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**Having a Parent With Cancer: An Examination of the Ways
Children Cope and How the Family System Is Affected**

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Having a Parent With Cancer: An Examination of the Ways
Children Cope and How the Family System Is Affected

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Having a Parent With Cancer: An Examination of the Ways Children Cope and How the Family System Is Affected

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Current statistics estimate that 75% of families will experience a diagnosis of cancer in a family member at some juncture of the family life cycle. In addition, medical and mental health care professionals have begun to realize that cancer impacts not only patients, but their family members (Veatch & Nicholas, 1998; Rait & Lederberg, 1989). Much of the research to date has focused on how patients and their spouses cope and perceive their family environment, with relatively little attention paid to the college-age children of patients. Furthermore, of the studies that have examined the children of cancer patients, many have had small sample sizes and lacked comparison and control groups (Kahle & Jones, 1999). Thus, additional research is needed to better understand the impact of having a parent with cancer on variables of coping and the family environment and compare these results with those from children

who have had a parent with another chronic illness and children whose families do not have a history of any chronic illness. The current study contributes to the literature by comparing the college-age children of cancer patients with the college-age children of heart disease patients and college students who do not have a history of any chronic illness within their immediate families on variables of coping, current functioning, and perceptions of the family environment.

The current sample consisted of 89 college students who reported having a parent with cancer, 25 students who had a parent with heart disease, 6 with parent(s) with both cancer and heart disease, and 169 participants who denied any type of chronic illness in their immediate families. A series of MANOVAs were conducted to explore the differences in coping, family environment, and current functioning between the parent with cancer, parent with heart disease, parent(s) with both cancer and heart disease, and no illness groups. The impact of the current stage of parental illness, stage of the family life cycle at diagnosis, and whether or not the family sought counseling to help them cope with the parental illness on variables of coping, current functioning, and the family environment were also explored.

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CHAPTER I

INTRODUCTION

It is estimated that three out of every four families will be faced with the diagnosis of cancer at some point in the course of the lifecycle (Veatch & Nicholas, 1998). Furthermore, researchers have discovered that many family members are deeply and painfully affected by the affliction of cancer upon one of its members (Rait & Lederberg, 1989). Thus, in recent years, clinicians and researchers alike have begun to conceptualize the family of the cancer patient as the unit of treatment rather than just the patient (Veatch & Nicholas, 1998). However, the impact of cancer on the family remains a relatively understudied phenomenon. Of the little research that has been conducted examining the families of cancer patients, the majority has focused on the spouses of cancer patients and the patients themselves (Faulkner & Davey, 2002). At this time, very little is known about the impact of cancer on the children of patients with respect to how they cope and perceived their family environment and family coping styles, especially as they enter adulthood (Leedham & Meyerowitz, 2000, Kahle & Jones, 2000).

A review of the literature suggests that the children of cancer patients are impacted in profound ways by the experience of cancer. For example, young children and adolescents of cancer patients have been indicated as a hidden high-risk group, who may suffer from vegetative disturbances, psychological symptoms, acting-out behaviors, school problems, and face long-term changes in their levels of self-esteem and cognitive performance (Rait & Lederberg, 1989). However, little is known about

how the late adolescent and adult children cope with their parent's illness and perceive it as a catalyst for change in their family environment.

Many of the studies examining the impact of cancer on the family system have sampled patients and their spouses, though few have explored the perspectives of the children. In addition, the majority of studies exploring the family environments of cancer patients, regardless of the composition of the sample, have been limited to a comparison between two different types of cancer families: those that indicate experiencing lower levels of distress with those who suffer from higher levels of distress. For instance, studies have shown that families characterized by higher levels of cohesion and lower levels of conflict seem to demonstrate lower levels of distress and adapt better to the crisis of cancer than families with the opposite traits (Weihs & Reiss, 1996; Schulz, Schulz, Schulz, & Von Kerekjarro, 1996). Other variables, such as the level of flexibility within the family system, a stance towards open communication between family members, and a strong family sense of coherence have been associated with higher levels of adaptation in families that experience cancer (Schulz et al., 1996; Rustad, 1994; Mullen, Smith, & Hill, 1993). Despite the relevance of this knowledge in understanding the linkage between the family environment and family functioning, the literature is lacking in studies comparing families affected by cancer with no illness control families (Kahle & Jones, 2000). In fact, it is only when the scope of investigation is widened to include an array of chronic illnesses that studies can be found comparing families that have been afflicted with a chronic illness and those that have not. The results of these studies indicate families of chronically ill members tend

to experience higher levels of conflict and lower levels of cohesion than control families (Peters & Esses, 1985; Dura & Beck, 1988). However, these studies usually contained small sample sizes and involved illnesses such as chronic back pain, diabetes, and arthritis. Thus, additional research is needed to verify these results and determine whether they generalize to having a parent with cancer. Past research is also lacking in the number of studies comparing the differences in the family environment across families afflicted with different types of chronic illnesses. While a few significant differences have been found between families suffering from different types of illnesses, further research needs to be conducted to explore the differences in family environment between specific illnesses (Kahle & Jones, 2000). Therefore, the present study incorporated a control group consisting of participants that had no history of any chronic illness in their immediate families and comparison groups that included the children of parents with heart disease and the children of parents with both cancer and heart disease.

How adult patients and their spouses cope with a diagnosis of cancer has been the focus of a number of research studies, though considerably less attention has been given to the children of patients. Lazarus and Folkman (1984) defined coping as the “cognitive and behavioral efforts to manage demands appraised as taxing or exceeding resources.” In order to assess coping efforts, the literature suggests it is necessary to consider the nature of the demand or stressor. In the case of cancer or another potentially life threatening chronic illness, the stressor may be seen as a “high stakes” situation or a time when environmental demands are high and emotions are intense

(Rowland, 1989). In order to cope with “high stakes” situations, stress and coping theory predicts that many people will have a tendency to revert back to more primitive and rigid coping behaviors; therefore, being less able to utilize a variety of coping strategies to confront the stressor. Furthermore, when the stressor is seen as uncontrollable, such as instances of cancer, higher levels of emotion-focused coping are also expected (Rowland, 1989). Emotion-focused coping involves concentrating coping efforts towards the management of emotional reactions to the stressor, while problem-focused coping pertains to taking actions to change the stressor or the type of interaction one has with the stressor (Leedham & Meyerowitz, 2000). Social support and a strong family sense of coherence have also been linked to the ability to cope. Prior research indicates these strategies may buffer some of the negative consequences of having a parent with cancer (Rowland, 1989; Mullen et al., 1993). Several other coping strategies have been associated with effective coping: an open acceptance of the diagnosis (Rowland, 1989), the ability to create meaning out of the experience (Walsh-Burke, 1989), and information seeking (Christ, Seigel, & Sperber, 1994). Despite the number of effective coping strategies the families of cancer patients have been shown to employ, the literature suggests they commonly use several ineffective strategies as well. More specifically, families tend to utilize the strategies of avoidance and distancing in their efforts to cope, but rarely are such strategies effective in managing their levels of distress (Aymanns, Filipp, & Klauer, 1995; Compas, Worsham, Ey, & Howell, 1996). From a Family Systems perspective, the way that a family copes is integrally related to the way that it functions. Thus, further research is needed to examine the relationship

between the college-age children of cancer patients and other comparison and control groups on various coping strategies.

The goal of the present study was to investigate the differences between the college-age children of cancer patients, heart disease patients, both cancer and heart disease patients, and families that do not have a history of a chronic illness on measures of coping, family environment, and current functioning. By exploring these differences, researchers may gain greater insight about the ways families are changed through having a parent with cancer and the coping mechanisms they employ. This knowledge may then be utilized to promote successful family functioning and coping throughout the course of the disease.

CHAPTER II

REVIEW OF THE LITERATURE

The advent of Family Systems Theory in 1945, laid the foundation for a new framework to conceptualize the family. It asserted that the family is more than the sum of the individuals within it and a system where members are dependent upon and influence the actions of other members (Nichols & Schwartz, 1998). Despite the known importance of the family brought about by this theory, it was not until the 1970's, that the field of cancer research took a dramatic turn by shifting its focus of study from the individual cancer patient to the patient and their entire family (Veatch & Nicholas, 1998). However, an overwhelming majority of oncology research to date has continued to focus on the reactions of patients and their spouses. On the other hand, little is known about how having a parent with cancer influences the children of patients, especially those approaching late adolescence and early adulthood (Leedham & Meyerowitz, 1999; Kahle & Jones, 2000; Faulkner & Davey, 2002).

Furthermore, much of the research that has been conducted on the children of cancer patients has been plagued with methodological problems, including small sample sizes and the lack of comparison groups and control groups (Kahle & Jones, 2000). Thus, the intent of the present study was to expand upon what is already known about how the children of patients cope and their perceptions about the ways cancer changes the family environment and compare them to a no illness control group, and parent with heart disease and parent(s) with both cancer and heart disease comparison groups.

