

FACTORS AFFECTING MARITAL SATISFACTION  
FOR PARENTS OF PEDIATRIC  
ONCOLOGY PATIENTS

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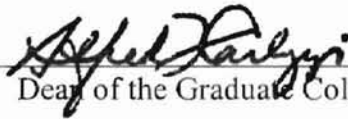

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***Trust in the Lord with all your heart and lean not on your own understanding; in all your ways acknowledge him, and he will make your paths straight. – Proverbs 3:5-6***

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## CHAPTER I

### INTRODUCTION

Childhood cancer is the largest nonaccidental cause of death for children between the ages of 2 and 16 years old (Bearison & Mulhern, 1994), thus representing a significant problem for American families. Approximately 10,000 children are diagnosed with cancer each year in the United States (Lampkin, 1993), ranking it as one of the more prevalent disabling childhood chronic illnesses (Newacheck & Halfon, 1998). Cancer represents a heterogeneous group of disorders (Eiser, 1994; Friedman, Latham, & Dahlquist, 1998), characterized by rapid and unregulated reproduction or growth of abnormal cells that interferes with normal physiological functioning (Mulhern & Friedman, 1990). Although childhood cancer was previously considered to be a terminal illness, it is currently considered a chronic, life-threatening disease due to improved medical technology. Some estimate that as many as two-thirds of all children diagnosed with cancer will survive their malignancy (Friedman et al., 1998). As a result, families must now learn to manage their child's disease on a daily basis, as well as cope with long-term, aggressive treatment regimens and uncertainty about the child's survival (Dolgin & Phipps, 1996). Improved survival rates also mean that the long-term adjustment of children with cancer and their families is of greater concern than ever before (e.g., Frank, Blount, & Brown, 1997; Kupst, 1992; Mulhern & Friedman, 1990). Certainly, childhood cancer is disruptive of normal childhood and family experiences and has a significant impact on the parents and siblings of the ill child (e.g., Feeman & Hagen, 1990; Havermans & Eiser, 1994; Ostroff & Steinglass, 1996).

Although some studies report that childhood cancer has minimal impact on families (e.g., Barbarin, Hughes, & Chesler, 1985; Davies, Noll, DeStefano, Bukowski, & Kulkarni, 1991; Eiser, 1994; Havermans & Eiser, 1994; Kazak & Barakat, 1997; Kazak & Meadows, 1989; Kupst, 1992; Kvist, Rajantie, Kvist, & Siimes, 1991; Speechley & Noh, 1992), a number of studies report that children with cancer and their families experience significant adjustment difficulties. Survivors of childhood cancer frequently report significant emotional difficulties such as anxiety and depression, social difficulties, family problems, and learning difficulties (e.g., Chang, 1991; Greenberg & Meadows, 1991; Sawyer, Antoniou, Toogood, & Rice, 1997). Siblings of children with cancer also appear to be affected by the experience, as evidenced by reported increases in emotional and behavioral problems following diagnosis of cancer in a sibling (Sahler et al., 1994; Sloper & While, 1996). Parents seem to experience significant difficulties, as well, including marital problems (Dahlquist et al., 1993; Dahlquist, Czyzewski, & Jones, 1996; Greenberg & Meadows, 1991), depression (Dahlquist, et al., 1993; Van Dongen-Melman et al., 1995), anxiety (Dahlquist et al., 1993; Hughes & Lieberman, 1990; Sawyer et al., 1997; Van Dongen-Melman et al., 1995), and social problems (Morrow, Carpenter, & Hoagland, 1984).

Inconsistent reports exist regarding the degree of adjustment difficulties in children with cancer and their families. However, most researchers would agree that children and their families are indeed at risk for adjustment difficulties. Thus, researchers have attempted to identify risk and protective factors influencing adjustment to childhood cancer. Better psychological and social functioning for children with cancer has been associated with higher levels of family cohesion and organization, as well as lower levels

of family conflict (Varni, Wilcox, & Hanson, 1988). Notably, the adjustment of individual parents of pediatric oncology patients is consistently associated with the adjustment of ill children and their well-siblings (e.g., Chang, 1991; Dolgin & Phipps, 1996; Drotar, 1997; Frank et al., 1997; Kupst et al., 1995; Kupst & Schulman, 1988; Kupst et al., 1982; Mulhern, Fairclough, Smith, & Douglas, 1992; Overholser & Fritz, 1990; Sahler et al., 1997). Thus, it would appear that the adjustment of family members is interrelated in complex ways.

The issue of adjustment in the family is particularly important given the research finding that parental reactions and adjustment are relatively consistent from the time of diagnosis to the end of treatment, and even as many as 10 years following the diagnosis of cancer in a child (Kazak & Barakat, 1997; Kupst & Schulman, 1988; Van Dongen-Melman et al., 1995). These findings provide strong evidence that the effects of childhood cancer on the family are long-term, persisting for several years after the diagnosis of childhood cancer. In sum, it appears that parents who initially experience higher levels of distress are at heightened risk for the occurrence of more severe long-term difficulties.

As indicated by research, marital functioning certainly appears to be impacted by having a child with cancer (e.g., Chang, 1991; Kupst & Schulman, 1988; Kupst et al., 1984). Because marital functioning is associated with the adjustment of individual parents, children with cancer, and well-siblings in a complex, transactional manner, it is important to recognize and study the influence of marital functioning on adjustment outcomes. Notably, several studies find that the degree of marital dissatisfaction experienced is significantly related to overall family coping with childhood cancer (e.g.,



Barbarin et al., 1985; Dahlquist et al., 1993; Kupst & Schulman, 1988; Kupst et al., 1984; Mulhern & Friedman, 1990). However, research regarding marital satisfaction and childhood cancer is problematic in many regards, including the fact that often only one partner completes measures (e.g., Kupst and colleagues). Additionally, few researchers have addressed the potential associations between individual adjustment factors and marital dissatisfaction. Dahlquist and her colleagues (Dahlquist et al., 1993; Dahlquist et al., 1996) explored this question in a series of studies focusing on parents of children diagnosed with cancer. Analyses indicated that levels of marital dissatisfaction for each partner were associated with the individual adjustment of both partners. This occurred in such a way that the combination of *both* partners' emotional responses led to better prediction of marital dissatisfaction than did the use of only one partner's report. Thus, it appears that emotional responses of each individual affect the levels of marital dissatisfaction experienced by both partners.

The current study sought to extend this research by examining how levels of marital dissatisfaction in parents of children with cancer are affected by specific intrapersonal cognitive appraisal variables, namely, illness uncertainty and coping style, in addition to intrapersonal adjustment. The inclusion of cognitive appraisal variables provided further knowledge of marital dissatisfaction beyond the influence of individual, global emotional adjustment, which was examined in the work of Dahlquist and her colleagues (Dahlquist et al., 1993; Dahlquist et al., 1996). Illness uncertainty and coping style were selected for this study because previous research clearly demonstrated that these cognitive appraisal variables indeed influence adjustment to chronic illness (e.g., Bouchard, Sabourin, Lussier, Wright, & Richer, 1998; Mishel, 1988).

Illness uncertainty is conceptualized as difficulty determining the meaning of or accurately predicting the outcomes of illness-related events (Mishel, 1988). Events involving uncertainty are often perceived as being particularly stressful (Mishel, 1984), and many illnesses possess characteristics that increase the likelihood that an individual will experience uncertainty. Illness uncertainty may be elevated even further in illnesses where no discernable symptom pattern is present (Mishel, 1988), such as in childhood cancer. In the broader context of chronic illness, research has consistently indicated that managing illness uncertainty can play a vital role in an individual's adaptation to an event (Mishel, 1988).

Coping styles are also believed to influence an individual's adjustment to stressful events. Lazarus and Folkman (1984) have described coping as a cognitive and behavioral process that mediates the relationship between an individual and the environment by helping to control internal and/or external demands. Coping is viewed as a contextual process because various strategies may be more or less effective in different situations (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986). Two broad types of coping style have been identified: problem-focused coping and emotion-focused coping (Lazarus & Folkman, 1984). Problem-focused coping efforts are aimed at changing, managing, or controlling the external environment, whereas emotion-focused strategies are used by an individual to regulate internal reactions to a situation (Folkman et al., 1986; Lazarus & Folkman, 1984). Of particular interest to the current proposal are recent findings that the coping styles used by one partner influenced the marital dissatisfaction experienced by both partners (Bouchard et al., 1998). This pattern of results suggests that

the role of coping styles in marital dissatisfaction is indeed an important area for further inquiry.

In summary, several intrapersonal and interpersonal variables may be related to marital dissatisfaction in parents of children with cancer. Research has demonstrated that the cognitive appraisal variable of illness uncertainty is associated with individual adjustment to a variety of chronic illnesses (e.g., Mishel, 1988) and may also be related to marital adjustment in similar contexts. Additionally, the use of specific coping styles by individuals and their partners appears to play a role in the level of marital dissatisfaction experienced by both partners (Bouchard et al., 1998).

Given the importance of the marital relationship in the adjustment of families to childhood cancer, this paper seeks to explore several issues regarding adjustment (i.e., intrapersonal global distress), cognitive appraisal mechanisms (i.e., illness uncertainty and coping style), and levels of marital dissatisfaction for parents of children with cancer. A review of literature is provided, describing existing knowledge regarding parent adjustment to childhood cancer in both individual and marital domains. Available chronic illness and pediatric cancer literatures relating to illness uncertainty and coping style are reviewed as well. Then, details of the study, which was undertaken as an attempt to clarify how adjustment factors and cognitive appraisal mechanisms influence marital dissatisfaction in this unique population, are provided. Finally, the results of the current study and their implications are examined.

It was predicted that higher levels of individual distress for both mothers and fathers would be associated with greater marital dissatisfaction for both parents. Additionally, higher levels of illness uncertainty were expected to be related to higher

ratings of individual distress for both mothers and fathers. Higher levels of illness uncertainty were also predicted to be associated with increased marital dissatisfaction. Coping style was expected to be significantly associated with marital dissatisfaction as well. Specifically, hierarchical regression analyses were conducted to predict marital dissatisfaction using individual distress, illness uncertainty, and coping style as the predictor variables; regression analyses were conducted separately for fathers and mothers.

## CHAPTER II

### LITERATURE REVIEW

#### Childhood Cancer

Recent findings show that approximately 10,000 children and adolescents are diagnosed with some form of cancer each year in the United States (Lampkin, 1993). Although childhood cancer is relatively rare, and despite improved treatment outcomes, childhood cancer remains the largest nonaccidental cause of death for children who are between the ages of 2 years and 16 years (Bearison & Mulhern, 1994). Importantly, childhood cancer has also been identified as one of several chronic childhood conditions that creates disabling effects for children (Newacheck & Halfon, 1998). The average age of onset of childhood cancer is 5 years old, and the average duration of active treatment for childhood cancer ranges from one year to three years (Kazak, 1994).

The term *cancer* is often thought to refer to a single disease; however, cancer is a heterogeneous group of disorders that differ along several dimensions, including symptoms, diagnosis, and treatment (Eiser, 1994; Friedman et al., 1998). The singular defining feature of any form of cancer is the rapid and unregulated reproduction or growth of abnormal cells (Mulhern & Friedman, 1990). This process incurs damage because it interferes in the functioning of normal cells, such that necessary and routine physiological processes are disrupted. There are various forms of childhood cancer, including leukemias, brain tumors, lymphomas, neuroblastoma, soft tissue sarcomas, Wilm's tumor, and bone tumors. These disorders are generally classified according to the physiological systems affected (Sherwood, 1997).

Leukemia and brain/nervous system tumors are the most common childhood cancers, together accounting for approximately half of all cases of cancer diagnosed in children under the age of 15 years (Friedman et al., 1998). Leukemias are characterized by the uncontrolled proliferation of white blood cells, which are typically critical in providing immune defense (Sherwood, 1997). One form of leukemia, acute lymphoblastic leukemia (ALL), is the single most common type of childhood cancer (Coniglio & Blackman, 1995; Kazak & Nachman, 1991; Mulhern & Friedman, 1990; Said, Waters, Cousens, & Stevens, 1989). The second most common form of childhood cancer is brain tumors, which may include medulloblastomas, cerebellar astrocytomas, and brainstem gliomas (Cecalupo, 1994).

Other forms of childhood cancer include lymphomas, which affect various types of cells in the immune system (Cecalupo, 1994). This class of malignancies includes Hodgkin's Disease and non-Hodgkin's lymphomas (Cecalupo, 1994). A highly malignant tumor is neuroblastoma, which affects sympathetic nervous tissue (Cecalupo, 1994; Friedman et al., 1998). On the other hand, Wilm's tumor, which occurs in the kidney, has a better prognosis than many other forms of childhood cancer (Cecalupo, 1994; Friedman et al., 1998). Soft tissue sarcomas, including rhabdomyosarcoma, act on soft tissues, most commonly those in the head and neck region (Cecalupo, 1994). Finally, bone tumors, which include osteosarcoma and Ewing's sarcoma, may occur in children but are fairly uncommon childhood malignancies (Cecalupo, 1994).

