The Relationship Between Family Communication and Psychosocial Adjustment of Cancer Patients.

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The relationship between family communication and psychosocial adjustment of cancer patients

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THE RELATIONSHIP BETWEEN FAMILY COMMUNICATION
AND PSYCHOSOCIAL ADJUSTMENT
OF CANCER PATIENTS

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in

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by

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ABSTRACT

The purpose of this study was to examine the relationship between patient-family communication and psychosocial adjustment to cancer. Cancer patients receiving radiation therapy (n=105) were interviewed using a semi-structured format. The majority of female subjects were being treated for breast cancer and the majority of male subjects for prostate cancer.

Questionnaires assessing psychosocial adjustment and patient-family communication were employed. Psychosocial adjustment was tapped by means of the Psychosocial Adjustment to Illness Scale (PAIS). The PAIS provides a global adjustment score and taps seven independent domains of adjustment: health care orientation, vocational environment, domestic environment, sexual relations, extended family relations, social environment, and psychological distress. A communication scale devised for this study assessed patient-family communication interactions through the communication constructs of frequency, encouragement, honesty, emotional support, and communication satisfaction.

Analysis of the data indicated that interactions with immediate family members, especially spouses, were important factors in determining psychosocial adjustment. Multiple regression procedures revealed that emotional
support and encouragement were the most important predictors of psychosocial adjustment. Independently, emotional support was the most important predictor affecting global adjustment as well as the domains of health care orientation, domestic adjustment, and psychological distress. Frequency of communication and honesty within the communication environment did not independently predict effective adjustment but the two constructs seemed to produce a stable environment in which the family could provide the patient with essential levels of emotional support and encouragement.

The findings of the investigation suggest that family members were important means of social support. Well-adjusted patients indicated that interpersonal interactions with family members facilitated adjustment through emotional support, interest, reassurance, positive feedback, and encouragement. Thus, one can reasonably conclude that adjustment to the experience of cancer takes place in the home environment and that patient-family interactions are important for successful adjustment.
The American Cancer Society (1990) estimated that approximately 76 million Americans now living will be diagnosed as having cancer, about 30% of the total population. During the next decade, cancer will strike three of four American families with more than 1 million new cases of cancer diagnosed in the year 1990. Most people diagnosed with cancer are expected to die from the disease and its treatments (Burish & Lyles, 1983).

Due to its ubiquitous and deadly nature, a tremendous amount of research has focused on the medical aspects of cancer. The federal government and private agencies have spent billions of dollars trying to cure cancer or at least to extend the lives of those with cancer. However, its psychosocial aspects have not been as extensively examined, even though the psychological trauma that results from the diagnosis and treatment of cancer can be as damaging to a patient as the disease itself (Radley & Green, 1987; Harrell, 1972).

Psychologically, cancer can be devastating. Paterson and Aitken-Swan (1954) reported that cancer was regarded as the most alarming disease a person could contract. Twenty
years later, McIntosh (1974) concluded that cancer caused more fear and anxiety in individuals than did any other disease. In spite of significant medical achievements, cancer is still feared more than any other disease known to man (Peters-Golden, 1982).

While advances in medicine have significantly improved the outlook for most cancer patients with increased longevity and a cure for some types of cancer, cancer patients and their families still suffer significant psychological problems. Cohen and Wellisch (1978) observed that cancer patients and their families are often placed in a psychological limbo torn between the hope for a cure while faced with the possibility of impending death. The psychological limbo often forces patients and their families into states of uncertainty and despair resulting in high levels of fear, stress, and alienation (Miller & Knapp, 1986; Wakefield, 1962).

In addition to fear, anxiety, and uncertainty, cancer adversely affects interpersonal relationships within a family (Sullivan & Reardon, 1986; Bermann, 1973; Hill, 1958; Renneker, 1957). Jones (1979) reported that cancer frequently brings a deadly silence to family interactions. Often, family members stop talking and avoid daily contact with a cancer patient for fear of saying or doing the "wrong" thing (Kubler-Ross, 1969). Not only does the lack of interaction strain familial roles (Vess, Moreland, &
Schwebel, 1985) and traditional relationships, but the lack of interaction can adversely affect the way an individual adjusts to chronic illness (Speigel, Bloom, Kramer, & Gottheil, 1989).

Welch-McCaffrey (1988) observed that "patients do not cope with cancer in a vacuum; regardless of family size or the presence of formal or informal support networks, patients cope with cancer within the context of the family unit" (p. 199). Masters, Cerreto, and Mendlowitz (1983) concluded that the outcome of patients' adjustment behaviors depended not only upon their efforts, but also upon their interpersonal interactions with family members, friends and health care professionals. Unfortunately, Jackson (1986) noted that sometimes patients failed to cope with their illness because their families were fixed in homeostatic patterns and prevented deviation from established patterns of interaction. Changes in medical technology have created an environment where cancer patients and their families are living with the disease for extended periods of time; therefore, cancer becomes an important part of both the patient's and their family's daily existence (Gotay, 1984). Consequently, patient-family interactions and psychosocial considerations are important in understanding how a patient adjusts to cancer.

Psychosocial considerations accrue even greater significance in light of a growing body of literature
which suggests that a patient's psychological reactions can influence physical well-being as well as the ultimate prognosis (Cobb, 1976). A variety of researchers have linked psychological adjustment with a number of health-related outcomes. Goodkin, Antoni, and Blaney (1986) reported that premorbid pessimism and an alienating style of interpersonal interaction tended to promote the development of certain types of cancer. Temoshok (1987) suggested that a personality style characterized as cooperative and appeasing, unassertive, patient, and unexpressive of negative emotions tended to be linked to cancer onset and progression. Conversely, Derogatis, Abeloff, and Melisaratos (1986) concluded that cancer patients whose coping styles facilitated external, conscious expression of negative emotions and psychological distress seemed to survive longer.

Patients that have failed to adjust to cancer have demonstrated higher rates of social alienation (Turnquist, Harvey, & Andersen, 1988), increased contemplation of suicide (Jamison, Wellisch, & Pasnau, 1978), and higher drop-out rates from cancer treatment programs (Gilbar & Kaplan-DeNour, 1989). Such maladjustive behaviors have been associated with lower survival rates (Goodkin, Antoni, & Blaney, 1986). On the other hand, effective psychosocial adjustment has produced favorable effects on health, longevity, and recovery (Grossarth-Maticek, Kanazir,
Vetter, & Schmidt, 1983). Heinrich and Schag (1985) reported that effective adjustment in the form of active coping processes successfully reduced psychological trauma as well as physical problems for cancer patients.

Despite research that links effective adjustment behaviors to increased chances of cure and survival (Greer, Moorey, & Watson, 1989), little empirical evidence exists indicating how communication concerning cancer within a family unit affects psychosocial adjustment. The lack of research exists even though family interactions have been identified as critical to patient adjustment to chronic illness (Siegel, 1988; Crosby & Jose, 1983; Shapiro, 1983). Soskolne and Kaplan-DeNour (1989) concluded that when patients have an emotionally supportive family system their adjustment problems to illness are smaller. While the conclusion drawn by Soskolne and Kaplan-DeNour (1989) may be intuitively true, little empirical evidence exists to support its underlying premise.

Due to the lack of research, little understanding exists concerning communication and adjustment. The need for this type of research is critical since the lack of adjustment can lead to psychological trauma, cancer recurrence, and perhaps even premature death. A variety of medical researchers have called for investigations concerning cancer and communication (Johnson, Lauver, & Nail, 1989; Heinrich & Schag, 1985; Burish & Lyles, 1983;
Friedenbergs, Gordon, Hibbard, Levine, Wolf, & Diller, 1982; Messerli, Garamendi, & Romano, 1980; Craig, Comstock, & Geiser, 1974). If psychosocial adjustment to illness is essential to lessening the emotional trauma associated with the diagnosis and treatment of cancer, then researchers should explore how communication affects the adjustment process. The purpose of this study was to examine communication and cancer by exploring the links among patient-family communication and psychosocial adjustment to illness. Ultimately research may be able to provide a foundation for enhancing patient-family communication interactions which will facilitate adjustment. This study was a step toward understanding the process.
CHAPTER 2

REVIEW OF LITERATURE CONCERNING SOCIAL SUPPORT,
PSYCHOSOCIAL ADJUSTMENT, AND SELF-DISCLOSURE

This chapter will identify the literature and research findings that provide a theoretical foundation for exploring communication and adjustment to illness. First, the literature concerning social support and health will be discussed. Second, the research concerning self-disclosure will be examined. Finally, hypotheses will be proposed that link communication and psychosocial adjustment to illness.

Social Support

To understand the psychosocial aspects of cancer, it is necessary to review the research concerning social support and chronic disease. The next section will examine the social support literature by: 1) reviewing important findings, 2) noting the theoretical and operational limitations of existing research, and 3) identifying the role of communication in social support.

Cobb (1979) noted that "social support has beneficial effects on a wide variety of health variables from conception to just before death, and on the bereaved who are left behind after a death" (p. 113). Caplan (1974) reported that social support from "significant others helps
the individual mobilize his psychological resources and master his emotional burdens" (p.6). In general, social support from significant others enables a person to deal with the hardships of life through social contact and emotional guidance.

In relation to cancer, the mastering of emotional burdens is extremely important. A variety of health care professionals have reported that a diagnosis of cancer evokes far greater emotional repercussions than any other diagnosis, regardless of mortality rate or treatment method (Meyerowitz, 1980). Acte and Vauhkonen (1971) reported that 85% of 100 patients responded to a diagnosis of cancer with intense fear, anxiety and depression. It has been reported that cancer patients are under such a severe form of anxiety that previously successful means of coping are likely to be unsuccessful (Johnson, Lauver, & Nail, 1989). For a more complete review of the psychological distressors associated with cancer and its treatments see Appendix A.

In general, cancer patients are required to face not one but a multitude of stress related incidents. Initially, they must face the devastating impact of the diagnosis, then face the treatment process. Treatment for the disease can involve surgery, radiation therapy, chemotherapy, and for some patients all three procedures. Later, patients are faced with periodic checkups
accompanied by the fear of cancer recurrence, secondary cancer, additional treatments, changes in protocol, metastases (spreading of the disease), or even a prognosis of being terminal. Thus, the final outcome can promote stress and anxiety for long periods of time and sometimes for a life-time. Even after patients have been successfully treated for the disease and cure or remission has been achieved, they can experience guilt for placing the immediate family and future family members at risk. This guilt generates from the hereditary nature of some types of cancer. Consequently, the ambiguity created by the disease, its treatments, and genetic origins accentuate the importance of social support in coping with the experiences associated with the disease.

Understanding the role of social support is also essential since a vast majority of patients report significant changes in their lifestyles as a result of the cancer. Meyerowitz et al. (1979) found that 32% of breast cancer patients were not able to work as they had before being treated for cancer. Peters-Golden (1982) found that over one-third of their subjects reported being avoided by family and friends after being diagnosed with cancer. Friedman et al. (1988) reported that 34% of their subjects were assessed as having a dysfunctional family life following a diagnosis of cancer. Jamison et al. (1978) reported that over one-fourth of the women they surveyed
had seriously considered suicide for reasons associated with their mastectomies. Moreover, Lazlo and Lucas (1981) reported that 30-50% of cancer patients actually withdraw from treatment due to adjustment problems. Thus, if cancer creates ambiguity, stress, anxiety, and dysfunctional activities and if social support can diminish the impact of these problem areas, then social support should be examined as a critical dimension in the adjustment process.

The term "social support" has been used generally to refer to the mechanisms by which interpersonal relationships protect people from the stresses and hardships of life (Cohen & McKay, 1984). The focus on social forces has led researchers to examine the manner in which human attachments within the environment function as systems of support (Gottlieb, 1981). Researchers have reported that support produced positive effects on a wide variety of outcomes, including but not limited to physical health, mental well-being, and social integration (Wortman, 1984; DiMatteo & Hays, 1981).

To study the role of support, researchers have turned their attention to the examination of social forces that contribute to the maintenance and promotion of an individual's health. Hinkle and Wolff (1958) added credence to the general proposition that an individual's relation to the social environment influences health. They concluded that, "some people who remain free from illness
in the face of major life changes appear to have psychological characteristics which help to 'insulate' them from the effects of some of their life experiences" (Hinkle & Wolff, 1958, p. 40). Drawing from the work of Hinkle and Wolff, Moos (1982) identified three important dimensions functioning in most social environments which influence physical well-being. The three dimensions identified by Moos reflect an individual's perceptions of: 1) the interpersonal sphere; 2) the personal development sphere; and 3) the sphere that concerns the extent of order, control, and change in the individual's environment.

From Moos's dimensions, the interpersonal sphere has generated a tremendous amount of research corroborating the conclusion that social support in the form of interpersonal relationships can directly affect, buffer or moderate the effects of life crises. In the area of chronic illness, social support in the form of interpersonal relations has been correlated with improved recovery and enhanced adjustment. In a study of patients suffering a heart attack, Gruen (1975) found that patients given supportive psychotherapy (i.e., development of a genuine interest in the patient, reassurance, positive feedback, and encouragement) spent fewer days in intensive care, on a heart monitor, and in the hospital. At the 4-month follow-up, the patients were rated as having less anxiety and less retarded activity. Sosa, Kennell, Klaus, Robertson, and
Urrutia (1980) found positive results between a supportive companion and childbirth complications. In an experimentally controlled study, women that were assigned a supportive hospital companion were significantly less likely to develop complications during labor and delivery, than were the women in a control group that were not assigned a companion.

Social support has been identified as an important predictor of coping with cancer and its treatments (Jones & Reznikoff, 1989). Social support at the time of diagnosis and during the course of cancer has been associated with decreased levels of emotional distress and better levels of adjustment. Mastectomy patients that reported having a supportive family environment tended to have fewer post-surgical complications (Bloom, 1982; Jamison, Wellisch, & Pasnau, 1978). Weisman and Worden (1975) found that cancer patients that lived significantly longer than the norm tended to maintain cooperative and mutually responsive supportive relationships with others. Carey (1974) reported that higher-quality interpersonal relationships (i.e., greater concern shown by spouse and one's clergy) positively correlated with greater emotional adjustment in a sample of 84 terminally ill cancer patients. Wortman and Dunkel-Schetter (1979) noted that virtually all the studies that have examined predictors of effective coping with cancer have found that people with supportive relations
with family, friends, and health care professionals were likely to cope more effectively with the disease than those that lacked such supportive relationships.

**Criticisms of Social Support Research**

The research linking social support and physical health is impressive; however, Cohen (1979) observed that "although the general trend of research investigating social support is intriguing and mutually consistent, the research base is weak" (p. 99). There appear to be three major weaknesses in the social support literature. First, the social support literature posits communication to be important in facilitating supportive relations, but most studies fail to examine supportive relations from a communication perspective (Northouse & Northouse, 1987). This situation exists even though a number of investigators have concluded that interpersonal communication is vital to the implementation of effective coping strategies (Sullivan & Reardon, 1986; Meyerowitz, 1980; Heinrich, Schag, & Ganz, 1984; Heinrich & Schag, 1985).

The literature is filled with citations that document interpersonal communication problems as being significant and important to cancer patients (e.g., Soskolne & Kaplan-DeNour, 1989; Sullivan & Reardon, 1986; Miller & Knapp, 1986; Cohen & McKay, 1984; Wortman, 1984; Heinrich, Schag, & Ganz, 1984; Masters, Cerreto, & Mendlowitz, 1983; Dunkel-
Schetter & Wortman, 1982; Krant & Johnston, 1978; Weisman & Worden, 1975; Kubler-Ross, 1969). Nevertheless, the intricacies of interpersonal communication have been neglected in the literature (Northouse & Northouse, 1987). Researchers have failed to focus on what aspects of face-to-face interactions facilitate or inhibit patient adjustment. How does frequency of interaction about the illness affect adjustment? What effect does honesty in communicative interactions have on adjustment? How is adjustment affected if a patient and family focus on the negative aspects of cancer? The positive? What if they discuss both positive and negative? What happens if a patient does not talk at all? These questions need to be addressed if the links among interpersonal interactions and adjustment to illness are to be better understood and given credence in the professional medical community.

Furthermore, studies that incorporate a communication perspective often lack a strong theoretical foundation (Thompson, 1984; Pettigrew & Turkat, 1986; Arnston, 1985). Thompson (1984) commented that health communication research has been dominated by problem specific situations void of theoretical foundations. The lack of a theoretical foundation limits the generalizability of research findings and inhibits the incorporation of findings into an organized body of knowledge. Consequently, a need exists for exploring the role of supportive interactions and
cancer from a communication perspective that is methodologically sound and grounded in theory.

Second, research is limited due to the lack of specificity concerning the term "social support". In a variety of the social support studies, a family member has been instructed to be supportive of the respondent (i.e., patient), but it is unclear exactly how the support provider chose to operationalize this behavior (DiMatteo & Hays, 1981). The difficulty in operationalizing supportive behaviors is caused by the lack of a consensual definition of social support. In 1984, Wortman published an extensive review of the literature concerning social support and cancer patients. She concluded that the lack of definitional agreement on the term "social support" limits a fundamental understanding of the role social support plays in health-related research. Social support has been operationally defined as a broad range of tangible constructs, such as social class, job satisfaction, and financial resources (Wortman, 1984). Additionally, social support has been defined to include intangibles such as therapeutic listening, cohesion and responsiveness, emotional support, role tension, information tension, patient education, and communication (DiMatteo & Hays, 1981).

Complicating the lack of definitional agreement is the variability of health-related outcome measures used in
research. In a review of the social support literature, DiMatteo and Hays (1981) discovered that outcome variables in existing research include length of survival beyond expected, the comfort experienced by supportive individuals while visiting patients, mood disturbances experienced by the patient, vocational adjustment, psychological adjustment, locus of control, and financial security. As a result of the wide variety of outcome variables, it becomes exceedingly difficult to know precisely what social support affects and which outcome variables are worthy of investigation. Should quality of life be valued over length of life? Should emotional adjustment be the focus, to the exclusion of vocational adjustment or even domestic adjustment? Is comfort of a supportive individual as relevant as a patient's psychological distress? In spite of disagreements over outcome variables, the controversy does not diminish the importance of social support as a valuable resource for coping with chronic illness, especially for cancer patients, but the controversy does illustrate that the researcher must carefully select and operationalize the particular outcome variable to be studied.

The third criticism involves the lack of empirical evidence supporting the reported findings. Anecdotal evidence abounds linking social support and physical well-being (Bombeck, 1989; Cousins, 1988; Siegel, 1988; Jackson,
1986; Jones, 1979); unfortunately, empirical evidence is limited. Kaplan, Cassel, and Gore (1977) summarized the literature by noting that "there is little strong empirical evidence to confirm the role social support may play in health and illness. This is not surprising; attempts at conceptualization and measurement have been inadequate, discipline-bound (or study-bound), and usually formulated for post-hoc interpretation of unexpected, but striking findings" (p. 47).

This investigation addressed all three criticisms leveled against the social support literature. First, the research provides a communication perspective grounded in the theory of self-disclosure. From the theoretical perspective, social support is defined as patient-family communication and operationalized as objective psychological support according to the criteria established by Caplan (1979). Caplan's two-dimensional scheme identifies support as tangible or psychological, and objective or subjective. Objective psychological support involves the communication of information about the illness and about care, as well as the expression of specific behaviors such as touching, listening, disclosing, and smiling (i.e., communication).

Second, the investigation was empirical in nature and operationally defined the health-related outcome variable as psychosocial adjustment to illness. By utilizing a
quantifiable outcome and by operationally defining and measuring the social support variable, the research provides empirical support for the links between social support (defined as patient-family communication) and adjustment.

Self-disclosure

Self-disclosure has been identified as a critical component in the development of interpersonal relationships (Hosman & Tardy, 1980). Self-disclosure is the primary building block for relationship development; without self-disclosure of personal information, interpersonal relationships could not be developed (DeVito, 1980). The theory of self-disclosure as presented by Jourard (1959, 1964) posits that people disclose information to initiate and maintain healthy relationships. Wheeless (1976) argued that self-disclosure was an essential component of a continuing intimate relationship. Taylor and Altman (1973) noted that relationship development involves reciprocal self-disclosive communication. Inherent in the research examining self-disclosure are the links among disclosure, reciprocity, and the development of interpersonal relations (Prisbell & Anderson, 1980).