A review of the literature will begin with an overview of Family Systems Theory and its relevance in illness research. Next, the impact of cancer on family functioning will be explored. A number of specific variables will be described that have been linked to more adaptive functioning over time. In addition, the scope of investigation will broaden to include research on other chronic illnesses in order to assess the differences that have been discovered between chronically ill families and healthy control groups on measures of family functioning. Relevant literature about the role coping plays in dealing with a family member's illness will also be reviewed. The definition of coping will be provided, as well as the differences between emotion-focused and problem-focused strategies discussed. Then, a number of specific strategies that the family members of patients frequently use to help them cope will also be explored. Finally, because heart disease will be used as a comparison group to assess how the families of cancer patients compare to other chronically ill families, an overview about the impact of heart disease on the family will be provided. The research study that follows draws upon the research presented on coping and family environment in order to explore how participants cope with having a parent with cancer and their perceptions about how this experience changed their family.

CANCER AND THE FAMILY

Family Systems Theory

Family Systems Theory was proposed nearly sixty years ago by Ludwig von Bertalanffy (1945) and it argued for a shift away from reductionist philosophies and linear cause and effect and towards principles of wholeness, the examination of multiple

relationships as they influence each other and the entire system, and the importance of studying phenomena within the contexts they occur (Mikesell, Lusterman, & McDaniel, 1995). In other words, Systems Theory posits that individuals live and interact within social systems, which have organized boundaries and determine standards for social roles and the behaviors and practices necessary to maintain certain values. Furthermore, theorists have argued that the family is the primary and most important social system (Sirles & Selleck, 1989).

In the 1970's a number of researchers began to apply the concepts of Systems Theory to populations with a variety of physical and mental illnesses, shifting the focus of investigation from the individual patient to the patient and their entire family (Peters & Esses, 1985). Litman (1974) described the family, within the context of an illness, as:

Perhaps the most important social context within which illness occurs and is resolved. Family is involved in the process of defining illness, providing preliminary validation to the sick role, and precipitating initial steps in seeking out and utilizing necessary available care, including participation in care. (p. 495)

One of the basic premises of Systems Theory, as it applies to illness research, is that a change, like the diagnosis of cancer, in one person or part of the system is followed by a change in other parts of the system (Peters & Esses, 1985; Faulkner & Davey, 2002). In addition, the family is conceptualized as a stable system that strives to maintain homeostasis. Thus, it is believed that when a serious stressor, like an illness in a family member occurs, the family will be thrown out of homeostasis. When this happens, the

family may first react by utilizing familiar coping strategies they have used successfully in the past to return the system back to its steady state. However, disorganization may ensue in the system if these strategies do not achieve the desired results; thus, the family may have to evolve its structure and create new rules to deal with the stressor and cope effectively (Peters & Esses, 1985). As a result of this process, it is believed that the family's coping strategies and the structure of the family environment may be altered in the face of cancer. Despite the profound impacts cancer can have on the family system, there remains a dearth of literature focusing on the impact of parental cancer on children, adolescents, and young adults (Faulkner & Davey, 2002). The following section will review the current oncology and chronic illness literature on the impact a diagnosis of cancer or another chronic illness has on the family environment.

The Impact of Cancer on the Family

Ryan and Ryan (1979) described cancer as “no respecter of the immediate family. It strikes and scars them all and the scars remain for years” (Welch-McCaffrey, 1988). Furthermore, Tringali (1974) asserted that the “potential for alteration in family functioning is multifaceted” with respect to role expectations, division of labor, and the provision of emotional support. Thus, it should be no surprise that family problems represent one of the most significant areas of stress for families coping with cancer, second only to the cancer itself (Schulz, Schulz, Schulz, and Von Kerekjarro, 1996). Unfortunately, almost half of all family members coping with the disease experience levels of distress equal to that of the patient, creating a greater strain on the family system (Schulz et al., 1996). Similarly, almost thirty percent of families exhibit high

enough levels of distress to experience psychological symptoms that warrant professional assistance (Sales, Schulz, & Siegel, 1992). Research also indicates that one of the most difficult tasks for many families is their ability to adapt the family system to meet the demands of the illness. In fact, the degree to which a family is flexible, or can adapt its structure, is a key ingredient in how cancer will impact the family over time (Rait & Lederberg, 1989).

Cancer requires the family to be willing to change its role relationships, power structure, and relationship rules in order for family functioning to continue as the system copes with having a parent with cancer. In renegotiating these relationships, families must be careful to achieve a moderate level of flexibility in the system. If the structure or organization of the system is too rigid, then the family does not possess the flexibility to accomplish tasks necessary for successful coping, resulting in higher levels of distress. However, if there is too much ambiguity about the structure of the system, levels of distress will also increase because members are unclear about the rules and roles of the family (Schulz et al., 1996).

Another important element in successfully renegotiating the structure of the family is communication between family members. Families who talk about the levels of distress they are experiencing seem to have less difficulty changing the structure and roles of their family to cope with the illness and experience higher levels of psychological well being (Schulz et al., 1996; Rustad, 1994). On the other hand, some families adopt what is called the “Conspiracy of Silence” and decide not to talk about the illness or its effects. This stance has been documented to produce profound

negative effects on family relationships and psychological well being that may crystallize if proper actions are not taken to correct them (Rait & Lederberg, 1989). Even when children are very young, it is important to incorporate them into this process because these children are usually sent away to live with someone else while their healthy parent cares for the parent with cancer. When these children are not informed about what is happening in the family, they may experience feelings of guilt and wonder if they played a causative role in their separation from their parents. They may also feel as though their parents have abandoned them. Furthermore, not being included in family communication and experiencing feelings of guilt or abandonment have been associated with more problematic outcomes in children (Rait & Lederberg, 1989). The ability of the family to communicate and alter its roles and structure seem to be critical elements in maintaining family functioning over the course of the illness.

A strong sense of coherence within the family has also been noted as an important component in buffering the impact of cancer. Coherence is represented by three components: comprehensibility, manageability, and meaningfulness. Comprehensibility is the degree to which the stressor can be defined in cognitive terms that make sense to the family. Manageability is the extent families believe their resources are adequate to meet the demands of the cancer and any additional demands of the life cycle (Antonovsky & Sourani, 1988). Family members' abilities to provide meaning to the experience to help them emotionally understand the event and preserve a sense of competency within the family makes up the component of meaningfulness. Embedded within the family sense of coherence is the family's ability to use the

definition of the event as a source of motivation to combat the cancer (Rolland, 1993). Based on a study of cancer patients and their spouses, a sense of coherence has been associated with lower levels of psychological distress by decreasing the tendency that an event will be conceptualized as stressful (Mullen, Smith, and Hill, 1993). However, little is known about how families with cancer compare to families without any type of chronic illness in terms of a family sense of coherence.

With regard to other factors of the family environment, such as cohesion, conflict, and organization, the literature seems lacking. However, one study was recently published comparing adolescent children of cancer patients with no illness controls on measures of distress and family functioning. Twenty-seven adolescents who had a parent with cancer and twenty-three adolescents whose parents did not have any chronic illness participated in the study. Participants completed several measures of current functioning and the family environment: Revised Children's Manifest Anxiety Scale (Reynolds & Richmond, 1985), Children's Depression Inventory (Kovacs, 1992), the PTSD Checklist-Civilian Version (Weathers, 1993) and the Family Environment Scale (Moos & Moos, 1981). No significant differences were found between the groups on measures of anxiety and depression, but a positive family environment was associated with lower levels of depression and anxiety in adolescents. Furthermore, adolescents who described their family environments more cohesive, expressive, and less conflictual experienced lower levels of distress than families with lower levels of cohesion and expression and higher levels of conflict (Harris & Zakowski, 2003).

Despite the contribution of the previous study, the majority of studies in the literature fail to compare families of cancer patients with no illness control families on variables of the family environment. Of the studies that do investigate the impact of having a parent with cancer on the child and the family system, most compare variables of family functioning between cancer families. Studies, such as these, have shown those families who exhibit higher levels of cohesion and lower levels of conflict suffer less distress than families with higher conflict and lower levels of cohesion (Weihs & Reiss, 1996; Schulz et al., 1996). However, in order to better understand how families with an ill parent compare to families with healthy family members, one must widen the scope of investigation to the literature regarding other forms of chronic illness.

In a pioneering study, Peters and Esses (1985) investigated the differences between thirty-three children who had a parent with Multiple Sclerosis and one hundred ninety-nine children who were from healthy families. All of the children in the study were between the ages of thirteen and eighteen and many of those with an ill parent indicated their parent's illness had been ongoing for a period of years. The authors compared the two groups on variables of family environment using the Family Environment Scale (Moos & Moos, 1981). The study yielded differences between the children of parents with Multiple Sclerosis and the children in the control group on indices of cohesion, conflict, intellectual-cultural orientation, moral-religious emphasis, and organization (Peters & Esses, 1985). More specifically, the children of chronically ill parents reported higher levels of conflict and lower levels of cohesion, organization, intellectual-cultural orientation, and moral-religious emphasis. However, it should be

noted that the authors acknowledged the higher moral-religious emphasis in the control group may be reflective of a biased sample instead of true differences between the groups because the control group was obtained from a religiously based school (Peters & Esses, 1985).