The most common initial symptoms of childhood cancer include anemia, fatigue, general malaise, pallor (paleness), irritability, loss of appetite or weight, fever, excessive bruising, petechiae or purpura (discolorations of the skin due to abnormally functioning

blood vessels), bleeding, and/or bone pain (Cecalupo, 1994; Mulhern & Friedman, 1990; Teufel, 1995). The procedures used to establish a diagnosis of childhood cancer vary by the type of cancer that is suspected. For example, if leukemia is suspected, a white blood cell (WBC) count using a routine blood test is performed. Patients with leukemia will generally have an elevated WBC count greater than 10,000 or up to 100,000 WBC per cubic millimeter (Nesbit, 1989), compared with a normal count of 7,000 WBC per cubic millimeter (Sherwood, 1997). For patients who meet this criterion of elevated WBC, a bone marrow aspiration is performed to determine whether malignant lymphoblasts exist in the bone marrow, which would establish a diagnosis of leukemia (Mulhern & Friedman, 1990). Further, a lumbar puncture, or spinal tap, is carried out to determine if the child also has central nervous system (CNS) leukemia, which is identified by the presence of leukemic cells in the cerebrospinal fluid (Mulhern & Friedman, 1990). Other procedures that may be used to establish a diagnosis of cancer in a child include computer tomography (CT) scan, diagnostic ultrasound, magnetic resonance imaging (MRI), and finally, pathologic examination of samples taken from tissue biopsies (Nesbit, 1989).

Despite the differences in types of cancer, the treatment options are similar across childhood cancers. Chemotherapy, surgery, radiation therapy, bone marrow transplantation, or any combination of the four, may be used to treat cancer depending on a variety of factors unique to the particular case (Granowetter, 1994; Grosfeld, 1999). While medications and treatment protocols have varied over the years, these basic treatments have persisted as the primary options for the treatment of childhood cancer (Grosfeld, 1999). The available methods for treating childhood cancer must be carefully

managed because each treatment poses its own risks for short-term and long-term side effects (Parisi, Fahmy, Kaminsky, & Malogolowkin, 1999).

Chemotherapy medications are often used to treat cancers because of their ability to be administered systemically to fight cancer both at the site of its origin and throughout the body (Granowetter, 1994). Unfortunately, because chemotherapy is a systemic treatment, the medications used can affect normal tissues and cause side effects including temporary low blood counts leading to increased susceptibility to infection, hair loss, nausea and vomiting, changes in appetite, or short-term or long-term damage to internal organs (Granowetter, 1994).

Surgery may be used to remove solid tumors but is typically not successful in the treatment of most cancers due to presence of metastases (Granowetter, 1994). Metastases are instances in which the tumor is not localized, but instead branches into surrounding areas, spreading throughout various physiological systems. Even if surgery is used, chemotherapy or radiation therapy is also used to improve the chances for successful treatment of the malignancy (Granowetter, 1994).

Additionally, radiation therapy may be required when surgery and/or chemotherapy do not completely remove a cancerous tumor (Granowetter, 1994). Radiation therapy may also be required when central nervous system involvement is present because the blood-brain barrier is impermeable to chemotherapy agents. Although radiation therapy itself is not painful, it may be difficult for children because it can only be delivered to a patient who is completely still (Granowetter, 1994). Like chemotherapy, radiation may cause a variety of side effects, including irritation of the skin where radiation is directed, general malaise, and loss of appetite, as well as specific



effects based on the site of the tumor (Granowetter, 1994). Radiation therapy poses additional risks, especially when given in high doses, which include the prevention of normal growth or increased danger for secondary malignancies (Granowetter, 1994).

Another treatment method that is used most commonly to treat leukemias is bone marrow transplantation. This procedure is used because leukemias originate in the bone marrow, which is responsible for the production of the component parts of blood. The procedure involves destruction of bone marrow in the patient through high doses of chemotherapy and possibly radiation therapy (Granowetter, 1994). After treatment to destroy the cancerous bone marrow, the patient is given donated bone marrow intravenously to repopulate the marrow with the required components to resume the production of all elements of the blood (Granowetter, 1994). Normal bone marrow function does not resume for 3 to 6 weeks, posing high risks of infection or other complications including bleeding (Granowetter, 1994). Bone marrow transplantation may also be used to deliver intensive doses of chemotherapy or radiation therapy for solid tumors (Granowetter, 1994).

Regardless of the type of childhood cancer or treatment, the first goal of treatment is to induce a remission (Cecalupo, 1994; Coniglio & Blackman, 1995; Mulhern & Friedman, 1990), which is defined as the reduction of the level of cancer cells below medical detection (Coniglio & Blackman, 1995; Granowetter, 1994; Teufel, 1995). Following remission induction, long-term treatment continues because cancerous cells are likely still present despite the inability to detect them using current medical technology (Granowetter, 1994). Due to continued treatment beyond remission induction,

active treatment for childhood cancer typically lasts anywhere from one to three years (Kazak & Nachman, 1991; Mulhern & Friedman, 1990).

Current data suggest that if a child is diagnosed with cancer at the average age of onset, which is five years old (Kazak, 1994), the child and family can minimally expect to be involved in active treatment until the child is eight years old. Annually in the United States, as many as 10,000 children and adolescents (Lampkin, 1993) and their families may be faced with beginning this long process. In addition to the chronicity of treatment, families must also cope with the invasiveness of treatments for childhood cancer. Treatment methods such as chemotherapy and radiation therapy may be used as often as once each week (Granowetter, 1994). Although surgery and bone marrow transplantation will not be experienced this frequently, these treatments often require even more coordinated efforts by the family and medical team, as well as lengthy hospital stays (Cecalupo, 1994). Importantly, the treatments themselves, as well as accompanying side effects, are disruptive of normal experiences for children and their families. A significant burden is placed on parents, especially to manage the disease such that they can also meet other role obligations (Friedman et al., 1998). Thus, the very nature of cancer and its treatment creates multiple challenges for children and their parents, producing a great deal of stress for the family system, including the marital relationship.

### Survival Rates

Advances in medical technologies have allowed for the development of treatments that prolong the lives of pediatric oncology patients and improve their chances for long-term survival (e.g., Linet, Ries, Smith, Tarone, & Devesa, 1999). This has resulted in substantial increases in the five-year survival rates for many forms of cancer

in recent decades. For example, the five-year survival rate for ALL has increased from 10% in the 1970's (Cousens, Waters, Said, & Stevens, 1988) to anywhere from 60% to 70% (Dunsmore, 1999; Gamis & Nesbit, 1991; Heukrodt et al., 1988; Kazak & Nachman, 1991; Mulhern & Friedman, 1990) and possibly even as high as 80% (Dolgin & Phipps, 1996; Dunsmore, 1999). Of important note are recent findings that total childhood cancer mortality declined by 58% between 1978 and 1995 (Linnet et al., 1999). Notably, approximately two-thirds of all children diagnosed with cancer will survive their malignancy (Grosfeld, 1999; Friedman et al., 1998). Dramatic improvements in survival rates for pediatric oncology patients have resulted in a shift such that childhood cancer is now conceptualized as a life-threatening chronic illness, not as a terminal disease (e.g., Eiser, 1994; Friedman et al., 1998; Hockenberry, Herman, Schultz, & Falletta, 1998; Kazak, 1994).

Certainly, increases in long-term survival rates for children with cancer are welcome advances. However, the evolving nature of the disease and its treatment brings changes in the nature of adjustment and coping with the disease (Kazak, 1993). Several years ago, primary concerns for coping were related to issues of bereavement and grief (e.g., Eiser, 1994). Because children with cancer live longer and must remain in treatment for their disease longer, children and their families are now faced with the challenges of managing the disease on a daily basis over lengthy periods of time. Additionally, because of the increased chances of survival for a child with cancer, long-term adjustment of the child and the family has become a predominant issue in research and practice (e.g., Frank et al., 1997; Kupst, 1992; Mulhern & Friedman, 1990). This is further complicated, though, by the fact that "although scientific progress has created realistic hopes, the

ultimate fate of any one child or adolescent with cancer remains unknown” (Neville, 1998, p. 37). It seems, then, that the adjustment of families of children with cancer is a complicated and challenging task.

#### Family Adjustment to Childhood Cancer

The experience of childhood cancer is a unique stressor that carries with it the potential for negatively impacting children and their families. Children with cancer face treatments with aversive effects, as well as several invasive and painful procedures, for many years during the course of the disease. These treatments and procedures may include bone marrow aspirations, spinal taps, finger sticks, blood draws, and chemotherapy. Indeed, the procedures and their side effects are often described as worse than the disease itself (e.g., nausea, vomiting; Hockenberry et al., 1998). Although it is the child who undergoes treatment and painful procedures, the family is also impacted by witnessing the effects of treatment and procedures. In addition to managing the disease and its treatment on a daily basis, the child and family are also faced with the knowledge that the treatment does not guarantee cure of their disease.

Research on childhood chronic illnesses supports the notion that a child’s illness or disability affects not only the child but also the parents and siblings of the ill child (e.g., Feeman & Hagen, 1990; Havermans & Eiser, 1994; Ostroff & Steinglass, 1996). Of particular note is the fact that childhood cancer disrupts normal experiences for children and their families. In addition to the disease itself, children and parents must be concerned about the behavioral effects of hospitalization and/or medication, caring for siblings, and the alteration of parents’ educational and career objectives (Kazak, 1994).

The child's physical, mental, emotional, cognitive, and social development are also of great concern (Kazak, 1994).

Although some studies suggest that childhood cancer has minimal effects on families (e.g., Barbarin et al., 1985; Davies et al., 1991; Eiser, 1994; Havermans & Eiser, 1994; Kazak & Barakat, 1997; Kazak & Meadows, 1989; Kupst, 1992; Kvist et al., 1991; Speechley & Noh, 1992), many other studies report that children with cancer and their families experience adjustment difficulties. Survivors of childhood cancer frequently report significant emotional difficulties such as anxiety and depression, social difficulties, family problems, and learning difficulties (Chang, 1991; Greenberg & Meadows, 1991; Sawyer et al., 1997). Siblings of children with cancer also appear to be affected by the experience, as evidence by reported increases in emotional and behavioral problems following diagnosis of cancer in a sibling (Sahler et al., 1994; Sloper & While, 1996). Parents also appear to experience significant difficulties with marital problems (Dahlquist et al., 1993; Dahlquist et al., 1996; Greenberg & Meadows, 1991), depression (Dahlquist et al., 1993; Van Dongen-Melman et al., 1995), anxiety (Dahlquist et al., 1993; Hughes & Lieberman, 1990; Sawyer et al., 1997; Van Dongen-Melman et al., 1995), and social problems (Morrow et al., 1984). Unfortunately, much of the research examining the psychological outcomes of cancer remains in its infancy, so no firm conclusions have been reached regarding the *level* of psychological distress, and the *degree* of maladjustment in parents and families of children with cancer (Baskin, Forehand, & Saylor, 1985). This mirrors the lack of consistent findings regarding the adjustment of families of children with other chronic illnesses and disabilities (Quittner et al., 1998). Despite inconsistent findings, what does appear to be true is that these parents and

children are certainly at risk for adjustment problems, and a subset of these individuals indeed experience significant difficulty.

Given inconsistent reports of maladjustment, some researchers have moved to identifying specific variables that serve as risk or protective factors affecting children's and families' adjustment to childhood cancer. Though the risk and protective factors identified vary between studies, probably in part to methodological and measurement differences, most indicate that family functioning or family adjustment is related to individual adjustment for all family members. This is understandable, as family members often respond to stressors in an interactive fashion, not simply on an individual level (Barbarin et al., 1985).

Studies consistently support the idea that the adjustment of family members is strongly interrelated in chronic childhood illnesses, including pediatric cancer. A full review of the existing literature in this area is beyond the scope of the current paper; however, it is important to note the impact of family functioning on individual adaptation in families with chronic illnesses. Indeed, family functioning is frequently identified as an important variable in predicting the adjustment of children with cancer and their parents and siblings (e.g., Cohen, Friedrich, Jaworski, Copeland, & Pendergrass, 1994; Kazak & Meadows, 1989; Kupst & Schulman, 1988; Kupst et al., 1984; Sloper & While, 1996; Thompson, Gil, Burbach, Keith, & Kinney, 1993). Specifically, the adjustment of individual parents of pediatric oncology patients appears to be strongly related to the adjustment of ill children and their well siblings (e.g., Chang, 1991; Dolgin & Phipps, 1996; Drotar, 1997; Frank et al., 1997; Kupst et al., 1995; Kupst & Schulman, 1988; Kupst et al., 1982; Mulhern et al., 1992; Overholser & Fritz, 1990; Sahler et al., 1997).

The effects of parental adjustment on child adjustment may be explained partially by the fact that parental adjustment difficulties affect parents' day-to-day behaviors, emotions, and cognitions (Cummings & Davies, 1994; Frank et al., 1997). Thus, adjustment difficulties may affect an individual's abilities to meet his/her parental role obligations and interfere in the level of care provided for children, which in turn affects child adjustment.

In a review of studies regarding adjustment to chronic childhood health conditions, Drotar (1997) found that family or parental functioning, depending on the measured variable in each study, was significantly related to the psychological adjustment of children in 37 of the 41 studies reviewed. In a study of the factors influencing the psychosocial adjustment of pediatric oncology patients, researchers found that higher levels of externalizing behaviors in children were significantly related to higher parental scores of trait anxiety (Frank et al., 1997). Further, Overholser and Fritz (1990) found that more adaptive parental coping during the treatment of cancer in their children was significantly related to better long-term adjustment for both parents and children following the completion of treatment.