Understanding self-disclosure for cancer patients is essential since the underlying foundation of the social support and health research has focused on the
interpersonal sphere experienced by patients (Moos, 1982). Not only has the interpersonal sphere dominated the social support literature, but interpersonal interactions have been correlated with increased psychological well-being and with a lower probability of physical illness (Wills, 1985). Shared interpersonal interactions have been identified as supportive in nature because of the social exchange of rewards (Hosman & Tardy, 1980) and because the history of reciprocal exchanges makes individuals more confident that their significant others will provide assistance in times of need. Wills (1985) concluded that "it is evident that resources provided by interpersonal relationships play an important role in determining people's adaptive functioning and health outcomes" (p. 61). Jourard's theory of self-disclosure (1979) posits that individuals that maintained high levels of self-disclosure would also attain increased levels of psychological well-being.

Recent research has indicated that the interpersonal sphere is governed by four factors relating to self-disclosure (Cline, 1986; Tardy, Hosman, & Bradac, 1981; DeVito, 1980; Hosman & Tardy, 1980; Prisbell & Anderson, 1980; Gilbert & Hornstein, 1975; Cozby, 1973). The four dimensions that affect interpersonal relationships are: 1) the target of disclosure; 2) the amount of self-disclosure; 3) the reciprocity of disclosure; and 4) the accuracy or honesty of disclosure.
The first important dimension of self-disclosure and relational development is the target of the disclosure. Tardy, Hosman, and Bradac (1981) found that the target of disclosure consistently affected the amount of self-disclosure. Cozby (1973) found that disclosure to significant others (i.e., spouse, family, and friends) was associated with positive mental health while maladjustment was indicated by frequent disclosures to all others (i.e., acquaintances, strangers, and non-humans).

For this investigation, the focus was on the patient's communication with his/her family. The focus on patient-family communication is theoretically justified because close individuals like family members know the patient intimately and are more likely to be able to understand the patient's communications and expressions of needs. The reciprocal interactions that have occurred within the home environment provide the patient with a support group that is intimately aware of any idiosyncrasies. The patient is also more likely to communicate openly with family members than with a health care professional who is superficially acquainted.

Mitchell and Glicksman (1977) maintained that family members can be helpful by allowing patients to verbalize personal concerns during times of stress. Ferlic, Goldman, and Kennedy (1979) reported that the reactions of the spouse were extremely important for breast cancer patients.
in coping with the disease. Dunke1-Schetter and Wortman (1982) suggested that family members can help patients clarify their feelings by being sounding boards and sympathetic listeners.

Despite the conclusions, both anecdotal and empirical, that posit a link between family interactions and health-related outcomes, few empirical studies have examined the impact of naturally occurring support networks (that is, family and friends) on a cancer patient's coping processes (Wortman & Conway, 1985). Litman (1974) in his review of the literature concerning family and illness noted that the "interrelationships between health and the family virtually constitute terra incognita" (p. 496). Ten years later, Wortman (1984) summarized her review of the social support literature by noting that it would be highly desirable to assess support provided from a spouse and immediate family, since there is some anecdotal evidence indicating that a family's reaction to a cancer patient can be a critical factor in adjustment.

This shortcoming in the literature is particularly relevant since the few studies examining family members have depicted them as important sources of support for cancer patients (Taylor, Lichtman, & Wood, 1985; Jones & Reznikoff, 1989). In an comprehensive review of the support literature, DiMatteo and Hays (1981) found few studies that examined social support provided by family
members and a cancer patient's ability to cope with the illness (Bloom, 1982; Bloom, Ross, & Burnell, 1978; Krant & Johnston, 1978; Weisman & Worden, 1975). Even in these few studies, the provider of the support was a mixture of family, friends, peer groups, physicians, and health care providers. In a more recent review of the social support research, Irwin and Kramer (1988) observed that there were no empirical studies that attempted to gauge the effect of naturally occurring social support sustained during treatment on the amelioration of psychological distress during and after treatment. These researchers concluded that future investigations should focus on the role of the family as suppliers of social support for the cancer patient. Since cancer can be accompanied by a host of fears, uncertainties, anxieties, and traumatic experiences, then the focus on patient-family communication could provide insight into the role communication plays in the adjustment process.

The second dimension of self-disclosure, amount of self-disclosure, is commonly assessed by examining the frequency with which one discloses (DeVito, 1980). Frequency of self-disclosure has been linked to decreased uncertainty and lower levels of ambiguity in relational situations (Berger & Bradac, 1982). A variety of researchers have identified a modest link between the frequency of disclosure and mental health measures (Mayo,
Even though the correlations between self-disclosure and mental health have been modest, \( r = 0.18 \) to \( 0.34 \), these results suggest that the frequency of self-disclosure can affect one's psychological well-being (Cozby, 1973).

In relation to physical health, Pennebaker (1989) reported that as frequency of disclosure concerning traumatic experiences increased, the health of the individual improved. Those that inhibited disclosure of traumatic events reported significantly more health-related problems than those that freely discussed and came to grips with the experience. In a related study, Pennebaker, Kiecolt-Glaser, and Glaser (1988) found that increased disclosure was linked to improvements in the immune system. In a study investigating hypertension, Cumes (1983) found that as the amount of self-disclosure increased, systolic blood pressure levels decreased.

These studies suggest that frequency of communication affects the way an individual adjusts to a traumatic experience. As noted earlier, cancer is a lifelong traumatic illness beginning with initial diagnosis and continuing through aversive treatment procedures and future familial difficulties. Self-disclosure may facilitate coping with this long and difficult process.

The third dimension of self-disclosure that is relevant to the interpersonal sphere is reciprocity.
Social exchange theorists note that reciprocal exchanges provide a sense of equilibrium and balance in a relationship (Altman & Taylor, 1973). Through reciprocal exchanges information is transferred between dyad members and each member has something invested in the relationship. Investment levels vary during the course of a relationship. Spiritas and Holmes (1971) revealed that if one member of a dyad wants to increase the investment level by increasing the level of intimacy in the conversation, the other member will tend to increase investment by increasing the level of intimacy of conversation as well. Comparable levels of exchange, investment, and intimacy have been linked to relational satisfaction (Littlejohn, 1983).

The norm of reciprocity suggests in a functional interpersonal relationship each member of a dyad controls the level of investment in a relationship by either engaging or disengaging in a topic of conversation (Bradac, Tardy, & Hosman, 1981). For example, if one member of a dyad wants to increase investment by discussing a sensitive issue and the other member does not respond in kind, then the individual with the higher level of investment will alter the topic to avoid loss of investment. Powell (1969) postulated that the norm of reciprocity enables each member of a dyad to control the level of exchange by reverting back to safe territory when the exchange becomes
uncomfortable (i.e., discussing less controversial topics, more pleasant topics, less intimate topics).

For traditional relationships the ability to "revert" to safer territory may be appropriate and functional, but a cancer patient who is faced with fears, anxieties, and uncertainties may need to discuss uncomfortable topics (i.e., pain, recurrence, fear, death, etc.) with a relational partner. The inability to discuss such topics with family members could be dysfunctional for the patient. Klein (1971) noted that families that fail to discuss uncomfortable issues can actually harm the patient. He concluded that, "Families can help or hinder healthy coping with a patient's problems. Individuals are generally part of a family network characterized by the same value system and agreed-on pattern of communication. Some families reward only the expression of pleasant feelings and refuse to hear the unpleasant" (Klein, 1971, p. 1661).

Issues related to cancer are commonly unpleasant and patients need to feel free to openly discuss the unpleasantries. Kubler-Ross's (1969, 1974) work documented that discussions concerning death and dying enabled terminally ill patients and their families to work through their feelings about death. Kubler-Ross's work suggested that patients and their families need to recognize the consequences of an illness to facilitate acceptance and peace. She noted that when patients failed to discuss the
negative aspects of the illness and the possibility of death that the illness was much more difficult for patient and the family. Adding to Kubler-Ross's position, Shapiro (1983) provided anecdotal evidence to support the premise that patients that were able to openly discuss all disease related issues with other family members tended to have longer survival rates.

Conversely, popular writers (Bombeck, 1989; Siegel, 1988; Ornstein & Sobel, 1988) and popular beliefs (Peters-Golden, 1982) hold that a patient and family should only discuss positive aspects of the illness. Positive discussions have been equated with positive attitudes which facilitate improved health-related outcomes while negative issues are equated with negative attitudes which diminish the chance of recovery (Ornstein & Sobel, 1988). This research addressed the reciprocity issue by examining what topics were discussed and what topics were avoided as well as whether the family encouraged the patient to discuss the disease.

The last feature of self-disclosure, accuracy and honesty, reflects an individual's ability to communicate truthfully with others in a communicative encounter. Wheeless (1978) observed that honesty correlated with a target's trustworthiness. Jourard (1964) reported that honesty in the communicative interaction facilitated the development of healthy relationships.
In relation to chronic illness, Acte and Vauhkonen (1971) noted that truthfulness in the long run is almost always preferable to deception, no matter how kind the motives prompting the deception. In the early 1970s, 88 to 90% of physicians surveyed said they would not tell patients about the likelihood of their impending death (Hinton, 1973). Ten years later, the physicians' approach to this issue reversed, with 97% indicating that they would inform the patient of a terminal prognosis (Miller & Knapp, 1986). The reason for the drastic change in attitudes is believed to be two-fold: 1) most patients want to know the truth about their prognosis (Lind, Good, Seidel, Csordas, & Good, 1989); and 2) many dying patients already know or suspect their terminal status before they are told by their physician (Shneidman, 1984). As noted earlier, informing a patient about a prognosis enables the patient to cope with feelings, fears, and uncertainties associated with an illness (Kubler-Ross, 1969).

Although, physicians readily inform patients about a terminal prognosis, some families avoid telling a patient what they know about an illness (Block & Boyer, 1984). The lack of communication between a patient and his/her family could adversely affect the patient's adjustment process. Cohen and Wellisch (1978) provided anecdotal support to the conclusion that families that failed to communicate openly and honestly about chronic illness
experienced heightened levels of anxiety and uncertainty. From an empirical standpoint, it is unclear how honesty in patient-family interactions affect a patient's adjustment to illness?

By exploring the frequency of communication, the reciprocity of the communicative encounters, the honesty within the interactions, and the target of the interactions, this investigation will be able to shed new light on the role of interpersonal relationships in facilitating psychosocial adjustment to illness. The next two sections provide the theoretical and operational justifications for investigating psychosocial adjustment and specific communication processes.

Psychosocial Adjustment to Illness

A review of the research examining social support and cancer reveals that cancer and its treatments require patients and their families to alter their daily activities and expectations to cope with the experience of cancer. The psychological trauma associated with the disease has serious consequences for patients resulting in loss of self-esteem (Meyerowitz, 1980), increased suicidal tendencies (Jamison, et al. 1978), and withdrawal from treatment (Gilbar & Kaplan-DeNour, 1989). Each of these behaviors has been linked to increased chances of cancer recurrence and decreased chances of recovery (Meyerowitz,
Heinrich, & Schag, 1983). Consequently, the reduction of psychological trauma is critical if a patient is to effectively adjust to the disease.

The traditional approach to adjustment has been to examine the coping strategies adopted by patients in dealing with stressful situations (Cohen & Lazarus, 1979). Coping has been found to be a critical component in a patient's struggle for survival and recovery (Sanders & Kardinal, 1977). The way an individual copes with the demands of chronic illness can be an important determinant of the course of the illness and of the medical care received (Coyne & Holroyd, 1983). Pettingale, Morris, Greer, and Haybittle (1985) indicated that patients whose response to cancer was categorized as active were significantly more likely to be alive and free of recurrence at 10 year follow-ups than were patients who responded with passive coping strategies.

Research by Goodkin, Antoni, and Blaney (1986) revealed that inadequate coping strategies appeared to promote illness in a variety of patients with abnormal pap smears. In a study exploring breast cancer patients, Levy et al. (1985) described how ineffective coping strategies characterized by passivity and hopelessness were associated with poorer chances of recovery for women with breast cancer. Still other studies have linked ineffective
coping with subsequent mortality from cancer in males (Perksy, Kempthorne-Rawson, & Schekelle, 1987).

Even though researchers have linked coping processes to health related outcomes, the results must be viewed with reservations due to the inherent difficulties in measuring coping strategies. A principal problem inherent in the coping literature is that most of the research fails to operationalize coping processes across situations (Sidle, Moos, Adams, & Cady, 1969). Coping is frequently defined in case-by-case situations limiting the generalizability of the findings.

Situation specific definitions have created other problems for researchers. Cooper (1988), in his evaluation of theoretical and methodological issues in research involving stress, coping, and health observed that frequently the concept of coping is loosely defined which results in problematic issues for researchers. The lack of a solid definitional foundation confounds how coping is operationalized in the research. For example, in life events research the concepts of stress and coping are consistently interchanged—a stressful life event is often interpreted as an inability to cope (e.g. divorce). Interchangeability obfuscates the differences between coping and stressful life situations.

Lazarus and Folkman (1984) identified four distinct coping processes utilized by individuals to deal with
stressful situations—fighting spirit, stoic acceptance, denial, and hopelessness/helplessness. These categories have been widely accepted and utilized to identify how individuals prevent, avoid, or control emotional distress (Vitaliano, Russo, Carr, Maiuro, & Becker, 1985). However, when researchers operationalize the four coping strategies, they often reduce the four independent processes down to two with fighting spirit and denial being combined to form one strategy, while stoic acceptance and hopelessness/helplessness are combined to form the other (Sullivan & Reardon, 1986). Other researchers create two strategies with denial being one strategy and fighting spirit, stoic acceptance, and hopelessness/helplessness forming the other (Dean & Surtees, 1989).

Theoretically, these combinations confound the understanding of coping processes. Fighting spirit, stoic acceptance, denial and hopelessness/helplessness are conceptualized as different approaches to dealing with stressful situations; thus, combining them may prevent a clear understanding of how individuals deal with life-strains. Consequently, contradictory results have been reported for denial as a coping strategy. Denial has been identified as a useful strategy (Sanders & Kardinal, 1977) as well as an unproductive coping process (Caplan, 1979; Weisman & Worden, 1976).
In addition to contradictory findings, respondents find it difficult to identify particular strategies they use to cope with stressful situations (Johnson, Lauver, & Nail, 1989). An individual may unconsciously choose to deny the illness or develop a fighting spirit or stoically accept the disease. Individuals may merely respond with what they perceive to be the most appropriate reaction to the situation at hand. Due to the unconscious nature of selecting a coping strategy, respondents may attempt to rationalize their actions when questioned by researchers. Moreover, when researchers ask subjects to identify how they coped with a particular life-strain they may not be able to consistently categorize their own behavior or actions, due to the subjectivity of self-perceptions.

Life-strains involve both external experiences and internal emotional states. For example, a person may be required to cope with the pressures of graduate school as well as deal with the strains created by a life-threatening illness. To cope with such pressures, the individual may utilize a fighting spirit for graduate school, while stoic acceptance may provide a degree of stability regarding the illness. Situations that require an individual to cope with more than one stressor--cancer is such a situation--cloud the picture of how the individual manages the situation. The muddling of multiple stressors combined with confusion within the subject and the subjectivity of
the researcher brings into question the links between coping, stress, and health-related outcomes.

Adding to the confusion, a variety of researchers have suggested that information search is a distinct, legitimate and effective coping process for cancer patients (Sidle, Moos, Adams, & Cady, 1969). Supporters of information search techniques, as a coping strategy, posit that successful coping intervention is possible by increasing the patient's knowledge about what is happening. Research on this type of intervention indicates that information reduces distress during contact with a noxious stressor (Leventhal & Nerenz, 1983).

However, research has suggested that information interacts with an individual's personality traits in relation to health-related outcomes. Goldstein (1973) reported that people who do not typically avoid information demonstrated better recovery if they received specific information and worse recovery if they received general information. "Avoiders" on the other hand, did better with general information than specific information.

Cohen and Lazarus (1979) summarized the results of studies focusing on information search as a coping strategy and concluded that the studies are unclear and inconsistent. They observed that usually any information is given in the context of support, encouragement, attention, and with an implicit challenge to the patient.
Lazarus and Folkman (1984) noted that the mixture of information content with emotional supportiveness makes it difficult to determine whether informational or supportive elements are more important in aiding a patient's coping with psychological trauma. Consequently, it is difficult to know whether it is the information that enhanced the coping process or the supportiveness provided by the providers of the information. The uncertainty surrounding information search techniques limits the explanatory power of information as a coping process.

In general, research concerning coping and health have produced some enlightening and important results. Unfortunately, due to theoretical and methodological problems associated with the concept of coping, the results must be viewed with reservations. Moreover, the problems associated with assessing coping processes limits a clear conceptual understanding of how coping varies from individual to individual and situation to situation. Despite the difficulty in assessing coping processes, the fact remains that individuals suffer significant psychological trauma as a result of the diagnosis and treatment of cancer; therefore, it is important to understand how the patient copes with the disease in order to reduce the uncertainty and emotional anxiety that surrounds cancer.
To provide a clearer picture of the psychological processes inherent in coping with disease, this research explored a broader concept of coping by examining psychosocial adjustment to illness. Herzlich (1973) noted that to understand how an individual deals with a life-threatening illness means more than the examination of either a style of coping or a way of thinking, but requires an examination of psychosocial adjustment.

Psychosocial adjustment represents a coordination of the patient's bodily feelings and social action; a process of channelling the individual's experiences of life with the realities of the disease (Heinrich & Schag, 1985; Gonzales, Steinglass, & Reiss, 1989). Since a cancer patient is required to deal with a host of stressors including but not limited to the threatening nature of the disease, the detrimental side effects of treatment, family disruptions, psychological limbo, and social alienation, then an examination of how a patient adjusts to the demands of the disease is theoretically and conceptually more valuable than merely examining a patient's style of coping. Wortman and Dunkel-Schetter (1979) observed that it has become increasingly important to understand how people live with cancer and not just how they cope with a diagnosis of cancer.

Psychosocial adjustment furnishes a strong foundation for understanding how people learn to live with a traumatic
experience. The focus on psychosocial adjustment has been augmented during the past two decades by the efforts of psychiatrists to reintegrate psychiatric patients into the community (Weissmann, Sholomskas, & John, 1981). Psychosocial adjustment has also been found to be a key concern for cancer patients due to the emotional demands of the disease.

Since patients are under such severe stress and anxiety that they frequently become despondent, suicidal, and withdraw from treatment, it is important to understand the important factors affecting psychosocial adjustment to illness. The underlying assumption of psychosocial adjustment is that individuals experiencing a debilitating or chronic illness want to pick up the threads of a normal life (Strauss, 1975). Psychosocial adjustment to illness assesses the degree to which individuals attain a "normal" life.

Cancer patients do not and cannot withdraw from society as a result of the illness and resurface when the disease has been treated. As noted earlier, a cancer patient must face the strains of the illness as well as the demands of daily life. Effective adjustment includes an adaptation to the disease as well as everyday stressors.

Psychosocial adjustment has been operationally defined as a multidimensional concept which includes coping skills,
psychological integrity, and social support (Derogatis, 1986). Turnquist, Harvey, and Andersen (1988) noted that "adjustment is a complex, heterogeneous process of adapting to the demands of illness, and involves several independent domains, including: physical discomfort and activity, vocational rehabilitation, mood, cognitive functioning, and social relationships" (p. 62).

To assess the independent domains of psychosocial adjustment, Derogatis (1986) developed the Psychosocial Adjustment to Illness Scale (PAIS), to be used with the medically ill. The PAIS was designed to measure seven specific domains of adjustment: health care orientation, vocational environment, domestic environment, sexual relationships, extended family relationships, social environment, and psychological distress. The specific domains of psychosocial adjustment establish the concept as a cleaner, clearer, and more concrete measure of illness adaptation than the construct of coping.

Research exploring psychosocial adjustment to illness has generated findings that suggest effective adjustment strategies produce favorable effects on health, longevity, and recovery (Grossarth-Maticke, Kanazir, Vetter, & Schmidt, 1983). Heinrich, Schag, and Ganz (1984) reported that effective adjustment successfully reduced psychological trauma and physical problems for cancer patients. Derogatis, Abeloff, and Melisaratos (1979)
concluded that "cancer patients whose adjustment styles facilitated external, conscious expression of negative emotions and distress appeared to survive longer; individuals whose styles involved suppression or denial of psychological distress had a shorter length of survival" (p. 26).