Another study, by Dura and Beck (1988), compared variables of the family environment between families where the mother had radiating back or neck pain, the mother had insulin-dependent adult onset diabetes, and a no illness control group. Only seven families made up each comparison group, yielding a total sample size of twenty-one families with children between the ages of seven and twelve. The entire family was assessed using both pencil and paper instruments and a family interview. Significant differences were discovered between the groups on the Family Environment Scale (Moos & Moos, 1981) with respect to cohesion and conflict. Similar to the findings of Peter and Esses (1985), the current researchers reported that both the current pain and chronic illness families had significantly lower levels of family cohesion and higher levels of conflict than the no-illness control group. Although not statistically significant, group means were also divergent on a measure of expressiveness, with illness families evidencing lower levels of expression as compared with controls (Dura & Beck, 1988). In a more recent study, parents diagnosed with various mental and physical, chronic illnesses were asked about the perceived impact their illness had on their children. Seventeen respondents ranged in age from 29 to 55 and were predominately female. Results from the study indicate parents have a tendency to view their illness as having a negative effect on their children. For example, parents noted

seeing a variety of changes in their children's behaviors, including anxiety, behavior problems, denial, and frequent crying. Despite the negative changes in children's behaviors, positive differences, like increased communication, helpfulness, and compassion, were noted as well. Parents in the study also reported primary coping strategies of avoidance, ignoring the problem, withdrawal, and anger. Consequently, results suggest that parents may worry about methods of family coping and seek additional social support resources to help meet the demands of the illness (Lundwall, 2002). Although the results of this study are limited by its small sample size, lack of a control group, and the inclusion of so many different types of illnesses, it provides an interesting perspective about how parents perceive their illness as impacting of their children.

In order to better understand how families respond to the stress of chronic illness, Stuifbergen (1990) sought to compare families with four different types of chronic illness: heart disease, diabetes, multiple sclerosis, and arthritis. However, it should be noted that a control group was not included in the study. The sample contained sixty-seven chronically ill parents and their spouses, all of whom had children ranging from elementary to college age. The participants completed the Family Environment Scale (Moos & Moos, 1981) and two patterns emerged that fit the majority of families in the sample. One pattern accounted for approximately two-thirds of the families and they were characterized by high-moderate scores on the dimensions of cohesion, moral-religious values, and intellectual cultural orientation. Another twenty percent of families displayed a profile with high-moderate responses on

cohesion, expressiveness, independence, achievement orientation, and control (Stuifbergen, 1990). Despite the potential utility of this study, because it did not contain a control group it is difficult to know how chronically ill families function differently than families without an illness. Furthermore, the present article does not address the potential differences between the groups, but rather collapsed them to explore patterns of functioning with respect to chronic illness in general. Thus, it is unknown whether differences existed between the groups on indices of family environment.

Unfortunately, similar issues as those aforementioned have been cited in both the cancer and chronic illness literature and seem to be common. In fact, a review of the literature suggests that there are a number of gaps in the research to date on the impact of cancer and other forms of chronic illness on the family. Despite the recent attention families have received over the last few years, the majority of the cancer literature still focuses on patients and spouses. In addition, most of the studies that have been conducted are plagued by small sample sizes, lack of control or comparison groups, and the need for qualitative data to assess changes to the family environment that standard instruments may not be sensitive enough to decipher (Kahle & Jones, 1999; Schulz, Schulz, Schulz, & Von Kerekjarro, 1996). Therefore, there is a great need in the literature for studies that explore variables of family environment, which focus on the children of patients, consist of large sample sizes, and incorporate comparison and control groups into their design.

In summary, it seems that families who have a parent with cancer and report having higher levels of cohesion, familial sense of coherence, communication, moderate levels of organization, and lower levels of conflict suffer less distress and exhibit higher levels of coping than those families with the reversed pattern. However, little is known about whether the children of cancer patients characterize their family environment differently than children of parents with other illnesses or children who come from healthy families. Although the chronic illness literature would predict that the children of cancer patients and other chronically ill parents would rate their families as being less cohesive and more conflictual than families without illnesses, those studies involve illnesses that are less life threatening in the immediate context and may suffer from sample bias (Dura & Beck, 1988, Stuifbergen, 1990). More specifically, samples consisted of families who self-selected to be part of the study through newspaper advertisements or local illness organizations and may be reflective of a segment of the chronic illness population that suffers from higher levels of distress and responds less effectively to the crisis of the illness. Thus, it is unclear whether the potentially life threatening nature of chronic illnesses like cancer and heart disease and the inclusion of a broader sample that is not self-selecting will have the same or reversed effects. Therefore, further research is needed to determine not only whether these differences exist between the children of cancer patients, children of parents with another type of chronic illness, and healthy controls, but also to more fully explore how these groups differ in regard to indices of coping.

Coping With the Experience of Having a Parent With Cancer

As previously described, the family can be conceptualized as a system with a unique structure that strives to maintain homeostasis. However, the advent of a chronic illness in a parent is likely to threaten the stability of the family system and alter its functioning. It is only when the family has adequate resources to cope with the occurrence of an illness that it is able to return to homeostasis, though it is probable that families afflicted with a chronic illness will take longer to return to a steady state due to the nature of the stressor (Sirles & Selleck, 1989). Before exploring the specific ways families cope with cancer, it first seems necessary to review the literature regarding the process of coping in general.

Folkman and Lazarus (1984) conceptualized coping as the cognitive and behavioral efforts people undertake “to manage demands they appraise as taxing or exceeding their current resources” (Dunkel-Schetter, Feinstein, Taylor, & Falke, 1992). The purpose of these coping behaviors should serve to assist the family or individual in altering and normalizing the meaning of the experience, regulating emotional distress, and managing the stressor (Rowland, 1989). However, the degree to which families experience the benefits of coping depends on a variety of factors, including whether their coping efforts are emotion or problem-focused. Problem-focused strategies are usually more effective at decreasing levels of distress and managing stressors. Such strategies rely on an active problem-solving stance and are usually employed when the stressor and its impact are viewed as things that can be changed. Emotion-focused strategies are seen as less effective at reducing the level of experienced distress. These

types of strategies rely predominately on passive problem-solving styles and tend to be exhibited when confronting an uncontrollable stressor, like cancer (Rowland, 1989). Similarly, Lazarus, Averill, and Opton (1974) classified cancer as a high-stakes situation where the demands of the environment are great and emotions are strong. Furthermore, high-stakes situations are thought to elicit more primitive, rigid, and reflexive coping efforts that are less realistic than would low stakes stressors like routine medical visits. Furthermore, previous research predicts that families begin exhibiting either adaptive or maladaptive coping patterns in the weeks following a cancer diagnosis and these patterns are likely to continue over time and be resistant to change (Leedham & Meyerowitz, 2000). Therefore, it appears the family's methods for coping with a stressor like cancer seem to be somewhat stable.

A couple of studies have examined the utilization of problem-focused and emotion-focused coping strategies in response to cancer. Compas, Worsham, Ey, and Howell (1996) explored coping strategies and levels of distress in the children of cancer patients. One hundred thirty-four participants, ranging from ages six to thirty-two, comprised the sample for the study. Through the use of a clinical interview, subjects were asked to describe everything they had done to make the experience of having a parent with cancer better for themselves. They were then asked to classify their responses into one of three categories: problem-focused, emotion-focused, or dual-focused. Each participant was given a list containing the name and definition of the three strategies. Problem-focused was conceptualized as "trying to change or do something about their parent's illness," while emotion-focused was defined as "trying to

deal with their feelings about their parent's illness" (Compas et al, 1996). Lastly, dual-focused was described as "trying to accomplish both of these goals". The findings of the study indicated that as the children of patients move from childhood into adolescence and adulthood, they use proportionately more emotion-focused coping strategies. Consequently, it seems that adolescents and young adults seem to be rather ineffective at coping with their parent's illness. In addition, one of the primary strategies respondents endorsed was avoidance, which has been documented as an ineffective coping strategy for managing distress. Higher levels of avoidance were also linked to higher levels of anxiety and depression in the current sample (Compas, et al, 1996).

