083		17.048***		8.660**		13.910***	

*$p < .05$

**$p < .001$

***$p < .0001$

of the resource variables on levels of psychological stress. Based on the Double ABCX theory, it was hypothesized that each resource variable would predict lower levels of the criterion variable.

Sense of Coherence (SOC). H_{2a} stated that patients with higher levels of sense of coherence would report lower levels of psychological stress. This hypothesis was supported at the .05 level of significance. Figure 11 and Table 6 show a path from sense of coherence to psychological stress that is statistically and substantively significant (b=-1.199, B=-.805). Patients with higher levels of sense of coherence tended to have lower levels of psychological stress. A one point increase in sense of coherence predicted a 1.199 point decrease in patients' psychological stress scores. The path model shows that, in the context of all the predictors, sense of coherence was the only significant predictor of psychological stress. The relative weight of its predictive power was much greater than any other variables (B=.805 for sense of coherence, B=.043 for spiritual resources, B=.035 for family strengths, and B=.018 for accumulated demands).

To further understand the strong predictive power of sense of coherence, psychological stress was regressed on the subscales of sense of coherence. The following beta weights were found: (a) Sense of Coherence-Meaningfulness (b=-.419, B=-.094, p<.542), (b) Sense of

Coherence-Manageability (b=-1.111, B=0.258, p<.148), and (c) Sense of Coherence-Comprehensibility (b=-1.606, B=0.482, p<.017). Comprehensibility, or the capacity to make cognitive sense of the stimuli that people perceive, and manageability, or the sense that available resources are adequate to meet perceived demands, seem particularly important in lessening perceptions of psychological stress among patients.

Family Strengths. H_{2b} stated that patients with higher levels of family strengths would report lower levels of psychological stress. This hypothesis was rejected at the .05 level of significance. Figure 11 and Table 6 reveal that when the other predictors were controlled, the unique effect of family strengths on psychological stress was not significant (b=.068, B=.035). It appears that, by itself, family strengths did not predict levels of psychological stress.

Spiritual Resources. H_{2c} stated that patients with higher levels of spiritual resources (or lower scores on the extrinsic subscale of the Religious Orientation Scale) would report lower levels of psychological stress. Figure 11 and Table 6 show that the unique effect of spiritual resources also was not significant at the .05 level (b=-.08, B=-.043). When the effects of the other predictor variables were controlled, spiritual resources was not a significant predictor of patients' reported levels of psychological

stress.

Hypotheses one and two were the primary hypotheses of this study. Collectively the predictor variables accounted for 55.5% of the variance of psychological stress. The F value for the full model was 13.479 and was significant beyond the .0001 level. All of the predictor variables collectively made a significant contribution to the prediction of psychological stress. As suggested by the preceding hypothesis testing, sense of coherence was the primary predictor. Without sense of coherence in the model, the other predictors could account for only 16.07% of the variance of psychological stress.

Because the path model reports only direct effects, it does not permit a full interpretation of the effects of these predictor variables. The section following the hypothesis testing presents a decomposition of effects, which substantively enhanced the explanatory role of these variables. As a bridge to this section, it is necessary to examine the study's secondary hypotheses. These hypotheses test the unfolding impact of the predictor variables on each other, following the causally prescribed order.

Hypothesis Three: Effect of Accumulated Demands on Spiritual Resources, Family Strengths, and Sense of Coherence

The direction of effects from accumulated demands to resource variables was hypothesized according to stress

mediation theory. Each of the effects were theorized to be opposite the direct, positive effect of accumulated demands on psychological stress. Higher levels of demands were predicted to weaken reported levels of each resource variable.

Spiritual Resources. H_{3a} stated that patients with higher levels of accumulated demands would report lower levels of spiritual resources (or higher scores on the extrinsic subscale). Figure 11 and Table 6 show that accumulated demands was not a significant predictor of patients' levels of spiritual resources (b=-.092, B=-.054). The direction of effects was opposite the hypothesized relationship.

Family Strengths. H_{3b} stated that patients with higher levels of accumulated demands would report lower levels of family strengths. This hypothesis was supported at a .05 level of significance (b=-.641, B=-.385). When controlling for the effects of spiritual resources, a pile-up of demands appeared to weaken reported family strengths in the patient sample. This effect is consistent with the notion of family strengths as a mediator of stressful demands.

Additional analyzes showed that family strengths was correlated with the subscales of accumulated demand, its relationship with intrafamily strains was significant ($r=-.660$, $p<.0001$). Table 7 shows that when intrafamily strains was substituted for accumulated demands in the path

model, it was a significant predictor of family strengths ($b=-2.427$, $B=-.661$, $p<.0001$). Intrafamily strains had nearly twice the impact on family strengths compared to accumulated demands.

Sense of Coherence. H_{3c} stated that patients with higher levels of accumulated demands would report lower levels of sense of coherence. This hypothesis was rejected at a .05 level of significance. Figure 11 and Table 6 show that the path from accumulated demands to sense of coherence was not significant ($b=.198$, $B=.093$). When the effects of spiritual resources and family strengths were controlled, the unique effect of accumulated demands on sense of coherence was not significant. A bivariate regression also did not reveal a significant effect ($b=-.257$, $B=-.121$). It is notable that the direction of the relationship was opposite from the predicted one. It appears that in the context of spiritual resources and family strengths, sense of coherence was possibly strengthened rather than weakened by a pile-up of demands.

Additional analyzes revealed a moderate, significant correlation between sense of coherence and intrafamily strains ($r=-.400$, $p<.009$). Table 7 indicates that when intrafamily strains was inserted into the path model, its effect on sense of coherence was not significant ($b=-.339$, $B=-.072$, $p<.678$).

Hypothesis Four: Effects of Spiritual Resources on Family Strengths and Sense of Coherence

Family Strengths. H_{4a} stated that patients with higher levels of spiritual resources (or lower scores on the extrinsic subscale) would report higher levels of family strengths. This hypothesis was rejected at a .05 level of significance (b=-.090, B=-.091). When the effect of accumulated demands was held constant, spiritual resources did not significantly enhance reported levels of family strengths among patients.

Sense of Coherence. H_{4b} stated that patients with higher levels of spiritual resources would report higher levels of sense of coherence. This hypothesis was accepted at a .05 level of significance (b=-.324, B=-.258). When the effects of accumulated demand and family strengths were controlled, higher levels of spiritual resources were associated with higher levels of sense of coherence. Patients with intrinsic religiosity reported higher levels of sense of coherence than those without this resource. A bivariate regression was also significant at a .05 level (b=-.384, B=-.305, $p<.052$).

Hypothesis Five: Effect of Family Strengths on Sense of Coherence

H_5 stated that patients with higher levels of family strengths would report higher levels of sense of coherence. Table 6 and Figure 11 show that the path from family

strengths to sense of coherence was significant at a .05 level (b=.766, B=.602). When the effects of accumulated demand and spiritual resources were controlled, family strengths was strongly associated with sense of coherence among patients. A one point increase in family strengths predicted a .766 point increase in sense of coherence scores.

Bivariate regression equations were computed between the subscales of family strengths and sense of coherence to further analyze the relationships (see Table 8). When the subscales of sense of coherence were regressed on family accord, a dimension of family strengths, the following beta weights were found: (a) Sense of Coherence-Meaningfulness (b=.474, B=.580), (b) Sense of Coherence-Manageability (b=.518, B=.604), and (c) Sense of Coherence-Comprehensibility (b=.555, B=.500). Each equation was significant beyond the .05 level. When the subscales of sense of coherence were regressed on family pride, a dimension of family strengths, each equation was also significant beyond the .05 level. However, the standardized beta weights revealed relatively less predictive power than those from family accord: (a) Sense of Coherence-Meaningfulness (b=.345, B=.498), (b) Sense of Coherence-Manageability (b=.285, B=.393), and (c) Sense of Coherence-Comprehensibility (b=.352, B=.375). These data show that the family accord dimension of family strengths

Table 8

Bivariate Regressions of the Predictors of Sense of Coherence (SOC) and Its Subscales: Patient Sample

	Dependent Variables							
Independent Variables	SOC Meaningfulness		SOC Manag.		SOC Compreh.		SOC Total	
	b	B	b	B	b	B	b	B
Spiritual Resources	-1.647	-.253	-1.779*	-.261	-1.635	-.186	-5.859**	-.296
Family Accord	.474**	.580	.518**	.604	.555**	.500	1.515**	.608
Family Pride	.345**	.498	.285**	.393	.352**	.375	.923**	.438
Family Strengths	.253**	.605	.243**	.556	.278**	.490	.744**	.584

* $p < .10$

** $p < .05$

was particularly salient in predicting sense of coherence. It was the family's sense of competence that strongly affected sense of coherence among patients.