In a related project, Hislop, Waxler, Coldman, Elwood, and Kan (1987) studied 127 breast cancer patients and found a number of psychological variables related to survival after controlling for clinical variables. Extroversion, low anger and high levels of social contacts at home were all related to a better chance of survival. Gordon and associates (1980) found that psychosocial adjustment was positively correlated with cancer patients' adjustment to living with their disease. In a similar vein, Pettingale, Burgess, and Greer (1988) concluded that mental adjustment was an important factor in aiding patients come to grips with their diagnosis. In a stronger statement, Pettingale, Morris, Greer, and Haybrittle (1985) posited that psychological adjustment was the most significant individual factor in determining either death or recurrence from breast cancer. Patients that have withdrawn from treatment have been identified as having more adjustment problems by both psychosocial adjustment measures and physician reports (Gilbar & Kaplan-DeNour, 1989). Clearly, research suggests that psychosocial adjustment to illness
does reflect how the patient is adapting to the experience of cancer.

Despite the research that identifies strong links between psychosocial adjustment and positive health-related outcomes, it is unclear what affects psychosocial adjustment. Kaplan-DeNour (1982) suggested that additional research should be conducted to answer the questions of what facilitates adjustment and what inhibits effective adjustment. Radley and Green (1987) noted that "even though an illness takes place inside one's body, the problem of adjustment is not reducible to a consideration of individual coping styles; an understanding of the personal world of the individual is necessary to understand adjustment" (p. 181). A critical part of a patient's personal world is the home; thus, patient-family interactions need to be understood to gain a better understanding of the adjustment process.

Communication and Adjustment

Over the last few years, health care professions have recognized that medical treatment does not operate in a vacuum but is influenced by physician-patient rapport, patient cooperation, and patient-family interactions (Siegel, 1988). Specifically, a patient's prognosis can involve a strong desire to understand and deal with new situations created by the uncertainties of the illness.
Patients diagnosed with cancer have demonstrated a great need for social support (i.e., empathic understanding, respect, and constructive discussions) to deal with the fears and anxieties created by the disease (Friedman & DiMatteo, 1982). Social support at the time of diagnosis for cancer (Funch & Marshall, 1983) and during its course (Taylor, Lichtman, & Wood, 1985) has been associated with better levels of adjustment as well as improved prognosis.

A major source of social support and means for adjustment for cancer patients has proven to be the family. The family constitutes the most important social context within which illness occurs and is resolved (Litman, 1974). Family members and spouses have been depicted as important sources of social support for cancer patients (Jobin, 1977; Leiber, Plumb, Gerstenzang, & Holland, 1976). Furthermore, the quality of social support provided by the family has been linked to improved recovery (Cohen & Syme, 1985) and longevity (Porritt, 1979).

The need for communication interactions with family members as an essential means of social support was identified by Wortman (1984). She noted that the uncertainties and fears experienced by a person diagnosed with cancer are likely to result in an enhanced need for social support through interpersonal communication with family, friends, and health care professionals. Cancer patients have expressed appreciation for the opportunity to
clarify their situation through discussion and supportive interactions with significant others (Wortman & Dunkel-Schetter, 1979). Empirically, Weisman and Worden (1975) noted that in general, "longevity-as a statistical entity in cancer deaths-was significantly correlated with patients who could maintain active and mutually responsive relationships" (p. 74). Masters, Cerreto, and Mendlowitz (1983) reported that the outcome of the patient's adjustment behaviors depend not only upon his or her efforts but also upon the interpersonal interactions with family members.

Unfortunately, most of the research to date indicates that cancer patients are dissatisfied with the social support provided through family interactions. Heinrich, Schag, and Ganz (1984) reported that over 86% of the cancer patients they surveyed reported having interpersonal communication problems with their family and spouse. Of these, 26% reported having severe problems communicating with their spouse and over 44% reported having some problem in communicating with their spouse. Regarding interactions with family members, 68% reported having some problems and 17% reporting having severe problems. Of the 20 problems most frequently cited by cancer patients, the most often reported was pain and discomfort associated with the disease and its treatment while the second most noted
problem was the lack of open communication with family members (Parkes, 1974).

Even though researchers have found that cancer patients are dissatisfied with their communication interactions with family members, research to date has failed to identify how patient-family communication affects adjustment to illness or why patients are dissatisfied with the communication with their families. Recognizing these shortcomings, Heinrich and associates concluded that data should be collected to allow for an examination of the factors that inhibit communication with family members about the illness. Wortman (1984) reinforced this call for research by concluding that "it would be highly desirable to assess social support from the spouse and immediate family since there is evidence that the family's reaction to the cancer patient can be a critical factor in adjustment" (p. 2343). This research answers the call made by Heinrich et al. and Wortman by exploring patient-family communication interactions and psychosocial adjustment to illness.

Communication Variables and Hypotheses

As noted previously, communication with family members has been identified as an important aspect of social support and has been speculated to be instrumental in a patient's adjustment to illness. Satisfaction with
communication has been identified in other contexts as an important determinant of coping with stressful situations (Hecht, 1978). Easily, cancer can be classified as placing the patient in a stressful situation. As a result of the psychological distress of cancer, interpersonal interactions with family members are disrupted and traditional family activities are altered (Sullivan & Reardon, 1986). Since cancer creates a stressful situation for the patient as well as the family, then communication satisfaction could be critical to a patient's development of effective adjustment mechanisms. This is especially important in light of research that suggests that the quality of family interactions is important to the resilience of a family facing stress (Pittman & Lloyd, 1988).

Bloom (1982) interviewed breast cancer patients and reported that the quality of their responses to persons, institutions, and one's environment could affect their psychosocial adjustment. Heinrich and associates (1984) concluded that dissatisfaction with the primary support network of the patient may actually inhibit the patient from effectively adjusting to the demands of the illness. As previously noted, ineffective adjustment has been linked to social withdrawal, cancer recurrence, and decreased longevity. While Heinrich et al. (1984), Bloom (1982), and Weisman and Worden (1975) speculated that communication
satisfaction was critical to psychosocial adjustment, they only provided anecdotal evidence to support their assumption. Even though the speculation may be intuitively true, empirical data is needed. Therefore, to test this assumption a hypothesis was posed:

H1: The greater the communication satisfaction reported by a patient, the better a patient's score on the psychosocial adjustment to illness index.

While a global measure of communication satisfaction may suggest a relationship between family communication and psychosocial adjustment, it does not identify what aspects of patient-family communication facilitate or inhibit the adjustment process. As an outcome variable, communication satisfaction fails to provide much insight into the dynamics of patient-family communication. Communication is not a unidimensional construct, the multidimensional aspects of the phenomena must be examined to gain a better understanding the dynamic nature of interactions. Therefore, this research goes beyond a global measure of communication satisfaction and explores relationships among the dimensions of self-disclosure and psychosocial adjustment. The dimensions of self-disclosure were operationalized as frequency, honesty, and encouragement (reciprocity).
The first important dimension of self-disclosure concerns the frequency of communication about the illness. In order for self-disclosure to occur, a patient must be willing to discuss the disease and its treatments with family members. Family interactions have proven to be particularly important to a patient because of the fear and uncertainty that are associated with the disease (Friedman, Baer, Nelson, Lane, Smith, & Dworkin, 1988). Unfortunately, cancer brings a deadly silence to traditional family interactions. Jamison, Wellisch, and Pasnua (1978) found that 89% of mastectomy patients in their study reported having had little or no communication with their spouse or significant other prior to surgery, 87% reported little or no communication while hospitalized, and 50% reported little or no communication about the illness after returning home. Krant and Johnson (1978) found that discussions about the consequences of the illness rarely take place between a patient and family. Gordon, Freidenbergs, Diller, Rothman, Wolf, Ruckdeshel-Hibbard, Ezrachi, and Gerstman (1977) found that the lack of open communication in a family was frequently cited as one of the major problems experienced by cancer patients.

Jones (1979) interviewed cancer patients in a cancer ward and derived a typical scenario for patients and their families.

The family arrives at the hospital and files
into the mother's room; after exchanging the initial salutations, no one speaks. This family, like many other American families, has rarely experienced dying or death before. They simply do not know how to handle the situation and do not know what to say to each other... The family visits for a while, talking about nothing in particular, and then the husband pats his wife on the shoulder and kisses her, and they say goodbye... After the family left, I asked the wife why she looked so depressed. She said, "It's as if I don't know who they are anymore. They act like strangers to me. They do not talk to me anymore." (p. 354)

While the scenario provided by Jones indicates that patients and their families do not communicate about the illness, other researchers have linked communication in stressful situations to the development of effective adjustment strategies (Wortman & Dunkel-Schetter, 1979). Other researchers have theorized that the frequency of disclosure communication by cancer patients and their families is linked to adjustment to illness (Sullivan & Reardon, 1986; Wortman, 1984; Wortman & Dunkel-Schetter, 1979); however, no empirical evidence exists linking the
two factors. To test this relationship a hypothesis was posed:

H2: Patients who frequently discuss their illness with a family member will have better scores on the psychosocial adjustment to illness index than patients who do not frequently communicate about the illness with a family member.

While the frequency of communication could be important to psychosocial adjustment, the nature of the communication could also affect adjustment. The nature of patient-family communication important for this investigation involves the dimensions of honesty and encouragement (reciprocity). Carey (1974) found that quality interpersonal relationships with family members correlated with greater emotional adjustment in a sample of 84 terminal patients. In another study, cancer patients that tended to maintain mutually responsive relationships with significant others lived significantly longer than the norm (Weisman & Worden, 1975). Unfortunately, the majority of cancer patients report that the disease seriously disrupts the quality of family relationships.

Mitchell and Glicksman (1977) reported that 86% of their sample expressed regret that they were not able to "discuss the situation more fully and honestly" with their family. Leiber, Plumb, Gerstenzang, and Holland (1976)
reported that husbands tended to suppress the truth when they felt the information ran counter to the beliefs of their wives. In a study concerning cancer patients and imagined interactions, Gotcher and Edwards (1989) discovered that some cancer patients plan out conversations that would protect family members from the hardship of cancer.

The impression management attempted by cancer patients and their families distorts patient-family interactions and undermines the quality of family relationships. Wortman and Dunkel-Schetter (1979) illustrated how impression management destroys honest communication between a patient and family:

Most cancer patients find themselves in an uncomfortable situation, a 'catch-22': either they can express their feelings and be themselves, thereby, incurring others' avoidance and rejection, or they can enact a charade, pretending that everything is fine, and at least obtain some support from others. Because neither of these alternatives is satisfactory, the patient may vacillate sometimes putting on a good face, and sometimes confronting others with their pain and anxiety. This vacillation, of course, pollutes the social environment and makes it even more difficult for friends and
relatives to know how to respond to the patient. 
(pp. 142-143)

Jones (1979) reported that in most cases a patient and family members attempted to protect each other from the truth by not openly discussing the illness and its consequences. Both patients and families function as if not talking about the illness would cause the effects of the disease to disappear.

Unfortunately, neither theory nor research support the premise that deception is the optimal form of communication for cancer patients. Acte and Vauhkonen (1971) observed that truthfulness in the long run is almost always preferable to deception, no matter how kind are the motives prompting the deception. Researchers have speculated that open and frank discussions with a sympathetic listener may provide cancer patients with the opportunity to articulate fears and feelings, therefore, initiating the first step toward understanding and coping with the illness (Friedman & DiMatteo, 1982). By allowing patients to express concerns, by acknowledging these concerns, and by acting as a sounding board, family members can help the patient to interpret and manage the cancer experience. However, if a patient and family deceive one another, then the patient may be inhibited from effectively adjusting to cancer.
Not only may the lack of honesty hinder effective adjustment, but the patient is well aware of the lack of honesty in the communication environment which creates additional distress for the patient. Peters-Golden (1982) found that "72% of breast cancer patients reported that they were treated differently after people knew they had cancer. Of these, 72% found that the most prevalent difference was that they were misunderstood; 52% found they were avoided or feared; and 14% felt they were pitied" (p. 486). Additionally, Peters-Golden (1982) reported that 66% of disease-free respondents said they would go out of their way to "cheer up" a cancer patient. When asked about their "cheerfulness," respondents indicated that they thought that it was always beneficial for patients to have those around them to be as cheerful as possible.

Artificial cheerfulness from a patient's support network results in unintentional harm to a patient, such as physical avoidance, avoidance of open communication, and strained and negative interactions (Dunkel-Schetter & Wortman, 1982). Individuals that have been able to maintain honest interpersonal relationships with their family despite their illness have been found to cope more effectively with the disease than individuals who are not able to maintain such relationships (Jamison, Wellisch, & Pasnua, 1978). However, when cancer interrupts honesty within family interactions, a patient interprets the lack
of honesty as evidence of rejection at the very time when support from others is important (Wortman, 1984).

To avoid being rejected, Sullivan and Reardon (1986) concluded that some patients may adopt a helplessness/hopelessness style of adjustment to encourage communication with others. While they did not provide empirical data to support their conclusion, the use of a helplessness/hopelessness style of adjustment can be harmful to a patient. Stavraky, Buck, Lott, and Worklin (1968) found that an unfavorable outcome was associated with hopelessness or "giving-up" in patients with a variety of cancer types. The helplessness/hopelessness style has proven not to be conducive to effective adjustment nor longevity (Greer, Morris, & Pettingale, 1979). Burgess, Morris, and Pettingale (1988) found that a helpless/hopeless style was characterized by high anxiety and depression in cancer patients over a 12 month period. Levy et al. (1985) described how ineffective coping characterized by passivity and hopelessness were associated with poorer chances of recovery for women with breast cancer. Other studies have linked helplessness/hopelessness with subsequent mortality from cancer in males (Diclemente, & Temoshok, 1985; Perksy, Kempthorne-Rawson, & Schekelle, 1987). "Recurrence-free survival has been significantly more common among patients who reacted to cancer by "denial" or "fighting spirit" than among patients
who responded with stoic acceptance or feelings of helplessness/hopelessness" (Pettingale, Burgess, & Greer, 1988, p. 255).

Consequently, if the lack of honesty in a communication environment has the potential for forcing the patient to shift to an ineffective adjustment strategy, then it is important to examine the link between honesty in communication and adjustment to illness. Research concerning the terminally ill has indicated that talking frankly about death and dying not only helps patients sort out personal feelings but also assists family members in adjusting to the emotional demands of the situation (Carey, 1974). Similarly, honesty in communication could facilitate adjustment for the cancer patient.

A potential factor affecting whether a patient honestly expresses thoughts about the illness is whether the family encourages or punishes the patient for discussing the illness. Klein (1971) reported that families can affect a patient's adjustment to illness by rewarding only the expression of pleasant feelings and refusing to hear the unpleasant. However, the expression of unpleasant aspects of the illness could be critical to the development of an effective adjustment strategy.

Derogatis, Abeloff, and Melisaratos (1979) reported that cancer patients whose adjustment styles were deemed most effective required the expression of negative emotions
and distress, while individuals whose styles involved suppression or denial of psychological distress had a shorter length of survival. Cox and Mackay (1982) reviewed the area of emotional expression and disease and concluded that the strongest psychosocial factor in preventing effective coping strategies seemed to be the inability of the patient to express strong emotions concerning the disease.

A patient's inability to express strong emotions could be linked to patient-family communication interactions. Jackson (1986) noted that sometimes patients do not adapt to their illness because their families are extremely fixed in their homeostatic patterns and do not permit deviation from established patterns of interaction. Because cancer requires a patient to deal with the fear and uncertainty inherent in the illness, the patient may feel the need to express negative feelings. However, if a patient is in a family that punishes the individual for deviating from accepted patterns, then the patient may be denied the social support necessary to effectively adjust to the illness.

To test the relationship between honesty and psychosocial adjustment and whether the family encourages the patient and psychosocial adjustment, two hypotheses were posited:
H3: Patients that report honest discussions about the illness will score better on the psychosocial adjustment to illness index than patients that report a lack of honesty.

H4: Patients in families that encourage the patient to discuss the illness will score better on the psychosocial adjustment to illness index than patients in families that discourage such communication.

The final communication variable that this research explored was emotional support. Emotional support has been identified by a variety of researchers as an essential factor in psychosocial adjustment. Emotional support assures an individual of being loved and valued as a person. Schaefer, Coyne, and Lazarus (1981) reported that emotional support was important in reducing or averting depression in the general public. Emotional support has been identified as especially important for individuals that are experiencing stressful situations--such as cancer (Siegel, 1988).

In a study involving cancer patients, over 90% of the sample reported that emotional support was one of the most helpful things that they had received (Dunkel-Schetter & Wortman, 1982). Soskolne and Kaplan-DeNour (1989) concluded that when patients have an emotionally
supporting family system their adjustment problems seem to be smaller. Conversely, the lack of emotional support has been identified as the cause of psychological distress and social withdrawal for women with breast cancer (Bloom, 1982; Bloom, Ross, & Burnell, 1978). If emotional support is necessary for psychosocial adjustment, then:

H5: Patients in families that provide emotional support will score better on the psychosocial adjustment to illness index than patients in families that report low levels of emotional support.
CHAPTER THREE

METHODS

In health-related research, an often repeated adage is that when conducting research involving children, pregnant women, and cancer patients, one must be very, very careful. Not only must one be careful with cancer patients, but Van Dam and Aaronson (1987) noted that researchers conducting cancer-related investigations should be cognizant of the clinical setting, patient discomfort, patient fatigue, and intrusion with treatment processes. Even though many patients may welcome the opportunity to contribute to the body of knowledge concerning cancer, serious considerations must be given to the burden placed on patients who are seriously ill and undergoing therapy. Similarly, consideration must be given to the demands placed on the medical staff administering the therapy (Aaronson & Beckmann, 1987). Van Dam and Aaronson (1987) suggested "that every effort should be made to design studies that minimize the burdens on the patient and staff through careful selection of methods and procedures" (p. 112). With these concerns in mind, the present study employed procedures which minimized intrusion into the operations of the cancer facility, and limited the amount of time and effort required from the participants. This chapter
identifies the methods and procedures used in the investigation.

Subjects

Cancer patients undergoing radiation therapy at the Mary Bird Perkins Cancer Centers in Baton Rouge and Hammond, Louisiana, participated in the study. One hundred and five (105) patients were involved in the investigation (49 female and 56 male subjects). Of the 105, 102 were used for data analysis. Three subjects were excluded due to their failure to complete the entire interview. One patient chose to terminate the interview before it was completed and two patients were experiencing pain and discomfort so the interviewer stopped the interview. Seventy-two percent of the female subjects were being treated for breast cancer and the 81% of the male subjects were being treated for prostate cancer. Ages for the participants ranged from 25 to 90 (Mean=62, Median=66, SD=14.7). The majority of the subjects were married (74% married, 6% single, 9% divorced, 12% widowed); the average length of marriage was 34 years (Median=37, SD=15.7).

Care was taken to ensure that information was solicited from patients that were cognitively functional and ambulatory. The researcher wanted participants that were alert and active. The researcher also wanted patients to feel they had the freedom and the ability to leave the
interview setting if they deemed it necessary. Initial contact with each subject was through a letter from Dr. Johnson, Medical Director of the Perkins Cancer Centers. The letter explained the research and asked patients to volunteer to participate if they were interested in the investigation (see Appendix B). After the initial letter, patients that expressed an interest were asked to sign up for an interview time. A few participants were contacted directly by the researcher or the head technologist concerning whether they were interested in participating.

To be contacted to participate in the study, patients were required to meet four criteria: 1) Karnofsky status of 5-11; 2) no major cognitive deficits; 3) no alcohol or drug abuse problems; and 4) no difficulty in communicating orally. These criteria were decided upon by the researcher in consultation with Dr. Johnson. The criteria represent accepted research screening methods for health-related research (Jones, Fayers, & Simons, 1987; Van Dam & Aaronson, 1987).

The Karnofsky status scale is a functional performance scale that rates a patient's ability to carry on normal activities. The Karnofsky scale is the best known scale used by physicians to assess a patient's overall ability to perform physical activities (Van Dam & Aaronson, 1987). It employs an 11-point scale within three broad categories—ability to carry on normal activities, vocational
abilities, and care for self (Jones, Fayers, & Simons, 1987). The absence of cognitive deficiencies and drug abuse problems better insured the validity and reliability of the data collected. The Karnofsky score, cognitive deficiencies, and drug abuse problems were determined by the oncologists and the technologists at the Perkins Cancer Centers. The oncologists and the technologists had the experience, knowledge, and the medical information necessary to make such decisions.