Not unexpectedly, maternal adjustment has been studied far more frequently than paternal adjustment. Findings frequently indicate significant associations between maternal and child adjustment. For example, one study demonstrated that maternal self-reports of depression were the sole best predictor of child depression as measured by both child self-report and by maternal report on standardized measures (Mulhern et al., 1992). Kupst and her colleagues (1995) assessed the adjustment of survivors of childhood cancer and their parents 10 years following the completion of treatment for cancer. Results of

this study revealed that better maternal coping and adjustment were associated with better coping and adjustment in survivors of childhood malignancies (Kupst et al., 1995). Further, in a multi-site collaborative study of sibling adjustment to childhood cancer, Sahler and colleagues (1997) studied the relationship of maternal well-being and sibling adaptation to cancer. Mothers and siblings of children with cancer completed standardized measures and, based on their scores, sibling coping was divided into “Dysfunctional” and “Resilient” groups (Sahler et al., 1997). The children who met criteria for inclusion in the Dysfunctional group had mothers whose scores on measures of total well-being were significantly lower than the scores of mothers of siblings in the Resilient group (Sahler et al., 1997).

Given the preponderance of studies including only maternal adjustment and the paucity of research regarding paternal adjustment to childhood cancer, researchers have begun to recognize the importance of fathers in child and family adjustment and have called for more studies to include paternal adjustment as a focus (e.g., Eiser, 1994). Notably, in a study assessing family coping with pediatric leukemia approximately 6 years following diagnosis, Kupst and Schulman (1988) found that children’s scores on the Family Coping Scale (FCS), which is a standardized measure of cognitive, emotional, and behavioral coping, were significantly related to the FCS ratings of their fathers.

In sum, childhood cancer represents a unique stressor for mothers and fathers alike, with the potential to impact children and families negatively as they attempt to cope with the uncertainty of survival, painful procedures, and aversive treatments for several years. Childhood chronic illnesses such as cancer affect all members of the family, and it appears that many children and their families experience at least moderate



adjustment difficulties. Importantly, research indicates that family functioning is indeed related to the adjustment of each family member, probably because family members respond to stressors in an interactive manner.

### Parental Adjustment to Childhood Cancer

Evidence indicates that the adjustment of all family members to childhood cancer is interrelated. Specifically, it appears that the adjustment of mothers and fathers is a primary factor affecting the adjustment of chronically ill children and their well siblings. Marital functioning especially may also be impacted by childhood cancer and subsequently influence the adjustment of all family members. In the following section, parental adjustment to childhood cancer will be discussed in terms of individual parental adjustment and the cognitive appraisal variables of interest in the current study, illness uncertainty and coping style. Finally, research regarding marital functioning of parents of children with cancer and other chronic illness will be reviewed.

#### Individual Parental Adjustment to Childhood Cancer

Silver, Westbrook, and Stein (1998) write that caring for a chronically ill child presents a variety of “burdens and obligations that can increase tension, deplete energy, and be accompanied by symptoms of psychological distress” (p. 5). This may be in part because parents of children with chronic illnesses are faced with many additional responsibilities, including the physical care of the ill child, dealing with medical, educational, and other service providers, helping the child cope with the physical and emotional demands of the illness, and balancing competing family needs (Silver et al., 1998). Additionally, it is probable that both parents will experience increased levels of anxiety, social isolation, health problems, and even marital and sexual dysfunction (Eiser,

1994). Several researchers report significant emotional disturbances in parents of children with cancer, including elevated levels of anxiety, uncertainty, fear of death, loss of control, guilt, and anger (Brunnquell & Hall, 1982; Magni, Silvestro, Carli, & de Leo, 1986; Spinetta, 1982).

For parents of children with various chronic illnesses, levels of stress and depression have been inconsistently reported (Baskin et al., 1985; Quittner et al., 1998; Silver et al., 1998). Despite such inconsistent findings, most researchers recognize that childhood chronic illness, including cancer, has the potential to bring about or exacerbate psychological dysfunction in parents (Barbarin, 1987). The adjustment of parents to childhood cancer is of great concern not only because it appears to influence their children's adjustment to the disease, but also because studies have demonstrated that parental reactions and adjustment are relatively consistent from the time of diagnosis to the end of treatment and even up to 10 years later (Kazak & Barakat, 1997; Kupst & Schulman, 1988; Van Dongen-Melman et al., 1995). In a series of investigations, Kupst and colleagues found that parental coping tended to be stable between diagnosis and 6 months, 1 year, and 2 years following diagnosis and slightly better 6 years following the diagnosis of pediatric leukemia (Kupst, 1992). Parental coping continued to be stable even at the 10-year follow-up period (Kupst & Schulman, 1988). In a more recent study, parenting stress and quality of life during a child's treatment for cancer was shown to be strongly associated with later parental adjustment for both mothers and fathers (Kazak & Barakat, 1997). This is particularly salient in light of the findings of Van Dongen-Melman and her colleagues (1995), which demonstrated that long-term psychosocial effects on parents of childhood cancer survivors persisted long after treatment

completion, especially in the areas of elevated uncertainty and loneliness. Obviously, parents who initially experience higher levels of distress are at heightened risk for the occurrence of more severe long-term adjustment difficulties, which may subsequently impact the long-term adjustment of their children.

Though studies of parental adjustment to childhood cancer do not utilize consistent methodology or measures, most of these studies demonstrate that parents, especially mothers, experience elevated levels of distress, placing them at risk for adjustment difficulties. In one study of mothers and fathers of pediatric oncology patients, researchers found that 85.4% of parents indicated psychological distress meeting case-level requirements on the Goldberg General Health Questionnaire at their child's diagnosis, and 61.9% of the parents met case-level criterion at 6 months following diagnosis (Hoekstra-Weebers, Heuvel, Klip, Bosveld, & Kamps, 1996). Notably, these percentages are significantly higher than the 15% of parents of healthy children who met case-level criterion for psychological distress on the same measure (Hoekstra-Weebers et al., 1996). In another study utilizing the Goldberg General Health Questionnaire, researchers found that mothers and fathers of children with cancer had significantly higher Total, Anxiety, and Insomnia scores following their child's diagnosis than did a comparison group (Sawyer et al., 1997).

Hughes and Lieberman (1990) utilized a semi-structured interview and standardized self-report measures to assess sources of vulnerability and stress for parents of children with cancer. Though findings were limited by a small sample size, it is important to note that 13 of 18 parents of pediatric oncology patients reported anxiety symptoms elevated beyond the normal range. Further, six of the 18 parents, which

comprised one-third of the entire sample, suffered from “severe” anxiety symptoms that the researchers believed warranted further clinical attention.

Other researchers studying parental adjustment to childhood cancer have used the Psychosocial Adjustment to Illness Scale (PAIS). The PAIS is a comprehensive measure that assesses psychosocial adjustment to illness across a variety of domains (Morrow et al., 1984). These domains include the vocational environment, the domestic environment, sexual relationships, extended family relationships, the social environment, psychological distress, and health care orientation (Morrow et al., 1984). PAIS scores are statistically compared to the mean scores for each domain in order to detect the presence of adjustment difficulties. In a study of mothers and fathers of children with cancer, parents reported significant adjustment problems attributable to their child’s cancer across *all* of the above-defined domains of psychosocial functioning (Morrow et al., 1984).

It appears then that a considerable number of parents of children with cancer experience elevated levels of distress and that this distress affects a number of important areas in their lives. Importantly, one study reported that intermediate to high levels of anxiety were present in 42% of parents of children who survived cancer, and elevated levels of depression were reported by 31% of those parents (Van Dongen-Melman et al., 1995). In a large-scale multi-site investigation, mothers of children with cancer and mothers in the general community completed a standardized interview and self-report measures to compare the well-being of mothers in each group (Sahler et al., 1997). Perhaps not surprisingly, mothers of children with cancer were found to evidence significantly lower levels of well-being, including more self-reported worry, less energy,

less satisfaction, lower mood, feelings of being less relaxed, and perceived lower levels of self-control.

Although research regarding parental adjustment to childhood chronic illness is advancing, a consistent shortcoming in the literature is the paucity of research assessing whether and how the adjustment patterns of mothers and fathers differ. Taanila, Kokkonen, and Jarvelin (1996) point out that it is important to consider the adjustment of mothers and fathers separately because coping with a child who has a serious illness is an individual process. These researchers used interviews and self-report measures to examine the coping of mothers and fathers whose children who had serious illnesses or disabilities, including diabetes, mental retardation, or a motor handicap. Findings for each illness group indicated that each parent is affected differently, with mothers experiencing higher levels of depression, insecurities about caring for their children, and more difficulties in their relationships with their spouses and in the parental role. Fathers, on the other hand, are more likely to experience more problems with attachment to the ill child and more difficulty with economic problems or other factors perceived to serve as societal labels of the family. Thus, it appears that mothers were affected differently and possibly even to a greater degree by their children's conditions than were fathers.

Interestingly, research frequently reveals that fathers report lower levels of distress than do mothers (e.g., Hoekstra-Weebers et al., 1996; Quittner et al., 1998; Silver et al., 1998; Taanila et al., 1996). For example, Silver and colleagues (1998) found that parents of children with health conditions reported significantly higher levels of distress than did parents of healthy children, with a pattern of lower distress in fathers than in mothers. In another study, mothers of children with cystic fibrosis (CF) reported more

symptoms of depression than did fathers (Quittner et al., 1998). Based on similar patterns of findings regarding significantly higher levels of psychological distress in mothers than in fathers of children with cancer, Hoekstra-Weebers and colleagues (1996) proposed that mothers may be at more risk psychologically than fathers. Eiser (1994) proposed that this difference lies in the fact that the practical and emotional burden of care for a child with cancer more often falls on mothers than on fathers. This may result in reduced interactions and more emotional difficulties for women than for men.

In one of the few studies of childhood cancer including both mothers and fathers, Sawyer and his colleagues (1997) assessed children and their families immediately after the diagnosis of cancer and at 1 year and 2 years following diagnosis. The adjustment of these children and families was compared to the adjustment of children and their families in the general community at each assessment period. Results demonstrated that mothers and fathers of children with cancer experienced significantly more anxiety, stress, and sleep disturbance than did parents in the general community. Importantly, mothers endorsed significantly higher levels of difficulty than did fathers of children with cancer. Because it seems that many mothers and fathers of children with cancer are susceptible to experiencing increased levels of distress, it becomes important to assess factors that may be responsible for differential patterns of adjustment in parents of pediatric oncology patients.

In summary, research indicates that parents of children with cancer may experience adjustment difficulties, including significant emotional disturbances. Findings regarding levels of adjustment are somewhat inconsistent and seem to indicate that mothers and fathers vary in the difficulties they do experience. One possibility

accounting for these findings is that adjustment may differ between individuals as a function of intraindividual variables, especially cognitive appraisal factors, or ways in which people make sense of events. Illness uncertainty and coping style are two such variables that may operate in the adjustment process. However, little research has examined the relationships between these cognitive appraisal mechanisms, global individual adjustment, and subsequent effects on marital dissatisfaction for parents of children with cancer. Investigation of these relationships is important if healthcare professionals are to come to understand how best to help families of children with chronic illnesses.

### Illness Uncertainty

All patients with chronic, life-threatening illnesses experience some degree of uncertainty regarding the course and outcomes of their illnesses. Additionally, loved ones and caregivers privy to these situations are also likely to experience a degree of illness uncertainty. Previous research has demonstrated that illness uncertainty does indeed affect caregivers as well as patients. For example, in one study of spouse caregivers, results showed that the caregiver's level of uncertainty regarding their spouse's illness was a significant predictor of the caregiver's health (Stetz, 1989). This is an important consideration, especially for parents of pediatric cancer patients. Because their children are highly dependent on them for "normal" parental caregiving activities in addition to the management of most or all aspects of their cancer and its treatment, parents of children with cancer may be even more affected by illness uncertainty than are caregivers of other individuals with chronic illnesses. Thus, it becomes important to examine the

role of illness uncertainty in the individual and marital adjustment of parents to childhood cancer.

Briefly, illness uncertainty has been defined as difficulty assigning value to illness-related events or difficulty in accurately predicting outcomes of events (Mishel, 1988). These difficulties result in an inability to determine the implications or meaning of illness-related events (Mishel, 1988). Many illnesses may generate uncertainty because they are unpredictable, ambiguous, unfamiliar, or inconsistent by nature (Mishel, 1984). This is particularly important because it is thought that events in which uncertainty occurs may be especially stressful for individuals (Mishel, 1984).

In illness situations, illness uncertainty may be higher when there is no discernable symptom pattern (Mishel, 1988). This is often the case with childhood cancer, which has a highly variable course depending on a variety of disease and individual factors, including the age of the child, the general health of the child, the type of cancer, the location of the cancer, the disease stage, and response to treatment. Additionally, symptom patterns in cancer may vary as a result of remissions or exacerbations of symptoms, disruption of previous symptom patterns, or conflicting signs of improvement and decline throughout the course of the disease. Indeed, Mishel (1988) reports that such factors are associated with elevated levels of uncertainty for patients with chronic illnesses. Further, differentiation of symptoms in terms of their cause or seriousness is especially difficult for individuals with cancer; the difficulty of differentiating symptoms may also increase illness uncertainty (Mishel, 1988).

Research with adults has demonstrated that increased levels of illness uncertainty are associated with perceiving less hope (Christman, 1990; Mishel, 1984), decreased



quality of life (Braden, 1990; Padilla, Mishel, & Grant, 1992) and increased levels of mood disturbance and feelings of anxiety (Bennett, 1993; Christman et al., 1988). In a series of studies of women with gynecological cancer, Mishel and her colleagues found that higher levels of uncertainty were related to more adjustment problems (Mishel, Hostetter, King, & Graham, 1984; Mishel, Padilla, Grant, & Sorenson, 1991; Mishel & Sorenson, 1991). Results of these studies led to the proposal that uncertainty may influence adjustment through its relationship with the selection of coping strategies for individuals (Mishel et al., 1991; Mishel & Sorenson, 1991). Padilla and colleagues (1992) subsequently documented that illness uncertainty was a key predictor of quality of life scores for women in treatment for gynecological cancer.