Decomposition of Effects: Patient Sample

The path model in Figure 11 provides an overview of the direct effects of the predictor variables on levels of psychological stress. It also shows direct effects, in the causally hypothesized order, between each resource variable and its antecedents. While the direct effects permit tests of the study's hypotheses, the data analysis also yields a decomposition of effects. The theoretical value of the model was expanded when effects of predictor variables were decomposed into direct, indirect, and total effects. Alwin and Hauser's (1975) procedures were used to decompose and interpret the path effects found in this study (see Table 9). A total effect indicates the amount of change in a consequent variable that is induced by a given shift in an antecedent variable. It is obtained by summing a given variable's indirect and direct effects on a consequent variable. Indirect effects are those portions of a variable's total effects which are transmitted or mediated by variables specified as intervening between the cause and effect in one's model. They are computed by multiplying the coefficients of all possible paths intervening between a given antecedent and consequent variable. The direct

Table 9

Decomposition of Effects of Predictors on Psychological Stress: Patient Sample

Dependent Variables	Independent Variables	Total Effects	Indirect Effects via Spiritual Resources	Indirect Effects via Family Strengths	Indirect Effects via Sense of Coherence	Direct Effect
Spiritual Resources	Accumulated Demands	-.054				-.054
Family Strengths	Accumulated Demands	-.380	.005			-.385*
	Spiritual Resources	-.091				-.091
Sense of Coherence	Accumulated Demands	-.122	.017	-.232		.093
	Spiritual Resources	-.313		-.055		-.258*
	Family Strengths	.602				.602***
Psychological Stress	Accumulated Demands	.115	.011	.173	-.075	.018
	Spiritual Resources	.206		.041	.208	-.043
	Family Strengths	-.450			-.485	.035
	Sense of Coherence	-.805				-.805***

* $p < .05$ *** $p < .0001$ (Note: Numbers are standardized beta weights)

effect of one variable and another is that portion of its total effect which is not transmitted by intervening variables.

The decomposition of effects revealed the overall substantive and statistical significance of the predictor variables' effects on psychological stress among patients. Sense of coherence had the largest total effect on the dependent variable (B=-.805). A world view that allowed patients to perceive stimuli as comprehensible, meaningful, and manageable was strongly associated with lower levels of psychological stress among patients. Also, the total effects of family strengths and spiritual resources on psychological stress were much greater than their direct effects. The direct effect of family strengths was only .035, but its total effect was -.450. Similarly, the direct effect of spiritual resources was only -.043, but its total effect was .206. It appears that most of the effects of spiritual resources and family strengths on psychological stress were transmitted indirectly through sense of coherence for this patient sample.

When the total effects of family strengths on psychological stress were decomposed, it was found that its indirect effect via sense of coherence reversed its direction from positive to negative and greatly enhanced its predictive power. The positive direct effect is theoretically and statistically difficult to explain,

particularly in light of the negative correlation between the variables ($r=-.427$, $p<.005$). The negative indirect and total effects were predictable. Of the total effect of family strengths (-.450), -.485 of the effects were transmitted indirectly through sense of coherence and .035 were transmitted directly. In the hypothetical model, it appears that family strengths enhanced sense of coherence, which in turn lessened psychological stress among patients. Much of the influence of family strengths in lowering psychological stress was transmitted through its enhancement of sense of coherence.

The effects of Sense of Coherence were also important in assessing the effect of spiritual resources. When the total effects of spiritual resources on psychological stress were decomposed, it was also found that its indirect effects via sense of coherence reversed the direction of its direct effect and increased its predictive power. The direct effect (-.043) is difficult to explain, particularly since higher spiritual resources (i.e. lower extrinsic scores) were correlated with lower levels of psychological stress ($r=.199$, $p<.210$). The total and indirect effects are clear. Higher levels of spiritual resources were associated with lower levels of psychological stress. Of the total effect (.206), .208 was transmitted via sense of coherence, .041 was transmitted via family strengths, and -.043 was transmitted directly. According to the hypothesized model,

it appears that the positive impact of spiritual resources on sense of coherence was transmitted to lessen psychological stress. Patients with greater spiritual resources seemed to have stronger sense of coherence and, in turn, less psychological stress.

Decomposing the total effects of accumulated demands on psychological stress was also revealing. It clarified the roles of the resource variables as stress mediators or stress buffers. The total effect of accumulated demands (.115) was greater than its direct effect (.018). The direct effect accounted for only 15.6% of the total effect. It appeared that sense of coherence reduced the total effect by .075. In the hypothesized model, because accumulated demands directly increased sense of coherence, which in turn lessened psychological stress, sense of coherence appeared to play a stress-buffering role. It reduced the total effect of accumulated demands on psychological stress.

When sense of coherence was decomposed, the total effect explained by accumulated demands was -.122. Sense of coherence was slightly increased by accumulated demands' direct effect (.093) and its indirect effect via spiritual resources (.017). However, sense of coherence was diminished by the indirect effect of accumulated demands via family strengths. A pile-up of demands lowered family strengths, which in turn lessened its positive impact on sense of coherence. In the context of indirect effects it

appeared that sense of coherence was weakened by accumulated demands. It was only in the full model that sense of coherence assumed its role as a stress-buffering variable.

The data further revealed that family strengths transmitted .173 of the total effect of accumulated demands on psychological stress. Family strengths by itself transmitted only -.013 of the indirect effects. The path from accumulated demands to family strengths, through sense of coherence to psychological stress accounted for .186 of the indirect effects. According to the hypothesized model, accumulated demands weakened family strengths, which in turn lowered sense of coherence and its impact on psychological stress. The combined effect led to mild increases in psychological stress. It appears that family strengths served as a stress-mediating variable. It was lowered by a pile-up of demands, and it increased the total effect of accumulated demands on psychological stress. Family strengths was the indirect path through which most of the influence of accumulated demands was transmitted.

The effects of accumulated demands through spiritual resources appears to be substantively insignificant. Only .011 of the total effect of accumulated demands on psychological stress was transmitted via spiritual resources.

Predictors of Psychological Stress: Spouse Sample

The path model depicted in Figure 12 was derived through the same process used in the patient sample. An identical sequence of four multiple regressions was calculated. The information generated from the equations was also used in a similar fashion. Standardized beta weights were used to test the study's hypotheses for the spouse sample. A decomposition table was developed to interpret the direct, indirect, and total effects of the predictor variables on psychological stress. A trimmed path model was then created for the spouse sample by deleting nonsignificant paths from the original model.

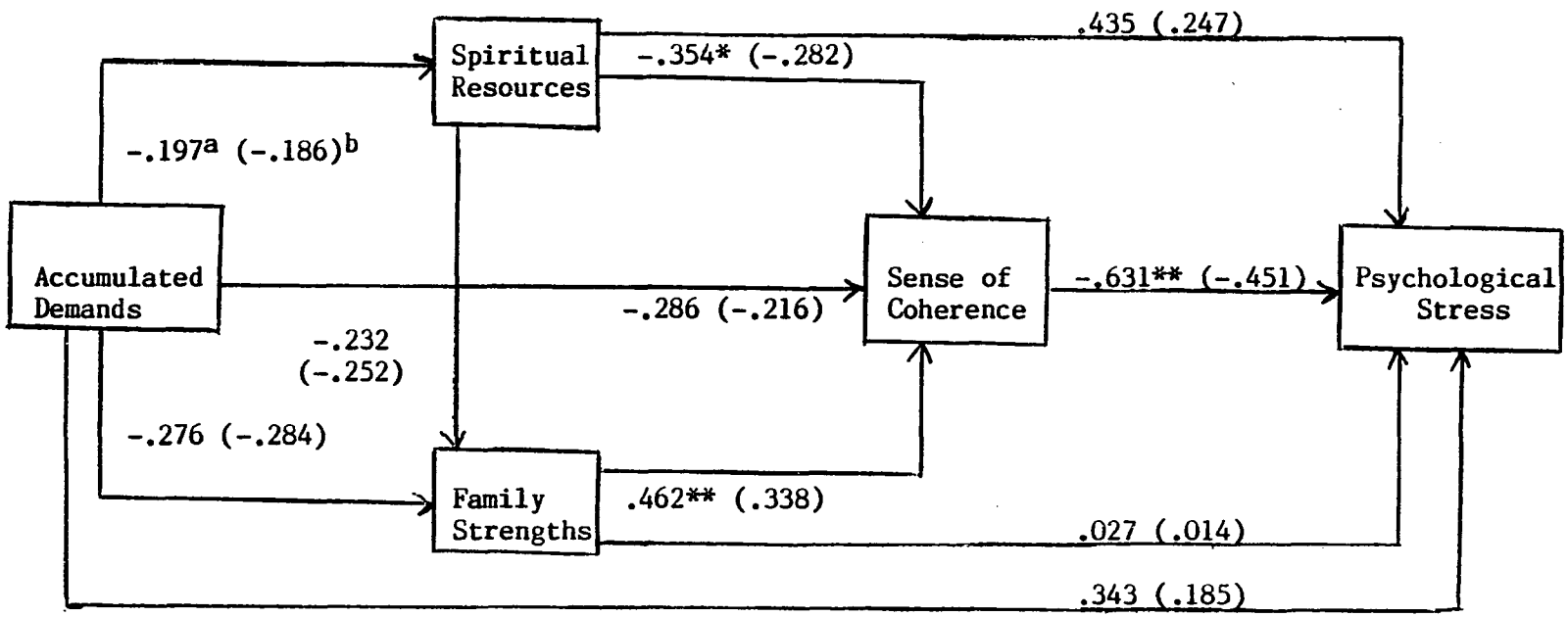
The path coefficients, or standardized beta weights, shown in Figure 12 represent the direct effects of the predictor variables. They were used in testing each hypothesis as it applied to the spouse sample. F tests and R^2 values were also calculated. The results are reported in Table 10.