Procedures

Patients that volunteered to participate were asked to complete a 30 minute interview. During the interview the researcher elicited answers to the patient-family communication instrument, designed by the researcher, as well as the Psychosocial Adjustment to Illness scale (PAIS). The interview followed a structured format with the patient-family communication instrument completed first, followed by the PAIS.

Once patients volunteered to participate, the researcher contacted them in the lobby area, either immediately after they had received radiation therapy or while waiting to be treated. The researcher checked with the technologists to ensure no disruption in treatment schedules.
The researcher met patients in the lobby area and escorted them to an interview room. The interview room was Dr. Johnson's office. On the way to the office, the subject was informed that the researcher had been treated for cancer, and that Dr. Johnson had been the researcher's oncologist. The researcher informed the patient of his treatment for testicular cancer with surgery at the Our Lady of the Lake Medical Center and thirty (30) radiation sessions at the Perkins Cancer Center, in the summer of 1988. The reason for informing the patient of the researcher's cancer was to provide common ground between the subject and the researcher. Once in Dr. Johnson's office, the researcher sat at Dr. Johnson's desk with the patient across the desk. The informed consent was read and signed, and the interview began.

To facilitate consistency and ease of completion, the researcher had participants respond to each communication question using a placard (see Appendix C) representing the five point Likert-type scale used to score the communication questionnaire. The placard allowed the subjects to respond to each question in one of three ways: 1) with a number 1-5; 2) with a strong NO, a no, a ? (Neutral), a yes, or a strong YES; or 3) with strong disagreement, disagreement, neither agreement nor disagreement, agreement, or strong agreement. The placard provided the participants with a visual representation of
their answers. The placard enabled subjects to better distinguish between a strong NO and a no as well as between a yes and a strong YES.

During the interview, the respondents were asked to identify whom they talked the most with concerning the illness and its treatments, 81% of the respondents indicated family members, 15% close friends, 3% the clergy, and 1% God. To focus the interview on family interactions, respondents were asked to answer each question based on the previous 30 days and in regard to the family member they talked the most with concerning the illness. Respondents were free to choose the particular family member. In previous investigations concerning social support, research has not discriminated between particular family members and the value of the social support provided (Kubler-Ross, 1969; Bloom, 1979; DiMatteo & Hays, 1981; Jones & Reznikoff, 1989). The focus on a particular family member enabled a subject to concentrate on the interactions with a certain relational partner. Without focusing on a particular family member, patients may have tended to average across all family members. Sixty-five percent of the respondents answered the communication questions in relation to their spouse, 23% with their children, 6% with siblings, 2% with parents, and 4% responded with family in general or with close friends.
The day after the interview, a family member that escorted the patient to the radiation treatment center was contacted by the researcher concerning their interest in participating in the investigation. An interview with a relational partner would provide a triangulation of the responses elicited from the patient. Triangulation would minimize the problems associated with self-report data. It was hoped that an interview with a family member would provide additional information concerning how the family as well as the patient was adjusting to the experience of cancer. However, after thirty spouses were contacted and all refused to participate this part of the project was deemed unfeasible.

Measures

Psychosocial Adjustment to Illness Scale (PAIS)

Clinical psychiatrists have suggested that the best way to assess adjustment to illness is through an interview conducted by a trained psychiatrist (Weissman, Sholomskas, & John, 1981). However, even a psychological interview does not always produce a clear picture of adjustment (Gilbar & Kaplan-DeNour, 1989). Since the psychiatric interview is not always possible or appropriate, the PAIS (see Appendix D) was created to provide health care professionals with a readily available means for identifying adjustment problems in medical patients.
The PAIS has demonstrated high correlations with psychiatric evaluations of patients (Dean & Surtees, 1989) and with physicians' assessments of patients' psychological adjustment (Soskolene & Kaplan-DeNour, 1989).

In a review of social adjustment scales (Weissman, Sholomskas, & John, 1981), the PAIS was rated as one of the most reliable and valid self-report instruments available for tapping psychological and social adjustment to illness. Kaplan-DeNour (1982) commented that the PAIS has proven to be an adequate scale for measuring adjustment/maladjustment for medical patients. Kaplan-DeNour further argued that the scale should be used to fill in the gaps concerning factors that facilitate psychosocial adjustment to illness.

Derogatis (1977) concluded that the PAIS is appropriate for the assessment of any medical condition which has an identifiable psychosocial component and which is of sufficient severity to impact measurably on the psychological and interpersonal relations of the patient. Cancer patients meet both criteria. Derogatis (1977) also reported that in order for the PAIS to be used effectively the patient should be alert, interested in participating in the assessment, and functionally unimpaired intellectually. As noted earlier, the patients interviewed met these qualifications.
The PAIS is a multi-dimensional instrument designed to quantify and assess the psychological and social adjustment to an illness (Soskolne & Kaplan-DeNour, 1989). Forty-six items comprise the PAIS, which requires 15-20 minutes to complete. The PAIS assesses and quantifies adjustment to illness in terms of 7 principal domains: Health Care Orientation; Vocational Environment; Domestic Environment; Sexual Relationships; Extended Family Relationships; Social Environment; and Psychological Distress. Each domain represents constructs which have been identified as having high predictive relevance for adjustment to illness. Each domain is operationally defined by a series of questions or items which are homogeneous in the measurement of that domain construct. However, although all domain measures correlate well with the total adjustment score, the instrument has been designed to minimize intercorrelations among domains (Derogatis & Lopez, 1983). The total adjustment score is obtained by summing the PAIS scores on all the dimensions, providing a Global Adjustment index. (Derogatis, 1986).

The next few paragraphs provide a description of the seven domains, including reliabilities obtained in this investigation.

**Health Care Orientation.** The domain of health care orientation addresses the nature of the respondent's health care attitude, and whether it functions to promote a
positive or negative adjustment to the illness and its treatment. This domain was tapped by 8 items (alpha = .90) which assessed patient attitudes concerning the medical profession, quality of information concerning the disease and its treatment, and the patient's expectations about recovery.

**Vocational Environment.** The domain of vocational environment was designed to reflect the impact that a medical disorder may have on vocational adjustment. Vocation is flexibly defined to indicate work, school, or home, whichever is most appropriate. The 6 items (alpha = .88) represent perceived quality of job performance, job satisfaction, lost time, vocational goals, and job conflicts. When a respondent indicates he/she is retired, the items are re-worded to assess ability to perform daily tasks around the home (Derogatis & Lopez, 1983).

**Domestic Environment.** The domestic environment concerns illness-induced difficulties that arise primarily in the home or family environment. It assesses the problems experienced by the patient and the family in adapting to the illness. The 8 items (alpha = .88) measure a variety of family living circumstances including financial impact, quality of family relationships, and family adjustment to new responsibilities.
Sexual Relationships. The domain of sexual relationships measures changes in the quality of sexual functioning associated with the patient's illness. The 6 items (alpha = .87) are presented in a progressive sequence, beginning with a focus on quality of interpersonal relationships and moving toward specific issues of sexual functioning. The items tap sexual interest, frequency, performance, and satisfaction.

Extended Family. The extended family section measures the disruption in traditional extended family relations as a function of the illness. Extended family interactions include communication with family members (brothers, sisters, aunts, cousins, etc.) other than the immediate family (parents, children, spouse). The 5 item domain assesses a variety of factors including interest in interacting with extended family members, physical dependency on extended family, social dependency on extended family, and the quality of extended family relations (alpha = .79).

Social Environment. The domain of social environment assesses the status of the patient's current social and leisure time activities, and the degree to which the patient suffers impairment or lack of interest in participating in these activities. The 5 items (alpha = .82) are divided into three categories
"individual", "family", and "social" with questions tapping both interest and actual behavior.

**Psychological Distress.** The psychological distress section taps dysfunctional thoughts and feelings that accompany illness. The 7 items (alpha = .84) assess major indicators of psychological distress such as anxiety, depression, hostility, guilt, body image, and self-esteem.

In this investigation as well as other investigations, the PAIS (overall alpha=.87) has demonstrated high reliability in studies involving chronic illness (renal dialysis patients, lung cancer patients, and cardiac care patients). Alphas for past studies have ranged from a low of .17 (for extended family) to a high of .93 (for sexual relationships) for the seven principal domains (Kaplan-DeNour, 1982). Partial construct and criterion validity has been established in over 30 studies involving chronically ill patients. Correlations between PAIS domain scores range from moderate to low (e.g., r=.05 to .43), a pattern which indicates the construct validity of the PAIS domains (Derogatis, 1986).

**Scoring of the PAIS**

PAIS questions are designed to assess the quality of adjustment in the seven domain areas. Each item is scored on a 4-point (0-3) scale of adjustment. Higher scores
indicate poorer levels of adjustment while lower scores indicate more effective adjustment.

The PAIS questionnaire can be used as a semi-structured interview instrument with specific responses that represent the 4 point scale (see Appendix D for the PAIS with responses and corresponding scores). The questionnaire was constructed to allow researchers or clinicians to ask specific questions and for respondents to answer in their own words. The semi-structured nature of the questionnaire enabled follow-up probes to elicit more complete responses.

Since the researcher lacked the formal training of a psychiatrist in regard to psychiatric evaluations, the researcher was trained to use the PAIS by a board certified social worker. Prior to data collection, a practice interview was conducted. Both the researcher and social worker were present during the interview and each scored the PAIS instrument. Ninety-two ratings were made; 82% of the rating were in complete agreement; 15% of the ratings differed by only one category; and 3% of the ratings differed by two categories (Kappa coefficient = .81). The high level of agreement indicated that the researcher could reliably and validly utilize the PAIS. Additionally, the researcher used follow-up questions to clarify the respondent's answers to ensure an appropriate match with the answers provided with the PAIS questions.
Once the interview was completed, the researcher totalled the ratings given to each question in each domain to obtain a score for that domain. The seven domain scores were summed to obtain the Global Adjustment score. The Global Adjustment score was used as the aggregate value of the dependent variable and analyzed in relation to the independent variables. The use of Global Adjustment scores has proven to be very effective in evaluating psychosocial adjustment analyses using inferential statistics (Derogatis & Lopez, 1983).

Patient-Family Communication Variables

To tap patient-family communication interactions, a communication instrument was created by the researcher which incorporated frequency, honesty, encouragement, emotional support, and communication satisfaction. The communication instrument constructed for the investigation is contained in Appendices E and F. Appendix E identifies the items according to the communication constructs. Appendix F is the form of the instrument used in the investigation.

Frequency of Communication. The frequency of patient-family communication addresses how often the patient and family discussed the illness. The 5 questions (alpha = .90) are worded both positively and negatively concerning
both patient initiated and family initiated communication about the disease.

**Honesty.** The domain of honesty within the communication environment measures whether the patient perceived honesty in the communications from the particular family member and whether the patient communicated honestly with that family member. Honesty is tapped by 6 positively and negatively worded items (alpha = .70).

**Encouragement.** The domain of encouragement assesses whether or not a patient and family encouraged interactions concerning the disease. Respondents are asked whether they stimulated the discussion, the family member stimulated the discussion, if questions concerning the disease were asked, and whether the topic of cancer made the family member feel uncomfortable. Six items tap this domain (alpha = .82).

**Emotional Support.** Emotional support reports the degree to which the patient perceived love and closeness from the family member following the diagnosis of cancer and during the treatment for the disease. The 6 items in this domain measure closeness, love, physical avoidance, sensitivity, and moral support (alpha = .77).

**Communication Satisfaction.** Communication satisfaction is an adaptation of Hecht's interpersonal communication satisfaction questionnaire (1978). In studies that have adapted Hecht's scale, high reliabilities have been reported (Spitzberg & Hecht, 1984; Downs,
Clampitt, & Pfeiffer, 1988; Stephen & Harrison, 1986). The revised scale contains 5 items (alpha = .77) which tapped interest in communication, satisfaction with communication, and freedom to discuss all topics.

Additional Questions. Due to a pilot study, additional questions were included to allow for the collection of qualitative data to add richness to the quantitative findings. Respondents were asked to indicate the topics they discussed with their family, the topics they would like to discuss with their family, how the illness changed the interactions within the family, and how communication within the family could be improved.

Scoring of the Communication Scale

Patient-family communication variables were designed to provide a score for each of the constructs (frequency, honesty, encouragement, emotional support, and communication satisfaction. Each item was scored on a five point Likert-type scale. Higher scores indicated effective communication while lower scores indicated poor communication between patient and relational partner.

Pilot Study

A pilot study sought to ascertain the application of the communication instrument and the PAIS to the interview setting. Ten subjects comprised the pilot study (3 females
and 7 males). The results of the pilot study revealed two important issues. First, few patients discussed the negative aspects of the illness with their family. The pilot participants indicated that their families were very optimistic about the possibility of recovery and that they (the patients) avoided discussing the negative aspects to avoid discouraging their families. This result led the researcher to add items to the survey instrument that tapped frequency, honesty, encouragement, and emotional support of the interactions concerning the negative aspects of disease.

Second, the pilot results indicated that an item needed to be added to allow participants to indicate the topics they discussed and those avoided. A question was added at the beginning of the interview to ascertain what aspects of the disease the patient and families talk about (both positive and negative topics were included). Also, a question was added at the end of the questionnaire concerning what topics patients would like to discuss more fully with their families.

Reliabilities for the four communication domains were moderate to low for the pilot study (.73 for frequency, .85 for encouraging communication, .52 for honesty, .15 for emotional support, and .63 for communication satisfaction). Consequently, the questionnaire was revised, leading to the improved reliability estimates described above.
Preliminary data analyses suggested that the communication variables were correlated with the global adjustment to illness score in the hypothesized direction.

The pilot study proved valuable in three ways. First, the researcher was able to refine the questionnaire to tap patient-family communication. Second, the preliminary investigation identified the need to include qualitative questions to enrich the quantitative data. Third, the study provided a preliminary indication that patient-family communication was linked to psychosocial adjustment to illness.

Data Analysis

Data analysis was conducted in two phases. First, the Psychosocial Adjustment to Illness Scale (PAIS) was analyzed by a factor analysis to verify the domains of adjustment. The domains of the factor structure were compared to the factors identified by other researchers (Derogatis, 1986; Derogatis & Lopez, 1983). The constructs identified in the factor analysis were used as dependent variables in the multiple regression procedures.

Second, the hypotheses were tested using Pearson r's, multiple regression procedures, and a canonical correlation. Pearson r's were used to identify the relationships among the communication variables and global adjustment. Global adjustment was the primary dependent
variable tested because of the exploratory nature of the present investigation.

To further probe the relationships and provide insight into the role of communication and the specific domains of psychosocial adjustment, multiple regression procedures were utilized. In the analyses, each of the independent variables (frequency, encouragement, honesty, emotional support, and communication satisfaction) were examined to determine their relationship to global adjustment as well as to the specific domains of adjustment (health care orientation, vocational environment, domestic environment, sexual relations, extended family, social environment, and psychological distress).

To provide additional information concerning the dependent and independent variables, a canonical correlation was used because of its ability to "parsimoniously describe the number and nature of mutually independent relationships existing between the two variable sets" (Stevens, 1986, p. 373). A canonical correlation identifies the multiple relationships between the dependent and independent variables and describes both the nature and strength of the relationships (Tucker, Weaver, & Berryman-Fink, 1981). The canonical correlation was employed to assess to what extent the set of dependent variables could be predicted from the set of independent variables (Hair, Anderson, Tatham, & Grabałowsky, 1979; Thompson, 1984).
CHAPTER FOUR

RESULTS

The results of the statistical procedures will be presented in the following manner. First, the factor analysis for the PAIS will be provided. Second, the results of Pearson product-moment correlations, multiple regression procedures, and the canonical correlation will be identified. Third, the results of the hypotheses will be summarized. All analyses were performed utilizing an IBM 3090 mainframe and selected software from SPSS-X ("SPSS-X User's Guide," 1988).

Factor Analysis of the PAIS

The Psychosocial Adjustment to Illness Scale (PAIS) was constructed to provide researchers and clinicians with a global adjustment score along with seven dimensions of adjustment in terms of health care orientation, vocational environment, domestic environment, sexual relations, extended family relations, social environment, and psychological distress (Derogatis, 1986). To verify the domains obtained in this investigation, the PAIS was factor analyzed. Using a principal components factor analysis with varimax rotation, minimum loadings of .5, and a minimum eigenvalue of 1.0, an eight factor solution was extracted which explained 65% of the variance.
The factor analysis replicates factor structures reported in previous studies (Derogatis, 1986; Derogatis & Lopez, 1983). The factor structure and the items that represent the eight dimensions are in Table 1. The first factor represents the domestic environment dimension with six of the eight original domestic environment items loading on the factor (alpha for the six items=.88). The second dimension was the health care orientation domain with all eight original items from the health care orientation section loading on the factor (alpha=.90). The third dimension identified was vocational environment with all six items from the vocational environment section loading on the dimension (alpha=.88). The fourth factor identified was psychological distress with all seven of the seven original items loading on the factor (alpha=.84). The fifth factor was sexual relations with all six of the sexual relation items loading on the factor (alpha=.87). The sixth factor was extended family relations with all five of the extended family items loading on the factor (alpha=.79). The only deviation in the factor structure in this investigation and those previously reported was in the domain of social environment. In this investigation, social environment loaded on two factors. Factor seven was labelled interest in social activities (alpha=.76) and factor eight was identified as participation in social activities (alpha=.83). Past factor analyses have reported
interest and activity as one factor. Therefore, due to the small sample size and the theoretical links between interest and activity, social environment with both domains (alpha=.82) were considered as one construct for subsequent data analyses.

The results of the factor analysis substantially confirm the original dimensions of the PAIS as identified by Derogatis and Lopez (1983). These results indicate that the PAIS can tap critical domains of adjustment and has the sensitivity to distinguish between the domains. The high reliabilities of the dimensions indicate their utility as subscales in measuring the facets of psychosocial adjustment.