Northouse, Templin, Mood, and Oberst (1998) also addressed the role of illness uncertainty in the adjustment of adults with cancer. Women with breast cancer were compared with women who had benign breast disease; the women's partners were also included in this study. Couples facing breast cancer reported higher levels of uncertainty and greater decreases in their marital and family functioning than did couples experiencing benign breast disease. Notably, levels of adjustment reported by women with breast cancer corresponded highly with those of their husbands, and levels of distress for both partners remained relatively consistent over a one-year period from the time of diagnosis. In a study involving patients who experienced myocardial infarction, results demonstrated that individuals who reported greater uncertainty also experienced higher levels of emotional distress (Christman et al., 1988). Again, levels of uncertainty and emotional distress remained consistent over time, up to four weeks following hospital discharge.

Additional research with other illness groups provides further evidence that illness uncertainty indeed plays an important role in adjustment to chronic illness. In a study of individuals with postpolio syndrome, illness uncertainty was found to contribute unique and significant variance to the prediction of psychological distress beyond that predicted by illness severity and demographic variables (Mullins et al., 1995). Based on this finding, the authors concluded that illness uncertainty is at least one intrapersonal cognitive appraisal process that contributes to the level of psychological distress experienced in the context of chronic illness. In another study, Mullins, Chaney, Pace, and Hartman (1997) examined individual adjustment in individuals who had histories of childhood asthma. Results of this study were similar, indicating that illness uncertainty was a significant and important predictor of individual adjustment.

Managing illness uncertainty may play a vital role in individual adaptation to an event (Mishel, 1988). Despite the apparent importance of illness uncertainty in adjustment, only one study to date has investigated illness uncertainty in the context of childhood cancer. Grootenhuis and Last (1997) examined a number of variables, including illness uncertainty, thought to predict emotional adjustment in mothers and fathers of children with cancer either in remission or in relapse. Results indicated that mothers and fathers of children in relapse endorsed similar levels of uncertainty, and these levels were higher than those reported by parents whose children were in remission. Further, higher levels of uncertainty were related to higher levels of depression and anxiety in mothers of children in relapse. Although this study is an important initial step in understanding how illness uncertainty and parental adjustment to childhood cancer are related, many questions remain. Importantly, research in other areas points to the fact that

illness uncertainty does indeed play an important role in adaptation to chronic, life-threatening illnesses.

Given consistent reports of significant associations between illness uncertainty and adjustment, uncertainty appears to be an important cognitive variable to consider when examining parental adjustment to the experience of childhood cancer. Yet, uncertainty has received little attention in the context of childhood chronic illnesses, especially cancer. Research demonstrates associations between uncertainty and such variables as caregiver health (e.g., Stetz, 1989) and marital functioning (e.g., Northouse et al., 1998). Further, relationships between uncertainty and adjustment factors appear to be relatively stable over time. Taken together, these findings indicate that illness uncertainty should not be overlooked in its role in adjustment. This is especially true for childhood cancer because the very nature of the disease has great potential for producing heightened levels of uncertainty. It is also important to examine potential relationships between uncertainty and other cognitive variables, including coping style.

### Coping Style

Coping style has also been examined as a factor influencing parental adjustment to childhood chronic illness. Lazarus and Folkman (1984) propose that coping serves as a mediating variable between an individual and the environment. Coping is conceptualized in this model as a cognitive and behavioral process or action that serves the adaptive function of controlling internal and/or external demands that are viewed as stressful or taxing (Lazarus & Folkman, 1984). Coping strategies are viewed as behavioral responses to situational stressors, not as preexisting traits or dispositions (Folkman et al., 1986).

Notably, because coping is descriptive of behavior that occurs in a person-situation interaction, coping is contextual (Folkman et al., 1986).

Lazarus and Folkman (1984) elucidate a distinction between two types of coping strategies, problem-focused strategies and emotion-focused strategies, that may be differentially effective in various situations. Problem-focused strategies, as described by Folkman and his colleagues (1986), are characterized by efforts aimed at changing, controlling, or managing the person-environment interaction. Such strategies include problem-solving or seeking additional information about the problem. Emotion-focused strategies, on the other hand, are intended to regulate or control one's own emotional response to the situation. These strategies include avoidance or positive reappraisal.

Because coping is considered to be contextual, coping strategies should be evaluated in terms of the outcomes achieved (Lazarus & Folkman, 1984). This point is illustrated in several studies examining coping with various childhood illnesses, including cancer. For example, Chesler and Barbarin (1987) interviewed parents of children with cancer and found that emotion-focused strategies were more useful for parents when responding to the emotional stresses of childhood cancer. Conversely, problem-focused strategies were likely to be more helpful for parents when faced with more practical stresses, including assisting children with adherence to medical treatment regimens. In another study, researchers found increased levels of distress among mothers of children with disabilities for those mothers who utilized emotion-focused strategies as compared with mothers who utilized problem-focused strategies (Miller, Gordon, Danielle, & Diller, 1992). Taken together, this group of findings suggests that the effectiveness of

emotion-focused and problem-focused strategies in various situations is determined in part by the demands of the situations.

Because emotion-focused and problem-focused coping strategies can serve either adaptive or maladaptive functions in various situations, more research is needed to better understand features of particular situations in which the strategies have different outcomes. One feature of the situation may involve the gender of the individual engaging in the coping strategies. Of particular note are findings that men and women use different coping strategies in dealing with problems, and the effects of particular coping strategies may differ by gender (Bouchard et al., 1998). Notably, two longitudinal studies have examined coping strategies and marital satisfaction, finding evidence of significant relationships between the use of particular coping strategies and marital satisfaction (Karney & Bradbury, 1995; Menaghan, 1982). Importantly, Pearlin & Schooler (1978) report that coping responses have stronger impact in the marital domain than in other realms of functioning, including the occupational realm.

Bouchard and colleagues (1998) studied a large sample of couples who had been living together an average of 11 years. Each individual in the dyad completed a demographic questionnaire, the Ways of Coping Questionnaire (WOC), and the Dyadic Adjustment Scale (DAS). Regression analyses were performed using the DAS total score as the criterion variable and coping scores as predictor variables. Results indicated that coping strategy significantly contributed to the prediction of individual marital satisfaction. Distancing-avoidance, confrontation-seeking, and denial strategies were negatively related to marital satisfaction, and problem-focused strategies were positively related to marital satisfaction. The same pattern of results was also seen in the prediction

of partners' marital satisfaction. Based on these results, the authors conclude that "within the context of close relationships, coping strategies used by an individual become dyadic events" (p. 123). Although this study appears to be the first of its kind to examine how the coping strategies of partners influence both individuals in the relationship, the results indicate that the influence of a partner's coping is systematic in that the harmful effects of a strategy for an individual are also harmful for the partner.

### Marital Functioning

Research across a variety of domains indicates that marital functioning for individuals across a number of challenging situations is intricately related to and affected by individual emotional adjustment, as well as intrapersonal cognitive variables including illness uncertainty and coping style. Marital functioning is undoubtedly impacted by having a child with cancer (e.g., Chang, 1991; Kupst & Schulman, 1988; Kupst et al., 1984). Subsequently, marital functioning then influences the adjustment of individual parents, children with cancer, and well-siblings in a complex, transactional manner. Despite recognition that marital functioning is an important factor in individual and family adjustment, the construct itself has not been well defined within the literature and, thus, has not been consistently measured across studies (e.g., Dahlquist et al., 1993; Kupst, 1992). Because the body of literature regarding marital functioning is so broad, a thorough review of that literature is not within the scope of this thesis. For the purposes here, marital distress will only be addressed in the context of pediatric chronic illness.

When a child is diagnosed with cancer, each parent must cope with the situation as an individual, while at the same time facing the demands of the situation as a couple (Dahlquist et al., 1993). Chang (1991) reported that marital distress is one of multiple

stressors experienced by most families faced with childhood cancer. Additionally, the degree of distress in the marital relationship has been shown to be significantly related to overall family coping for families of children with cancer (e.g., Barbarin et al., 1985; Dahlquist et al., 1993; Kupst & Schulman, 1988; Kupst et al., 1984; Mulhern & Friedman, 1990).

Marital distress and childhood cancer. Previous research has demonstrated increased incidence of marital distress in parents of children with cancer. In an early study, researchers reported that parents of children with cancer evidenced more marital distress than did parents of children with hemophilia or children without chronic illnesses (Lansky, Cairns, Hassanein, Wehr, & Lowman, 1978). Interestingly, the parents of children with cancer did not experience as much marital distress as couples attending marital therapy, suggesting that parents of children with cancer experience significant but perhaps subclinical levels of marital distress. Similarly, Fife, Norton, and Groom (1987) reported that levels of marital distress in parents of children recently diagnosed with cancer were intermediate between levels of marital distress in well-adjusted couples and in couples seeking marital counseling. Notably, a significant decline in marital satisfaction was observed for mothers and fathers within the first year following the diagnosis of childhood cancer.

Speechley and Noh (1992) assessed the psychological adjustment of parents of children who had recently completed treatment for cancer and whose cancer was in remission. Standardized self-report instruments were used to measure several dimensions of parental adjustment, including individual and marital factors. Importantly, the level of marital satisfaction for mothers and fathers who participated in the study demonstrated a

significant inverse association with depression and anxiety. For both mothers and fathers, lower levels of marital satisfaction were related to higher levels of depression and anxiety.

In an important series of investigations, Kupst and her colleagues (Kupst & Schulman, 1988; Kupst et al., 1982; Kupst et al., 1983; Kupst et al., 1984; Kupst et al., 1995) followed families of children diagnosed with leukemia for up to 10 years following the diagnosis. Results of these studies indicated that individual adjustment was significantly related to marital functioning in these families. Sixty-four families were assessed one year after the diagnosis of leukemia (Kupst et al., 1982). Results demonstrated that increased rates of family or marital problems were significantly related to less adequate adjustment in both mothers and fathers. Sixty of those same families were assessed at two years post-diagnosis (Kupst et al., 1984). Importantly, better quality of the parents' marital relationship was significantly correlated with better family coping at this assessment. This relationship between the quality of the marital relationship and coping was even stronger at the assessment six years following the diagnosis of childhood leukemia (Kupst & Schulman, 1988). These studies thus documented the salient relationship between marital functioning and individual coping in parents of children diagnosed with cancer.

Though the early research conducted by Kupst and her colleagues was important in advancing the understanding of how parents cope with cancer in their children, some shortcomings should be noted. Perhaps the most notable limitation of this series of studies was the use of unstandardized measures, including the Current Adjustment Rating Scale (CARS) and an adaptation of the Family Coping Scale (FCS). These were the sole



measures used to assess parental coping and marital distress. Additionally, for many of the participating families, only one partner in the marital dyad completed the measures, limiting the utility of ratings of marital distress because the marital relationship was defined by only one partner's perception.

Dahlquist and her colleagues have conducted perhaps the most comprehensive studies to date assessing factors that affect marital distress in parents of children with cancer (Dahlquist et al., 1993; Dahlquist et al., 1996). In these studies, the researchers examined the associations between scores on several measures of individual adjustment and scores of relationship satisfaction from the Dyadic Adjustment Scale (DAS). Dahlquist and her colleagues (1993) asked couples to complete the Spielberger State-Trait Anxiety Inventory (STAI), the Beck Depression Inventory (BDI), the Modified Repression-Sensitization Scale (R-S), and the DAS within two months of the diagnosis of cancer in their children. Scores on the DAS were indicative of significant marital distress for 25% of the mothers and 28% of the fathers (Dahlquist et al., 1993). Notably, these incidence levels were elevated above the 16% incidence rate reported in a community survey (Eddy, Heyman, & Weiss, 1991). Multiple regression analyses were conducted to predict overall marital distress in separate models for mothers and fathers. Importantly, DAS total scores for each partner were better predicted by the utilization of both partners' individual adjustment scores. Dahlquist, Czyzewski, and Jones (1996) later examined those same parents with the same measures to assess marital distress approximately 20 months after the diagnosis of cancer in their children. As expected, individual distress scores were initially elevated but decreased over time.

Not all studies report similar patterns of either adequate or poor marital adjustment for parents of children with cancer or other chronic illnesses. For example, in a longitudinal study of families of children with cancer, researchers reported that adequate family coping was reflected by the “stable” marital status of the majority of parents of children with cancer over the 2 years of the study (Sawyer et al., 1997). However, other research has indicated that marital satisfaction undergoes a significant decline within the first year following the diagnosis of childhood cancer (Fife et al., 1987). At least two theories have been offered to explain the inconsistent results found in these studies. The first explanation suggests that a majority of studies rely primarily on global measures of marital adjustment, such as divorce and separation rates, or, the report of only one partner. Such global assessments cannot adequately reflect the intricacies present in the adjustment of a family to childhood cancer, and several researchers have commented on the need to move beyond global measures of marital functioning to examine specific sources of variability in the marital distress ratings of parents (e.g., Benson & Gross, 1989; Quittner et al., 1998). A second possibility for the inconsistent results in marital distress studies is that specific individual adjustment factors (i.e., maternal/paternal distress, maternal/paternal illness uncertainty) contribute to marital functioning in parents of children with cancer and other chronic illnesses. Unfortunately, the roles of individual factors in marital distress or marital dissatisfaction ratings have rarely been considered.