Hypothesis One: Accumulated Demands and Psychological Stress

H_1 stated that spouses of cancer patients with higher levels of accumulated demands would report higher levels of psychological stress. Similar to the patient sample, this hypothesis was rejected at a .05 level of significance. Figure 12 and Table 10 show that the path between accumulated demands and psychological stress was not

Figure 12

Path Model for the Predictors of Psychological Stress: Spouse Sample



* $p < .10$ (Note: Numbers in parentheses are standardized beta weights)

** $p < .05$

Table 10

Predictors of Psychological Stress: Spouse Sample

	Dependent Variables							
Independent Variables	Spiritual Resources		Family Strengths		Sense of Coherence		Psychological Stress	
	b	B	b	B	b	B	b	B
Accumulated Demands	-.197	-.186	-.276	-.284	-.286	-.216	.343	.185
Spiritual Resources			-.232	-.252	-.354*	-.282	.435	.247
Family Strengths					.462**	.338	.027	.014
Sense of Coherence							-.631**	-.451
Constant	32.653		60.081		42.400		58.018	
Adjusted R-square	.003		.058		.214		.291	
F	1.080		1.933 p<.163		3.807*		4.182*	

* $p < .10$

** $p < .05$

significantly different from zero (b=.343, B=.185). In the context of spiritual resources, family strengths, and sense of coherence, accumulated demands was not significantly associated with levels of psychological stress. Analagous to the patient sample, in the spouse sample a pile-up of demands was not a significant predictor of the criterion variable.

A bivariate regression between psychological stress and accumulated demands also did not yield a significant effect (b=.455, B=.244, p<.177). The resource variables reduced the direct effects of demands on psychological stress by 24% (.244-.185/.244). The reduction was more moderate than in the patient sample. As a group the resource variables also functioned like stress mediators in the spouse sample. However, stress mediation did not occur in a technically and statistically significant sense. The prior relationship between demands and psychological stress was not significant, even before the resource variables were added.

Further analyzes were performed on the relationship between the subscales of accumulated demand and psychological stress in the spouse sample. The loss subscale showed a significant but low correlation (r=.288, p<.038). When psychological stress was regressed on sense of coherence, family strengths, spiritual resources and the loss subscale, the latter approached but did not reach

significance as a predictor (b=2.405, B=.250, p<.148). When loss replaced accumulated demand in the full model, the model explained only 4.2 percent more of the variance of psychological stress (Adjusted R^2=.281 vs. 239).

Hypothesis Two: Resource Variables and Psychological Stress

Sense of Coherence. H_{2a} predicted that spouses with higher levels of sense of coherence would report lower levels of psychological stress. The finding was similar to the patient sample. Figure 12 and Table 10 show a significant path from sense of coherence to psychological stress (b=-.631, B=-.451). Higher levels of sense of coherence were associated with lower levels of psychological stress. As a result, H_{2a} was supported. Parallel to the patient sample, the path model for spouses revealed that sense of coherence was the only statistically significant predictor of psychological stress. The relative weight of its predictive power was twice that of any other predictor (B=-.451 for sense of coherence; B=.247 for spiritual resources, B=.185 for accumulated demand; B=.014 for family strengths).

To further analyze the strong association between sense of coherence and psychological stress among spouses, a series of bivariate regressions were conducted. When psychological stress was regressed on each subscale of sense of coherence, none of the equations were statistically

significant (Sense of Coherence-Meaningfulness, b=-.768, B=-.196, p<.240; Sense of Coherence-Manageability, b=-.111, B=-.032, p<.904; Sense of Coherence-Comprehensibility, b=-1.360, B=-.490, p<.061). Similar to patients, the comprehensibility subscale showed the strongest association with levels of psychological stress. Spouses who reported greater ability to comprehend and understand events they encountered tended to report lower levels of psychological stress.

Family Strengths. H_{2b} contended that spouses with higher levels of family strengths would report lower levels of psychological stress. Parallel to the finding in the patient sample, this hypothesis was rejected at the .05 level of significance. The standardized beta weight, representing the direct effect of family strengths on psychological stress, was not significantly different from zero (b=.027, B=.014). Figure 12 and Table 10 show that when the effects of the other predictors were controlled, family strengths was not significantly associated with levels of psychological stress. Among patients and spouses alike, perceived family strength had no significant direct effect on the criterion variable.

Spiritual Resources. H_{2c} stated that spouses with higher levels of spiritual resources would report lower levels of psychological stress. Figure 12 and Table 10 show that spiritual resources did not have a significant direct

effect on psychological stress (b=.435, B=.247, p<.150). As a result, H_{2c} was rejected. In comparison to the patient sample, the standardized beta weight was much greater (B=.247 vs. B=-.043) and approached statistical significance. When the effects of the other predictors were controlled, higher spiritual resources among spouses tended to be associated with lower levels of psychological stress.

The path model for spouses of cancer patients revealed that sense of coherence was the only predictor variable that had a statistically significant direct effect on psychological stress. The predictor variables cumulatively accounted for 29.11% of the variance of the criterion variable (compared to R^2=55.5 in the patient sample). The F value was 4.182 and was significant at a level of .0092. The proportion of variance accounted for by the predictor variables was significantly different from zero. One can conclude that all of the predictors collectively made a significant contribution to the prediction of levels of psychological stress.

Following a process identical to the patient sample, secondary hypotheses were also tested in the spouse sample. They are examined in the following section.

Hypothesis Three: Effects of Accumulated Demands on Spiritual Resources, Family Strengths, and Sense of Coherence

Spiritual Resources. H_{3a} contended that spouses with

higher levels of accumulated demands would report lower levels of spiritual resources. Similar to the patient sample, this hypothesis was rejected at a .05 level of significance. Figure 12 and Table 10 show that accumulated demands was not a significant predictor of spiritual resources (b=-.197, B=-.186). Also, the relationship was opposite the hypothesized association. It appeared that higher levels of demand were associated with higher levels of spiritual resources. Further, the mobilization of spiritual resources by accumulated demands in the spouse sample seemed substantially larger than in the patient sample (B=-.186 vs. -054).

Family Strengths. H_{3b} stated that spouses with higher levels of accumulated demands would report lower levels of family strengths. Unlike the patient sample, this hypothesis was not significant in the spouse sample. Figure 12 and Table 10 show that the path coefficient was in the predicted direction but did not reach a significant magnitude (b=-.276, B=-.284). In the context of spiritual resources, a pile-up of demands did not appear to be significantly related to weakened family strengths. A bivariate regression between accumulated demand and family strengths also was not significant (b=-.230, B=-.237).

When the subscales of family strengths and accumulated demands were correlated, no significant relationship appeared. Although intrafamily strains was highly

associated with family strengths in the patient sample, they were not related in the spouse sample. Table 11 shows that when intrafamily strains replaced accumulated demands in the path model, its path to family strengths did not reach significance (b=-.356, B=-.088). Standardized beta weights revealed that intrafamily strains was a weaker predictor of family strengths than accumulated demands (B=-.088 vs. -.237).

Sense of Coherence. H_{3c} hypothesized that spouses with higher levels of accumulated demands would report lower levels of sense of coherence. This hypothesis was rejected at a .05 level of significance. When the effects of spiritual resources and family strengths were controlled, accumulated demands was not significantly associated with sense of coherence (b=-.286, B=-.216). Unlike the patient sample, the direction of the relationship was in the predicted direction.

When sense of coherence was correlated with the subscales of accumulated demands, its relationship with intrafamily strains was moderately low but significant (r=-.414, p< .018). Table 11 shows that when intrafamily strains replaced accumulated demand in the path model, it was a significant predictor of sense of coherence (b=-1.901, B=-.343). Higher levels of intrafamily strains were associated with lower levels of sense of coherence, in the context of spiritual resources and family strengths.

Table 11

Relationship between the Predictors of Psychological stress when Intrafamily Strains is the Independent Variable: Spouse Sample

	Dependent Variables							
Independent Variables	Spiritual Resources		Family Strengths		Sense of Coherence		Psychological Stress	
	b	B	b	B	b	B	b	B
Intrafamily Strains	.010	.022	.330	-.081	-1.810*	-.326	.922	.119
Spiritual Resources			.182	-.200	-.286	-.227	.357	.202
Family Strengths					.508*	.326	-.058	-.030
Sense of Coherence							-.625*	-.446
Constant	31.246		56.996		37.806		65.854	
Adjusted R-square	-.033		-.019		.285		.272	
F	.015		.704		5.120**		3.897**	

* $p < .05$

** $p < .01$

Hypothesis Four: Effects of Spiritual Resources on Family Strengths and Sense of Coherence

Family Strengths. H_{4a} hypothesized that spouses with higher levels of spiritual resources would report higher levels of family strengths. This hypothesis was rejected at a .05 level of significance (b=.232, B=.252). When the effect of accumulated demands was controlled, spiritual resources was not significantly associated with family strengths. The finding was paralled in the patient sample.