Correlation and Regression Results

With the domains of adjustment confirmed through the factor analysis, the hypotheses were first analyzed using Pearson r's. As hypothesized, the communication variables were significantly and negatively correlated with overall adjustment (global adjustment score of the PAIS). A low score on the PAIS reflects effective adjustment. In relation to global adjustment, the correlations indicated that patient-family communication was significantly correlated with the patient's adjustment to cancer. Specifically, global adjustment was significantly related to frequency of communication (r=-.43, p<.001),
### Table 1

**Factor Structure for the Psychosocial Adjustment to Illness Scale (PAIS)**

<table>
<thead>
<tr>
<th>Factors and Items</th>
<th>I</th>
<th>II</th>
<th>III</th>
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<th>V</th>
<th>VI</th>
<th>VII</th>
<th>VIII</th>
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<tbody>
<tr>
<td><strong>1. DOMESTIC ENVIRONMENT</strong></td>
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<tr>
<td>How would you characterize your relationship with the other people you live with?</td>
<td>.85</td>
<td>.22</td>
<td>.07</td>
<td>.16</td>
<td>.06</td>
<td>.13</td>
<td>.18</td>
<td>-.03</td>
</tr>
<tr>
<td>How would you characterize your relationship with your spouse (boyfriend, parent, etc.)?</td>
<td>.82</td>
<td>.27</td>
<td>-.02</td>
<td>.12</td>
<td>.07</td>
<td>.15</td>
<td>.12</td>
<td>-.03</td>
</tr>
<tr>
<td>Has your illness resulted in any decrease in communication between yourself and members of your family?</td>
<td>.80</td>
<td>.29</td>
<td>.12</td>
<td>.12</td>
<td>.05</td>
<td>.13</td>
<td>.22</td>
<td>.04</td>
</tr>
<tr>
<td>In those areas where you have found your abilities impaired, has your family shifted roles to take over those duties?</td>
<td>.78</td>
<td>.25</td>
<td>.07</td>
<td>.12</td>
<td>-.05</td>
<td>.10</td>
<td>.04</td>
<td>-.11</td>
</tr>
<tr>
<td>Have you experienced any physical disability associated with your illness?</td>
<td>.69</td>
<td>.16</td>
<td>-.02</td>
<td>-.07</td>
<td>-.07</td>
<td>.10</td>
<td>-.10</td>
<td>.23</td>
</tr>
<tr>
<td>An illness such as yours often creates a drain on a family's financial resources; are you having any difficulty meeting the financial demands of your illness?</td>
<td>.61</td>
<td>.01</td>
<td>.29</td>
<td>.23</td>
<td>.14</td>
<td>.00</td>
<td>.14</td>
<td>-.22</td>
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</table>
### Table 1 continued:

**Factor Structure for the Psychosocial Adjustment to Illness Scale (PAIS)**

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<th>VII</th>
<th>VIII</th>
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</thead>
<tbody>
<tr>
<td><strong>II. HEALTH CARE ORIENTATION</strong></td>
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<td></td>
</tr>
<tr>
<td>Generally speaking, how do you feel about the quality of medical care available and the doctors that provide it?</td>
<td>0.08</td>
<td>0.74</td>
<td>0.04</td>
<td>0.07</td>
<td>0.16</td>
<td>0.10</td>
<td>0.05</td>
<td>-0.08</td>
</tr>
<tr>
<td>Could you describe for me your general attitude and approach to taking care of your health?</td>
<td>0.13</td>
<td>0.73</td>
<td>0.21</td>
<td>0.14</td>
<td>0.07</td>
<td>-0.04</td>
<td>-0.05</td>
<td>-0.06</td>
</tr>
<tr>
<td>Being ill can be a confusing experience, and some patients feel that they do not receive enough information and details from their doctors and the medical staff about their illness. How do you feel?</td>
<td>0.25</td>
<td>0.69</td>
<td>0.18</td>
<td>0.15</td>
<td>0.14</td>
<td>0.00</td>
<td>0.07</td>
<td>0.02</td>
</tr>
<tr>
<td>Your present condition probably requires some special attention and care on your part; could you tell how you attend to the needs?</td>
<td>0.37</td>
<td>0.66</td>
<td>0.08</td>
<td>0.20</td>
<td>0.15</td>
<td>0.01</td>
<td>0.09</td>
<td>-0.04</td>
</tr>
<tr>
<td>When they are ill, different people expect different things about their illness, and have different attitudes about being ill. Could you please describe your feelings about your recovery?</td>
<td>0.21</td>
<td>0.63</td>
<td>0.15</td>
<td>0.16</td>
<td>0.13</td>
<td>0.00</td>
<td>0.17</td>
<td>-0.03</td>
</tr>
</tbody>
</table>
Table 1 continued:

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<th>VII</th>
<th>VIII</th>
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<tbody>
<tr>
<td>In an illness such as yours, patients are given</td>
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<tr>
<td>different amounts of information about their treatment. I wonder if you would mind telling</td>
<td>.19</td>
<td>.63</td>
<td>.32</td>
<td>.05</td>
<td>.23</td>
<td>-.01</td>
<td>.20</td>
<td>-.01</td>
</tr>
<tr>
<td>me how much information you have been given?</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>In an illness such as yours, people have</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>different ideas about their treatment and what to expect from it. How do you feel?</td>
<td>.39</td>
<td>.62</td>
<td>.21</td>
<td>.12</td>
<td>.27</td>
<td>.01</td>
<td>.12</td>
<td>.08</td>
</tr>
<tr>
<td>How do you feel about the treatment you have been receiving for your present illness, and</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>the doctors who are treating you?</td>
<td>.34</td>
<td>.58</td>
<td>.09</td>
<td>.30</td>
<td>.17</td>
<td>.19</td>
<td>.12</td>
<td>.06</td>
</tr>
</tbody>
</table>

III. VOCATIONAL ENVIRONMENT

Has your illness in any way impaired your ability to do your job?                   | .01 | .04 | .85 | .12 | .09 | .00 | .13 | .02   |
| How well do you physically perform your job?                                      | .03 | .14 | .84 | .00 | .00 | .00 | .04 | .08   |
| Have you noticed any increase in arguments, friction, or difficulty in getting along with your coworkers since your illness? | .10 | .24 | .70 | .21 | .14 | .16 | .25 | .03   |
| Have you had to change your goals concerning your job as a result of your illness?| .16 | .20 | .69 | .21 | .07 | -.02| .11 | .16   |
Table 1 continued:

Factor Structure for the Psychosocial Adjustment to Illness Scale (PAIS)

<table>
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<th>VI</th>
<th>VII</th>
<th>VIII</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is your job as important to you now as it was before the illness?</td>
<td>.11</td>
<td>.25</td>
<td>.69</td>
<td>.18</td>
<td>.11</td>
<td>.16</td>
<td>.05</td>
<td>.19</td>
</tr>
<tr>
<td>During the past 30 days, have you lost any time at work due to the illness?</td>
<td>.02</td>
<td>.16</td>
<td>.64</td>
<td>.21</td>
<td>.03</td>
<td>.00</td>
<td>.07</td>
<td>.06</td>
</tr>
<tr>
<td>VI. PSYCHOLOGICAL DISTRESS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the patient manifest signs or complain of symptoms of guilt, blame, or remorse? (Have you been feeling guilty or like you have let people down lately?)</td>
<td>.06</td>
<td>.02</td>
<td>.06</td>
<td>.73</td>
<td>.10</td>
<td>.04</td>
<td>-.12</td>
<td>.15</td>
</tr>
<tr>
<td>Does the patient admit to or complain of worrying about his/her condition or other matters? (Have you been worrying about things more since you became ill?)</td>
<td>-.09</td>
<td>.16</td>
<td>.08</td>
<td>.72</td>
<td>.03</td>
<td>-.04</td>
<td>.07</td>
<td>-.03</td>
</tr>
<tr>
<td>Does the patient behave or speak in a manner that indicates his/her self-esteem and self-evaluation has fallen? (Have you been feeling down on yourself or feeling inadequate)?</td>
<td>.17</td>
<td>.06</td>
<td>.07</td>
<td>.71</td>
<td>.01</td>
<td>-.07</td>
<td>.14</td>
<td>.06</td>
</tr>
</tbody>
</table>
Table 1 continued:

Factor Structure for the Psychosocial Adjustment to Illness Scale (PAIS)

<table>
<thead>
<tr>
<th>Factors and Items</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
<th>VI</th>
<th>VII</th>
<th>VIII</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the patient manifest signs or complain of symptoms of fear, nervousness, or anxiety?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Have you been feeling anxious or nervous?)</td>
<td>.02</td>
<td>.11</td>
<td>.27</td>
<td>.70</td>
<td>-.14</td>
<td>.10</td>
<td>-.05</td>
<td></td>
</tr>
<tr>
<td>Does the patient manifest signs or complain of symptoms of sadness, dysphoria, or loss of life interest? (Have you been feeling sad or depressed at all recently)?</td>
<td>.07</td>
<td>.20</td>
<td>-.02</td>
<td>.70</td>
<td>.13</td>
<td>.01</td>
<td>.07</td>
<td>.17</td>
</tr>
<tr>
<td>Has the patient experienced a negative body image change as a result of his/her illness? (Do you think your illness has changed your physical appearance in any way?)</td>
<td>.21</td>
<td>.18</td>
<td>.25</td>
<td>.57</td>
<td>.09</td>
<td>.15</td>
<td>.10</td>
<td>.07</td>
</tr>
<tr>
<td>Does the patient manifest signs or complain of symptoms of anger, hostility, or irritability? (Have you been more irritable or angry?)</td>
<td>.27</td>
<td>.20</td>
<td>.22</td>
<td>.55</td>
<td>.00</td>
<td>.07</td>
<td>.10</td>
<td>.05</td>
</tr>
<tr>
<td>V. SEXUAL RELATIONS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When some people become ill they report a loss of interest in sexual activities; have you experienced a reduction of sexual interest associated with your illness?</td>
<td>.00</td>
<td>.18</td>
<td>.08</td>
<td>.05</td>
<td>.82</td>
<td>-.03</td>
<td>.10</td>
<td>-.02</td>
</tr>
</tbody>
</table>
Table 1 continued:

Factor Structure for the Psychosocial Adjustment to Illness Scale (PAIS)

<table>
<thead>
<tr>
<th>Factors and Items</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
<th>VI</th>
<th>VII</th>
<th>VIII</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has there been a reduction in the frequency of your sexual activities during the past month?</td>
<td>.14</td>
<td>.05</td>
<td>.02</td>
<td>.07</td>
<td>.80</td>
<td>.10</td>
<td>-.09</td>
<td>.08</td>
</tr>
<tr>
<td>Sometimes, having an illness can create problems in a close interpersonal relationship; has your illness led to any problems in your relationship with your ____ (husband, wife, boyfriend, fiance, etc.)?</td>
<td>.09</td>
<td>.15</td>
<td>.19</td>
<td>.07</td>
<td>.78</td>
<td>.03</td>
<td>.18</td>
<td>-.07</td>
</tr>
<tr>
<td>Has there been any change in the pleasure or satisfaction you derive from sexual activities?</td>
<td>.01</td>
<td>.19</td>
<td>.04</td>
<td>.07</td>
<td>.76</td>
<td>-.09</td>
<td>.05</td>
<td>.06</td>
</tr>
<tr>
<td>Sometimes an illness will cause an interference in a person's ability to perform sexual activities even they are still interested in sex. Has this happened to you, and if so, to what degree?</td>
<td>.13</td>
<td>.18</td>
<td>.09</td>
<td>.11</td>
<td>.65</td>
<td>-.08</td>
<td>.24</td>
<td>-.05</td>
</tr>
<tr>
<td>Have any conflicts or arguments developed between you and your partner as a result of any sexual difficulties you have been having?</td>
<td>.20</td>
<td>.20</td>
<td>-.04</td>
<td>.18</td>
<td>.58</td>
<td>.04</td>
<td>.19</td>
<td>.04</td>
</tr>
</tbody>
</table>
Table 1 continued:

<table>
<thead>
<tr>
<th>Factors and Items</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
<th>VI</th>
<th>VII</th>
<th>VIII</th>
</tr>
</thead>
<tbody>
<tr>
<td>VI. EXTENDED FAMILY RELATIONS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you had as much communication with members of your family outside your immediate household since your illness?</td>
<td>.21</td>
<td>.00</td>
<td>.06</td>
<td>.18</td>
<td>-.05</td>
<td>.84</td>
<td>.16</td>
<td>.03</td>
</tr>
<tr>
<td>Have you remained as interested in interactions or activities with these members of your family as you were prior to your illness?</td>
<td>.07</td>
<td>.01</td>
<td>-.03</td>
<td>-.03</td>
<td>-.16</td>
<td>.81</td>
<td>.05</td>
<td>.01</td>
</tr>
<tr>
<td>In general, how well have you been getting along with these members of your family recently?</td>
<td>.26</td>
<td>.11</td>
<td>.02</td>
<td>-.06</td>
<td>.11</td>
<td>.70</td>
<td>.13</td>
<td>.13</td>
</tr>
<tr>
<td>Do you socialize much with these members of your family? Has your illness reduced your ability to do so?</td>
<td>-.03</td>
<td>.03</td>
<td>.10</td>
<td>-.07</td>
<td>.04</td>
<td>.61</td>
<td>.13</td>
<td>-.14</td>
</tr>
<tr>
<td>Do you depend on these members of your family for support and physical help, particularly since your illness?</td>
<td>.13</td>
<td>.02</td>
<td>.06</td>
<td>-.11</td>
<td>-.13</td>
<td>.60</td>
<td>-.13</td>
<td>.15</td>
</tr>
</tbody>
</table>
Table 1 continued:
Factor Structure for the Psychosocial Adjustment to Illness Scale (PAIS)

<table>
<thead>
<tr>
<th>Factors and Items</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
<th>VI</th>
<th>VII</th>
<th>VIII</th>
</tr>
</thead>
<tbody>
<tr>
<td>VII. SOCIAL ENVIRONMENT INTEREST</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are you still as interested in your leisure time activities and hobbies as you were prior to your illness?</td>
<td>.12</td>
<td>.17</td>
<td>.15</td>
<td>.08</td>
<td>.10</td>
<td>.07</td>
<td>.86</td>
<td>.24</td>
</tr>
<tr>
<td>Have you maintained your interest in social activities since your illness (e.g., social clubs, church groups, going to the movies.)?</td>
<td>.12</td>
<td>.14</td>
<td>.15</td>
<td>.15</td>
<td>.20</td>
<td>.08</td>
<td>.85</td>
<td>.18</td>
</tr>
<tr>
<td>Are you as interested in leisure time activities with your family (i.e., playing cards &amp; games, taking trips, going swimming, etc.) as you were prior to your illness?</td>
<td>.17</td>
<td>.12</td>
<td>.21</td>
<td>.11</td>
<td>.14</td>
<td>.15</td>
<td>.81</td>
<td>.14</td>
</tr>
<tr>
<td>VIII. SOCIAL ENVIRONMENT PARTICIPATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How about actual participation? Are you still actively involved in doing those activities?</td>
<td>-.08</td>
<td>.02</td>
<td>.14</td>
<td>.08</td>
<td>.08</td>
<td>.08</td>
<td>.29</td>
<td>.77</td>
</tr>
<tr>
<td>Do you still participate in those activities to the same degree you once did?</td>
<td>.04</td>
<td>.06</td>
<td>.26</td>
<td>-.05</td>
<td>.02</td>
<td>.10</td>
<td>.13</td>
<td>.74</td>
</tr>
<tr>
<td>How about participation? Do you still go out with your friends and do those things?</td>
<td>-.01</td>
<td>-.12</td>
<td>.02</td>
<td>.18</td>
<td>-.05</td>
<td>-.07</td>
<td>.18</td>
<td>.59</td>
</tr>
</tbody>
</table>
encouragement ($r = -0.42, p < 0.001$), emotional support ($r = -0.52, p < 0.001$), honest ($r = -0.37, p < 0.001$), and communication satisfaction ($r = -0.44, p < 0.001$).

Table 2 presents the correlations between the communication variables and the domains of psychosocial adjustment to illness. In addition, it presents the results of an analysis of the intercorrelations among the communication variables. As the table indicates, these correlations ranged from a low of 0.34 (between emotional support and frequency as well as emotional support and honesty) to a high of 0.70 (between frequency and encouragement). Table 3 contains the means and standard deviations.

Multiple Regression Results

The predictor variables were entered into the equations using a forced-entry multiple regression procedure. The five independent variables were included in the regression equations regardless of the amount of variance each independent variable individually accounted for. The simultaneous procedure was employed instead of a stepwise procedure (which enters predictor variables into the regression equation on the basis of the amount of variance they individually explain).

The simultaneous procedure was justified on two levels. First, the theoretical perspective guiding the
Table 2
Correlation matrix for dependent and independent variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Global</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 HCO</td>
<td>.78</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 VOC</td>
<td>.62</td>
<td>.39</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 DOM</td>
<td>.61</td>
<td>.39</td>
<td>.20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 SEX</td>
<td>.56</td>
<td>.45</td>
<td>.19</td>
<td>.18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 EXT</td>
<td>.31</td>
<td>.20</td>
<td>.04</td>
<td>.34</td>
<td>.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 SOC</td>
<td>.44</td>
<td>.19</td>
<td>.31</td>
<td>.15</td>
<td>.17</td>
<td>.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 PSY</td>
<td>.66</td>
<td>.43</td>
<td>.38</td>
<td>.27</td>
<td>.22</td>
<td>.09</td>
<td>.29</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Frequency</td>
<td>-.43</td>
<td>-.28</td>
<td>-.33</td>
<td>-.36</td>
<td>-.25</td>
<td>-.21</td>
<td>.09</td>
<td>-.17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 Encourage</td>
<td>-.42</td>
<td>-.25</td>
<td>-.29</td>
<td>-.41</td>
<td>-.20</td>
<td>-.23</td>
<td>-.14</td>
<td>-.13</td>
<td>.70</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 Emot. Sup.</td>
<td>-.52</td>
<td>-.37</td>
<td>-.16</td>
<td>-.63</td>
<td>-.27</td>
<td>-.18</td>
<td>-.12</td>
<td>-.33</td>
<td>.34</td>
<td>.35</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 Honesty</td>
<td>-.37</td>
<td>-.24</td>
<td>-.20</td>
<td>-.28</td>
<td>-.18</td>
<td>-.08</td>
<td>-.18</td>
<td>.61</td>
<td>.67</td>
<td>.34</td>
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<tr>
<td>13 Comm. Sat.</td>
<td>-.44</td>
<td>-.31</td>
<td>-.23</td>
<td>-.45</td>
<td>-.29</td>
<td>-.20</td>
<td>-.05</td>
<td>-.21</td>
<td>.57</td>
<td>.55</td>
<td>.61</td>
<td>.54</td>
<td></td>
</tr>
</tbody>
</table>

Note. HCO=Health care orientation, VOC=Vocational environment, DOM=Domestic environment, SEX=Sexual relations, EXT=Extended family, SOC=Social environment, and PSY=Psychological distress. Correlations below ±.15 are not significant. Correlations between ±.16 and ±.22 are significant (p<.05). Correlations between ±.23 and ±.29 are significant (p<.01). All correlations above ±.29 are significant (p<.001).
<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Adjustment</td>
<td>22.55</td>
<td>8.40</td>
</tr>
<tr>
<td>Health Care Orientation</td>
<td>3.72</td>
<td>2.32</td>
</tr>
<tr>
<td>Vocational Environment</td>
<td>3.59</td>
<td>1.95</td>
</tr>
<tr>
<td>Domestic Environment</td>
<td>2.30</td>
<td>1.77</td>
</tr>
<tr>
<td>Sexual Relations</td>
<td>2.56</td>
<td>1.85</td>
</tr>
<tr>
<td>Extended Family</td>
<td>1.72</td>
<td>0.81</td>
</tr>
<tr>
<td>Social Environment</td>
<td>1.15</td>
<td>1.06</td>
</tr>
<tr>
<td>Frequency</td>
<td>18.66</td>
<td>5.46</td>
</tr>
<tr>
<td>Encouragement</td>
<td>22.37</td>
<td>5.22</td>
</tr>
<tr>
<td>Emotional Support</td>
<td>23.42</td>
<td>2.55</td>
</tr>
<tr>
<td>Honesty</td>
<td>21.81</td>
<td>4.24</td>
</tr>
<tr>
<td>Communication Satisf.</td>
<td>22.43</td>
<td>3.29</td>
</tr>
</tbody>
</table>
study specified that all five variables should be negatively related to psychosocial adjustment, with no variable being more important than the others. Second, the multicollinearity of the independent variables (see Table 2) restricted the use of stepwise regression procedures. Chatterjee and Price (1977) and a number of other statisticians (Tatsuoka & Lohnes, 1988; Freund & Minton, 1979; Montgomery & Peck, 1982; Draper & Smith, 1981; Huck, Cormier, & Bounds, 1974) recommend that stepwise procedures should not be used in multicollinear situations. Consequently, theoretical and empirical circumstances indicated the simultaneous regression procedure. The results of the regression procedures are summarized in Table 4.

The first regression analysis examined global adjustment as a function of the five communication variables. The simultaneous solution revealed a significant main effect for the five communication variables \((R = -.60, R^2 = .36; F = 10.81, df = 5/96, p = .0001)\). The simultaneous solution explained 36% of the variance in the global adjustment score. An examination of the independent variables revealed a significant main effect for emotional support \((\beta = -.40; t = -3.86; p = .0001)\) on global adjustment.

The second regression analysis examined health care orientation as a function of the communication variables. The solution produced a significant main effect \((R = -.40, \)
An examination of the independent effects of the communication variables revealed a significant main effect for emotional support (beta=-.28; t=-2.14; p=.01) on health care orientation.

In the regression analysis, where the dependent variable was vocational environment the equation produced a significant solution (R=.35, R²=.12; F=2.7, df=5/96, p=.02). However, an examination of the independent variables revealed that no one variable was a significant predictor with only frequency of communication approaching significance (beta=-.26; t=-1.79; p=.08).

The fourth regression analysis examined the domain of domestic environment. The regression equation produced a significant solution (R=-.67, R²=.45; F=15.5, df=5/96, p=.001). The solution explained 45% of the variance in the domestic environment domain. An examination of the independent variables revealed that emotional support support (beta=-.57; t=-5.82; p=.0001) and encouragement to communicate (beta=-.23; t=-1.95; p=.05) were significant predictors of domestic environment.