Throughout the literature, researchers have documented a number of specific ineffective coping strategies that the children of cancer patients tend to employ to assist them in dealing with their parent's illness. As described in the previous paragraph, one such strategy is avoidance. Another common strategy used by families and patients dealing with cancer is distancing. A sample of 668 cancer patients were given the Ways of Coping, a well known coping measure, and results indicated that the majority of subjects used distancing as their primary coping mechanism. Distancing was shown to decrease levels of distress only when used at moderate levels. In addition, the longer the time since diagnosis was positively correlated with an increased utilization of the coping strategy of behavioral avoidance and the level of distress experienced (Aymanns, Filipp, & Klauer, 1995). Similarly, a study of one hundred twenty adolescents who had a parent with terminal cancer indicated being so overwhelmed

with the experience of cancer that they sought to escape the situation by relying primarily on avoidance and distancing strategies (Christ, Siegel, & Sperber, 1994).

Despite the use of a number of ineffective coping strategies, the families of patients seem to include several more effective coping strategies in their repertoire that allow them to minimize the impact cancer has on their family. For example, in Christ, Siegel, and Sperber's (1994) study of adolescents who had a parent with terminal cancer, they found information seeking to be a potentially effective strategy. It is believed this strategy is effective because increased knowledge may reduce anxiety and lead to an increased sense of control in family members by taking something that was unknown and making it known. The adolescents in the study often aggressively sought information about their parents' cancer and treatment through a variety of mediums, such as books and other periodicals, teachers, hospital staff, and their parents. However, it should be noted that while information seeking is usually an effective strategy for managing distress, some adolescents reported that they felt overwhelmed by the information and unprepared to handle the possible outcomes of their parents' treatment (Christ et al., 1994). Therefore, parents or other family members may want to assist adolescents in their search for information to help minimize their risk of feeling overwhelmed instead of comforted. Another study by Tringali (1986) also discovered the utility of information seeking when trying to deal with the experience of cancer. Twenty-five patients and their families were asked about things they believed their family needed to help them cope with cancer. Overwhelmingly, learning more about the patient's illness and treatment was seen as one of the most important aspects of

coping during all stages of treatment (Tringali, 1986). Thus, it seems that the provision of information about their family member's illness is a very important coping resource for families.

Social support has been documented as another key coping resource when dealing with the stress of having a family member with cancer. In fact, Mullen, Smith, and Hill (1993) cited that social support was found to be one of the most frequently used strategies to buffer the negative effects of stress in the literature. Tringali's (1986) study assessing the needs of family members, also cited social support as one of the primary resources families believed they needed to cope with the experience of cancer. Aymanns, Filipp, and Klauer (1995) explored the relationship between the provision of social support and cancer patients' adjustment over time. It was discovered that cancer patients who had families that readily provided them with high levels of social support were more likely to engage in a "fighting spirit" against the disease (Aymanns et al., 1995). Therefore, it seems that the provision of social support may facilitate adaptation even in the face of severe stressors like cancer.

An open acceptance and the ability to create meaning out of the experience also seem to be important and effective resources for family members. In a study of cancer patients and their spouses, families who openly accepted the diagnosis of cancer, while maintaining a sense of responsibility to realistically deal with the threat of cancer and remaining flexible, were seen as more effective copers (Rowland, 1989; Dunkel-Schetter et al., 1992). Similarly, families that assigned a positive meaning to cancer were shown to have a higher sense of well-being and an increased level of beneficial coping

strategies (Walsh-Burke, 1992). Furthermore, in a study of adolescents who had a parent with terminal cancer, the search for a deeper meaning and understanding about their parent's cancer, was found to be a powerful strategy in managing levels of distress (Christ et al., 1994).

In addition, Mullen, Smith, and Hill (1993) investigated the relationship between a family sense of coherence and levels of distress for forty-two patients and their spouses. They discovered that families with a high sense of coherence indicated having lower levels of distress than those with a lower sense of coherence. Furthermore, based on Lazarus and Folkman's model of coping, higher levels of preventive coping resources are thought to be associated with lower levels of distress. Thus, the authors concluded that in light of the fact that a sense of coherence was most strongly associated with decreased distress, it may be a core coping resource in helping people to effectively cope with cancer (Mullen et al., 1993).

It seems that the family members of cancer patients employ a variety of different strategies to help them cope with the experience of cancer. Given the nature of a stressor like cancer, it is not unusual that many patients and their families have a diminished sense of control and rely more heavily on emotion-focused coping strategies. In addition, it is not surprising that families commonly utilize a number effective, as well as ineffective, strategies in attempts to manage their distress. The following section will review the statistics about heart disease, coping, and family environment as a basis for the construction of a comparison group.

Additional Factors Affecting How the Family Responds to Having a Parent With Cancer

Both the stage of the family life cycle at diagnosis and the current stage of the illness have been reported in numerous research articles as factors in determining the impact cancer will have on the family system (Veatch & Nicholas, 1998; Veatch, 1999; Rait & Lederberg, 1989). For example, young, recently married couples may experience struggles regarding the developmental task of separating from their families of origin. When cancer is diagnosed in this stage of the family life cycle, the partner with cancer may rely primarily on their family of origin for support and guidance during this difficult time; thus, alienating their new spouse from the process and causing friction in the marital relationship. Couples should be encouraged to communicate their feelings to each other and involve their spouse in the decision making process (Rait & Lederberg, 1989; Veatch, 1999). In families with young children, parents are trying to balance the responsibilities of raising children, work, leisure, and continuing to separate from their families of origin. When a parent is diagnosed with cancer at this time in the family life cycle, spouses are likely to have extreme difficulty managing developmental tasks, reassigning roles, and caring for their ill spouse (Rait & Lederberg, 1989). Spouses may elicit the assistance of their families of origin and boundaries may become blurred. Children may also be called upon to perform adult roles and responsibilities. Young children may feel lonely, scared, abandoned, or fearful about the future, while adolescents may have difficulty balancing their desires to care for their parent with their social and academic tasks. At this stage of the family life cycle, open communication

has been documented as one of the most effective strategies to minimize the number of negative effects experienced by the children of patients (Veach, 1999). Aging families, characterized by parents with grown children, are faced with redefining their interpersonal relationships and life goals. A diagnosis of cancer in this phase of the family life cycle can elicit a role reversal between parents and children, where adult children may be called upon to assist their parents throughout treatment. When adult children are not able to help their parents during this difficult time because of geography or their own personal responsibilities, they may experience guilt (Rait & Lederberg, 1989; Veach, 1999). Thus, families are faced with balancing the unique challenges of developmental tasks and responsibilities associated with that particular phase of the family life cycle with the demands of caring for an ill family member.

The current stage of the parent's illness has been associated with current functioning, coping, and perceptions of the family environment in the children of cancer patients. During the diagnosis phase, family members usually have strong emotional reactions, including shock, anger, powerlessness, and hopelessness. The family's level of organization before the illness has been noted as an important factor in determining the ease with which roles and responsibilities can be reassigned (Veach & Nicholas, 1998). The treatment phase of the illness represents a relatively understudied area in the literature. However, open communication about the illness seems to facilitate the restructuring of the family environment. In addition, families with young children may need to enlist the assistance of persons outside the family system to perform household duties, care for the children, and assist the ill parent (Veach & Nicholas, 1998). The

final stage of the illness involves issues of death or remission/survival. During this phase, the children of patients may struggle with the potential loss of a parent. One research study conducted interviews with 120 adolescents who had a parent in the terminal stages of cancer. Results of the study suggested that many adolescents were able to discuss their parents' illness, but a subset of adolescents surveyed were not. Those adolescents who were unable to discuss the terminal aspects of their parents' illness during the interview most frequently used emotional detachment and continued involvement in their own day-to-day activities to cope with the illness. Based on the responses provided during the interviews, the researchers identified five primary difficulties and concerns adolescents experienced as their parents' death approached: "empathy for the parent's suffering, increased involvement with the ill parent, need to help at home, reactions to specific parental relationships, and guilt" (Christ et al., 1994). During the terminal phase of cancer, adolescents may feel empathy for their parents' condition and desire to spend additional time with them, but become overwhelmed by their emotions and use coping strategies like distancing and avoidance to control these feelings. In addition, the quality of the relationship between adolescents and their parents before the illness was an important factor in determining the level of conflict in these relationships after diagnosis—relationships that were conflictual before were associated with adolescents' increased difficulty adapting to the illness (Christ et al., 1994). In terms of coping with their parent's approaching death, adolescents were found to rely on intellectualization and the seeking of information about their parents' illness, searching for meaning, and utilizing sources of social support (Christ et al.,

1994). After the loss of a parent, children may be affected in profound ways. In order to process this event, children were reported to need information about the illness presented to them in a way they could understand, feel involved in the process of treatment prior to death, be able to express their thoughts and feelings, remain involved in developmentally appropriate activities outside the home, and be informed about the grief reactions experienced by the adults around them. The importance of open communication between parents and children throughout the illness, especially during its final stages, was noted to play a pivotal role in helping children prepare for and process the death of a parent (Adams-Greenly & Moynihan, 1983). In summary, each stage of the illness presents new concerns the family must cope with and should be considered an important variable in determining the impact cancer has on the family.