Sense of Coherence. H_{4b} stated that spouses with higher levels of spiritual resources would report higher levels of sense of coherence. This hypothesis could only be accepted at the .10 level of significance (b=.354, B=.282, $p<.10$). When spiritual resources was entered as a dummy coded variable (i.e. intrinsic religious orientation vs. extrinsic and indiscriminantly pro-religious orientations, its effect on sense of coherence reached significance at a .05 level (b=6.175, B=.371). It appeared that spouses with intrinsic religiosity tended to report higher levels of sense of coherence than those without this orientation.

Hypothesis Five: Effects of Family Strengths on Sense of Coherence

H_5 stated that spouses with higher levels of family strengths would report higher levels of sense of coherence. Table 10 and Figure 12 show that the path from family strengths to sense of coherence was significant at the .05

level (b=.462, B=.338). When the effects of spiritual resources and accumulated demands were controlled, the hypothesized causal path suggested that higher family strengths enhanced sense of coherence.

Bivariate regressions were conducted between the subscales of family strengths and sense of coherence to further analyze the relationship. Table 12 shows that when the subscales of sense of coherence were regressed on family accord, Sence of Coherence-Meaningfulness (b=.396, B=.522) and Sense of Coherence-Manageability (b=.386, B=.455) were predicted beyond a .05 level of significance. When the subscales of sense of coherence were regressed on family pride, none were significantly predicted. It appears that family accord, or a family's sense of competence, was substantively associated with spouses' perceptions that their lives were meaningful and that demands were manageable.

Decomposition of Effects: Spouse Sample

In a process corresponding to the analysis of effects in the patient sample, a decomposition of effects was applied to the sample of spouses. Identical procedures were used and the results are reported in Table 13.

The decomposition revealed the substantive and statistical significance of the predictor variable effects on levels of psychological stress among spouses. Similar

Table 12

Bivariate Regressions of the Predictors of Sense of Coherence (SOC) and Its Subscales: Spouse Sample

Independent Variables	Dependent Variables: SOC Meaningfulness		SOC Manage.		SOC Compreh.		SOC Total	
	b	B	b	B	b	B	b	B
Spiritual Resources	1.812*	.306	1.313	.198	2.500*	.298	5.625*	.338
Family Accord	.396**	.522	.386**	.455	.305	.284	1.088**	.512
Family Pride	.094	.133	.116	.145	.127	.126	.337	.169
Family Strengths	.208**	.427	.214**	.392	.186	.269	.608*	.445

* $p < .10$

** $p < .05$

Table 13

Decomposition of Effects of Predictors on Psychological Stress: Spouse Sample

			Indirect Effects via			Direct Effect
Dependent Variables	Independent Variables	Total Effect	Spiritual Resources	Family Strengths	Sense of Coherence	
Spiritual Resources	Accumulated Demands	-.186				-.186
Family Strengths	Accumulated Demands	-.237	.047			-.284
	Spiritual Resources	-.252				-.252
Sense of Coherence	Accumulated Demands	-.244	.068	-.096		-.216
	Spiritual Resources	-.367		-.085		-.282*
	Family Strengths	.338				.338**
Psychological Stress	Accumulated Demands	.253	-.076	.047	.097	.185
	Spiritual Resources	.408		.034	.127	.247
	Family Strengths	-.138			-.152	.014
	Sense of Coherence	-.451				-.451**

* $p < .10$ ** $p < .05$ (Note: Numbers are standardized beta weights)

to the patient sample, sense of coherence had the largest total effect on the dependent variable (B=-.451). Also, the total effects of family strengths and spiritual resources were substantially greater than their direct effects. The direct effect of family strengths was only .014, but its total effect was -.138. The direct effect of spiritual resources was .247, but its total effect was .408. Considerable portions of the total effects of spiritual resources and family strengths on psychological stress appeared to be transmitted indirectly through sense of coherence.

When the total effect of family strengths on psychological stress was decomposed, its indirect effects via sense of coherence reversed its direction from positive to negative and enhanced its predictive power. Of the total effect of family strengths (-.138), .014 was transmitted directly and -.152 was transmitted indirectly via sense of coherence. In the hypothesized model it seems that family strengths increased sense of coherence, which in turn lowered psychological stress. The total effect of family strengths remained rather weak, but was enhanced by its indirect effect through sense of coherence.

The association between spiritual resources and psychological stress was much higher among spouses than patients. The total effect of spiritual resources approached the predictive power of sense of coherence. The

decomposition revealed that the total effect of spiritual resources (.408) resulted from four paths: (a) .247 was transmitted directly; (b) -.004 via family strengths to psychological stress; (c) .038 via family strengths to sense of coherence to psychological stress; and (d) .127 via sense of coherence to psychological stress.

According to the hypothesized causal paths, it appears that higher levels of spiritual resources had a moderately strong unique effect in reducing levels of psychological stress. Spiritual resources also enhanced sense of coherence, which in turn reduced psychological stress. The resulting total effect was substantial. Spouses with intrinsic religiosity appeared to report substantively less psychological stress than those without these spiritual resources. The stronger total effect of spiritual resources on psychological stress in the spouse sample, as compared to the patient sample, appeared to arise from the differences in direct effects (B=.247 for spouses, B=.043 for patients).

Decomposing the effects of accumulated demand revealed that its total effect on levels of psychological stress was .253. In comparison to patients, spouses reported that accumulated demands had twice the impact on heightening psychological stress. Spouses seemed more susceptible to a pile-up of demands than patients. Most of the difference was found in the relative size of the direct effects.

Of the total effect of accumulated demands, .185 was

transmitted directly (vs. a direct effect of .018 among patients). Also, while sense of coherence reduced the total effect of demands among patients, it increased the total effect among spouses by .097. Sense of coherence functioned as a stress mediator in the spouse sample. Accumulated demands weakened sense of coherence (by a total effect of -.244), which in turn lessened the ability of sense of coherence to reduce psychological stress. Perhaps this explains why sense of coherence had a relatively lower direct effect on psychological stress in the spouse versus patient sample (B=-.451 for spouses, B=-.805 for patients). Perhaps it also explains why spouses appeared more vulnerable than patients to a pile-up of demands.

Family strengths transmitted .047 of the total effect of accumulated demands on psychological stress. A pile-up of demands weakened family strengths (by a total effect of -.237), which lessened its ability to enhance sense of coherence. In turn, the power of sense of coherence in reducing psychological stress was lessened. Family strengths had a mild effect as a stress mediator. It was lowered by accumulated demands, and in turn it increased the total effect of demands on psychological stress.

Spiritual resources transmitted -.076 of the total effect of accumulated demand. Thus, among spouses, spiritual resources functioned as a stress buffer. It reduced the total effect of accumulated demands on

psychological stress. Accumulated demand mobilized spiritual resources by a total effect of .186, which increased its ability to lessen psychological stress. Perhaps this explains the stronger direct effect of spouses' spiritual resources on psychological stress as compared to patients.

Discussion of Trimmed Models

According to Rank and Sabatelli (1982), an advantage of path analysis is the ability to create parsimonious theoretical models through the deletion of nonsignificant paths. If a path does not appear to meet a criterion of statistical or substantive significance, it may be deleted from the model. The elimination of these paths allows one to "tighten up" a theory so that it is more parsimonious with the data. In this study, paths that did not meet a criterion of at least a $p<.10$ level of significance were deleted from the model. Regression equations were recalculated using only the predictors that were significant at this level.