The fifth regression analysis examined sexual relations. The simultaneous solution revealed a significant main effect explaining 13% of the variance (R=.36, R²=.13; F=2.86, df=5/96, p<.02). However, no one communication variable was a significant predictor of sexual relations.
In the regression equation where extended family was the dependent variable, the simultaneous solution was not significant ($p = .19$). Also, in the regression equation where social environment was the dependent variable the simultaneous solution was not significant ($p = .64$).

The final regression analysis examined psychological distress. The simultaneous solution revealed a significant main effect for the five communication variables ($R = -.348$, $R^2 = .12$; $F = 2.65$, df = 5/96, $p = .03$). The solution explained 12% of the variance in the psychological distress domain. An examination of the independent variables revealed that emotional support ($\beta = -.331$; $t = -2.71$; $p = .007$) was a significant predictor of psychological distress.

Before the results of the multiple regression analyses can be interpreted a word of caution is necessary because of multicollinearity. Data analysis reveals two important symptoms of multicollinearity. First, the correlation matrix (Table 2) indicates that the correlations among the communication variables were stronger than the correlations between the independent and the dependent variables. Second, the significant $R^2$ for several of the equations and the statistically insignificant coefficients indicates a possible problem of multicollinearity (Lewis-Beck, 1989).

The problem of multicollinearity causes confidence intervals for coefficients to be very wide, and
Table 4

Results of the regression analyses

<table>
<thead>
<tr>
<th>Variable</th>
<th>GLOBAL</th>
<th>HCO</th>
<th>VOC</th>
<th>DOM</th>
<th>SEX</th>
<th>EXT</th>
<th>SOC</th>
<th>PSY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>-.18</td>
<td>-.13</td>
<td>-.26</td>
<td>-.08</td>
<td>-.16</td>
<td>-.07</td>
<td>-.04</td>
<td>-.08</td>
</tr>
<tr>
<td>Honesty</td>
<td>-.03</td>
<td>-.03</td>
<td>-.08</td>
<td>.11</td>
<td>-.20</td>
<td>.00</td>
<td>.00</td>
<td>-.09</td>
</tr>
<tr>
<td>Encourage</td>
<td>-.12</td>
<td>-.01</td>
<td>-.13</td>
<td>-.23</td>
<td>-.10</td>
<td>-.13</td>
<td>-.16</td>
<td>-.08</td>
</tr>
<tr>
<td>Emt. Support</td>
<td>-.40**</td>
<td>-.28**</td>
<td>-.03</td>
<td>-.57***</td>
<td>-.16</td>
<td>-.09</td>
<td>-.14</td>
<td>-.33**</td>
</tr>
<tr>
<td>Comm Sat.</td>
<td>-.05</td>
<td>-.04</td>
<td>-.03</td>
<td>.01</td>
<td>-.07</td>
<td>-.03</td>
<td>.11</td>
<td>.05</td>
</tr>
<tr>
<td>R²</td>
<td>.36</td>
<td>.17</td>
<td>.12</td>
<td>.45</td>
<td>.13</td>
<td>.07</td>
<td>.03</td>
<td>.12</td>
</tr>
<tr>
<td>F</td>
<td>10.8***</td>
<td>3.8**</td>
<td>2.7*</td>
<td>15.5***</td>
<td>2.8*</td>
<td>1.4</td>
<td>.66</td>
<td>2.6*</td>
</tr>
</tbody>
</table>


*p<.05. **p<.01. ***p<.001.
The $t$-statistics for significance tests to be very small making it more difficult to achieve statistical significance (Lewis-Beck, 1989). Thus, multicollinearity of the independent variables clouds the examination of the independent impact of each of the communication variables on psychosocial adjustment.

**Canonical Correlation Results**

A canonical correlation was computed with the seven domains of adjustment as dependent variables and the five communication variables as independent variables (frequency of communication, encouraged to communicate, honesty in the communication environment, emotional support, and communication satisfaction). The results revealed one significant canonical root between the dependent variables and the independent variables (eigenvalue=.976, $R_c=.702$, $R_c^2=.492$; Wilks lambda=.413, approximate $F=2.54$, $df=35/381$, $p<.001$). The redundancy index for the significant canonical function was .67. The redundancy index is important because it represents the amount of shared variance between the two sets of variables (Stevens, 1986). The redundancy index indicates that approximately 67% of the variance in psychosocial adjustment was explained by patient-family communication.

Structure coefficients (loadings) which are key for interpreting the canonical correlation are presented in
Table 5. The loadings on the dependent variables indicate that the domestic environment domain greatly defined psychosocial adjustment while patient-family communication was defined by emotional support. The results revealed that as the scores on emotional support increased the scores on the domestic environment domain decreased, indicating improved levels of psychosocial adjustment. Overall, the negative loadings for the psychosocial variables and the positive loadings for the communication variables revealed that as patient-family communication improved adjustment also improved (lower scores reflect effective adjustment).

However, one must use caution in interpreting the canonical correlation because of the small sample size. Stevens (1986) noted that structure coefficients are unreliable unless the sample size per variable is very large. Barcikowski and Stevens (1975) recommended at least 20 subjects per variable if only the largest function was interpreted. In this study, there were only 8.5 subjects per variable and only the first canonical function was interpreted.

Summary of the Hypothesis Testing

The significant negative Pearson r's suggest that on a basic level patient-family communication is related to psychosocial adjustment to illness. The results indicated
Table 5  
Canonical loadings for psychosocial adjustment to illness and patient-family communication.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Psychosocial Adjustment</strong></td>
<td></td>
</tr>
<tr>
<td>Health Care Orientation</td>
<td>-.572</td>
</tr>
<tr>
<td>Vocational Environment</td>
<td>-.361</td>
</tr>
<tr>
<td>Domestic Environment</td>
<td>-.946</td>
</tr>
<tr>
<td>Sexual Relations</td>
<td>-.432</td>
</tr>
<tr>
<td>Extended Family</td>
<td>-.341</td>
</tr>
<tr>
<td>Social Environment</td>
<td>-.207</td>
</tr>
<tr>
<td>Psychological Distress</td>
<td>-.463</td>
</tr>
<tr>
<td><strong>Patient-Family Communication</strong></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>.598</td>
</tr>
<tr>
<td>Encouragement</td>
<td>.620</td>
</tr>
<tr>
<td>Honesty</td>
<td>.498</td>
</tr>
<tr>
<td>Emotional Support</td>
<td>.943</td>
</tr>
<tr>
<td>Comm. Satisfaction</td>
<td>.718</td>
</tr>
</tbody>
</table>

Note. $R_c = .702; R_c^2 = .492; Wilks lambda = .413, p < .001; n = 102.$
that as the scores on the patient-family communication instrument increased (the higher the scores the better the communication) the scores on the psychosocial adjustment to illness instrument decreased (the lower the score the better the level of adjustment).

Specifically, the following results were revealed:

H1: The hypothesis predicted that there should be a significant negative correlation between communication satisfaction and psychosocial adjustment to illness. The hypothesis received some support. The hypothesis was supported through a simple correlation ($r = -0.44, p < 0.001$); however, regression analyses did not reveal communication satisfaction a significant predictor of psychosocial adjustment or any of the specific domains of adjustment.

H2: The hypothesis predicted that frequency of communication would be negatively correlated with psychosocial adjustment. The hypothesis was provided with some support. Frequency was negatively correlated with global adjustment ($r = -0.43, p < 0.001$) and frequency approached significance in the regression procedures for global adjustment ($p < 0.10$) and for the domain of vocational environment ($p < 0.07$).

H3: The hypothesis predicted that honesty in the communication interactions would be negatively correlated with adjustment. Univariate procedures provided support ($r = -0.38, p < 0.001$) but regression procedures did not indicate
that honesty makes an unique contribution to predicting psychosocial adjustment or its domains.

H4: The hypothesis predicted that patients in families that encouraged communication about the illness would score better on the psychosocial adjustment index. Univariate and multivariate procedures provided support for the hypothesis. Using Pearson's r, the findings revealed that encouragement was significantly correlated with global adjustment (r = -.42; p < .001). Multiple regression analyses revealed that encouragement was a significant predictor for the domain of domestic environment.

H5: The hypothesis predicted that emotional support would be negatively correlated with scores on the psychosocial adjustment to illness index. This hypothesis received the strongest support. Univariate procedures indicated that emotion supported was negatively correlated with global adjustment (r = -.52; p < .001). Multiple regression analyses indicated that emotional support was a significant predictor of global adjustment as well as the domains of health care orientation, domestic environment, and psychological distress. In addition, the canonical correlation identified emotional support as the primary factor defining patient-family communication.
CHAPTER FIVE

DISCUSSION

Little previous research concerning communication and illness has specifically examined the role that communication plays in the adjustment process. This has occurred primarily because communication variables have not been described or measured from a communication perspective (Northouse & Northouse, 1987). Most of the findings that link communication and adjustment are based on anecdotal reports with little or no empirical data to support the conclusions. Consequently, the importance of communication in relation to psychosocial adjustment to illness has not been clearly understood.

The primary focus of this investigation was to examine the effects of patient-family communication on the cancer experience, operationalized as psychosocial adjustment to illness. The results of this investigation provide some valuable insights into the role of patient-family communication and adjustment. The purpose of this chapter is to: 1) explore the implications of the present findings, 2) identify the limitations of this study, and 3) propose future research possibilities in the area of patient-family communication and adjustment.
Research Implications

The section on research implications will be divided into two parts. The first part will explore the findings concerning communication and adjustment. The second part will examine social support and adjustment to illness.

Patient-family Communication and Adjustment

Previous research in the area of self-disclosure and health has revealed that as the disclosure of personal information concerning traumatic experiences increases, the health of the individual improves (Pennebaker, 1989; Pennebaker, Kiecolt-Glaser, & Glaser, 1988). Jourard theorized that self-disclosure was positively related to healthy adjustment (Jourard, 1964). However, studies conducted by Pennebaker et al. and Jourard either were anecdotal or were based on post-hoc analyses of healthy subjects. This research extended the propositions of their findings and examined self-disclosure of individuals experiencing a life-threatening illness (cancer).

The results of this investigation support the importance of patient-family interactions in mitigating the psychological effects of cancer. Patients reported that interactions with family members facilitated social and psychological adjustment. The results of the investigation indicate that disclosure is critical to the process of adjustment in a variety of ways.
First, the study found that patients who report the best adjustment to the cancer experience also report the highest quality of patient-family communication. The results provide empirical support for anecdotal findings that link communication and adjustment (Jones, 1979; Jackson, 1986; Siegel, 1988; Kubler-Ross, 1969).

Specifically, patient-family communication (frequency, honesty, encouragement, emotional support, and communication satisfaction) explained a significant amount of the variance of global adjustment as well as the specific domains of health care orientation, vocational adjustment, domestic adjustment, sexual relations, and psychological distress. Patient-family communication was relevant in explaining global adjustment, accounting for 36% of the variance, and of prime importance for the domain of domestic adjustment, accounting for 45% of the variance. Additionally, patient-family communication interactions accounted for 12-17% of the variance in the domains of health care orientation, sexual relations, vocational adjustment, and psychological distress.

Of the communication variables, emotional support was identified as the most important variable affecting adjustment. Emotional support was operationally defined as the degree of moral support, closeness, and love perceived by a patient from a relational partner. Specifically, emotional support was the strongest predictor of adjustment
significantly affecting global adjustment as well as the domains of health care orientation, domestic environment, and psychological distress. The present finding corroborated previous research that identified emotional support as the most helpful aspect of social support (Dunkel-Schetter & Wortman, 1982; Neuling & Winefield, 1988).

In relation to the specific domains of adjustment, emotional support was found to be relevant to health care orientation, domestic adjustment, and psychological distress. The domain of health care orientation was concerned with a patient's current health care posture. The domain was focused on whether an individual's attitudes toward the medical profession were supportive of positive adjustment (Derogatis & Lopez, 1983). The findings of this investigation indicated that emotional support produced attitudes which are conducive to positive adjustment.

As argued earlier, adjustment to illness takes place in the home in that patients adjust to the demands of cancer within the context of the family unit. For patients in this investigation, emotional support was a significant predictor of domestic adjustment. Patients in this investigation reported more effective domestic adjustment in a family environment that provided emotional support.
As previously indicated, psychological distress has been correlated with treatment complications, cancer recurrence, and decreased longevity. Psychological distress has been identified as the most frequent problem voiced by cancer patients (Gotay, 1984). The results of this study revealed that emotional support was important in predicting the amount of psychological distress experienced by the patient. The findings indicated that emotional support from family members decreased the amount of anxiety, guilt, hostility, and depression (psychological distress) reported by a patient. As the quality of emotional support from family members improved, psychological distress diminished.

Overall, the links among emotional support and the domains of adjustment suggest that patients can more effectively adjust to the various cancer-related stressors in an atmosphere of emotional support. The value of emotional support identified in this investigation is consistent with the conclusion drawn by Soskolne and Kaplan-DeNour (1989) that patients in families with emotionally supportive family systems have fewer adjustment problems.

Along with emotional support, encouragement was identified as an important predictor of the domain of domestic adjustment. Patients that reported being encouraged to discuss the illness reported better domestic
adjustment than those discouraged from talking about the illness. This finding provides empirical support for the conclusion advanced by Klein (1971). Klein suggested that maladjustment in breast cancer patients increased when families discouraged communication concerning the illness.

The importance of encouragement indicates that patients are sensitive to the feedback from immediate family members. Wortman and Dunkel-Schetter (1979) theorized that families could act as possible "sounding boards" for patients to help them work out strategies for coping with cancer. The present findings suggest that the concept of the sounding board may be key to effective adjustment. The results concerning the domestic environment indicate that cancer patients depend on family members for emotional support and value encouraging messages from relational partners. Since the domestic domain dominates the global adjustment score, then it is possible to conclude that interactions from family members determine how a patient adjusts to the experience of cancer.

Frequency of communication correlated with adjustment based on the Pearson correlation; however, it did not make a significant, unique contribution in the regression analyses. A possible explanation for the lack of a clear association between frequency and adjustment could be the problem of multicollinearity. When the independent
variables are highly correlated, as in this study, it is impossible to separate out the effect of one, with all others held constant, with any degree of precision (Berry & Feldman, 1985). Thus, multicollinearity clouded the examination of the independent impact of each of the communication variables. Greater independence of the communication variables could have provided more insight into the role of frequency of communication as well as the impact of the other communication variables.

In spite of the problems created by multicollinearity, it can be theorized that the frequency of communication concerning the disease was important in the adjustment process. Caplan (1974) noted that the freedom to discuss the difficulties of life are important "for the validation of personal identity and worth, for help with tasks, and for support in handling emotional impulses" (p. 5). Fiore (1979) noted that cancer patients need interpersonal contexts that allow them to gain a sense of communication competence and control. For a cancer patient, the ability to discuss the disease may have established a stable interpersonal environment for the patient and his/her family.

The ability to engage in conversations with family members concerning the disease may have created an environment in which a patient perceived the freedom and the encouragement to talk about the emotional and physical
demands of the illness. The univariate findings correlating frequency and global adjustment (r = -.43) seem to give support to this interpretation. The strong correlation between frequency and global adjustment provide additional support to previous findings that identified a modest link between frequency and psychological well-being (Cozby, 1973; Mayo, 1968; Pederson & Higbee, 1969).

Moreover, a patient's ability to discuss the illness with family members may have created an open communication environment which facilitated effective adjustment. Vess, Moreland, and Schwebel (1985) reported that an open communication environment allowed family members to build a more cohesive, less conflictive family environment. Cohn (1982) stressed how an open communication environment enabled patients to express emotional concerns and family members to offer emotional support. Shapiro and Shumaker (1987) observed that frequent and open communication facilitated emotional well-being in parents of children with cancer. Intuitively, it makes sense that the freedom to communicate establishes an environment conducive to emotional support. If patients feel free to express their needs, then families members are better able to fulfill those needs.

Evaluation of honesty of communication provided little evidence to support the theory of self-disclosure or the conclusions drawn by Kubler-Ross (1969, 1974) and others
(Speigel, Bloom, & Yalom, 1981) that honesty facilitates adjustment. Previous research examining honesty and adjustment to terminal or chronic illness has been either anecdotal or has examined the variable in isolation of other communication variables. In this investigation, univariate analyses indicated a modest correlation between honesty and global adjustment ($r = -.37$). The regression procedures revealed that honesty was not in and of itself a significant predictor of global adjustment or any of the specific domains of adjustment.

The lack of multivariate support for a relationship between honesty and adjustment could be two-fold. First, the problem of multicollinearity could have prevented honesty from accounting for a significant portion of the variance beyond that accounted for by the other communication variables. Honesty was highly correlated with frequency ($r = .61$), encouragement ($r = .67$), and communication satisfaction ($r = .61$). The intercorrelations could have prevented honesty from significantly impacting adjustment.

Second, it could be that honesty functions similar to frequency of communication in establishing an interpersonal environment conducive to emotional support. Wortman and Dunkel-Schetter (1979) noted that the freedom to openly discuss the fears and anxieties associated with the illness was highly valued by cancer patients. Mitchell and
Glicksman (1977) observed that an open communication environment enabled patients to express their emotional concerns. If patients perceive a communication arena open to honest discussions of the consequences of the illness, then they may have been able to voice their specific needs. Once identified the family would be in a better position to provide the needed support. Thus, honesty in the communication environment may not have directly predicted adjustment but it could have been an important precursor to effective adjustment.

The present findings concerning honesty and adjustment do not mean that patients would not or could not benefit from honest discussions about the illness and its consequences. Clearly, the research concerning terminal illness has noted that open and honest communication concerning death and dying enabled individuals to better cope with the illness and its treatment (Kubler-Ross, 1969, 1974; Speigel, Bloom & Yalom, 1981). However, the results of this investigation found that when honesty was examined in conjunction with other communication variables, it did not uniquely predict effective adjustment.

The final communication variable that was examined as a possible predictor of psychosocial adjustment was communication satisfaction. Previous researchers speculated that communication satisfaction was linked to successful adjustment to chronic illness (Heinrich et al.,
1984; Bloom, 1982; Weisman & Worden, 1975). The researchers theorized that the more satisfied the patient was with his/her interpersonal interactions with family members the more successful the adjustment process. The findings of this investigation provide limited support for that conclusion. Even though communication satisfaction was correlated with global adjustment ($r=-.44$), the regression procedures failed to identify communication satisfaction as a significant predictor of global adjustment or any of the domains of adjustment. Except for honesty, communication satisfaction had the lowest regression coefficient (Table 3).

Once again multicollinearity contributed to the problem of identifying the independent impacts of the communication variables. Communication satisfaction was strongly correlated with the other communication variables. The lack of support for communication satisfaction and adjustment does not mean that communication satisfaction is irrelevant to successful psychosocial adjustment, rather it indicates that the variance in adjustment is explained by the individual communication constructs. Additionally, it is important to note that both psychosocial adjustment and communication satisfaction are outcome variables which could have limited the ability of communication satisfaction to predict effective adjustment.
Conclusion of Communication Findings

The findings of this investigation underscore the importance of effective communication for individuals adjusting to the experience of cancer. The results of this study provide empirical support for anecdotal findings that concluded: patients who successfully adjusted to cancer talked about the disease, had an emotionally supportive family system, and exhibited less anxiety about the illness (Weisman & Worden, 1976; Friedman et al., 1988; Irwin & Kramer, 1988; Ell, Mantell, Hamovitch, & Nishimoto, 1989).

Overall, these findings support the assertion made by Cooper (1982) that communication is critical to coping with chronic illness. Patients that reported supportive communication interactions with immediate family members experienced better levels of adjustment.

Family members that provided emotional support and encouragement enabled patients to manage the cancer experience in a less stressful manner. Patient-family communication interactions provided patients with opportunities to express their needs and assisted family members in fulfilling those needs.

Social Support and Adjustment

The second major implication of the investigation concerns the area of social support and adjustment. The
theory driving the social support and health literature posits that a supportive environment buffers the effects of life stressors. In other words, "individuals that are embedded in social networks which provide them with consistent and supportive relationships are better able to maintain psychological integrity during times of crisis" (Caplan, 1974, p. 5). The results of this investigation give credence to that position.