The decision to seek counseling during a parent's illness and the impact of doing so remains an understudied area in the field of cancer research. The discussions of counseling in the literature to date center around the proportion of family members that experience high enough levels of distress to warrant professional, mental health intervention and details for conducting therapy with children who have a parent with cancer (Hoke, 1997; Johnston & Martin, 1992; Sales, Schulz, & Seigel, 1992). When conducting therapy with families where a parent has been afflicted with cancer, research has shown parents should be provided with information about how the illness may affect them and their children. Once armed with this information, mental health providers should encourage parents to apply this information to their own family system and assist them in efforts to communicate with their children about the parent's illness.

The primary goals of therapy, therefore, should revolve around helping family members to communicate more openly with each other, understand the potential psychological impacts of having a family member with cancer, and seek the support they need to meet the demands of the stressor (Hoke, 1997; Johnston & Martin, 1992). In summary, little remains known about the utility of seeking counseling during a parent's illness.

Pilot Study

A pilot study was conducted to explore how college students who had a parent with cancer, a parent with another chronic illness, and families that did not have a history of any chronic illness differed on measures of coping, the family environment, and the number of negative life events experienced (Beard, Fouladi, Mercado, Sebree, & Sallee, 2002). Students who agreed to participate in the study were asked to complete a set of demographic and illness related questions. In addition, participants were asked to respond to the following measures: Brief COPE (Carver, 1997), Family Crisis Oriented Personal Evaluation Scales (F-COPES) (McCubbin, Thompson, & McCubbin, 2001), Family Environment Scale (FES) (Moos & Moos, 1981), Life Experiences Survey (LES) (Sarason, Johnson, & Seigel, 1978), and the Preventive Resources Inventory (PRI) (McCarthy & Lambert, 2001).

MANOVAS were conducted to determine the differences between the three groups on measures of coping, family functioning, and life experiences. Results of the study indicated significant differences between the three health status groups on four subscales of the Brief COPE (Venting, Self-Distraction, Emotional Support, and Acceptance), the Achievement subscale of the FES, and the total number of negative

life events experienced. Post-hoc analyses were conducted to further understand the differences between the groups. Participants whose parents' had cancer were found to engage in more self-distracting behaviors, vent their emotions more frequently, and seek emotional support more often than the participants whose families did not have a history of chronic illness. Results suggest that participants who had a parent with cancer were also more likely to use acceptance as a mechanism to cope with stress than those participants from the no illness and parent with chronic illness groups. Furthermore, subjects in the parent with cancer group also reported higher levels of achievement orientation in their families compared to their healthy family counterparts. In respect to the number of negative life events experienced, subjects from the parent with cancer group reported the highest number of negative life events, while those from the parent with chronic illness group reported experiencing the fewest number of negative life events (Beard et al., 2002).

The results of the pilot study were exploratory in nature and provided a foundation for the current study. More specifically, based on the findings of the pilot study, several important changes were made in designing the present study. First, the researcher decided to limit participants in the comparison group to a single chronic illness in order to better differentiate how the children and families of patients afflicted with different chronic illnesses respond. A qualitative portion was also added to the study as a vehicle of gathering additional information about how college students perceive their families as responding to parental illness. This component was incorporated to address the difficulties assessing change using standardized instruments

in the pilot and other studies cited in the literature. For similar reasons, the current study built upon the pilot by including a repeated measures design featuring standardized coping and family environment instruments that compared global and illness specific functioning in those participants who had a parent with cancer, heart disease, or both.

HEART DISEASE AS A COMPARISON GROUP

Similar to the present dearth of literature in the oncology field, scarcely little is known about the impact of having a parent with heart disease on the family with respect to variables of the family environment and coping (Kahle & Jones, 2000). In addition, much of the research to date has focused on the patients and their spouses or children who have heart disease. However, heart disease has been conceptualized as a crisis to both the patient and the family because it threatens the family's sense of stability, resources, adaptability, and belief system. In other words, a diagnosis of heart disease in a parent has the potential to alter a family's functioning and change their life trajectory. From a systems perspective, researchers view heart disease as something that impacts both the family environment and the family's ability to cope (Sirles & Selleck, 1989).

Research has demonstrated that there is a strong link between heart disease and the family. One study sampled men between the ages of thirty-two and sixty who were in the hospital after their first heart attack. Two-thirds of the sample had children living at home between the ages of eight months and nineteen years. Children reported feeling anxious, withdrawn, guilty, sad, and irritable in the time following their father's attack,

but many of these symptoms had subsided three months later (Dhooper, 1983). In addition, families reported giving up many of their recreational and leisure activities, as well as structured family times like meals together, in the weeks surrounding the attack. Although three months later many of these activities had resumed, the rules and structure of the family remained changed in some ways. For example, many families had to permanently alter their diets and cease certain family activities, like outdoor sports, that might be dangerous to the patient's health. In addition, other family members had to take on new roles that the patient could no longer perform (Dhooper, 1983). Another study conducted in Italy sampled 15 families with men between the ages of 45 and 65 who had a history of at least one heart attack. Families were solicited to invite their adult or adolescent children to attend the family interviews, but in only one family did this occur. Results of the study suggested that families have a tendency to perceive the illness in two ways: as a "mythical situation" where the disease continues to stay the focal point of the family and activities of daily life are thwarted or as a "historical" event where the family system alters its structure in order to take in the event and proceed with daily living (Bises, 1990). Families who viewed heart disease as a mythical event were more likely to engage in denial or maximize the time patients have left. When families denied the need to change the family system, members continued to adhere to rigid rules and routines that had been adopted before the illness. In addition, some families felt pressured by time and saw the need to maximize the utility of every free moment, not wasting any time. The researchers saw the primary purpose of this behavior as a mechanism to keep the family from processing the illness

and moving past it. However, families that portrayed the event in a “historical” context were discovered to be more flexible in their organization both before and after the event; therefore, allowing the system to reorganize itself with greater ease. Similar to previous research on chronic illness, the stage of the family life cycle at diagnosis was found to be an important factor in determining the impact heart disease had on the family. The stage of the family life cycle at diagnosis was also discovered to play an important role in how the family perceived itself and their ability to change the family structure (Bises, 1990). Thus, the organizational structure of a family before the development of a chronic illness appears to play a role in the functioning of the family after diagnosis and the ease with which the system will be able to alter itself.

In order to confront the stress of having a parent suffer a heart attack, studies have shown family members to exhibit a number of coping strategies. Like cancer, the attainment of social support has been reported as an important coping mechanism and has been linked to lower levels of distress (Sirles & Selleck, 1989; Dhooper, 1983). In the literature, social support encompasses three aspects that are believed to be related to successful coping: emotional support, cognitive support, and material support. Emotional support pertains to the belief that other family members and friends can be counted on for comfort and support during times of stress, while cognitive support is related to the gathering of information to help the family know what to expect and try to make sense of their current circumstances. Material support is related to other tangible resources such as money (Sirles & Selleck, 1989). In a study of 10,000 men, researchers found a strong correlation between high levels of social support and lower

occurrences of angina pectoris. Another study found that the incidence of death from circulatory and heart diseases was significantly related to a lack of social support (Sirles & Selleck, 1989). In addition to the provision of social support, Dhooper (1983) reported that family members typically sought information about the disease, passively accepted the diagnosis, expressed their feelings, and prayed to cope with the illness. Families, as a whole, also expressed mobilizing the family's resources and seeking help from members outside the family system to help them cope with the changes in the structure and roles of the family (Dhooper, 1983). Consequently, it appears that the families of patients with heart disease respond in very similar ways to the families of cancer patients when a parent is ill.

SUMMARY

Research has shown that the families of cancer patients are profoundly impacted by a diagnosis of cancer in one of its members. This tenet stemmed from the advent of Family Systems Theory in 1945 by Ludwig von Bertalanffy. One of the key principles of this theory is that all members of the system are integrally related and a change in one member will lead to changes in other members of the system. In addition, the primary goal of the family system is to maintain homeostasis. On the other hand, when a family is faced with a severe stressor, like cancer, it is likely that the family will be forced to alter its rules and structure in order to successfully cope (Peters & Esses, 1985). Thus, it seems important to explore the ways family members commonly cope with cancer and how the family environment is altered by the experience.

In the face of cancer, many family members report changes in role relationships, power structures, and relationship rules (Schulz et al., 1994). In order to successfully meet the demands of a changing family environment, researchers have found it is important for families to maintain a moderate level of flexibility in their structure and an open pattern of communication (Schulz et al., 1994; Rustad, 1994). A strong family sense of coherence has also been linked to lower levels of distress in family members (Mullen et al., 1993). With respect to other variables of the family environment, higher levels of cohesion and lower levels of conflict have been associated with lower levels of distress and better adaptation in families (Weihs & Reiss, 1996; Schulz et al., 1996). However, little is known about how the family environment of patients with cancer differs from other families, but several studies have compared families with other chronic illnesses to control groups. The results of these studies suggest that the families afflicted with a chronic illness are likely to have lower levels of cohesion and higher levels of conflict, as compared to healthy controls (Peters & Esses, 1985; Dura & Beck, 1988). However, the research regarding chronic illness suffers from potential sampling issues and focuses on less fatal forms of chronic illness, which makes it difficult to know whether these results will apply to the current groups of interest. Thus, how a diagnosis of cancer influences the family system remains to be seen.