Patient Trimmed Model

In the patient sample several paths were deleted. Accumulated demands did not have significant direct effects on spiritual resources, sense of coherence, or psychological stress. Spiritual resources was not a significant predictor of family strengths or psychological stress. Family

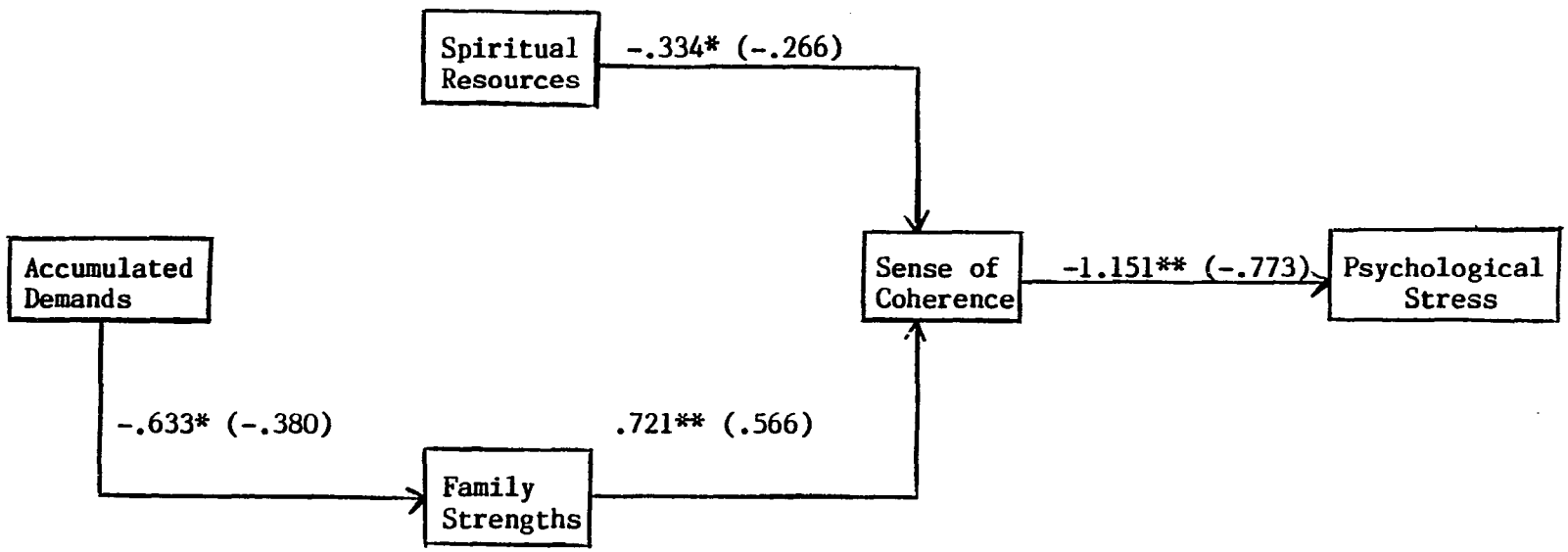
strengths also was not a significant predictor of psychological stress (see Figure 13).

The remaining significant predictive relationships were re-entered into the following regression equations; (a) psychological stress was regressed on sense of coherence, (b) sense of coherence was regressed on family strengths and spiritual resources, and (c) family strengths was regressed on accumulated demand. The resulting beta weights are reported in Table 14.

Accumulated Demands. An accumulation of demands was less important than anticipated by the hypothesized model. Its only unique effect was in its reduction of family strengths ($b=-.633$, $B=-.380$, $p<.01$). When stressful life events and chronic strains accumulated in the experiences of their families, patients perceived that the strengths of their families were diminished. In addition, accumulated demands had a total effect of .166 on psychological stress. All of this effect was transmitted indirectly via family strengths to sense of coherence to psychological stress. Higher demands lessened family strengths, which reduced the ability of family strengths to enhance sense of coherence. When sense of coherence was indirectly weakened, psychological stress increased. It appeared that in families with a higher number of stressful life events and chronic strains, patients perceived that they were indirectly more vulnerable to psychological stress.

Figure 13

Trimmed Path Model for the Predictors of Psychological Stress: Patient Sample



* $p < .05$ (Note: Numbers in parentheses are standardized beta weights)

** $p < .0001$

Table 14

Relationship between the Predictors of Psychological Stress: Patient Sample, Trimmed Model

Independent Variables	Dependent Variables: Family Strengths b	Family Strengths B	Sense of Coherence b	Sense of Coherence B	Psychological Stress b	Psychological Stress B
Accumulated Demands	-.633*	-.380				
Spiritual Resources			-.334*	-.266		
Family Strengths			.721**	.566		
Sense of Coherence					-1.151**	-.773
Constant	55.287		14.523		106.247	
Adjusted R-square	.098		.334		.587	
F	5.448		11.286*		59.148*	

* $p<.05$

** $p<.0001$

However, the magnitude of this effect was relatively mild. Of the total effects of all the predictors of psychological stress, accumulated demands was the weakest.

This finding was similar to Lavee, McCubbin and Patterson (1985) who also found that a pile-up of stressful life events had only indirect and not direct effects on adaptational outcomes. The result was also consistent with Lavee, McCubbin and Olson's (1987) finding that an accumulation of stressful life events was not directly related to the criterion variable of family well-being. It was contrary to Lavee, McCubbin and Olson's (1987) finding that intrafamily strain directly reduced the criterion variable. Part of this direct effect could be attributed to collinearity. The result was also contrary to McCubbin, Needle, and Wilson's (1985) finding that an accumulation of demands was directly associated with negative adaptational outcomes.

The study's finding was consistent with the observations of Avison and Turner (1988). In their review of the relationship between stressful life events and psychological distress, they noted that the observed relationship has regularly been found to be modest. They contend that many researchers believe that reported correlations understate the importance of stressful life events. They suggest that the low correlations are largely due to inadequate measures of stressful life events.

Family Strengths. Family strengths functioned similarly to a stress mediating variable in this study. It was directly weakened by an accumulation of demands, and it indirectly lowered psychological stress via its enhancement of sense of coherence. It had a moderately strong total effect of -.437 on psychological stress, all of which was transmitted through its strengthening of sense of coherence. Patients who reported higher strengths from their families appeared to have a much stronger sense of coherence than those with lower family strengths. When patients perceived that their families were a source of satisfaction, and were worthy groups with competent members, their sense of coherence was strengthened. In turn, these patients seemed more resistant to psychological stress and less vulnerable to stressful events.

This finding supports the results of Lavee, McCubbin, and Olson (1987), who found that marital adjustment was diminished by a pile-up of demands, but in turn, it enhanced family well-being. It also supports the positive effects of family system resources on family adaptation found by Lavee, McCubbin, and Patterson (1985), McCubbin, Needle, and Wilson (1985) and Weisman (1979). It was contrary to Lavee, McCubbin, and Patterson's (1985) finding that family resources were not diminished by a pile-up of demands.

The relatively high level of family strengths reported by patients supports the findings of Cella (1987), Hughes

(1987), and Hinton (1981). It is contrary to the research of Leiber and Plumb (1976), who found that 50% of cancer patients and spouses reported significant marital distress.

Spiritual Resources. Spiritual resources were unaffected by an accumulation of demands, contrary to Double ABCX theory that personal resources are directly affected by a pile-up of demands. Also, it had no effect on family strengths, contrary to the finding of family strengths literature (Stinnet, 1981). It retained its significance as a predictor of sense of coherence (b=-.334, B=-.266).

Resulting from its enhancement of sense of coherence, higher spiritual resources of patients were indirectly associated with lowered psychological stress (B=.205). It appeared that patients who possessed intrinsic religiosity, or who had made their religious beliefs a way of life, tended to have perceptions of their environments as meaningful, manageable, and comprehensible. In turn, these patients tended to report lower levels of psychological stress. Internalized religious faith seemed to make an important difference in the ability of patients to find psychological equanimity.

This finding supports the research of McCubbin and Lester (1977), Olson et. al (1983), Weisman (1979), Antonovsky (1987), and Herth (1989), who found that high levels of spiritual resources predicted less distress among individuals and families. According to Antonovsky

(1989), a strong faith in God helps maintain a strong sense of coherence in the midst of stressful life situations. The significant, but moderately low, correlation between female sex and spiritual resources ($r=.322$, $p<.04$) found in this study supports a common finding (Olson, et. al, 1983).

Sense of Coherence. Antonovsky's (1987) theory that sense of coherence emerges from general resistance resources such as religious faith and family system resources was supported by this study. Both were significantly associated with higher levels of sense of coherence. Antonovsky's (1987) contention that sense of coherence is the primary resource in tension management was also supported. Sense of coherence was the most powerful predictor of psychological stress ($b=-1.151$, $B=-.773$). High levels of sense of coherence had a salutogenic result for patients; they predicted less psychological stress and more well-being. Patients who could effectively balance trust and control in their lives, and who could make cognitive and emotional sense out of life, were psychologically more resistant to the demands they faced. The finding is consistent with the research of Lavee, McCubbin and Patterson (1985), Lavee, McCubbin, and Olson (1987), Weisman (1979), and Antonovsky (1979, 1987). According to Antonovsky (1979), people with strong coherence perceive the world as predictable, comprehensible, and meaningful. They are aware that life involves complexities, conflicts, frustrations, and failure.

However, they have a sense of confidence, or faith that things will work out as well as reasonably can be expected. This confidence seems to make frustration, failure and pain more tolerable, and it predicts lower levels of psychological distress.

Psychological Stress. The relatively normal levels of psychological stress reported by patients appeared to be related to the relatively high levels of sense of coherence, family strengths, and spiritual resources, and to the low association with accumulated demands. On average, these patients seemed resistant to cumulative demands and to the experience of chemotherapy. In this study only 32% of the patients reported high levels of psychological stress. This result was consistent with Plumb and Holland's (1977) finding that only 23% of their sample exhibited depression. It was contrary to the research of Craig and Abeloff (1974), Bukberg, Pennan, and Holland (1984), and Derogatis (1983), who found moderate to high levels of depression among nearly 50% of their patients. The lack of associations with age (Sobel and Warden, 1982), sex (Goldberg and Cullen, 1984), and income (Weisman, 1979) were consistent with other research.