Another body of literature underscoring the importance of the spousal dyad and marital functioning to individual adjustment is the literature regarding the positive effects of social support on adjustment. Research in several areas, including chronic illness,

consistently demonstrates that social support plays a distinct role in attenuating the negative effects of a variety of stressors (e.g., Hoekstra-Weebers et al., 1996). Because social support is an important factor in individual adjustment, it is important to examine the spousal dyad as a unique and meaningful source of social support.

Researchers have reported that marital status has often been used as an important indicator of social support in other areas of research because marriage is recognized as a uniquely intimate bond (Speechley & Noh, 1992). Because of the unique emotional closeness that is present in a marriage, the marital relationship may be one of the more powerful human relationships in terms of the support provided. Evidence supporting this contention includes higher levels of reported well-being in individuals in the general population who are married, as well as lower morbidity and mortality rates for those individuals (Schulz & Rau, 1985). Research consistently indicates that an individual's spouse or partner can serve as a major source of support to buffer the potential negative consequences of a stressor and the distress that may ensue (Hoekstra-Weebers et al., 1996). However, Gottlieb and Wagner (1991) point out that support in close relationships such as marriage is an interactive process in which both individuals "must concurrently deal with the demands imposed by the stressor and those imposed by each other's coping responses" (p. 167). Thus, each individual's experience of marital functioning may play an important role in adjustment above and beyond being married (Schulz & Rau, 1985).

In their study of parents of children with cancer described earlier, Speechley and Noh (1992) also examined parents of healthy children. Results demonstrated that levels of depression and anxiety were moderately lower among married couples than among those subjects that were not married at the time of the study for both groups of parents.

Based on consistent negative associations between marital status and psychological distress that were found in this study (such that being married was related to lower levels of depression and anxiety), the researchers speculated that marriage had a protective or buffering effect on the psychological adjustment of both mothers and fathers.

Marital distress and other childhood chronic illnesses. Importantly, there is a small body of work that has explored the marital adjustment of parents whose children have other chronic illnesses. These studies have implications for understanding marital distress in parents of children with cancer.

The effects of childhood cancer on the family may be partially understood by considering the potential for parents' marital distress to affect the ability of each parent to care for the sick child. In an early study of parents whose children had been diagnosed with juvenile diabetes, researchers found that parents' assessment of marital quality was directly related to their psychological well-being and ability to care for their ill children (Swift, Seidman, & Stein, 1967). Further, additional findings indicate that the degree of marital satisfaction within a marriage is a significant predictor of the mother's ability to cope with the responsibilities of caring for a child with a disability (Friedrich, 1979).

Friedman, Latham, and Dahlquist (1998) comment on the importance of marital quality for parents of children with chronic illnesses, making the point that parents must cooperate very closely to care for the ill child in addition to meeting normal family responsibilities. For example, Quittner and her colleagues (1998) compared married couples with children with cystic fibrosis (CF) and married couples with children without chronic illnesses. They found that more daily child-care tasks were performed by couples with children with CF than by couples whose children did not have chronic illnesses.

These couples also evidenced higher levels of conflict over child-rearing issues and lower levels of positive interactions on a daily basis. Results further indicated that couples in the CF group experienced higher levels of marital role strain than did couples in the comparison group.

Thus, it appears that childhood chronic illness presents multiple challenges for parents. Importantly, the experience of having a child with a chronic, life-threatening illness appears to impact not only individual adjustment but also marital functioning. The influence of individual adjustment and intrapersonal cognitive variables has important implications for marital functioning. Unfortunately, little is known about how individual adjustment, illness uncertainty, and coping style are related to marital distress.

#### Summary

Childhood cancer presents a variety of challenges to children and their families, including long-term, intensive treatment regimens and uncertainties about survival. As survival rates for childhood cancer have increased, so has the concern for the long-term adjustment of children and their families. Research has demonstrated that a variety of adjustment difficulties do exist for children and their families. Importantly, it appears that adjustment of all family members is interrelated in a complex and transactional manner, with parental adjustment serving a primary role in the adjustment of children with cancer and their siblings. Unfortunately, though, many questions regarding parental adjustment remain unanswered.

A variety of factors likely operate to produce adjustment at various levels for parents of children with cancer. Research has primarily taken a global approach in exploring individual adjustment of mothers and, to some extent, fathers. Although such

work is important, examination of more specific intraindividual factors, especially cognitive appraisal processes, may prove useful in understanding adjustment processes more fully. Both illness uncertainty and coping style are cognitive appraisal variables that appear to influence the adjustment process across a variety of populations. Illness uncertainty has been associated with adjustment in several illness groups but rarely addressed in the context of childhood cancer. Similarly, coping style has also been found to be related to various measures of adjustment in multiple populations experiencing chronic illnesses but has not been studied in terms of parental adjustment to childhood cancer. To date, no research has focused on how these variables relate to marital functioning in the context of childhood cancer. Thus, the purpose of the present study was to examine how illness uncertainty and coping style are related to marital dissatisfaction for parents of children with cancer.

## CHAPTER III

### PURPOSES AND HYPOTHESES

The purpose of the present study was to investigate how illness uncertainty and coping style are related to individual adjustment and to marital dissatisfaction for parents of children with cancer. Associations between individual adjustment and marital dissatisfaction were first examined, as previous research indicated a strong relationship between levels of individual psychological adjustment and the degree of marital dissatisfaction experienced. Consistent with previous research, it was expected that higher individual psychological distress scores for mothers and fathers would be related to higher scores of marital dissatisfaction.

Relationships between illness uncertainty and marital dissatisfaction were then examined. Previous research indicated that higher levels of uncertainty for adults facing illness are associated with greater marital dissatisfaction. Given the importance of these findings, it is expected that higher levels of illness uncertainty will be related to higher levels of marital dissatisfaction for mothers and fathers of children with cancer.

As previous research indicated that illness uncertainty is significantly associated with psychological adjustment in several illness groups, the association between illness uncertainty and individual distress was then examined. Illness uncertainty in childhood cancer has rarely been studied but is characterized by a highly variable and unpredictable disease course that may lead to elevated levels of uncertainty. Consistent with findings in other illness groups, it was expected that parents reporting higher levels of illness uncertainty would also report lower levels of individual adjustment.

Coping style was the other cognitive variable of interest for its role in the individual adjustment of parents of children with cancer. Distinct coping styles appear to be associated with different outcomes in various situations. Thus, it was of interest to explore which coping strategies are more effective for parents whose children have cancer. It was predicted that the use of an emotion-focused coping style would be inversely related to individual psychological adjustment

Finally, this study examined a prediction model of marital dissatisfaction using individual distress, illness uncertainty, and coping style as predictors. The following hypotheses were evaluated:

- 1) It was hypothesized that illness uncertainty and coping style would serve as significant predictors of marital dissatisfaction for fathers of pediatric oncology patients after controlling for the effects of individual distress.
- 2) It was believed that illness uncertainty and coping style would serve as significant predictors of marital dissatisfaction for mothers of pediatric oncology patients after controlling for the effects of individual distress.



## CHAPTER IV

### METHODOLOGY

#### Participants

Participants recruited for involvement included parents of children who had been diagnosed with cancer and who were undergoing treatment at the Jimmy Everest Cancer Center at Children's Hospital of Oklahoma. Only data for matched dyads was analyzed.

#### Procedures

It is important to note that data used in this study were gathered from an archival database that was created and maintained over a period of several years.

Original data used for this study were collected in the following manner. First, children who were recently diagnosed with cancer and were undergoing treatment at the time of the study were identified. Their parents were then approached by a trained researcher during a regularly scheduled appointment at the Jimmy Everest Cancer Center and verbally informed about the study. If interested, parents were given a consent form to sign and a questionnaire packet to complete. The consent form was briefly reviewed and parents were given verbal instructions regarding the completion of the questionnaire packet. Parents were also given the opportunity to ask questions about the consent form or questionnaires. Each questionnaire was labeled with instructions for completing the items. Parents were given the option to complete packets in the clinic or take their packets home with self-addressed, stamped envelopes. Parents were asked to complete the questionnaires independently in order to insure anonymity and to promote disclosure. Parents were thanked for agreeing to participate in this research. If both parents were not present at the child's appointment, a consent form, questionnaire packet, and self-

addressed stamped envelope were sent home with the parent at the clinic for the other parent to complete and return to the researcher. All packets were kept confidential, and names were not associated with any of the data. All procedures were approved by the University of Oklahoma Health Sciences Center Institutional Review Board.

Questionnaire packets were identical for all parents. The questionnaires that were included and utilized for this study were a demographics questionnaire, the Brief Symptom Inventory (BSI; Derogatis, 1993), the Parents' Perception of Uncertainty in Illness Scale (PPUS; Mishel, 1983), the Ways of Coping Scale-Revised (WOC-R; Folkman & Lazarus, 1988), and the Dyadic Adjustment Scale (DAS; Spanier, 1976).

### Measures

#### Marital Dissatisfaction

The Dyadic Adjustment Scale (DAS; Spanier, 1976) is a 32-item self-report inventory designed to measure the degree of relationship dissatisfaction in intimate dyads. Scores range from 0 to 151, with higher scores indicating more favorable adjustment. A score of 98 or lower on the DAS is considered to be the cutoff score for couples who are "maritally distressed" (Heyman, Sayers, & Bellack, 1994). Consistent with previous research efforts (e.g., Ptacek & Dodge, 1995), only the total DAS score representing relationship satisfaction will be used in analyses. The questionnaire possesses adequate reliability, ranging from .86 to .96 (Spanier, 1996). Cronbach's alpha for the current sample was .93.

#### Individual Distress

The Brief Symptom Inventory (BSI; Derogatis, 1993) is a short version of the Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1983). Whereas the SCL-90-R

contains 90 items, the BSI consists of only 53 short items. The BSI yields measures of nine clinical dimensions of psychological distress with t-scores ranging from 30 to 80. Research demonstrates that the BSI is highly correlated with the SCL-90-R, has high internal consistency ranging from .71 to .85, and possesses high test-retest reliability ranging from .68 to .91 (Derogatis, 1993). Respondents are asked to indicate on a 4-point scale the frequency with which they have experienced various psychological or physiological symptoms within the previous seven days. The Global Severity Index (GSI) score from the BSI will be used to assess overall parental distress. The use of the GSI score from the BSI is consistent with previous research assessing parental adjustment to childhood chronic illness (Kronenberger & Thompson, 1992; Miller et al., 1992). Cronbach's alpha for the current sample was .96.

The BSI also allows researchers to examine *T* scores in terms of caseness (i.e., GSI *T* score  $\geq 63$ , or two or more subscale scores  $\geq 63$ ). The BSI caseness criteria is considered to provide a good indicator of a positive case, although research regarding caseness on sensitivity and specificity is better developed for the SCL-90-R (Derogatis, 1993). Caseness criterion for maladaptation with the SCL-90-R has been used in a number of studies examining adaptation to chronic illness (e.g., Mullins et al., 1997; Thompson, 1985; Thompson, Gustafson, Hamlett, & Spock, 1992).

### Coping Style

The Ways of Coping-Revised (WOC-R; Folkman & Lazarus, 1988) questionnaire serves as the primary measure of parental coping style for the present study. The WOC-R is a self-report questionnaire comprised of 66 items aimed at assessing the coping strategies that individuals utilize when faced with a particular stressful situation. The

stressful situation in this study is the experience of their child's cancer and its treatment. Item responses are measured on a four-point Likert scale ranging from 0 (did not use this strategy) to 3 (used this strategy a lot).

Eight types of coping strategies emerge in factor analysis of the WOC-R; these strategies include planful problem-solving, confrontive coping, seeking social support, distancing, escape-avoidance, positive reappraisal, self-blame, and self-controlling (Folkman & Lazarus, 1988). These strategies can be further classified into two broad categories: problem-focused coping and emotion-focused coping. Confrontive coping, planful problem-solving, and seeking social support are considered to be problem-focused coping efforts, while emotion-focused coping includes distancing, self-controlling, self-blame, escape-avoidance, and positive reappraisal. Alpha coefficients are .80 and .81 for problem-focused coping and emotion-focused coping, respectively (Folkman & Lazarus, 1988). Cronbach's alpha for the current sample was .89.

Relative scores for problem-focused and emotion-focused coping will be used instead of raw scores in order to more accurately reflect individual coping differences (Vitaliano, Maiuro, Russo, & Becker, 1987). Relative scores are obtained in a two-step process and are represented by percentage scores of coping efforts accounted for by each strategy. First, the raw scores of each scale are divided by the number of items on that particular scale to obtain the mean item score. In order to obtain true proportions, the mean item score of each scale is then divided by the sum of mean item scores for all scales. This process results in values representative of how much each coping style was endorsed by the individual, relative to the other styles presented.