From a systems perspective, how the family copes is another important avenue that needs to be examined. In order to understand the coping process, it is important to differentiate between problem-focused coping and emotion-focused coping. Problem-focused efforts are usually more successful at managing levels of distress, but are also

associated with controllable stressors. Emotion-focused efforts, on the other hand, are usually less effective; however, they are most often utilized when the stressor is uncontrollable (Rowland, 1989). The children of cancer patients have been found to exhibit higher levels of emotion-focused coping. They also have a tendency to employ other ineffective strategies, such as distancing and avoidance, in attempts to cope with their parent's illness (Aymanns et al., 1995; Compas et al., 1996). The research has shown a number of effective strategies utilized by the families of cancer patients: information seeking (Christ et al., 1994), social support (Mullen et al., 1993; Aymanns et al., 1995), an open acceptance of the cancer (Rowland, 1989; Dunkel-Schetter et al., 1992), the ability to create meaning (Walsh-Burke, 1992; Christ et al., 1994), and a strong sense of coherence (Mullen et al., 1993). As a whole, the children and families of cancer patients tend to employ a variety of coping strategies, some helpful and some not, in trying to deal with their experiences. Additional factors, including the stage of the family life cycle at diagnosis, the current stage of the parent's illness, and whether counseling was sought during the illness, were examined with respect to their influence on coping, current functioning, and the family environment.

The proposed study compared the family environment, current functioning, and coping strategies of the college-age children of cancer patients, heart disease patients, cancer and heart disease patients, and families without a history of chronic illness. Therefore, the final section of the literature review documented the known parallels between having a parent with cancer and a parent with heart disease. In addition, the

ways families typically cope with a diagnosis of heart disease and how the family is changed as a result were explored.

Goals of the Present Study

The present study sought to examine the impact of having a parent with cancer on the family environment and explore the strategies children used to cope with this experience. In order to assess how these families differed from other families, two comparison groups and a control group were used. The comparison groups consisted of children who had a parent with another form of chronic illness, heart disease, or had a parent(s) diagnosed with both cancer and heart disease. Although the pilot study simply compared cancer to a general grouping of other chronic illnesses, recent literature has cited the need to compare specific types of illness in order to more fully understand their differing impacts (Beard et al., 2002; Kahle & Jones, 2000). In choosing a chronic illness in which to compare cancer to, it was important to consider the characteristics of the target population: the college-age children of parents who have had cancer. While arthritis is the most common form of chronic illness, it tends to affect the elderly (Thompson & Kyle, 2000). Whereas, heart disease is the most prevalent form of chronic illness in persons below the age of sixty-five; thus, it was expected that a number of college-age children would have parents affected by the disease (Centers for Disease Control Bureau of Health Statistics, 1999). In addition, like cancer, heart disease can represent a sudden crisis to the family system. The control group consisted of college-age children who have not experienced any form of chronic illness in a parent, a sibling, or themselves. The four groups were compared on several measures

of coping, the family environment, and current functioning. In addition, participants with parents who had suffered from heart disease, cancer, or both were asked to complete three essay questions regarding their role in the family during their parent's illness, how their relationships with other family members changed during the illness, and their perceptions about how other family members' relationships with each other changed. The rationale for including essay questions into the study design was to provide the opportunity for the children of chronically ill parents to describe the role they played during their parents' illness and perceptions of how their family changed in hopes of providing additional details about the illness that their responses to standardized measures would not. Responses from the essays were grouped into similar themes by three raters and specific quotes were chosen as examples of varying illness experiences.

PROPOSED RESEARCH QUESTIONS

The proposed research study was designed to address the following questions:

Research Question One: Will participants who had a parent with cancer and heart disease function differently from subjects who had a parent with cancer or heart disease on indices of coping strategies? Furthermore, will participants from the three illness groups endorse using specific coping strategies more or less frequently than subjects who had no illness in their immediate families?

Research Question Two: Will participants from the three illness groups endorse similar characteristics of their family environments, but differ significantly from the responses of participants in the no illness condition? More specifically, will the

families of cancer and heart disease patients perceive their families as being closer, expressing their feelings more, fighting more, having a more organized structure, and being more focused on academic pursuits than those who have not experienced an illness?

Research Question Three: Will participants in the parent(s) with cancer and heart disease group endorse lower levels of current functioning than their counterparts in the parent with cancer or heart disease conditions? In addition, will the three illness groups report lower levels of current functioning than the no illness group?

Research Question Four: Will participants who have had a parent with cancer, heart disease, or both indicate having different perceptions of their family environments and coping strategies when asked to think particularly about their parents' illness as compared to more general life events?

Research Question Five: Will the children of parents with cancer, heart disease, or both report utilizing different coping strategies and having differing perceptions of their family environments based on the stage of the family life cycle at diagnosis, the current stage of their parents' illness, and whether or not their family/family members sought counseling during their parents' illness?

Research Question Six: Will participants whose parents have had cancer, heart disease, or both report taking on additional roles and responsibilities during their parents' illness?

Research Question Seven: Will the children of cancer and heart disease patients perceive the experience of having an ill parent as an event that they believed changed the ways family members relate to each other and operate within the family system?

CHAPTER III

METHODOLOGY

The following chapter begins with a description of the participants involved in the current study and the procedures utilized to implement it. A detailed summary of each of the measures is also included. The chapter concludes with a review of the study's hypotheses and a rationale for the expected findings.

PARTICIPANTS

Participants for the current dissertation study were male and female undergraduate students enrolled in educational psychology courses at the University of Texas at Austin. Students were recruited from the Educational Psychology subject pool and asked to indicate whether a series of statements were true or false for their family: 1) My father or mother has been diagnosed with cancer anytime after I turned twelve years old, 2) My father or mother has been diagnosed with heart disease anytime after I turned twelve years old 3) No one in my family has had any type of chronic illness, other than cancer or heart disease in a parent, where chronic illness was defined as any less than "normal" physical or mental condition that persists for more than 3 months and has no known cure (Barth, 2000). Students who answered "true" to one of the first two criteria and "true" for the third criteria were included in parent with illness condition of the study, while students who chose "false" for statements 1 and 2 and "true" for statement 3 were selected to participate in the no illness, control group of the study. Participants received course credit for their participation in the study.

PROCEDURES

Those students who met the above eligibility requirements were sent an email providing them with the Web address where they could complete the study, their individual username and password that allowed them access to the Web site, the name and contact information of the researcher and supervising professor, and a statement encouraging them to contact the researcher if they had any questions or problems gaining Internet access or completing the measures. It should be noted that a number of studies have compared pencil and paper test administration with Internet administration and found few differences in results between the two methodologies, evidencing the reliability of this procedure (Fouladi, McCarthy, & Moller, 2002). Procedures stipulated by the American Psychological Association and the University of Texas Institutional Review Board for the Protection of Human Subjects were followed during this experiment to ensure the protection of students' rights.

When students went to the Web site, they were asked to enter the user name and password they had received via email from the researcher. After they logged onto the Web site, they were given a randomly generated new username and password and told to write down this information. This additional, randomly generated username and password was created to protect subjects' anonymity. It should be noted that a number of students experienced difficulty logging into the Web site for the first time with the username and password that had been sent to them via email. The researcher and Web designer worked diligently to rectify this matter. First, students were given new usernames and passwords to try to alleviate their difficulties and this intervention was

successful for most students; however, some participants continued to experience problems even with the new usernames and passwords. Out of the forty-one students who encountered a problem logging in, approximately fifteen students required additional assistance. The researcher communicated with these fifteen students via email and telephone to assist them in gaining access to the website. Despite repeated collaborative efforts between the researcher, student, and Web designer, three students were unable to successfully log in to the site and these students were given credit for their efforts. After participants entered the survey, they found instructions on how to complete the study and were told that it should take them between one and two and one-half hours to complete the study, depending upon their group assignment. The following self-report measures were included: a Demographic survey consisting of questions about family demographics and the course of their parent's illness (if applicable), Preventive Resources Inventory (PRI), Brief COPE (B-COPE), Family Crisis Oriented Personal Evaluation Scales (F-COPES), Family Environment Scale (FES), Family Sense of Coherence Scale (FSCOS), and the Outcome Questionnaire (OQ-45.2). Students assigned to any of the ill-parent conditions were also asked to complete additional versions of the FES, F-COPES, and BCOPE relating to their parents' illness and respond to three essay questions. These additional versions of the FES, F-COPES, and BCOPE contained the standardized sets of items completed by all participants, but added an additional instructional statement that asked participants with an ill parent to think specifically about their parents' illness as they completed the illness versions of the FES, F-COPES, and BCOPE (Appendices B, C, and E). The

essays asked participants to describe the actions they took to help their parents while they were sick, how they perceived their relationships with other family members changed as a result of the illness, and their perceptions about how other family members' relationships with each other were altered during their parents' illness. After students submitted their completed questionnaire, they were provided with a debriefing form explaining the purpose of the study, the researcher and supervising professor's contact information, and the telephone number for the University of Texas Counseling and Mental Health Center to assist them if they experienced any discomfort in the future. On the final page of the survey, participants were instructed to send an email to the researcher with a specified portion of text from the last page copied into their correspondence. Once their email was received, each participant was given credit and emailed a participation receipt.