Spouse Trimmed Model

Each nonsignificant path in the patient sample was also nonsignificant in the spouse sample. In addition, the paths from accumulated demands to family strengths and from

spiritual resources to sense of coherence were deleted. Perhaps the smaller spouse sample made it more difficult to detect significant relationships. The remaining significant beta weights are reported in Table 15 and depicted in Figure 14. The results show that sense of coherence continued to be significantly effected only by family strengths (b=.546, B=.399). In turn, higher levels of sense of coherence were a strong predictor of lower levels of psychological stress (b=-.792, B=-.566).

Spouses who reported higher levels of family pride and accord, who perceived their families to be competent, worthy and a strong source of satisfaction, tended to have higher sense of coherence. In turn, higher levels of family strengths were indirectly associated with lower levels of psychological stress. Its total effect on psychological stress, transmitted via sense of coherence, was -.243. The salutary effect of strong family relationships on adaptational outcomes has been frequently reported, both in Double ABCX theory (Lavee, McCubbin, and Patterson, 1985; Lavee, McCubbin, and Olson, 1987) and family strengths literature (Stinnet, 1981).

Sense of coherence remained as the most significant predictor of psychological stress (b=-.792, B=-.566). Spouses who had developed perceptions of their environments as comprehensible, manageable, and meaningful tended to report much less psychological distress than those who

Table 15

Relationship between the Predictors of Psychological Stress: Spouse Sample, Trimmed Model

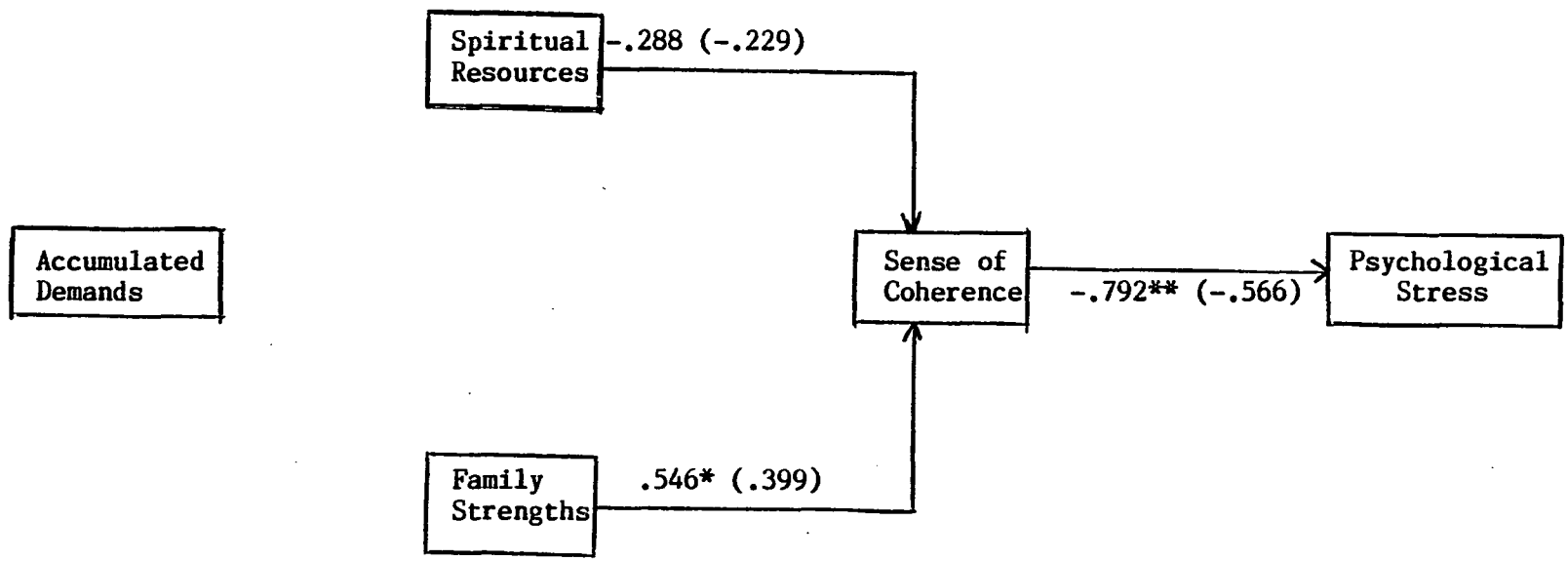
Independent Variables	Dependent Variables: Sense of Coherence b	Sense of Coherence B	Psychological Stress b	Psychological Stress B
Sense of Coherence			-.792**	-.566
Spiritual Resources	-.288	-.229		
Family Strengths	.545*	.399		
Constant	34.141		83.828	
Adjusted R-square	.197		.297	
F	4.795*		14.117*	

* $p<.05$

** $p<.001$

Figure 14

Trimmed Path Model of Predictors of Psychological Stress: Spouse Sample



* $p < .05$ (Note: Numbers in parentheses are standardized beta weights)

** $p < .001$

lacked these perceptions. The result is consistent with research reported above in the patient sample.

Spiritual resources lost its statistical significance as a predictor of sense of coherence (b=-.288, B=-.229, p<.174). Its total effect on reducing psychological stress, transmitted via its strengthening of sense of coherence, was a modest .130. When dummy coding was used (comparing those with intrinsic orientations to those without), the path to sense of coherence was significant (b=5.294, B=.318). The total effect on psychological stress was slightly stronger (.180). Spouses reported slightly fewer spiritual resources than patients, which perhaps accounts for its weaker impact. Patients perhaps had mobilized more religious faith under the threat of their disease.

Accumulated demands lost its significance entirely as a predictor variable. McCubbin's (1988) recommendation for isolating the effects of intrafamily strains was supported. Table 11 reveals that this subscale was significantly associated with lower levels of sense of coherence, and indirectly related to higher levels of psychological stress (b=-1.901, B=-.343). Its total effect on psychological stress was .199 (versus accumulated demand's total effect of .185).

The relatively normal levels of psychological stress among spouses also appeared to be related to their relatively high levels on each of the resource variables.

Contrary to the findings of Oberst and James (1985), Leiber and Plumb (1976) and Blocher (1976), spouses in this study were relatively free of high levels of distress. They appeared to manage quite well the regimen of chemotherapy treatments and any additional accumulation of demands.

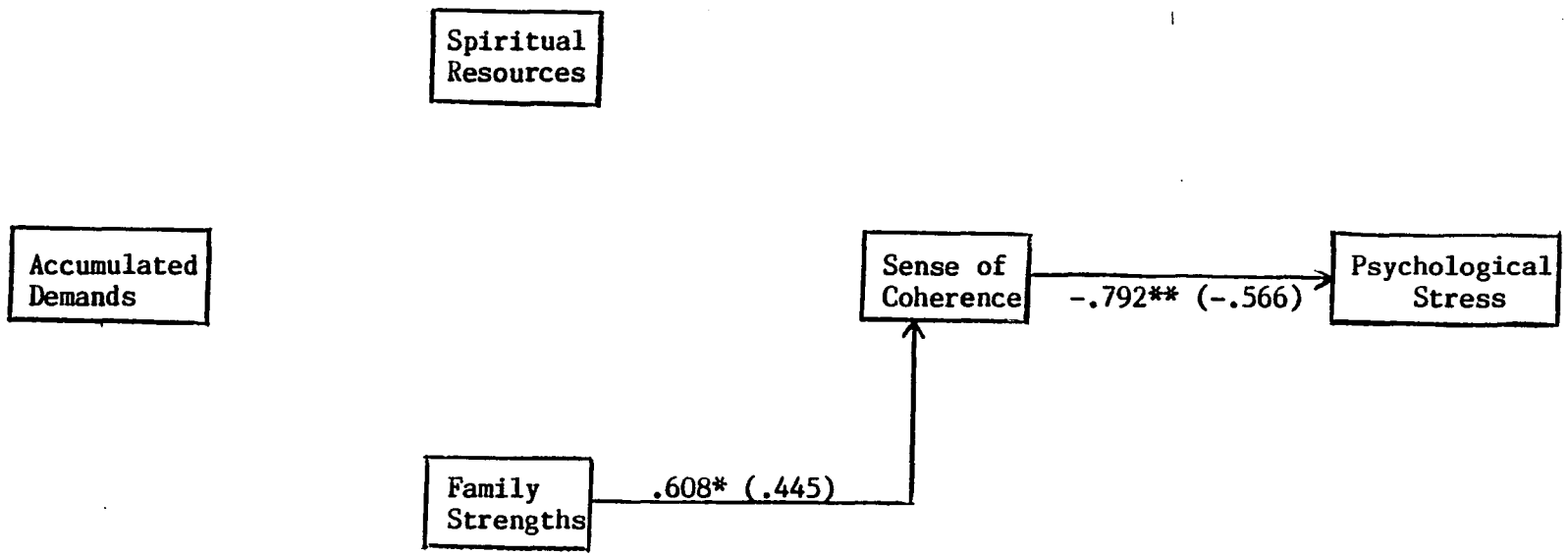
A re-trimmed model, shown in Figure 15, provides a summary glance of the predictors of psychological stress among spouses. Family strengths had a powerful impact on sense of coherence, which in turn was strongly associated with lower levels of distress.