### Illness Uncertainty

The measure of uncertainty used in the present study is the Parents' Perception of Uncertainty in Illness Scale (PPUS; Mishel, 1983). The PPUS contains 31 statements. The respondent ranks their level of agreement with each statement on a 5-point Likert scale that is anchored by "strongly agree" and "strongly disagree" responses. The items on the PPUS are intended to measure the respondents' perceptions of uncertainty in several areas related to another person's (their child's) illness, including symptomatology, diagnosis, treatment, and prognosis (Mishel, 1983). A single composite score is obtained, with higher scores indicating higher levels of uncertainty. This total score is composed of four factors. Uncertainty factors include ambiguity, or the absence or vagueness of cues concerning the planning and carrying out of care for the child; lack of clarity, which refers to receiving or perceiving information about the child's treatment and the system of care as intricate and ill-defined; lack of information, which is related to the absence of information concerning the diagnosis and seriousness of illness; and unpredictability, or the inability to make daily or future predictions concerning symptomatology and illness outcome (Mishel, 1987). Previous studies have demonstrated that the PPUS is a reliable and valid measure of illness uncertainty across a variety of chronic diseases. Cronbach's alpha for the current sample was .87.

## CHAPTER V

### RESULTS

#### Sample Description

Study questionnaires were completed by 122 parents (61 fathers, 61 mothers) whose children were receiving treatment for cancer. The mean age for children was 6.0 years ( $SD = 4.57$ ), with a mean time since diagnosis of 6.1 months ( $SD = 10.1$ ). Parent age was only available for a subset (27 fathers, 27 mothers) of the sample. Among the fathers, mean age was 35.6 years ( $SD = 7.4$ ); for mothers, the mean age was 33.8 years ( $SD = 6.8$ ). Only data for matched dyads (married or cohabiting couples) was utilized. Unfortunately, data regarding marital status or ethnic group membership was not collected, and was thus unavailable for analyses.

#### Preliminary Analyses

Preliminary analyses were first conducted to examine the relationship of parent gender to the primary variables of interest: individual distress, problem-focused coping, emotion-focused coping, illness uncertainty, and marital dissatisfaction. Mean values and standard deviations for these variables can be viewed in Table 1. Unfortunately, information regarding specific marital status (e.g., married or cohabitating) and ethnicity for participants was not initially collected and therefore not available for analyses.

T-tests were conducted to identify mean differences by parent gender for the primary variables of interest. No significant differences were observed as a function of gender for individual distress,  $t(59)=1.24$ ,  $p>.05$ , problem-focused coping,  $t(59)=-1.46$ ,  $p>.05$ , emotion-focused coping,  $t(59)=-.94$ ,  $p>.05$ , illness uncertainty,  $t(59)=1.37$ ,  $p>.05$ , or marital dissatisfaction,  $t(59)=-.19$ ,  $p>.05$ .

Table 1

Means and Standard Deviations for Primary Variables of Interest

Variable (Measure)	All Parents (N=122)		Fathers (N=61)		Mothers (N=61)	
	Mean	SD	Mean	SD	Mean	SD
Individual Distress (BSI)	58.93	11.57	59.98	12.63	57.89	10.40
Problem-Focused Coping (WOC)*	.41	.01	.40	.01	.42	.01
Emotion-Focused Coping (WOC) *	.26	.01	.27	.01	.26	.01
Illness Uncertainty (PPUS)	80.84	15.39	82.07	15.95	79.62	14.84
Marital Dissatisfaction (DAS)	109.47	18.74	109.28	17.85	109.66	19.74

\* Note. Mean *relative* scores, rather than raw scores, are presented for problem- and emotion-focused coping.

For informational purposes, the number of fathers and mothers who met caseness criteria for individual distress (i.e., BSI T score > 63) and marital dissatisfaction (i.e., DAS < 100) was also computed. Caseness criteria have been established for these measures to provide general guidelines for interpreting whether an individual is experiencing the measured phenomenon, such as distress or marital dissatisfaction, at a significant level that might be considered to warrant further clinical attention. Caseness criteria for individual distress was met by 31 (50.8%) fathers and 29 (47.5%) mothers in the sample. Additionally, 13 (21.3%) fathers and 16 mothers (26.2%) met caseness criteria for marital dissatisfaction.

Zero-order correlations were then computed for the primary variables of interest (please refer to Tables 2, 3, and 4 in Appendix A). It is important to note that higher scores on measures of individual distress, problem-focused coping, and emotion-focused coping indicate higher levels of distress or more frequent use of those coping strategies. However, for marital dissatisfaction, lower scores represent higher levels of marital

dissatisfaction. Table 2 provides a summary of the correlations between the primary variables of interest for the entire sample; tables 3 and 4 provide summaries of the correlations between the primary variables of interest for fathers and mothers, respectively.



## Primary Analyses

### Hypothesis 1

It was hypothesized that illness uncertainty and coping style would serve as significant predictors of marital dissatisfaction for fathers of pediatric oncology patients after controlling for the effects of individual distress.

A hierarchical regression equation was constructed to predict marital dissatisfaction in fathers to test the independent contribution of illness uncertainty and coping style after controlling for individual distress (see Table 6). Individual distress was entered on block 1. Block 2 consisted of illness uncertainty and emotion-focused coping. Results indicated that emotion-focused coping significantly predicted marital dissatisfaction for fathers ( $b^* = -.36, p < .01$ ), even after controlling for the effect of individual distress. Collinearity diagnostics indicated that multicollinearity effects were not of concern for the current sample; variance inflation factor values were within acceptable limits for individual distress ( $VIF=1.55$ ), emotion-focused coping ( $VIF=1.57$ ), and illness uncertainty ( $VIF=1.49$ ).

Table 5

#### Hierarchical Regression Analysis Predicting Marital Dissatisfaction in Fathers

Step	Predictor Variable	$\beta$	t for Within Step Predictors	$R^2$ Change	F Change for Step	Part Corr.
1	Individual Distress	-.42	-3.66**	.373	35.05**	-.35
2	Emotion-Focused Coping	-.36	-3.16**	.092	9.96**	-.30
	Illness Uncertainty	-.17	-1.47			-.19

\* $p < .05$ . \*\* $p < .01$ .

## Hypothesis 2

It was hypothesized that illness uncertainty and coping style would serve as significant predictors of marital dissatisfaction for mothers of pediatric oncology patients after controlling for the effects of individual distress.

A hierarchical regression equation was constructed to test the independent contributions of illness uncertainty and coping style to the observed variance of marital dissatisfaction in mothers after controlling for individual distress (see Table 7). Individual distress was entered on block 1. Block 2 consisted of illness uncertainty and emotion-focused coping. Results indicated that neither emotion-focused coping ( $b^* = -.20$ ,  $p = .19$ ) nor illness uncertainty ( $b^* = -.13$ ,  $p = .36$ ) was significantly predictive of marital dissatisfaction for mothers after controlling for the effects of individual distress.

Collinearity diagnostics indicated that multicollinearity effects were not of concern for the current sample; variance inflation factor values were within acceptable limits for individual distress ( $VIF=1.51$ ), emotion-focused coping ( $VIF=1.44$ ), and illness uncertainty ( $VIF=1.31$ ).

Table 6

### Hierarchical Regression Analysis Predicting Marital Dissatisfaction in Mothers

Step	Predictor Variable	$\beta$	t for Within Step Predictors	$R^2$ Change	F Change for Step	Part Corr.
1	Individual Distress	-.25	-2.01*	.064	4.04*	-.25
2	Emotion-Focused Coping	-.20	-1.34			-.17
	Illness Uncertainty	-.13	-0.92			-.12

\* $p < .05$ .

## CHAPTER VI

### DISCUSSION

The current study sought to investigate the contributions of two cognitive appraisal variables, namely illness uncertainty and coping style, to the level of marital dissatisfaction experienced by parents of children with cancer, while accounting for the influence of individual distress on marital dissatisfaction. Specifically, it was hypothesized that illness uncertainty and coping style would serve as significant predictors of marital dissatisfaction for fathers and mothers separately after controlling for the influence of individual distress. The different patterns of relationships for fathers and mothers were explored in order to examine whether contributions of cognitive appraisal mechanisms to marital dissatisfaction vary for fathers and mothers.

Results indicated distinct patterns of relationships among the variables of interest for each member of the dyad. Specifically, individual distress was related to marital dissatisfaction for both fathers and mothers. However, emotion-focused coping was associated with marital dissatisfaction for fathers but not for mothers. Illness uncertainty, on the other hand, was not significantly related to marital dissatisfaction for either fathers or mothers. Thus, the current findings suggest that factors influencing marital dissatisfaction are indeed different for fathers than for mothers. Such conclusions are consistent with previous research demonstrating different patterns of adjustment across fathers and mothers of children with cancer (Dahlquist et al., 1993; Dahlquist et al., 1996; Hoekstra-Weebers, Jasper, Kamps, & Klip, 1999; Sloper, 2000).

Notably, a significant body of existing literature demonstrates different levels and patterns of individual adjustment for fathers and mothers across several illness groups

(e.g., Hoekstra-Weebers et al., 1996; Quittner et al., 1998; Sawyer et al., 1997; Silver et al., 1998; Taanila et al., 1996). However, these studies have largely contrasted paternal and maternal adjustment on a global level, specifically individual distress, and have not examined how other variables differentially contribute to the prediction of marital dissatisfaction for fathers and for mothers. In the current study, as expected, different patterns of relationships between individual distress, coping style, illness uncertainty, and marital dissatisfaction emerged for fathers and mothers of children with cancer.

For fathers, emotion-focused coping was a significant predictor of marital dissatisfaction beyond the effects of individual distress. Illness uncertainty considered separately did not serve as a significant predictor of marital dissatisfaction for fathers. On the other hand, neither emotion-focused coping nor illness uncertainty was found to contribute significantly to the prediction of marital satisfaction beyond the effects of the global measure of individual distress for mothers. These findings are similar to those observed in another study of marital dissatisfaction, psychological distress, and coping of parents of pediatric oncology patients (Hoekstra-Weebers et al., 1999). In that particular study, marital distress for fathers was significantly related to their own coping behavior, while marital distress for mothers was best predicted by the coping behaviors of partners rather than the mothers' own coping style.

The results observed with fathers are indeed consistent with previous research suggesting a significant relationship between coping style and marital dissatisfaction. Longitudinal studies have demonstrated significant relationships between the use of particular coping strategies and marital satisfaction for dyads (Karney & Bradbury, 1995; Menaghan, 1982). Indeed, early research demonstrated that coping responses had a

stronger impact in the marital domain than in other realms of functioning, including occupational and other domains (Pearlin & Schooler, 1978). Importantly, more recent research has indicated that the use of particular coping strategies by an individual may be influential in predicting both individual and partner marital satisfaction (Bouchard et al., 1998). For example, the use of coping strategies such as distancing-avoiding and confrontation-seeking was associated with poorer marital outcomes, while the use of problem-focused strategies was related to higher ratings of marital satisfaction. Based on these findings, the researchers concluded that coping style affects not only the individual but also the partner, leading to the proposal that coping style is manifest as a dyadic process (Bouchard et al., 1998). Thus, intraindividual, cognitively-mediated coping efforts may be expressed through a variety of behaviors. In the context of an intimate relationship, coping efforts and subsequent behaviors may have reciprocal influences between partners. Certainly, clarification of the nature of the association between coping style and marital dissatisfaction is desired and should be pursued in future studies.

Unexpectedly, illness uncertainty was not found to be predictive of marital dissatisfaction for fathers or mothers of children with cancer. These findings stand in contrast to a substantial body of literature in both adult and pediatric chronic illness populations suggesting a significant relationship between perceived uncertainty and distress. In one study of mothers of children whose cancer was in relapse, findings indicated significant associations between higher levels of illness uncertainty and higher levels of anxiety and depression (Grootenhuis & Last, 1997). Previous research with adult populations has demonstrated a significant negative relationship between illness uncertainty and caregiver health for spouse caregivers (Stetz, 1989) and with marital

functioning for couples experiencing breast cancer (Northouse et al., 1998). Although illness uncertainty was correlated with marital dissatisfaction, it did not serve as a significant predictor of marital dissatisfaction in regression analyses. Thus, it is possible that illness uncertainty exerts its influence on relationship factors in an indirect manner, perhaps through more global processes such as individual distress. An alternate interpretation for divergent findings regarding illness uncertainty may lie in the manner in which statistical analyses were conducted. It should be noted that illness uncertainty and coping style were significantly correlated, perhaps to the extent that only one could enter the regression equation as a significant predictor of marital dissatisfaction (Cohen & Cohen, 1983). Ultimately, the potential impact of illness uncertainty on marital dissatisfaction, whether through direct or indirect pathways, should be subject to further study using larger sample sizes.

Importantly, findings are consistent with recent evidence that adjustment for fathers and mothers may present with similar outcomes but actually follow different pathways. For example, another study found that six to ten weeks following the diagnosis of childhood cancer, the general level of distress experienced was more influential in predicting marital distress for fathers than for mothers (Dahlquist et al., 1993). For families two to twenty months post-diagnosis, individual distress again was more influential in predicting marital distress for fathers than for mothers (Dahlquist et al., 1996). Also, the child's health status was associated with the level of marital distress for fathers but not for mothers (Dahlquist et al., 1996).

More recently, two separate research groups have studied the adjustment of parents of children with cancer at two time points in their children's illness, and both

groups found that the time 1 variables predictive of time 2 adjustment were different for fathers than for mothers (Hoekstra-Weebers et al., 1999; Sloper, 2000). In one study, coping style served as a prospective predictor of adjustment for fathers, while the only prospective predictor of adjustment for mothers was the level of pleasant events mothers engaged in prior to their child's diagnosis of cancer (Hoekstra-Weebers et al., 1999). Sloper (2000) also found that time 1 predictors of time 2 adjustment differed for fathers and mothers: specifically, employment problems served as the only significant prospective predictors of adjustment in fathers, while prospective predictors of adjustment for mothers included maternal appraisal of the strain of the child's illness and ability to cope with the strain, as well as family cohesion.