Interpersonal relations which were operationally defined as patient-family communication interactions were identified as important sources of social support for cancer patients. The results confirmed previous findings that interpersonal relations are important in adjusting to chronic illness (Spiegel, Bloom, Kraemer, & Gottheil, 1989; Kennedy, Kiecolt-Glaser, & Glaser, 1988; Wortman & Dunkel-Schetter, 1979).

The interpersonal sphere (Moos, 1982) directly affected the way the patient adjusted to the traumatic effects of cancer. Patients that reported having supportive and open interpersonal relations with family members demonstrated better adjustment than did patients whose interpersonal environment with their immediate family was restricted.

Moreover, the investigation reinforced the importance of the family network in the adjustment process. Patients in this investigation reported that family members were
important to them in attaining effective adjustment. The maintenance of close interpersonal relations provided the patient with the love, moral support, and closeness (emotional support) that were instrumental in how the patient adjusted to the psychosocial demands of the illness.

The findings document the importance of the family in the adjustment process. When asked an open-ended question concerning who they talked to the most about the disease and its treatments, 81% of the respondents indicated family members, 15% indicated close friends, 3% the clergy, and 1% God. Social network research has indicated that spouses and family members were primary avenues of help for cancer patients (Wills, 1985): this study supports that conclusion.

When respondents were asked what family member they talked to the most with concerning the disease, 65% of the patients indicated their spouse. The next most frequent target was a child, reported by 23% of the respondents. This finding confirmed earlier research that spousal communication is important in successful adjustment (Ferlic, Goldman, & Kennedy, 1979; Shapiro & Shumaker, 1987).

Family members were important means of social support. Well-adjusted subjects indicated that interpersonal interactions with family members facilitated adjustment.
through emotional support, interest, reassurance, positive feedback, and encouragement. Thus, one can reasonably conclude that adjustment to the experience of cancer takes place in the home environment and that patient-family interactions are important for successful adjustment.

Limitations

The investigation is limited in a variety of aspects. First, it is important to point out that the results are based on respondent self-reports, and are affected by the pressures of self-presentation and social desirability. While the participants were willing to share highly personal and intimate information about their interactions with family members, they only said what they wished the researcher to know. Future research should attempt to triangulate the data by interviewing both patient and family members; thus, allowing a comparison of the responses elicited from the patient with the responses given by a relational partner.

Second, the subjects for this investigation self-selected to participate. During the 5 month data collection process, a majority of the patients under treatment at the Perkins Cancer Centers did participate. However, a variety of patients chose not to be involved in the study. It is possible that only those that were effectively adjusting agreed to be interviewed.
Third, it is important to note that only one channel of communication was examined (verbal). While verbal communication is important and revealing about the interpersonal relationship, a significant amount of information was lost because of the focus on the verbal channel.

Fourth, the focus of this investigation was on the family as the support mechanism. No data were collected to assess the impact of other support systems on psychosocial adjustment. Consequently, it is unclear how patients without close family members adjust to the demands of the illness. It is unreasonable and illogical to conclude that patients without families do not and/or cannot adjust to the cancer experience.

Finally, this investigation focused primarily on breast and prostate cancer patients receiving radiation therapy. The subjects for this investigation represent a very small sample of cancer patients with a particular type of disease and treated with a particular type of protocol. Thus, it is unknown how patient-family communication interactions affect the adjustment of patients with other types of cancer and receiving other types of treatment.

Future Research

Despite its limitations, the present study provides empirical data about the effects of patient-family
communication on psychosocial adjustment to illness. The results provide empirical support for the proposition that emotionally supportive communication within the family unit significantly affects the adjustment process. This research represents a step in the process of understanding of how communication impacts adjustment to illness. Future research can build on this foundation to provide a better understanding of communication and adjustment. The next few paragraphs identify some possible areas of study.

From a communication perspective, it would be interesting to examine how the valence of communication affects psychosocial adjustment. The results of this research indicate that over one-third of the patients avoided discussing the negative aspects of the illness. If reality is created by language, then it would be interesting to examine patient-family communication from a socially constructed reality approach (Cherwitz & Hikins, 1986). Do patients that construct a positive "reality" adjust more effectively than patients that create a "reality" laden with negative aspects. Researchers could examine the language of patients and adjustment.

Future research should explore other channels of communication. Research has revealed that nonverbal responses are more important than verbal responses in determining the total impact of a message (Littlejohn, 1983; Birdwhistell, 1970), particularly for emotional
support (Mehrabian, 1976). Discrepancies between verbal and nonverbal messages could diminish the impact of patient-family communication, if nonverbal behaviors undermine the sincerity of the verbal component.

In this study, 50% of the respondents indicated that their relational partner pretended to be cheerful around them and 34% reported that they were told they looked good when they knew they did not. It is unclear how the discrepancies affected the adjustment process but what is clear is that patients were aware of the inconsistencies.

Consequently, future research should examine nonverbal communication as a possible variable in psychosocial adjustment. Future research needs to determine how the mixed messages and pretending to be cheerful impacts psychosocial adjustment. Additionally, researchers may find that the verbal component is less important while the nonverbal aspect of "just being there" significantly affects adjustment.

Another interesting avenue of research is the source of support and adjustment. Since social support can come from family members, friends, medical professionals, religious leaders, and organized support groups, then it is important to gain an understanding of the effect of the source on the support provided. This investigation found that patients that experienced supportive interactions from family members were better adjusted to the illness;
however, family interactions represent only one type of social support that is available to the patient. Future research should compare social support from the family with support from other sources to determine what source of support better facilitates adjustment. It could be that adjustment is enhanced by any support mechanism (family, friend, organized group, etc.).

As noted earlier, both patient and family suffer from the diagnosis and treatment of cancer. The results of this investigation provide insights into how the patient adjusts to the disease; however, future researchers might explore how the family copes with the illness. Heinrich and Schag (1985) reported that spouses were frequently more distressed than patients. Wellisch and associates (1978) reported that over 40% of spouses surveyed had suffered significant psychosomatic and psychological reactions after the wife's mastectomy. Cohen and Wellisch (1978) observed that a diagnosis of cancer mounts an assault upon both the individual's well-being as well as that of the family.

The interdependency of a family unit makes it important to examine the role of communication and adjustment for family members. Since cancer patients depend on their families for supportive interactions to facilitate effective adjustment strategies, then research should be conducted to gain an understanding of how the family adjusts to the experience of cancer.
In relation to the family, future researchers might explore the problem encountered in this study of relational partners refusing to be interviewed. It would be interesting to know why relational partners were not willing to talk about cancer with a stranger while patients were open and willing to discuss the disease. Not only would information from relational partners minimize the subjectivity of self-report data but information could be obtained concerning how significant others are adjusting to cancer. To gain such information, researchers may have to interview the significant other before interviewing the patient or at different locale or possibly video tape interactions in waiting rooms.

Additionally, researchers could focus on the importance of patient-physician-family interactions in relation to adjustment. Vess, Moreland, and Schwebel (1985) theorized that if patient and family are able to communicate openly with the physician, then adjustment might be facilitated. Unfortunately, research concerning adjustment has focused on the patient with the family being of minor or secondary importance (Northouse & Northouse, 1987). Gonzales, Steinglass, and Reiss (1989) concluded that there are remarkably few studies that focus on family issues, needs, and stresses during the chronic phase of an illness. As of this date, no research has examined patient-family-physician interactions and adjustment.
Future researchers might consider focusing on patients undergoing more aversive cancer treatments (e.g., hyperthermia, interferon, chemotherapy). For a variety of patients, radiation therapy is associated with aversive physical as well as psychological side effects; however, research involving chemotherapy patients has reported that the treatment process is significantly more aversive than radiation therapy. Burish and Lyles (1983) noted that chemotherapy causes significant physical changes and psychological side effects. Chemotherapy has caused some patients to consider suicide rather than undergo additional treatments (Whitehead, 1975). If patients would rather face death than treatment, then it would be valuable to examine whether patient-family communication could enhance a patient's adjustment to the effects of chemotherapy.

Finally, this research indicates that communication is critical to successful adjustment. Patients reported that family communication interactions enabled them to better cope with the social and psychological stressors that are related to cancer and its treatment. The next obvious step of the research is to explore the effects of communication on actual longevity. The results of this investigation indicate that communication affects the quality of life but another issue is whether communication also affects the length of life.


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APPENDIX A

PSYCHOLOGICAL TRAUMA

Adding to the anxiety of the diagnosis is the treatment for the disease. The methods for treating cancer have been identified as a primary source of psychological trauma for the patient and his/her family. The three primary forms of medical treatment for cancer are surgery, chemotherapy, and radiation therapy. A large and growing body of literature indicates that all three procedures induce significant psychological distress for patients (Bard & Sutherland, 1955; Holland, 1976).

Surgery

Surgery is the most preferred treatment for cancer (American Cancer Society, 1990); however, surgery can cause disfigurement, loss of movement, and changes in body image. Although surgery for all types of cancer can cause psychosocial problems for the patient, the focus of this section will be on breast cancer because of the prevalence of the disease and the devastating impact breast surgery can have on the quality of life for the patient.

Breast cancer is a major cause of death among American women, striking approximately 1 out of every 11 women (American Cancer Society, 1990) and 1 in 4 women with cancer, making it by far the most common type of cancer in
women. However, because of the improving survival rate (e.g., 87% 5-year survival rate for localized breast cancer), many women are living a substantial number of years with the aftermath of the illness and its treatment. Therefore, it is important to understand how the illness and its treatments affect the lives of those suffering from the disease.

The most common type of surgical treatment for breast cancer is the mastectomy. Surgical treatment can require a total mastectomy, a modified radical mastectomy, or a radical mastectomy. As a result of the surgery, a majority of patients treated experience depression, anxiety, and reduced self-esteem (Meyerowitz, 1980). Morris, Greer, and White (1977) reported that many patients take up to a year or more to regain normal functioning following a mastectomy and some never readjust.

Due to the anxiety associated with the treatment process, a variety of psychological problems are faced by the cancer patient. Bronner-Huszar (1971) reported that surgery for breast cancer has left a significant number of women feeling worthless, ugly, defeminized, socially and sexually unacceptable. Magnifying the feeling of unacceptability, Jamison, Wellisch, and Pasnau (1978) found that one-fourth of the women they surveyed had seriously contemplated suicide while three-fourths of the women
reported increased use of tranquilizers and alcohol due to emotional reactions to their mastectomies.

Moreover, the psychological aspects of breast cancer and mastectomy extend from the patient to her spouse and ultimately to the entire family. Wellisch, Jamison, and Pasnau (1978) reported that 40% of spouses surveyed had suffered psychosomatic and psychological reactions after the woman's surgery. Psychological trauma reported by the spouse and other members of the family were sleeping disorders, eating disorders, and the presence of nightmares. Overall, 42% of the spouses indicated that their ability to work was temporarily affected adversely by the surgery. In the area of sexual relations, over one-third of the spouses surveyed indicated that sexuality and intimacy were severely stressed and negatively altered after the mastectomy. The data also revealed that a variety of the patients and spouses polarized their feelings about the surgeon characterizing the surgeon as a sadistic butcher. Adding to the psychological trauma is the feeling of uncertainty, Messerill, Garamendi, and Romano (1980) revealed that a large majority of mastectomy patients felt that, at the time of the mastectomy, questions went unanswered by the surgeon.

Unfortunately, very few research studies have examined effective ways of reducing the distress of cancer surgery. The role of communication, adjustment, and cancer surgery
has remained a relatively unexplored area; however, such research is needed. Burish and Lyles (1983) indicated that future research needs to focus on training and communication skills to promote improved social and sexual functioning following cancer surgery.

**Chemotherapy**

The second major treatment for many types of cancer has been chemotherapy. Cancer chemotherapy can be one of the more aversive procedures used in medicine (Burish & Carey, 1986). Chemotherapy is a systemic treatment involving the administration of chemicals that are toxic to rapidly dividing cells, such as those that compose cancerous tissue. Unfortunately, these chemicals also affect normal cells which can produce a variety of adverse side effects, including decreased immunity to other diseases, hair loss, fatigue, and loss of appetite (Golden, 1975; Greer, 1979; Peterson & Popkin, 1980).

In addition to the pharmalogically induced symptoms, approximately one in four chemotherapy patients experience psychologically conditioned side effects, such as nausea, vomiting, dysphoria, and appetite loss (Carey & Burish, 1987). Burish and Lyles (1983) noted that the conditioned negative responses can be as "debilitating or more debilitating than the physical side effects of the treatments" (p. 170). Whitehead (1975) reported that
patients receiving chemotherapy often become very ill after a few treatments, develop an abhorrence to the treatments after three or more sessions, and often become suicidal after five or more sessions.

Attempting to reduce the conditioned side effects of chemotherapy a variety of antiemetic drugs are often prescribed to the patient; however, even when such medications are effective, they tend to have side effects (fatigue, loss of muscle coordination, hallucinations, and psychological highs and lows) or administrative demands (the need for hospitalization) which limit their acceptance or usefulness by patients (Gralla, Itri, Pisko, Squillante, Kelsen, Braun, Bordin, Braun, & Young, 1981).

Consequently, the adverse side-effects from chemotherapy result in many patients not completing the treatment process. Gilbar and Kaplan-DeNour (1989) reported that 30% of women following a mastectomy failed to complete prescribed chemotherapy treatments. In a mixed group of cancer patients, it was found that 30-50% stopped chemotherapy prematurely. Even though, stopping the treatment will control for the adverse side-effects, the lack of treatment has disastrous effects of increased chance of cancer recurrence, diminished chances of cure, and decreased survival.

Due to the failure of antiemetic procedures, behavioral techniques have been explored which attempt to
relax patients and, thereby, reduce adverse reactions to chemotherapy. The major behavioral procedures include relaxation training (Carey & Burish, 1987), hypnosis (LaBaw, Holton, Tewell, & Eccles, 1975), systematic desensitization (Morrow & Morrel, 1982), and stress management (Meichenbaum, 1977). Even with the limited success of behavior modification techniques, patients still suffer significant psychological distress and anxiety as a result of the treatment process. To better understand the psychological side of chemotherapy, Altmaier, Ross, and Moore (1982) urged additional research to identify why some patients develop inhibitory adjustment styles which facilitate the development of conditioned negative responses, this research is a response to Altmaier and associates plea for additional information.

Radiation Therapy

Radiation therapy is one of the mostly widely used treatments for a variety of cancers. Krisch and Goodman (1981) reported that over 50% of all cancer patients receive some form of radiation therapy. Like chemotherapy, radiation is effective in destroying cancerous tissues, but it can also cause adverse side effects. Frytak and Moertel (1981) noted that some side effects are so severe that patients voluntarily decide to terminate the treatment.
Since radiation therapy affects normal tissues as well as cancerous tissues, irradiation in the abdominal area results in the side effects of diarrhea, fatigue, urinary problems, anorexia, and bone marrow depression (King, Nail, Kreamer, Strohl, & Johnson, 1985). Radiation therapy for head and neck cancer frequently damages mucous membranes in the mouth and throat resulting in problems of congestion, loss of taste, dysphagia, dental problems, and periodontal infections (Donaldson, 1982). Johnson, Lauver, and Nail (1989) reported that over 75% of patients receiving radiation therapy reported suffering from detrimental side effects caused by the treatments.

In addition to the physical side effects, Peck and Boland (1977) observed that over two-thirds of their subjects experienced significant anxiety as well as extreme states of depression as a result of radiation therapy. Specific causes of psychological trauma involved patient uncertainty and misconceptions concerning the treatment process. In one study, over 94% of the patients perceived radiation therapy as the last resort with little or no hope for recovery (Peck & Boland, 1977). Rotman, Rogow, Deleon, and Heskel (1977) discovered that patients receiving radiation therapy were afraid that they were radioactive and that family and friends were in danger to be around them. Other patients feared that the use of radiation would cause cancer in other parts of the body (National
Cancer Institute, 1980). Overall, Rotman et al. (1977) concluded that "few therapeutic modalities in medicine induce more confusion, misunderstanding, and apprehension than the use of irradiation in cancer treatment" (p. 744).

Even though the fears related to radiation therapy are ill-founded (Krisch & Goodman, 1981; Rotman, Rogow, DeLeon, & Heskel, 1977), patients experience anxiety and depression due to inadequate preparation for the treatment process (Peck & Boland, 1977). Burish and Lyles (1983) confirmed conclusion and reported that the number 1 problem associated with radiation treatment involved inadequate preparation or insufficient education. Patients apparently received little or no information concerning radiation therapy and the information that is received is not understood. It is unclear whether patients are not informed by physicians or that information is presented but patients fail to understand and remember it. Whatever the situation, the patient is unprepared and confused about radiation therapy which makes the treatment process more frightening and aversive.
Dear Patient:

At the Mary Bird Perkins Cancer Center, we are always interested in learning more about how our patients are adjusting to their illness. In order to better obtain this information, we are asking you to volunteer to participate in a study concerning patient/family communication interactions. The study will involve your participation in a 30 minute interview.

If you are interested in participating in the study, please sign up for a time with the therapy technologists. It is recommended that you sign up for a time following a treatment session. This study is being conducted by Mike Gotcher from the LSU Speech Department and he will conduct the interview and answer any questions concerning the study.

Participation in the study is completely voluntary and your answers will be confidential. We hope that you will agree to participate in this important study concerning communication and illness.

Sincerely,

Sheldon A. Johnson, M.D.
Medical Director
Mary Bird Perkins Cancer Center
1. strong disagreement
2. mild disagreement
3. neither agreement nor disagreement
4. mild agreement
5. strong agreement
APPENDIX D

PSYCHOSOCIAL ADJUSTMENT TO ILLNESS INDEX

SECTION I  HEALTH CARE ORIENTATION

1. Could you describe for me your general attitude and approach to taking care of your health?
0 I am very concerned and pay close attention to my personal health.
1 Most of the time I pay attention to my health care needs.
2 Usually, I try to take care of health matters, but sometimes I just don't get around to it.
3 Health care is something that I just don't worry too much about.

2. Your present condition probably requires some special attention and care on your part; could you tell how you attend to the needs?
0 I pay close attention to all the needs of my present illness and do everything I can do to take care of myself.
1 I do a pretty good job taking care of my present illness.
2 I try to do all the things I am supposed to do to take care of myself, but lots of the time I forget or I am too tired or busy.
3 I do things pretty much the way I always have done.
then and I don't worry or take any special considerations for my illness.

3. Generally speaking, how do you feel about the quality of medical care available and the doctors that provide it?

0 Medical care has never been better, and the doctors who give it are doing an excellent job.

1 The quality of medical care available is very good, but there are some areas that could stand improvement.

2 Medical care and doctors are just not of the same quality they once were.

3 I don't have much faith in doctors and medical care today.

4. How do you feel about the treatment you have been receiving for your present illness, and the doctors who are treating you?

0 The treatment and the treatment staff have been excellent.

1 The treatment has been pretty good on the whole, although there have been a few problems.

2 I have not been impressed with the treatment I have received, but I think it is probably the best they can do.

3 I am very unhappy with the treatment I have received and don't think the staff has done all
they could have for me.

5. When they are ill, different people expect different things about their illness, and have different attitudes about being ill. Could you please describe your feelings about your recovery?

0  I am sure that I am going to overcome my illness and its problems quickly and get back to being my old self.

1  My illness has caused some problems for me, but I feel I will overcome them fairly soon, and get back to the way I was before.

2  My illness has really put a great strain on me, both physically and mentally, but I am trying very hard to overcome it, and feel sure that I will be back to my old self one of these days.

3  I feel worn out and very weak from my illness and there are times when I don’t know if I am really ever going to overcome it.

6. Being ill can be a confusing experience, and some patients feel that they do not receive enough information and details from their doctors and the medical staff about their illness. How do you feel?

0  I have been give a very complete picture and my doctor and the medical staff have give me all the details I wish.

1  I have a pretty fair understanding about my illness
and I feel that if I want to know more I can always get the information.

2 I do have some information about my illness but I feel I would like to know more.

3 My doctor and medical staff have told me very little about my illness even though I have asked more than once.

7. In an illness such as yours, people have different ideas about their treatment and what to expect from it. How do you feel?

0 I believe my doctors and medical staff are quite able to direct my treatment and feel it is the best treatment I could receive.

1 I have trust in my doctor's direction of my treatment; however, sometimes I have doubts about it.

2 I don't like certain parts of my treatment which are very unpleasant, but my doctors tell me I should go through it anyway.