In summary, coping resources appeared to outweigh accumulated demands as predictors of psychological stress in the patient and spouse samples. A pile-up of demands, along with the demands of chemotherapy, did not lead to high elevations of psychological stress for most patients and spouses. The mean scores on each coping resource were relatively high in both samples. Part of this is perhaps related to demographic characteristics. Spousal age was positively correlated with sense of coherence, and the mean age of spouses was relatively high. Female patients tended to report more spiritual resources, and they represented 57% of the patient sample.

According to Lazarus and Folkman (1984), psychological stress is a function of the degree to which demands tax or exceed coping resources. When people's resources are relatively high, their levels of psychological stress tend

Figure 15

Trimmed Path Model of Predictors of Psychological Stress: Spouse Sample



* $p < .01$ (Note: Numbers in parentheses are standardized beta weights)

** $p < .001$

to be relatively low. They are more resilient to the negative effects of an accumulation of demands. However, when coping resources are lower, levels of distress tend to be higher, even when demands are relatively minor (Delongis, Lazarus, and Folkman, 1988).

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary and Conclusions

Theorists from psychological stress and family stress perspectives have provided paradigms to examine the unfolding stress process and its impact on individuals and families. There is consensual agreement that the process flows from demands to adaptational outcomes, with resources playing intervening roles. There is less agreement about what specific demands, resources, and outcomes should be studied, how they are interrelated, and in what populations they apply.

The major purposes of this study were to examine the roles of three resources in the psychological adaptation of cancer patients and spouses of cancer patients, and to further clarify the linkages among components of the stress process in this population. The resources were sense of coherence and two of its antecedents, family strengths and spiritual resources. The latter was of particular interest given its potential importance and the lack of empirical evidence supporting its role.

Psychological stress, the criterion variable of this study, occurs when people appraise their environments as taxing or exceeding their resources and endangering their

well-being (Lazarus and Folkman, 1984). Consistent relationships have been found between an accumulation of demands from the environment and elevated levels of psychological stress (Dohrenwend and Dohrenwend, 1981; Pearlin, 1982; Cronkite and Moos, 1982; McCubbin and Patterson, 1983; Lavee, McCubbin, and Olson, 1987). Cancer patients and their spouses have frequently been shown to have elevated levels of psychological stress under the demands imposed by their disease (Derogatis, 1983; Bukberg, Pennon and Holland, 1984).

A significant relationship between a pile-up of demands and psychological stress was not found in this study. Both patients and spouses of patients reported that they were relatively free of high levels of psychological stress, and that these levels were not substantively associated with demands they reported. Several alternative explanations exist for this finding.

It is possible that measurement problems contributed to the lack of association between demands and psychological stress and to the relatively low levels of reported stress. The alpha reliabilities for the subscales of the FILE inventory, the measure of accumulated demands, were moderately low, which lowered the ability to determine correctly if the variables were related (i.e. statistical validity was threatened). To reduce the length of the questionnaire, four of nine subscales and 42 of 72 items

were used in this study. This also threatened construct validity. The potential for mono-operation bias also existed, which created the possibility that the constructs were under-represented (i.e. construct validity was threatened). The potential for mono-method bias also existed by the sole use of self-report measures. The measures did not eliminate the possibility of social desirability response sets. Potential problems with the model's internal and external specification also could have contributed to lack of association between demands and psychological stress.

The relatively small sample size lowered the study's statistical power. With only 42 cancer patients and 32 spouses it was difficult to detect "true" relationships between the variables. The small sample size restricted the range of variability for the measures. The scores for sense of coherence and family strengths were moderately skewed to the high side, and scores for psychological stress and accumulated demands were skewed to the low side. This perhaps contributed to the high correlation between these variables. The sample also consisted of volunteers. Perhaps patients and spouses who had more psychological stress and had experienced more demands were less motivated to return the questionnaires. The purposive sample likely created considerable confounding with the dependent variable. Random variations on levels of

psychological stress possibly occurred that were unrelated to a pile-up of demands.

Even with these potential problems, it is still possible that the hypothesized model correctly identified the degree of association between variables. This study suggested that an accumulation of demands was not a major factor in the stress process, except for its reduction of family strengths in the patient sample. The study found that intrafamily strains, a subscale of accumulated demands, was a more powerful predictor than a pile-up of demands, particularly in the spouse sample. McCubbin's (1988) recommendation to isolate the effects of the family strains subscale received support. Perhaps "daily hassles" as defined by Lazarus and Folkman (1984) are a better predictor of psychological stress than are larger demands.

This study also suggested that higher levels of coping resources accounted for lower levels of psychological stress among patients and spouses. Among these resources, higher scores on sense of coherence were most strongly associated with lower levels of psychological stress. Higher reported spiritual resources and family strengths were also associated with lower levels of psychological stress. The summary concludes with a recapitulation of the roles of these resources found in this study.

The findings of this study suggest that sense of coherence had a profound impact in lessening psychological

stress among patients and spouses. The suggestion must be tentative due to the potential of collinearity. The study supports Antonovsky's (1979, 1987) theory that sense of coherence is the core resource in moving people toward healthy outcomes in the midst of stressful demands. The study also supports Antonovsky's contention that sense of coherence emerges from general resistence resources such as religious faith and family strengths.

Another major finding of this study was the importance of family strengths as a resource variable. Both family pride and family accord, subscales of family strengths, appeared to make patients and spouses less vulnerable to stressful demands and seemed to enhance their regenerative power. It was reasonable to assume that most of the patients and spouses had experienced the crisis of initial diagnosis and its aftermath, as defined by Weisman (1979). It was clear that those with higher family strengths also had a greater sense of coherence, and in turn less psychological stress. It appeared that they had greater confidence in their ability to handle demands and to make sense of them. Those who reported fewer family strengths tended to have less confidence in their coping ability and more psychological stress.

A final result of this study highlighted the importance of spiritual resources in the adaptation process, at least for cancer patients. The link between strong spiritual

resources and a high sense of coherence is conceptually clear. The spiritual resource which is defined as a secure trust that God is the ultimate source of power, the creator of life, and will work for good in one's life, undergirds each dimension of the sense of coherence. It provides a basis for a sense of meaningfulness in life which indicates that life is worth living and that hardships are worth enduring. It strengthens manageability. Through intimate relationships with God, this spiritual resource is believed to help people perceive that there is an ultimate source of strength in the midst of their weakness. This resource also is assumed to help people find an optimal balance between trust and control, even when demands exceed resources such as with cancer and its treatments. Such a balance is a strong predictor of healthy adaptational outcomes. Strong spiritual resources also provide the confidence necessary for a sense of comprehensibility. Perceptions of the events of life as random and chaotic give way to a sense of order and lawfulness.

While the conceptual link between spiritual resources and sense of coherence is clear, this study provided empirical evidence of its existence. The link was particularly strong for patients. Patients who reported higher levels of spiritual resources also reported a higher sense of coherence, and in turn less psychological stress.

The same scenario also occurred for spouses, but to a lesser degree.

Recommendations

This study helped clarify linkages among components of the stress process, provided empirical support for the role spiritual resources, and generated further evidence about factors affecting the psychological stress of cancer patients and spouses. It contributed evidence to further the development of family stress theory. Its findings suggest further inquiries to enhance the explanatory power of this theory.

Because of the strong link found between sense of coherence and psychological stress, and the potential for collinearity, further research is needed to clarify this relationship. According to McCubbin (1988), collinearity is a common methodological problem in family stress and social-psychological research. Studies examining the relationship between sense of coherence and physiological outcomes are needed. The study also suggests that sense of coherence be included in the continuing search for parsimonius definitions of "regenerative families."

Since this study was limited predominantly to white subjects, as are most studies of family stress and of cancer patients, it suggests the need for samples tapping different cultures and ethnic backgrounds. As McCubbin

(1988) recommended, such studies would help determine if the findings generalize and if different families are empowered by the same strengths.

The study also suggests the need for research on how resource variables vary across the life cycle. The subjects in this study were predominantly middle age and above. Research with subjects at different points in the lifespan would help clarify how resources are depleted and replenished in various stages (McCubbin, 1988).

Empirical support for the role of spiritual resources suggests the need to further clarify the impact of this variable. While quantification of the construct remains difficult, the study demonstrates the need to include spiritual resources when examining resistence resources.

Qualitative research is needed in combination with quantitative methods. Such research holds the promise of better representing the theoretical constructs of sense of coherence and spiritual resources. It would provide rich insights into the empowering effects of these variables. The stories of cancer patients and spouses would add revealing insights for research on quantifying sense of coherence and spiritual resources.

Practical applications for healthcare practitioners are suggested by this study. According to Antonovsky (1987), a major concern of health sciences is uncovering the factors of effective tension management. Such factors,

when mobilized within individuals, can help people move toward physical and psychological health. This study suggests that sense of coherence and two of its antecedents, spiritual resources and family strengths, are three factors that can have a salutary impact on the psychological well-being of cancer patients and their spouses. When healthcare practitioners, such as physicians, nurses, social workers, and chaplains can help patients and spouses mobilize these coping resources, less psychological stress can be predicted. The potential for important indirect effects on physical well-being can be created.