Thus, results from the present study suggest that cognitive appraisal mechanisms, especially coping style, are strong correlates of level of marital dissatisfaction experienced by fathers but perhaps not mothers whose children have been diagnosed with cancer. Further, the finding that levels of individual distress predicted levels of marital dissatisfaction for both fathers and mothers is quite consistent with much of the previous literature. For example, Speechley and Noh (1992) found that mothers and fathers with higher ratings of depression and anxiety endorsed lower levels of marital satisfaction in a sample of parents of children whose cancer was in remission. In an important series of investigations by Kupst and her colleagues (Kupst et al., 1995; Kupst & Schulman, 1988; Kupst et al., 1982; Kupst et al., 1984), families were followed for up to ten years after the diagnosis of childhood leukemia. At all time periods, individual adjustment of parents was significantly related to marital functioning. However, this series of studies used unstandardized instruments in assessing individual and family adjustment, and only one

partner completed the instruments in most families. Importantly, the current study demonstrated consistent findings while employing improved methodology, including the utilization of standardized measures and use of ratings from each partner.

In addition to the regression analyses previously discussed, examination of caseness criteria for individual distress and marital dissatisfaction was also conducted. Caseness criteria serves as a means of defining clinically significant levels of distress, thereby indicating a potential need for clinical intervention. Approximately half of the fathers and half of the mothers in the sample met caseness criteria for individual distress on the BSI. This is somewhat higher than the rate observed in a sample of mothers of children with insulin-dependent diabetes mellitus (37%; Ewing, 1999) but similar to the rate of parents of children with brain tumors (58%; Fuemmeler, 1998). Normative data suggest that only 10% of the population should meet caseness criteria at any given point in time (Derogatis & Spencer, 1982). The rates of individuals meeting caseness criteria for individual distress in this sample are thus substantially higher than population norms, indicating that parents of children with cancer are indeed at risk for poor adjustment.

For marital dissatisfaction, approximately one-fifth of fathers and one-fourth of mothers met caseness criteria on the DAS; these incidence rates for marital dissatisfaction are similar to those observed by Dahlquist and her colleagues (1993) in a sample of parents whose children had recently been diagnosed with cancer. Importantly, such incidence rates are notably higher than that of 16% found in a large-scale community sample (Eddy et al., 1991). More than one-third of fathers and mothers who met criteria for marital dissatisfaction also met criteria for individual distress, pointing to a substantial subgroup of parents of pediatric oncology patients who may be at significant risk for



adjustment difficulties across multiple domains, including individual and relational adjustment. These data are consistent with previously discussed observations of significant associations between individual adjustment and marital dissatisfaction and further highlight the need for ongoing monitoring and provision of clinical services to these families (e.g., Friedman et al., 1998).

Several limitations of the current study should be noted. First, the ranges for ages of children and time since diagnosis were restricted; such restricted ranges may have influenced the current findings, given that the marital relationship can vary over time as a function of the ages of children and related caregiving responsibilities. Similarly, the cross-sectional nature of the current study does not allow for an understanding of adjustment across the course of the cancer experience; certainly, research efforts would be enhanced by longitudinal examinations of adjustment. Because of the nature of data collection, examination of associations between the primary variables of interest and additional demographics (e.g., ethnicity/race, education, and/or income) was not possible. However, this may be considered an informational rather than empirical shortcoming, as the population served by the clinic where data was collected is relatively homogeneous and likely would not have allowed for detection of potential differences in these areas. Some methodological limitations also arise with regard to the measures used in the study. The use of measures that were solely self-report may have played some role in the observed findings. Additionally, the measures used were not specific to the experience of having a child with cancer, so the items on these measures may not have adequately assessed issues specific to chronic illness. Finally, and perhaps most importantly, the lack of comparison groups of parents with children who were healthy or had another chronic

illness limits the interpretation of the present findings and restricts external validity.

Despite the aforementioned limitations of the study, several strengths should also be noted. Obtaining ratings from both partners allowed the examination of the associations between individual distress and cognitive appraisal mechanisms and marital dissatisfaction for the group of parents as a whole, and, for fathers and mothers separately. As mentioned previously, existing research examining differential adjustment patterns in fathers and mothers is limited, but indeed suggests that the process of coping with the occurrence of serious illness in a child differs for fathers and mothers (Hoekstra-Weebers et al., 1996; Quittner et al., 1998; Silver et al., 1998; Taanila et al., 1996). Such findings have led researchers to call for additional examination of differences in coping and adjustment between fathers and mothers with children who are chronically ill (e.g., Biller, 1993; Eiser, 1994). Additionally, the current study moved beyond the tradition of solely examining the influences of global factors (e.g., individual distress) and included examinations of the impact of more specific intrapersonal cognitive appraisal mechanisms.

The current results pose several additional questions that warrant consideration in future research. For example, the potential association between coping style and individual distress remains to be clearly delineated, as well as the relationship between individual distress and marital dissatisfaction. Additionally, it appears that the examination of *how* partner variables influence marital dissatisfaction is an important step in further understanding the interrelated nature of adjustment for couples. In a similar vein, future research should also seek to identify the influences of marital dissatisfaction on adjustment and functioning of children with cancer and their siblings.

Marital dissatisfaction and other measures of parental adjustment should be compared across multiple illness groups involving various levels of impairment or risk to life and with healthy subsets of children in an effort to develop disease-specific intervention models.

Several other intervention and clinical implications should also be noted. Because adjustment processes may follow different paths for fathers and mothers, intervention efforts should account for these differences in order to maximize the efficacy of interventions. For example, clinicians may wish to consider the influence of coping style on marital dissatisfaction in fathers, while other areas of focus may be considered for mothers of children with cancer. Additionally, adjustment influences do appear to overlap between fathers and mothers to some extent, including in the area of individual distress, suggesting that similar intervention efforts may be used for fathers and mothers addressing individual distress or other constructs that appear to have similar influences on adjustment.

The current study contributes to the growing knowledge base regarding parental coping and childhood cancer, examining specific intraindividual cognitive appraisal mechanisms and exploring different patterns of adjustment in fathers and in mothers. Specifically, indications that specific intrapersonal cognitive appraisal mechanisms may affect marital dissatisfaction and other measures of adjustment provide direction for the development of interventions to improve parental adjustment, with potential implications for improving the adjustment of other family members as well. The identification of cognitive appraisal mechanisms and their relationship to adjustment also provides insight into the occurrence of resiliency, and may subsequently allow for improved identification

of individuals who are at risk for poor adjustment. Finally, the finding that adjustment processes may follow different courses for fathers than for mothers warrants further consideration. Overall, it appears that cognitive appraisal mechanisms indeed influence marital dissatisfaction, though processes of adjustment to childhood cancer likely differ for fathers and for mothers.

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APPENDIX A:  
CORRELATION TABLES

Table 2.

Zero-Order Correlations Among Primary Variables for Overall Sample (N=122)

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Child Age											
2. Child Gender	.097										
3. Parent Age (N=54)	.560**	.418**									
4. Parent Gender	.003	.000	-.129								
5. Time Since Diagnosis	.235**	-.032	.103	.008							
6. Problem-Focused Coping	-.029	.093	-.069	.127	.032						
7. Emotion-Focused Coping	-.018	-.085	.047	-.085	-.121	-.842**					
8. Uncertainty	.075	-.113	-.051	-.080	-.056	-.370**	.463**				
9. Distress (BSI GSI)	-.031	.149	-.158	-.091	-.017	-.485**	.534**	.478**			
10. Partner Distress	-.033	.149	-.193	.091	-.010	-.072	.116	.310**	.335**		
11. Marital Dissatisfaction	-.008	.060	-.193	.010	-.061	.385**	-.432**	-.357**	-.434**	-.373**	
12. Partner Marital Dissatisfaction	-.010	.060	-.115	-.010	-.063	.185*	-.197*	-.273**	-.373**	-.434**	.667**

\* $p < .05$ . \*\* $p < .01$ .



Table 3

Zero-Order Correlations Among Primary Variables for Fathers (N=61)

Variable	1	2	3	4	5	6	7	8	9	10
1. Child Age										
2. Child Gender	.097									
3. Parent Age (N=27)	.539**	.477*								
4. Time Since Diagnosis	.217	-.026	.121							
5. Problem-Focused Coping	.006	.035	-.138	.081						
6. Emotion-Focused Coping	.003	-.084	.125	-.037	-.884**					
7. Uncertainty	.019	-.112	.005	.082	-.452**	.505**				
8. Distress (BSI GSI)	-.042	.088	.095	-.077	-.531**	.537**	.497**			
9. Partner Distress	-.025	.227	-.129	.035	-.071	.057	.275*	.353**		
10. Marital Dissatisfaction	-.084	.046	-.292	-.153	.546**	-.583**	-.504**	-.610**	-.141	
11. Partner Marital Dissatisfaction	.058	.072	-.150	.031	.311*	-.370**	-.349**	-.550**	-.253*	.671**

\*p &lt; .05. \*\*p &lt; .01.

Table 4

Zero-Order Correlations Among Primary Variables for Mothers (N=61)

Variable	1	2	3	4	5	6	7	8	9	10
1. Child Age										
2. Child Gender	.097									
3. Parent Age (N=27)	.590**	.351								
4. Time Since Diagnosis	.252*	-.038	.089							
5. Problem-Focused Coping	-.079	.181	.084	-.037						
6. Emotion-Focused Coping	-.044	-.088	-.122	-.227	-.770**					
7. Uncertainty	.178	-.116	-.129	-.027	-.240	.401**				
8. Distress (BSI GSI)	-.018	.227	-.264	.056	-.394**	.521**	.447**			
9. Partner Distress	-.042	.088	-.230	-.049	-.106	.200	.365**	.353**		
10. Marital Dissatisfaction	.062	.072	-.096	.021	.205	-.275*	-.217	-.253*	-.550**	
11. Partner Marital Dissatisfaction	-.085	.046	-.095	-.166	.001	.037	-.186	-.141	-.610**	.671**

\*p &lt; .05. \*\*p &lt; .01.

APPENDIX B:  
QUESTIONNAIRE BATTERY

Today's Date \_\_\_\_\_ Subject #: \_\_\_\_\_

**About Your Child**

Your child's date of birth \_\_\_\_\_ age: \_\_\_\_\_ sex: \_\_\_\_\_

What grade is your child in: \_\_\_\_\_

Child's diagnosis: \_\_\_\_\_ date of diagnosis: \_\_\_\_\_

Does your child have any other chronic illness: \_\_\_\_\_

Your Child's Current Medical Status (check one):

- newly diagnosed
- currently in first remission
- relapsed at least once
  - if relapsed, how many times \_\_\_\_\_
  - if relapsed, how long since last relapse \_\_\_\_\_
- off therapy, no sign of disease

Number of child's siblings: \_\_\_\_\_  
Is child:  oldest  middle  youngest

**About You**

Who is completing this questionnaire?

- mother  stepmother  grandmother
- father  stepfather  other \_\_\_\_\_

Marital Status:

- single, never married
- married, only marriage. Number of years married \_\_\_\_\_
- divorced, widowed, separated. Length of time \_\_\_\_\_
- remarried. Number of years remarried \_\_\_\_\_
- other \_\_\_\_\_

Who has the most responsibility for the daily care of your child?

- mother  stepmother  grandmother
- father  stepfather  other \_\_\_\_\_

Number of years of school (highest grade completed):

you \_\_\_\_\_ your partner \_\_\_\_\_

Occupation:

you \_\_\_\_\_

your partner \_\_\_\_\_

Total number of children living in your home: \_\_\_\_\_

Total number of people living in your home: \_\_\_\_\_

Have you or another family member received any type of psychosocial counseling? yes \_\_\_\_\_ no \_\_\_\_\_

## Couples' Scale

Most people have disagreements in their relationships. Please indicate below the approximate exact of agreement or disagreement between you and your partner for each item on the following list.

	Always Agree	Almost Always Agree	Occasionally Disagree	Frequently Disagree	Almost Always Disagree	Always Disagree
1. Handling family finances.	1	2	3	4	5	6
2. Matters of recreation.	1	2	3	4	5	6
3. Religious matters.	1	2	3	4	5	6
4. Demonstration of affection.	1	2	3	4	5	6
5. Friends	1	2	3	4	5	6
6. Sexual relations	1	2	3	4	5	6
7. Correct or incorrect behavior	1	2	3	4	5	6
8. Philosophy of life	1	2	3	4	5	6
9. Ways of dealing with parents or in-laws	1	2	3	4	5	6
10. Aims, goals, and things believed important.	1	2	3	4	5	6
11. Amount of time spent together.	1	2	3	4	5	6
12. Making major decisions	1	2	3	4	5	6
13. Household tasks	1	2	3	4	5	6
14. Leisure time interests and activities	1	2	3	4	5	6
15. Career decisions.	1	2	3	4	5	6
	All the time	Most of the time	More often than not	Occasionally	Rarely	Never
16. How often do you discuss or consider ending your relationship?	1	2	3	4	5	6
17. How often do you or your partner leave the house after a fight.	1	2	3	4	5	6
18. In general, how often do you think that things between you and your partner are going well.	1	2	3	4	5	6
19. Do you confide in your partner?	1	2	3	4	5	6
20. Do you regret that the two of you are together.	1	2	3	4	5	6
21. How often do you and your partner argue?	1	2	3	4	5	6
22. How often do you and your partner get on each other's nerves?	1	2	3	4	5	6
23. Do you kiss your partner?	1	2	3	4	5	6
24. Do you and your partner engage in outside interests together?	1	2	3	4	5	6

**Couples' Scale**

**How often would you say the following events occur between you and your partner?**

	Never	Less than once a month	Once or twice a month	Once or twice a week	Once a day	More often
25. Have a stimulating exchange of ideas.	1	2	3	4	5	6
26. Laugh together	1	2	3	4	5	6
27. Calmly discuss something	1	2	3	4	5	6
28. Work together on a project.	1	2	3	4	5	6

**There are some things about which couples sometimes agree and sometimes disagree. Indicate if either item below caused differences of opinions or were problems in your relationship during the past few weeks. (Check yes or no)**

31.    X                    X                    X                    X                    X                    X                    X

---

Extremely                    Fairly                    A little                    Happy                    Very                    Extremely                    Prefer

32. Which of the following statements best describes how you feel about the future of your relationship.

- \_\_\_\_\_ I want desperately for my relationship to succeed and would go to almost any length to see that it does.
- \_\_\_\_\_ I want very much for my relationship to succeed, and will do all I can to see that it does.
- \_\_\_\_\_ I want very much for my relationship to succeed, and will do my fair share to see that it does.
- \_\_\_\_\_ It would be nice if my relationship succeeded, but I can't do much more than I am doing now to help it succeed.
- \_\_\_\_\_ It would be nice if it succeeded, but I refuse to do any more than I am doing now to keep the relationship going.
- \_\_\_\_\_ My relationship can never succeed, and there is no more I can do to keep the relationship going.