All of the measures described herein, as well as, the consent and debriefing forms, were submitted to and approved by the Departmental Review Committee and the University Internal Review Board.

INSTRUMENTATION

Demographic Questions

Participants were asked to provide information about their sex, ethnicity, age, marital status, the marital status and education of their parents, and estimated family income. For those participants who had a parent with either heart disease, cancer, or both, they were also asked to answer a series of questions about the type of cancer or heart condition, the current stage of the disease, their age when their parent was first

diagnosed with the illness, whether or not the family/family members sought counseling to help them cope with their parents' illness, and a number of other illness related questions.

Measures of Individual and Family Coping:

Brief COPE

The Brief COPE was created by Charles Carver (1997) and represents an abbreviated version of the original COPE by Carver, Scheier, and Weintraub (1989). Both the COPE and the Brief COPE were designed to assess the different ways people cope with stress (i.e. the strategies they employ). The Brief Cope was originally created in research efforts with breast cancer patients, who had complained that the original COPE was too time consuming to complete and redundant (Carver, 1997). The Brief COPE consists of 28 items designed to assess coping styles and "particular ways of coping" by asking respondents to rate "how much or how frequently" they generally employ the coping strategies contained in the following statements when they are confronted with stressful events. Each statement/item was scored using a 4-point Likert scale (1= I haven't been doing this at all, 2= I have been doing this a little, 3= I have been doing this a medium amount, and 4= I have been doing this a lot). The Brief COPE contains a total score and 14 subscale scores that were utilized in the current study. The Brief COPE subscales are as follows: Active Coping, Planning, Positive Reframing, Acceptance, Humor, Religion, Using Emotional Support, Using Instrumental Support, Self-Distraction, Denial, Venting, Substance Use, Behavioral Disengagement, and Self-Blame. Scores for Emotion-focused, Problem-focused, and

Ineffective coping were also calculated using the standards detailed in Carver et al. (1994) for the COPE. Total Brief COPE scores range from 0-112 and assess the overall amount/frequency the strategies contained within the measure are employed. The Emotion-focused coping scores range from 0-16 and consist of the subscales of Venting and Using Emotional Support. Venting and Using Emotional Support pertain to gaining support or understanding from others (Using Emotional Support) and venting feelings/emotions regarding a particular stressor (Venting). Problem-focused coping scores range from 0-24 and contain the Active Coping, Planning, and Using Instrumental Support subscales. Problem-focused coping efforts pertain to those strategies where action is taken to remove or avoid the current stressor (Active Coping), develop plans to confront the stressor (Planning), or seek additional information to aid in the development of plans and actions (Using Instrumental Support). Ineffective coping strategies are measured using 4 of the Brief COPE subscales (Behavioral Disengagement, Substance Use, Denial, Self-Distraction) and scores range from 0-32 points. Those strategies deemed as ineffective consist of coping efforts focused on removing oneself from stressful situations and giving up hope to change the situation (Behavioral Disengagement), resorting to alcohol and drugs to cope (Substance Use), trying to pretend the stressor does not exist (Denial), and relying on other activities as a method of mental distraction from the current stressor (Self-Distraction). The remaining subscales of Positive Reinterpretation, Acceptance, Humor, Religion, and Self-Blame measure the strategies of trying to reconceptualize the stressor into more positive terms (Positive Reinterpretation), accepting the stressor as a real event where little can be

done to change it (Acceptance), relying on religious beliefs (Religion), making light or fun of the stressor (Humor), and being critical of oneself (Self-Blame) (Carver, 1997; Carver et al., 1989). All of the 14 subscales consist of 2 items each and individual scores range from 0-8. Higher scores are indicative of a greater utilization of the particular coping efforts assessed by the Brief COPE and its subscale areas.

Normative data was collected from a sample of 168 community residents who were recovering from Hurricane Andrew. Respondents were administered the Brief COPE initially between three and six months after the hurricane and again six months and one year later. The results were subjected to an exploratory factor analysis using an oblique rotation. Analyses yielded 9 factors accounting for 72.4% of the variance: Substance Use, Religion, Humor, Behavioral Disengagement, Use of Emotional and Instrumental Support, Acceptance, Active Coping, Planning and Positive Reframing, Venting and Self-Distraction, and Denial and Self-Blame. As a whole, the resulting factor structure for the Brief COPE was very similar to the original COPE factors. However, the present version of the scale contains 14 subscales: Active Coping, Planning, Positive Reframing, Acceptance, Humor, Religion, Using Emotional Support, Using Instrumental Support, Self-Distraction, Denial, Venting, Substance Use, Behavioral Disengagement, and Self-Blame (Carver, 1997).

Test-retest reliability for this sample over the three administrations yielded reliability coefficients ranging from .500 to .900. These coefficients suggest that the coping strategies measured by the Brief COPE appear to be relatively stable over time (Carver, 1997). Although no additional normative data has been published using the

Brief COPE with college students, such data has been collected through various studies for its parent instrument, the COPE. Three studies, using college student samples, yielded information about the factor structure of the COPE (discussed above), reliability, and validity. Coefficient alphas across the subscales ranged from 0.450 to 0.920 and test-retest reliability coefficients ranged from 0.420 to 0.890. Convergent and discriminate validity was also established using the Life Orientation Test, Rosenberg Self-Esteem Scale, Personal Views Survey, Jenkins Activity Survey, and State-Trait Anxiety Inventory (Carver et al., 1989).

Family Crisis Oriented Personal Evaluation Scales (F-COPES)

The Family Crisis Oriented Personal Evaluation Scales (F-COPES) was developed to assess problem solving strategies and behaviors employed by families when facing problems or difficulties. Participants are asked to rate their level of agreement with the 30 items using a 5-point Likert scale (1=Strongly Disagree, 2=Disagree, 3= Neither Agree or Disagree, 4 = Agree, 5= Strongly Agree). However, only 29 items were used for the current study based on the recommendation of the authors not to use one of the items in computing total and subscale scores (McCubbin, Thompson, & McCubbin, 2001). Dimensions of family coping strategies on the F-COPES are measured using a total score for the instrument and five subscale scores. The total score can range from 0-145 and higher scores are associated with a greater usage of effective family coping strategies. Acquiring Social Support, Reframing, Seeking Spiritual Support, Mobilizing the Family to Acquire and Accept Help, and Passive Appraisal are the five subscales of the F-COPES. The Acquiring Social

Support subscale contains 9 items, scores range from 0-45, and measures the family's "ability to actively engage in acquiring support from relatives, friends, neighbors, and extended family" (McCubbin et al., 2001). The Reframing subscale contains 8 items (range 0-40) and assesses the degree to which families are able to reconceptualize stressors so they are easier to manage. The remaining three subscales, Seeking Spiritual Support, Mobilizing the Family to Acquire and Accept Help, and Passive Appraisal, each contain 4 items and have scores that range from 0-20. The Seeking Spiritual Support subscale measures the ability of the family to "acquire spiritual support," while the Mobilizing the Family to Acquire and Accept Help subscale assesses the "family's ability to seek out community resources and accept help from others" (McCubbin et al., 2001). The final subscale, Passive Appraisal, measures the degree to which families accept stressors with the aim of decreasing the "reactivity" of the system (McCubbin et al., 2001). This instrument was chosen for the current study as it has been previously used within the field of cancer research and with undergraduate populations to assess the coping strategies employed by families (Fobair and Zabora, 1995; McCubbin et al., 2001).

Initial psychometric investigations were conducted on the F-COPES using a sample of 119 undergraduate and graduate students at a large midwestern university who were asked to administer the original 49-item instrument to their family and friends. Factor analyses were then conducted, eight factors emerged, and 19 of the original items were dropped from the survey. The eight factors were Confidence in Problem Solving, Reframing Family Problems, Passive Appraisal, Seeking Spiritual

Support, Acquiring Support from Extended Family, Acquiring Support from Friends, Acquiring Support from Neighbors, and Acquiring Support from Community Resources. Each of the remaining 30 items demonstrated factor loadings greater than 0.380. Cronbach's Alpha was also calculated and yielded a total scale alpha reliability of 0.770. Test-retest reliability for each of the factors and the total score of the final 30-item version yielded coefficients ranging from 0.610 to 0.950. Numerous other studies have used the F-COPES in clinical, academic, and community settings and have reported alpha reliability coefficients ranging from 0.610 to 0.960, with many coefficients between 0.800 and 0.890 (McCubbin et al., 2001).