The study also has implications for interventions with patients and spouses who experience high levels of psychological stress. The model examined in this study suggests that such negative adaptational outcomes are associated with relatively low levels of a sense of coherence, family strengths, and spiritual resources. Each resource can be examined for defects as a means of diagnosing the antecedents of elevated levels of psychological stress. Such diagnoses can be used to plan appropriate treatment strategies.

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APPENDIX A

CONSENT FORM

CANCER PATIENT/SPOUSE STUDY

I understand that I am being asked to participate in a research project by the Cancer Patient Support Program that is concerned with learning about the emotional stress of cancer patients and their spouses.

I understand that:

1. I will be asked to complete standardized psychological scales dealing with emotional stress such as depression and anxiety, and coping resources such as family strength, social support, and spirituality.

2. Everything that is written will be kept completely confidential and the results reported only in summary form.

3. I may benefit from being in the project through a better understanding of my feelings and personal strengths, but there is no direct medical benefit through participation.

4. I may refuse to participate in this project, and if I decide to participate, I may withdraw at any time with no penalty of any kind.

5. If I have questions about the project, I may call Dr. Jesse Meredith, Chairman of the Clinical Research Practices Committee, 748-4542 or Dr. Richard McQuellon, 748-4606, at the Bowman Gray School of Medicine Cancer Center.

I have had the chance to ask questions about the project, and all my questions have been satisfactorily answered. I hereby agree to participate.

_____	_____
Witness	Patient
_____	_____
Date	Spouse

APPENDIX B

Measures of Emotional Stress and Stress Coping Resources

Compiled by Paul Mullen for use in dissertation research.

Instructions

There are six separate questionnaires enclosed. Together, they are designed to measure the amount of stress you might be feeling and your resources for coping with stress.

At the beginning of each questionnaire there are instructions about how to complete it. All answers are confidential. Please answer all the items according to how you honestly think and feel (rather than how you think you "ought" to respond). There are no right or wrong answers. Your first response is usually the best.

Please complete the questionnaires separately and privately from your spouse. This is not to keep secrets, but to allow each answer to be truly your own.

When you complete the booklet, place it in the envelope and seal it. You can return it to one of the nurses before leaving the hospital, or mail it in. You may withdraw at any time without prejudice to further care at N.C.B.H.

Thank you again for your willingness to participate in this study. Your participation will help advance our understanding of how people cope with the stress of cancer. Please keep the pen and have a cup of coffee on me.

Some Facts About You

1. Age: _____

2. Sex: Male _____ Female _____

3. Patient _____ Spouse _____

4. Do you have any children? No _____ Yes _____

   How many? _____ Ages? _____

5. How many people live in your household?

   Children _____ Relatives _____ Total _____

6. What is your ethnic background?

   Black _____ White _____ Hispanic _____ Asian _____

   Native American _____ Other _____

7. How long have you or your spouse been diagnosed with cancer?

   Less than 6 months _____ 6 - 12 months _____

   More than a year _____

8. What is your annual family income before taxes?

   Less than $20,000 _____ $20,001-30,000 _____

   $30,001-40,000 _____ $40,001-50,000 _____

   $50,001-60,000 _____ Over $60,000 _____

9. How long have you been married to your spouse?

   Years _____

10. How would you describe your vocation?

    Clerical ____ Sales ____ Skilled labor ____

    Craftsman ____ Farming ____ Professional ____

    Managerial ____ Other _____

Questionnaire Two

Instructions

The following statements relate to various aspects of our lives. Please read each statement carefully. For each statement, circle the number which fits you best.

This scale is named the Orientation to Life Questionnaire and was developed by Aaron Antonovsky (1987).

RESPONSE CHOICES

1	2	3	4	5
Rarely or Never True	Occasionally True	Often True	Usually True	True Most of the Time

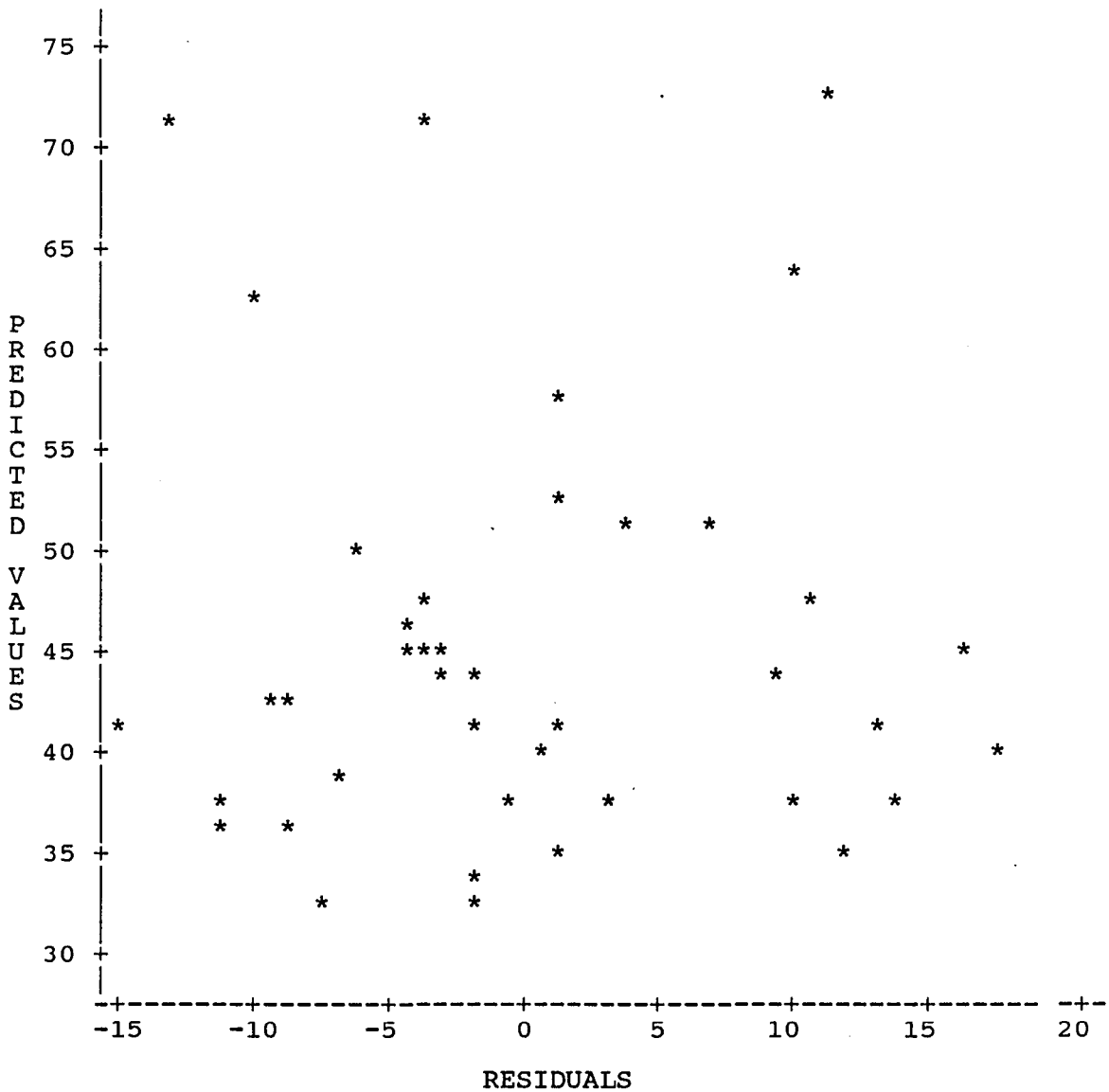
1.	I have the feeling that I don't really care about what goes on around me.	1	2	3	4	5
2.	In the past I have been surprised by the behavior of people whom I thought I knew well.	1	2	3	4	5
3.	People whom I counted on have disappointed me.	1	2	3	4	5
4.	Until now my life has had very clear goals and purposes.	1	2	3	4	5
5.	I have the feeling that I'm being treated unfairly.	1	2	3	4	5
6.	I have the feeling that I am in an unfamiliar situation and don't know what to do.	1	2	3	4	5
7.	Doing the things I do every day is a source of pleasure and satisfaction.	1	2	3	4	5
8.	I have very mixed-up feelings and ideas.	1	2	3	4	5
9.	I have feelings inside I would rather not feel.	1	2	3	4	5
10.	Many people--even those with a strong character--sometimes feel like losers in certain situations. I have felt like a "loser" in certain situations.	1	2	3	4	5

Questionnaire Two (Continued)

11. When something happens, I have generally found that I overestimate or underestimate its importance.	1	2	3	4	5
12. I have the feeling that there's little meaning in the things I do in my daily life.	1	2	3	4	5
13. I have feelings that I'm not sure I can keep under control.	1	2	3	4	5

APPENDIX C

PATIENTS



APPENDIX C

SPOUSES