3 In many ways I think my treatment is worse than the disease, and I am not sure it is worth going through it.

8. In an illness such as yours, patients are given different amounts of information about their treatment. I wonder if you would mind telling me how much information you have been given?
0 I feel my information concerning treatment is very complete and up-to-date.
1 My information concerning treatment is pretty complete, but there are one or two things I still want to know.
2 I have some information about my treatment but not as much as I would like to have.
3 I have been told almost nothing about my treatment and feel left out about it.

SECTION II VOCATIONAL ENVIRONMENT

9. Has your illness in any way impaired your ability to do your job?
   0 No impairment.
   1 Mild impairment, but very minor problems.
   2 Some serious problems.
   3 Illness has totally prevented me from doing my job.

10. How well do you physically perform your job now?
    0 Very well, complete adequacy.
    1 Slight inadequacy.
    2 Not too well.
    3 Poorly.

11. During the past 30 days, have you lost any time at work due to the illness?
    0 3 days or less.
    1 1 week.
12. Is your job as important to you now as it was before the illness?
0  Equal or greater importance than before.
1  Slightly less important.
2  A lot less important.
3  Little or no importance to me now.

13. Have you had to change your goals concerning your job as a result of your illness?
0  My goals are unchanged.
1  There has been a slight change in my goals.
2  My changes have changed quite a bit.
3  I have changed my goals completely.

14. Have you noticed any increase in arguments, friction, or difficulty in getting along with your coworkers since your illness?
0  None.
1  A slight increase in problems.
2  A moderate increase in problems.
3  A great increase in problems.

Section III  Domestic Environment

15. How would you characterize your relationship with your spouse (boyfriend, parent, etc.)?
0  Very good, there have been no changes in our relationship.
1 Adequate, we are a little less close since my illness.

2 Somewhat inadequate, we are definitely less close since my illness.

3 Markedly inadequate, we have had serious problems or a break in our relationship since my illness.

16. How would you characterize your relationship with the other people you live with (e.g., children, grandparents, etc.)?

0 Very good.

1 Adequate.

2 Somewhat inadequate.

3 Markedly inadequate, very poor.

17. To what degree has your illness interfered with your duties and tasks around the house?

0 No interference.

1 Slight interference, easily overcome.

2 Substantial impairment of some domestic duties.

3 Marked impairment, affecting all or nearly all tasks.

18. In those areas where you have found your abilities impaired by your illness, has your family shifted roles to take over those duties?

0 Excellent family adaptation.

1 Generally adequate adaptation with some flaws.

2 Generally inadequate adaptation, but many things
are left undone.

3 Highly inadequate adaptation, the family has not been able to help out at all.

19. Has your illness resulted in any decrease in communication between yourself and members of your family?

0 No decrease in communication.

1 A slight decrease in communication.

2 Communication has decreased, and I feel somewhat withdrawn from them.

3 Communication has decreased a lot, and I feel very alone.

20. Many people with an illness such as yours feel they need help from other people in getting things done from day to day; do you feel that you need that kind of help, and is there anyone available to provide it?

0 I don't feel I need such help, or the help I need is available from my family or friends.

1 I don't get all the help I need all of the time, but most of the time help is there when I need it.

2 I get some help, but I can't count on it all the time.

3 I really need help but seldom is anyone around to help.

21. Have you experienced any physical disability associated with your illness?
0  No physical disability.
1  A slight physical disability.
2  A moderate physical disability.
3  A severe physical disability.

22. An illness such as yours often creates a drain on a family's financial resources; are you having any difficulty meeting the financial demands on your illness?
0  No financial drain.
1  Slight financial drain.
2  Substantial financial drain.
3  Severe financial hardship.

Section IV  Sexual Relations

23. Sometimes, having an illness can create problems in a close interpersonal relationship; has your illness led to any problems in your relationship with your ____ (husband, wife, boyfriend, fiance, etc.)?
0  No change in investment or intensity of the relationship.
1  We are a little less close since my illness.
2  A significant reduction in intensity or investment since the illness.
3  Relationship terminated, with present illness a causal factor.

24. When some people become ill they report a loss of interest in sexual activities; have you experienced a
reduction of sexual interest associated with your illness?

0  No loss of sexual interest.
1  A slight loss of sexual interest.
2  A marked loss of sexual interest.
3  Absolutely no sexual interest since the illness.

25. Has there been a reduction in the frequency of your sexual activities during the past month?

0  No decrease in sexual activities.
1  Slight decrease in sexual activities.
2  Marked decrease in sexual activities.
3  Sexual activities have stopped.

26. Has there been any change in the pleasure or satisfaction you derive from sexual activities?

0  No change in sexual satisfaction.
1  A slight loss of sexual pleasure or satisfaction.
2  A marked loss of sexual pleasure or satisfaction.
3  Sexual pleasure and satisfaction have stopped.

27. Sometimes an illness will cause an interference in a person's ability to perform sexual activities even they are still interested in sex. Has this happened to you, and if so, to what degree?

0  No change in my ability to have sex.
1  Slight problems with my sexual performance.
2  Constant sexual performance problems.
3  Totally unable to perform sexually.
28. Have any conflicts or arguments developed between you and your partner as a result of any sexual difficulties you have been having?

0  No conflicts or arguments.
1  Mild conflicts, some arguments.
2  Moderate conflicts, frequent arguments.
3  Marked conflicts, constant arguments.

Section V  Extended Family Relationships

29. Have you had as much communication with members of your family outside your immediate household since your illness (e.g., called them on the phone, written to them, etc.)?

0  Contact is the same or greater since the illness.
1  Contact is slightly less.
2  Contact is markedly less.
3  No contact since the illness.

30. Have you remained as interested in interactions or activities with these members of your family as you were prior to your illness?

0  Interest is the same or greater since the illness.
1  Interest is slightly less.
2  Interest is a lot less since the illness.
3  Little or no interest in getting together with them.

31. Do you depend on these members of your family for support and physical help, particularly since your
illness?
0  I need no help, or they give me all the help I need.
1  Their help is enough, except for some minor changes.
2  They give me some help but not enough.
3  They give me little or help even though I need a great deal.

32. Do you socialize much with these members of your family? Has your illness reduced your ability to do so?
0  Little or no change in socializing.
1  Socializing with them has been slightly reduced.
2  Substantial reduction in socialization.
3  Socialization with extended family totally eliminated.

33. In general, how well have you been getting along with these members of your family recently?
0  Good, same as previously.
1  Fair, slightly less satisfactorily.
2  Poor, significantly less satisfactorily.
3  Very poor as compared to previously.

Section VI  Social Environment

34. Are you still as interested in your leisure time activities and hobbies as you were prior to your illness (i.e., watching TV, sewing, bicycling, etc.)?
169

0  Same level of interest as previously.
1  Slightly less interest than before the illness.
2  Significantly less interest than before the illness.
3  Little or no interest remaining.

35. How about actual participation? Are you still actively involved in doing those activities?
0  Participation remains unchanged.
1  Participation reduced slightly.
2  Participation reduced significantly.
3  Little or nor participation at present.

36. Are you are interested in leisure time activities with your family (i.e., playing cards & games, taking trips, going swimming, etc.) as you were prior to your illness?
0  Same level of interest as previously.
1  Slightly less interest than before.
2  Significantly less interest than before.
3  Little or no interest remaining.

37. Do you still participate in those activities to the same degree you once did?
0  Participation remains unchanged.
1  Participation reduced slightly.
2  Participation reduced significantly.
3  Little or no participation at present.

38. Have you maintained your interest in social activities
since your illness (e.g., social clubs, church groups, going to the movies, etc.)?
0  Same level of interest as previously.
1  Slightly less interest than before.
2  Significantly less interest than before.
3  Little or no interest remaining.

39. How about participation? Do you still go out with your friends and do those things?
0  Participation remains unchanged.
1  Participation reduced slightly.
2  Participation reduced significantly.
3  Little or no participation at present.

Section VII  Psychological Distress

In this section, the questions to be answered by the interviewer are presented along with suggested questions to the patient, which appear in parentheses.

40. Does the patient manifest signs or complain of symptoms of fear, nervousness, or anxiety? (Have you been feeling anxious or nervous recently?)
0  Not at all.
1  A little bit.
2  Quite a bit.
3  Extremely.

41. Does the patient manifest signs or complain of symptoms of sadness, dysphoria, or loss of life interest? (Have you been feeling sad or depressed at all
recently)?

0  Not at all.
1  A little bit.
2  Quite a bit.
3  Extremely.

42. Does the patient manifest signs or complain of symptoms of anger, hostility, or irritability? (Have you been more irritable or angry recently?)

0  Not at all.
1  A little bit.
2  Quite a bit.
3  Extremely.

43. Does the patient manifest signs or complain of symptoms of guilt, blame, or remorse? (Have you been feeling guilty or like you have let people down lately?)

0  Not at all.
1  A little bit.
2  Quite a bit.
3  Extremely.

44. Does the patient admit to or complain of worrying about his/her condition or other matters? (Have you been worrying about things more since you became ill?)

0  Not at all.
1  A little bit.
2  Quite a bit.
3  Extremely.
45. Does the patient behave or speak in a manner that indicates his/her self-esteem and self-evaluation has fallen? (Have you been feeling down on yourself or feeling inadequate since your illness?)

0 Not at all.
1 A little bit.
2 Quite a bit.
3 Extremely.

46. Has the patient experienced a negative body image change as a result of his/her illness? (Do you think your illness has changed your physical appearance in any way?)

0 Not at all.
1 A little bit.
2 Quite a bit.
3 Extremely.
APPENDIX E

COMMUNICATION ITEMS IDENTIFIED BY VARIABLE

NO = strong disagreement
no = mild disagreement
? = neither agreement nor disagreement
yes = mild agreement
YES = strong agreement

Frequency of Communication

1. I often discuss my illness with my ____.
   NO  no  ?  yes  YES

2. My ____ talks with me about my illness.
   NO  no  ?  yes  YES

3. I frequently talk about my illness with my ____.
   NO  no  ?  yes  YES

4. I do not talk about my illness with my ____.
   NO  no  ?  yes  YES

5. My ____ avoids talking about my illness.
   NO  no  ?  yes  YES

Encouragement

1. My ____ encourages me to talk about my cancer.
   NO  no  ?  yes  YES

2. My ____ asks questions concerning my illness.
   NO  no  ?  yes  YES

3. My ____ doesn't want me to talk about my illness.
   NO  no  ?  yes  YES
4. My ____ does not ask questions about my illness.
   NO no ? yes YES

5. When my ____ asks me questions, they really want to know the answer.
   NO no ? yes YES

6. When I confide in my ____ about my illness, I get the idea that it makes them feel uncomfortable.
   NO no ? yes YES

Honesty

1. My ____ tells me I look good when I know that I do not.
   NO no ? yes YES

2. My ____ tell me everything they know about my illness.
   NO no ? yes YES

3. My ____ wants to know the truth about my illness.
   NO no ? yes YES

4. My ____ does not talk honestly with me about my illness.
   NO no ? yes YES

5. My ____ pretends to be cheerful around me.
   NO no ? yes YES

6. I do not talk honestly with my ____ about my illness.
   NO no ? yes YES

7. My ____ and I are very open about my illness.
   NO no ? yes YES
Emotional Support
1. My ____ avoids me since I have been treated for cancer.
   \[\text{NO no ? yes YES}\]
2. I am not very close to my ____.
   \[\text{NO no ? yes YES}\]
3. My ____ shows me that they love me the way I am.
   \[\text{NO no ? yes YES}\]
4. My ____ gives me all the moral support I need.
   \[\text{NO no ? yes YES}\]
5. I rely on my ____ for emotional support.
   \[\text{NO no ? yes YES}\]
6. My ____ is sensitive to my personal needs.
   \[\text{NO no ? yes YES}\]
7. I wish my ____ would provide more emotional support.
   \[\text{NO no ? yes YES}\]

Communication Satisfaction
1. Talking with my ____ makes me feel better.
   \[\text{NO no ? yes YES}\]
2. My ____ expresses a lot of interest in what I have to say.
   \[\text{NO no ? yes YES}\]
3. I am very dissatisfied with my communication with my ____.
   \[\text{NO no ? yes YES}\]
4. I feel that I can talk to my _____ about anything.
   NO   no   ?   yes  YES

5. I am very satisfied with my communication with
   my _____.
   NO   no   ?   yes  YES

Negative Aspects of the Illness

1. My _____ doesn't want me to talk about the negative
   aspects of my illness (fears, pain, recurrence, death,
   etc.).
   NO   no   ?   yes  YES

2. My _____ avoids talking about the negative side of my
   illness (fears, pain, recurrence, death, etc.).
   NO   no   ?   yes  YES

3. My _____ and I are very open about the negative
   aspects of my illness (fears, pain, recurrence, death,
   etc.).
   NO   no   ?   yes  YES

4. I wish my _____ would provide more emotional support
   in regard to the negative aspects (fears, pain, 
   recurrence, death, etc.) of my illness.
   NO   no   ?   yes  YES

5. I frequently talk about the negative aspects (fears, 
   pain, recurrence, death, etc.) of my illness with
   my _____.
   NO   no   ?   yes  YES
APPENDIX F

COMMUNICATION INSTRUMENT USED IN THE STUDY

Demographics
Name:__________________________
Sex: Male Female
Date of Birth:____________________
Educational Level: Grammar School  Some High School
               Finished HS  Some College/Technical Training
               College Degree  Post-Graduate  Other:____________
Marital Status: Single  Separated/Divorced
               Married  Widowed
Length of time married: _______ yrs
Number of children:______
Church Attendance: Twice a Week  Weekly  Biweekly
               Monthly  Quarterly  Yearly  Never
Religious Affiliation: Catholic  Baptist  Jewish
               Methodist  Presbyterian  Episcopal  None
               Other:____________
Are you presently employed? Yes  No  Retired
Occupation: ________________
Is this your first serious illness: Yes  No  ____________
Is this the first serious illness in your immediate family: Yes  No
If no, what illness:__________________________
Informed Consent

This study examines the relationship between communication interactions and adjustment to illness (cancer). The attached questionnaire examines your actual communication with family members concerning cancer. The findings of the study will be used to help others deal with cancer. Knowing the purpose of the study, I hereby freely and voluntarily consent to complete the attached questionnaire. Questions regarding this study may be directed to Mike Gotcher, Ph.D. candidate at LSU, at 504-388-6895. I am free to ask questions at any time.

I understand that my participation in this study is voluntary and that I may terminate my involvement at any time. I understand that the information I provide will be confidential and that my identity will not be revealed.

__________________________________________  _____________
Signature of Patient                                Date
SURVEY OF PATIENT COMMUNICATION

Do you have someone that you can talk with openly and seriously about your illness? Yes No

Who: ____________________________

Why are you able to talk with _______ about your illness?

What family member do you talk the most with concerning your illness? _______________________. Please answer each question in relation to the last 30 days and with this family member in mind.

Below is a list of potential topics of conversation about your illness, please indicate which topics you have discussed (not merely mentioned but actually discussed) with your _______.

____ Doctors (pos)  ____ Doctors (neg)
____ Pain
____ The future
____ The surgery
____ Chemotherapy
____ Fears
____ Death
____ Other:

____ Causes of the illness
____ Financial concerns
____ Radiation therapy
____ Treatment side effects
____ Consequences of illness
____ Cancer recurrence
This survey examines actual communication that you have had about your illness. Please read each item carefully and answer it as honestly as possible, using the following scale.

- **NO** = strong disagreement
- **no** = mild disagreement
- **?** = neither agreement nor disagreement
- **yes** = mild agreement
- **YES** = strong agreement

1. I frequently discuss my illness with my ____.
   - NO  no  ?  yes  YES

2. My ____ asks questions concerning my illness.
   - NO  no  ?  yes  YES

3. My ____ doesn't want me to talk about the negative aspects of my illness (fears, pain, recurrence, death, etc.).
   - NO  no  ?  yes  YES

4. My ____ wants to know the truth about my illness.
   - NO  no  ?  yes  YES

5. My ____ avoids talking about the negative side of my illness (fears, recurrence, death, pain, etc).
   - NO  no  ?  yes  YES

6. My ____ encourages me to talk about my cancer.
   - NO  no  ?  yes  YES
7. My _____ gives me all the moral support I need.
   NO no ? yes YES
8. My _____ avoids talking about my illness.
   NO no ? yes YES
9. My _____ does not ask questions about my illness.
   NO no ? yes YES
10. My _____ talks with me about my illness.
    NO no ? yes YES
11. When I confide in my _____ about my illness, I get the idea that it makes him/her feel uncomfortable.
    NO no ? yes YES
12. I frequently talk about my illness with my _____.
    NO no ? yes YES
13. When my _____ asks me questions, he/she really wants to know the answer.
    NO no ? yes YES
14. I do not talk about my illness with my _____.
    NO no ? yes YES
15. My _____ tells me I look good when I know that I do not.
    NO no ? yes YES
16. My _____ pretends to be cheerful around me.
    NO no ? yes YES
17. My _____ tells me everything he/she knows about my illness.
    NO no ? yes YES
18. I am very dissatisfied with my communication with my _____.

   NO  no  ?  yes  YES

19. My ____ discourages me from talking about my illness.

   NO  no  ?  yes  YES

20. My ____ does not talk honestly with me about my illness.

   NO  no  ?  yes  YES

21. My ____ and I are very open about the negative aspects of my illness (fears, pain, recurrence, death, etc.).

   NO  no  ?  yes  YES

22. My ____ avoids me since I have been treated for cancer.

   NO  no  ?  yes  YES

23. I do not talk honestly with my ____ about my illness.

   NO  no  ?  yes  YES

24. I am not very close to my _____.

   NO  no  ?  yes  YES

25. My ____ shows me that they love me the way I am.

   NO  no  ?  yes  YES

26. I rely on my ____ for emotional support.

   NO  no  ?  yes  YES
27. I wish my _____ would provide more emotional support in regard to the negative aspects (fears, pain, recurrence, death, etc.) of my illness.  

   NO  no  ?  yes  YES

28. Talking with my _____ makes me feel better.  

   NO  no  ?  yes  YES

29. My _____ expresses a lot of interest in what I have to say.  

   NO  no  ?  yes  YES

30. My _____ is sensitive to my personal needs.  

   NO  no  ?  yes  YES

31. I feel that I can talk to my _____ about anything.  

   NO  no  ?  yes  YES

32. I frequently talk about the negative aspects (fears, pain, recurrence, death, etc.) of my illness with my _____.

   NO  no  ?  yes  YES

33. I am very satisfied with my communication with my _____.

   NO  no  ?  yes  YES

34. What topics would you like to discuss more fully with your _____?  

   _____ Doctors (pos)  _____ Doctors (neg)  
   _____ Pain  _____ Causes of the illness  
   _____ The future  _____ Financial concerns  
   _____ The surgery  _____ Radiation therapy
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Chemotherapy  Treatment side effects
Fears  Consequences of illness
Death  Cancer recurrence
Other:

35. Why haven't you discussed these topics?

36. Which of the following best describes your communication with your about your illness.

We try not to talk about it.
We focus on the negative side.
We focus on the positive side.
We talk about everything, positive and negative

37. How has cancer changed your relationship with your?

No change
Improved the relationship
Harmed the relationship

Please explain:
VITA

James Micheal Gotcher was born in Springfield, Tennessee on August 26, 1958, the son of Jimmy C. and Sandra F. Gotcher. He graduated from Green Brier High School, Green Brier, Tennessee in 1976. In 1980, he was awarded the Bachelor of Science degree, magna cum laude, from Austin Peay State University where he majored in Speech and Theatre. In August of 1983, he received a Master of Arts degree from the University of Florida in the field of Speech. He taught one year at the University of Miami and three years at Austin Peay State University before entering the Ph.D. program in speech at Louisiana State University in August of 1987. As a graduate student at Louisiana State University, he coached the LSU Debate team to a tenth place national ranking in 1988-89. He is now a candidate for the Doctor of Philosophy degree in speech at Louisiana State University in December, 1990.
Candidate: James M. Gotcher

Major Field: Speech

Title of Dissertation: The relationship between family communication and psychosocial adjustment of cancer patients.

Approved:

Major Professor and Chairman

Dean of the Graduate School

EXAMINING COMMITTEE:

Date of Examination:

7/18/90