Below is a list of problems people sometimes have. Please read each one carefully and circle the number to the right that best describes HOW MUCH THAT PROBLEM HAS DISTRESSED OR BOTHERED YOU IN THE PAST 7 DAYS, INCLUDING TODAY. Circle only one number for each problem and do not skip any items. If you change your mind, erase your first mark carefully.

HOW MUCH WERE YOU DISTRESSED BY:						
	NOT AT ALL	A LITTLE BIT	MODERATELY	QUITE A BIT	EXTREMELY	
1. Nervousness or shakiness inside	1	0	1	2	3	4
2. Faintness or dizziness	2	0	1	2	3	4
3. The idea that someone else can control your thoughts	3	0	1	2	3	4
4. Feeling others are to blame for most of your troubles	4	0	1	2	3	4
5. Trouble remembering things	5	0	1	2	3	4
6. Feeling easily annoyed or irritated	6	0	1	2	3	4
7. Pains in heart or chest	7	0	1	2	3	4
8. Feeling afraid in open spaces	8	0	1	2	3	4
9. Thoughts of ending your life	9	0	1	2	3	4
10. Feeling that most people cannot be trusted	10	0	1	2	3	4
11. Poor appetite	11	0	1	2	3	4
12. Suddenly scared for no reason	12	0	1	2	3	4
13. Temper outbursts that you could not control	13	0	1	2	3	4
14. Feeling lonely even when you are with people	14	0	1	2	3	4
15. Feeling blocked in getting things done	15	0	1	2	3	4
16. Feeling lonely	16	0	1	2	3	4
17. Feeling blue	17	0	1	2	3	4
18. Feeling no interest in things	18	0	1	2	3	4
19. Feeling fearful	19	0	1	2	3	4
20. Your feelings being easily hurt	20	0	1	2	3	4
21. Feeling that people are unfriendly or dislike you	21	0	1	2	3	4
22. Feeling inferior to others	22	0	1	2	3	4
23. Nausea or upset stomach	23	0	1	2	3	4
24. Feeling that you are watched or talked about by others	24	0	1	2	3	4
25. Trouble falling asleep	25	0	1	2	3	4
26. Having to check and double check what you do	26	0	1	2	3	4
27. Difficulty making decisions	27	0	1	2	3	4
28. Feeling afraid to travel on buses, subways, or trains	28	0	1	2	3	4
29. Trouble getting your breath	29	0	1	2	3	4
30. Hot or cold spells	30	0	1	2	3	4
31. Having to avoid certain things, places, or activities because they frighten you	31	0	1	2	3	4
32. Your mind going blank	32	0	1	2	3	4
33. Numbness or tingling in parts of your body	33	0	1	2	3	4
34. The idea that you should be punished for your sins	34	0	1	2	3	4
35. Feeling hopeless about the future	35	0	1	2	3	4
36. Trouble concentrating	36	0	1	2	3	4
37. Feeling weak in parts of your body	37	0	1	2	3	4
38. Feeling tense or keyed up	38	0	1	2	3	4
39. Thoughts of death or dying	39	0	1	2	3	4
40. Having urges to beat, injure, or harm someone	40	0	1	2	3	4
41. Having urges to break or smash things	41	0	1	2	3	4
42. Feeling very self-conscious with others	42	0	1	2	3	4
43. Feeling uneasy in crowds	43	0	1	2	3	4
44. Never feeling close to another person	44	0	1	2	3	4
45. Spells of terror or panic	45	0	1	2	3	4
46. Getting into frequent arguments	46	0	1	2	3	4
47. Feeling nervous when you are left alone	47	0	1	2	3	4
48. Others not giving you proper credit for your achievements	48	0	1	2	3	4
49. Feeling so restless you couldn't sit still	49	0	1	2	3	4
50. Feelings of worthlessness	50	0	1	2	3	4
51. Feeling that people will take advantage of you if you let them	51	0	1	2	3	4
52. Feelings of guilt	52	0	1	2	3	4
53. The idea that something is wrong with your mind	53	0	1	2	3	4

**Ways of Coping (Modified)**

<b>INSTRUCTIONS:</b> Please read each item and circle how much you have used it in coping with your child's illness and how much it has helped.		How much did you use this?			
		Not Used	Used some what	Used quite a bit	Used a lot
1.	Just concentrated on what I had to do next – the next step.	0	1	2	3
2.	I tried to analyze the problem in order to understand it better.	0	1	2	3
3.	Turned to work or substitute activities to take my mind off things.	0	1	2	3
4.	I felt that time would make a difference – the only thing to do was to wait.	0	1	2	3
5.	Bargained or compromised to get something positive from the situation.	0	1	2	3
6.	I did something that I didn't think would work, but at least I was doing something.	0	1	2	3
7.	Tried to get the person responsible to change his or her mind.	0	1	2	3
8.	Talked to someone to find out more about the situation.	0	1	2	3
9.	Criticized or lectured myself.	0	1	2	3
10.	Tried not to burn my bridges, but leave things somewhat open.	0	1	2	3



**Ways of Coping (Modified)**

<b>INSTRUCTIONS:</b> Please read each item and circle how much you have used it in coping with your child's illness and how much it has helped.		How much did you use this?			
		Not Used	Used some what	Used quite a bit	Used a lot
11.	Hoped a miracle would happen.	0	1	2	3
12.	Went along with fate; sometimes I just have bad luck.	0	1	2	3
13.	Went on as if nothing happened.	0	1	2	3
14.	I tried to keep my feelings to myself.	0	1	2	3
15.	Looked for the silver lining, so to speak; tried to look on the positive side of things.	0	1	2	3
16.	Slept more than usual.	0	1	2	3
17.	I expressed anger to the person(s) who caused the problem.	0	1	2	3
18.	Accepted sympathy and understanding from someone.	0	1	2	3
19.	I tell myself things that helped me to feel better.	0	1	2	3
20.	I was inspired to do something creative.	0	1	2	3
21.	Tried to forget the whole thing.	0	1	2	3
22.	I got professional help.	0	1	2	3
23.	Changed or grew as a person in a good way.	0	1	2	3
24.	I waited to see what would happen before doing anything.	0	1	2	3

**Ways of Coping (Modified)**

		How much did you use this?			
		Not Used	Used some what	Used quite a bit	Used a lot
25.	I apologized or did something to make up.	0	1	2	3
26.	I made a plan of action and followed it.	0	1	2	3
27.	I accepted the next best thing to what I wanted.	0	1	2	3
28.	I let my feelings out somehow.	0	1	2	3
29.	Realized I brought the problem on myself.	0	1	2	3
30.	I came out of the experience better than when I went in.	0	1	2	3
31.	Talked to someone who could do something concrete about the problem.	0	1	2	3
32.	Got away from it for awhile tried to rest or take vacation.	0	1	2	3
33.	Tried to make myself feel better by eating, drinking, smoking, using drugs or medication, etc.	0	1	2	3
34.	Took a big chance or did something very flaky.	0	1	2	3
35.	I tried not to act too hastily or follow my first hunch.	0	1	2	3
36.	Found new faith.	0	1	2	3

**Ways of Coping (Modified)**

<b>INSTRUCTIONS:</b> Please read each item and circle how much you have used it in coping with your child's illness and how much it has helped.		How much did you use this?			
		Not Used	Used some what	Used quite a bit	Used a lot
37.	Maintained my pride and kept a stiff upper lip.	0	1	2	3
38.	Rediscovered what is important in life.	0	1	2	3
39.	Changed something so things would turn out all right.	0	1	2	3
40.	Avoided being with people in general.	0	1	2	3
41.	Didn't let it get to me; refused to think too much about it.	0	1	2	3
42.	I asked a relative or friend I respected for advice.	0	1	2	3
43.	Kept others from knowing how bad Things were.	0	1	2	3
44.	Made light of the situation; refused to get too serious about it.	0	1	2	3
45.	Talked to someone about how I was feeling.	0	1	2	3
46.	Stood my ground and fought for what I wanted.	0	1	2	3
47.	Took it out on other people.	0	1	2	3
48.	Drew on my past experiences; I was in a similar situation before.	0	1	2	3

**Ways of Coping (Modified)**

<b>INSTRUCTIONS:</b> Please read each item and circle how much you have used it in coping with your child's illness and how much it has helped.		How much did you use this?			
		Not Used	Used some what	Used quite a bit	Used a lot
49.	I knew what had to be done, so I doubled my efforts to make things work.	0	1	2	3
50.	Refused to believe that it had happened.	0	1	2	3
51.	I made a promised to myself that things would be different next time.	0	1	2	3
52.	Came up with a couple of different solutions to the problem.	0	1	2	3
53.	Accepted it, since nothing could be done about it.	0	1	2	3
54.	I tried to keep my feelings from interfering with other things too much.	0	1	2	3
55.	Wished that I could change what had happened or how I felt.	0	1	2	3
56.	I changed something about myself.	0	1	2	3
57.	I daydreamed or imagined a better time or place than the one I was in.	0	1	2	3
58.	Wished that the situation would go away or some how be over with.	0	1	2	3

**Ways of Coping (Modified)**

<b>INSTRUCTIONS:</b> Please read each item and circle how much you have used it in coping with your child's illness and how much it has helped.		How much did you use this?			
		Not Used	Used some what	Used quite a bit	Used a lot
59.	Had fantasies or wishes about how things might turn out.	0	1	2	3
60.	I prayed.	0	1	2	3
61.	I prepared myself for the worst.	0	1	2	3
62.	I went over in my mind what I would say or do.	0	1	2	3
63.	I thought about how a person I admire would handle this situation and used that as a model.	0	1	2	3
64.	I tried to see things from the other person's point of view.	0	1	2	3
65.	I reminded myself how much worse things could be.	0	1	2	3
66.	I jogged or exercised.	0	1	2	3

APPENDIX C:  
OKLAHOMA STATE UNIVERSITY  
IRB APPROVAL LETTER

Oklahoma State University  
Institutional Review Board

Protocol Expires: 11/5/01

Date: Monday, November 06, 2000

IRB Application No AS0120

Proposal Title: FACTORS AFFECTING MARITAL SATISFACTION FOR PARENTS OF PEDIATRIC  
ONCOLOGY PATIENTS

Principal  
Investigator(s):

Misty L. Boyd  
215 North Murray Hall  
Stillwater, OK 74078

Larry Mullins  
414 N Murray  
Stillwater, OK 74078

Reviewed and  
Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

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Signature:



Carol Olson, Director of University Research Compliance

Monday, November 06, 2000

Date

Approvals are valid for one calendar year, after which time a request for continuation must be submitted. Any modifications to the research project approved by the IRB must be submitted for approval with the advisor's signature. The IRB office MUST be notified in writing when a project is complete. Approved projects are subject to monitoring by the IRB. Expedited and exempt projects may be reviewed by the full Institutional Review Board.

## VITA

Misty Lynn Boyd

Candidate for the Degree of

Master of Science

Thesis: FACTORS AFFECTING MARITAL SATISFACTION FOR PARENTS  
OF PEDIATRIC ONCOLOGY PATIENTS

Major Field: Psychology

Biographical:

Education: Graduated valedictorian from Byng High School, Ada, Oklahoma in May 1994; received Bachelor of Science degree sigma cum laude with Honors in Psychology from Oklahoma State University, Stillwater, Oklahoma in May 1998; Completed the requirements for the Master of Science degree with a major in Clinical Psychology at Oklahoma State University, Stillwater, Oklahoma in May 2001.

Experience: Worked at Psychological Services Center, Department of Psychology, Oklahoma State University, 1998 to present. Employed by Oklahoma State University Department of Psychology as graduate research assistant and teaching assistant, 1998 to present. Employed by Center on Child Abuse and Neglect, Department of Pediatrics, Children's Hospital of Oklahoma, Oklahoma City, Oklahoma, 2000 to present.

Professional Memberships: Oklahoma Psychological Association, Southwest Psychological Association, American Psychological Association, Society of Pediatric Psychology, Association for the Advancement of Behavior Therapy.