Construct validity was assessed using factor analysis on a sample of 2740 husbands, wives, and adolescents that were divided into two groups. The factor structure that resulted showed several of the original eight scales could be collapsed into five scales. The three scales pertaining to seeking social support from friends, neighbors, and family collapsed into one larger factor labeled "Acquiring Social Support," the two factors related to problems solving and reframing merged into a single factor labeled "Reframing," and the scale Acquiring Social Support from Community Resources combined with another item related to accepting gifts and favors to form "Mobilizing Family to Acquire and Accept Help." Scales labeled "Seeking Spiritual Support" and "Passive Appraisal" were not changed during this secondary analysis. One additional item was dropped from the scale, resulting in the final 29-item version of the F-COPES with each of the 29 items having a factor loading of 0.350 or greater. Cronbach's alpha was calculated for each group of the sample and resulted in

an alpha reliability of .860 for the first group and .87 for the second group (McCubbin et al., 2001).

Preventive Resources Inventory (PRI) The Preventive Resources Inventory is a 50-item self-report measure that asks respondents a number of questions about personal habits thought to be associated with the prevention of stress (McCarthy & Lambert, 2001). The PRI assesses the degree to which participants use preventive coping resources to handle life situations by asking them to rate their level of agreement with the 50 statements using a 5-point Likert scale (1= “Strongly Disagree” to 5= “Strongly Agree”). However, the current study included an earlier version of the PRI that contained 80 items. The PRI measures 6 areas related to preventive coping resources: Perceived Control, Maintaining Perspective, Self-Acceptance, Social Resourcefulness, Humor, and Organization (McCarthy & Lambert, 2001).

Overall perceptions of preventive resources are measured using a total score that includes all 80 items (range 0-400) and another score that includes all items except those contained on the Humor and Organization subscales (range 0 -270). According to the authors, the two total scores are calculated based on the premise that the Humor and Organization subscales may not be distinct factors and; therefore, not provide unique contributions to the total score. The Perceived Control subscale (range 0-70) of the PRI is purported to measure the degree to which having perceptions of control in life experiences diminishes stress, while the Maintaining Perspective subscale (range 0-70) assesses the extent to which more accurate perceptions of one’s role in a given situation buffers stress. The Social Resourcefulness subscale (range 0-70) pertains to the role of

the social environment in preventing stress. The Self-Acceptance subscale (range 0-40) measures how perceptions of being satisfied with life and knowing and accepting personal limitations contribute to the prevention of stress. The Organization and Humor subscales (each range 0-20) assess the extent to which overall planning and organizational skills and using jokes and laughter decrease stress. Higher scores on the PRI and its subscales are indicative of greater perceptions of preventive resources (McCarthy & Lambert, 2001). The PRI was chosen for this study because it is the only known instrument measuring preventive coping resources and the researcher felt it was important to explore the role preventive coping resources play in helping individuals cope with cancer and chronic illness in their families.

McCarthy and Lambert (2001) constructed an 80-item version of the PRI and McCarthy, Lambert, Beard, Canipe (2001) conducted psychometric investigations of the scale using a sample of 501 undergraduate students enrolled in educational psychology classes. A factorial composition of the PRI was conducted through a principle components analysis with varimax rotation and yielded some items that did not fit into a reasonable factor structure. These results were then combined with item analysis data from pilot studies and it was determined that 20, of the original 80-items, should be dropped from the scale due to ambiguities and difficulties respondents had with interpreting some of the statements. Subsequent factor analyses were then conducted and items that loaded on multiple factors were also dropped, making the final version of the PRI a 50-item inventory with five dimensions that accounted for 46.830% of the variance: Perceived Control, Maintaining Perspective, Social Resourcefulness,

Organization, and Humor. In addition, all items were found to load on one of the five above factors at 0.390 level or above. Coefficient alpha reliability coefficients were assessed using the above sample and alpha levels ranged from 0.810 to 0.909 for the five subscales (McCarthy et al., 2001).

Convergent and discriminate validity analyses were conducted on the PRI and other measures used in the study through a multi-trait multi-method matrix. Many correlations were found between scales of the PRI and other measures of Coping Resources, demonstrating convergent validity. For example, the factor labeled Perceived Control correlated at 0.488 with Cognitive Coping Resources and Maintaining Perspective correlated at 0.431 with Emotional Resourcefulness and at 0.515 with Cognitive Coping Resources. The total score for the PRI also correlated with measures of Emotional Resources ($r=0.537$), Cognitive Resources ($r=0.603$), Social Resources ($r=0.558$), General Self-Efficacy ($r=0.547$), and Social Connectedness ($r=0.522$). Evidence for discriminate validity was evidenced through a low correlation between the PRI and Ineffective Coping Strategies, with many items having a statistically significant negative relationship with Ineffective Coping Strategies (McCarthy & Lambert, 2001).

Measures of Family Functioning:

Family Environment Scale (FES)

The Family Environment Scale (FES) is a 90-item inventory designed to assess social and environmental variables operating within the family system. Respondents are asked to indicate their level of agreement with the statements presented by

determining whether the statement is mostly true or false for their nuclear family (Moos & Moos, 1981). The FES was chosen because it is “one of the most widely used and validated self-report measures of family functioning” (Koraneck, 1989).

The FES measures three dimensions using 10 subscales: the Relationship dimension contains the Cohesion, Conflict, and Expressiveness subscales; the Personal Growth dimension is composed of the Independence, Achievement Orientation, Intellectual-Cultural Organization, Active-Recreational Orientation, and Moral-Religious Orientation subscales; and the System Maintenance Dimension incorporates the Organization and Control subscales (Moos & Moos, 1981). Scores are calculated for each of the ten subscales and range from 0-10. The Cohesion subscale measures the degree to which family members show commitment and support towards each other and the Expressiveness subscale assesses the level of open communication and expression of feelings between family members. The Conflict subscale measures the level of “openly expressed anger, aggression, and conflict among family members” (Moos & Moos, 1981). The Independence subscale assesses the degree to which family members make their own choices and are self-sufficient, while Achievement-Orientation measures the extent school and work activities are viewed in a competitive framework. Intellectual-Cultural Orientation assesses the degree to which families value “political, social, intellectual, and cultural activities,” Moral-Religious Emphasis measures the value of ethical and religious ideas, and Active-Recreational Orientation measures the level of family participation in “social and recreational activities” (Moos & Moos, 1981). The Organization subscale assesses the level of importance families place on

“clear organization and structure in planning family activities and responsibilities” and Control measures the degree to which family rules govern family life (Moos & Moos, 1981).

Investigations of the psychometric properties of the FES were conducted using 1,125 normal families and 500 families who were described as “distressed.” Measures of internal consistency were calculated and ranged from 0.610 to 0.780 for the subscales of the FES. In addition, test retest reliability was assessed at both 2 and 12-month intervals, resulting in coefficients of 0.520 and 0.890, respectively. Criterion validity has also been measured in more than 200 studies that demonstrated its ability to discriminate between normal, distressed, other types of families (Moos & Moos, 1981, Grotevant & Carlson, 1989).

Family Sense of Coherence Scale (FSOC)

The Family Sense of Coherence Scale (FSOC) is a 26-item inventory designed to measure the extent to which family members perceive their family life as “comprehensible, manageable and meaningful” (Antonovsky & Sourani, 1988). Comprehensibility occurs when both internal and external events in the environment are seen as “structured, predictable and explicable,” where manageability is defined as those resources available to meet the demands these events impose (Antonovsky, 1987). Furthermore, meaningfulness is described as the perception that the above demands are viewed as challenges that are “worthy of investment and engagement” (Antonovsky, 1987). Respondents are asked to rate their level of agreement with each statement on a scale from one to seven with different extreme anchor phrases for each question

(Antonovsky & Sourani, 1988). A total FSCOS score and scores for the three subscales can be calculated. Total scores range from 0-182 and subscale scores range from 0-56 for the Comprehensibility subscale and 0-63 for the Manageability and Meaningfulness scales. Higher total and subscale scores are indicative of higher perceived levels of a family sense of coherence.

The Family Sense of Coherence Scale was adapted from the original Orientation to Life Questionnaire, or Sense of Coherence Scale (Antonovsky, 1993). Many of the items on the Family Sense of Coherence Scale were derived from the original scale by translating items from an individual to a family orientation. However, the items that did not make sense when this procedure was used were deleted. Additional items were also constructed to encompass aspects of everyday family life. Each item in the final version of the Family Sense of Coherence Scale was constructed based on the extent to which it related to one of the three dimensions of coherence: comprehensibility, manageability, and meaningfulness. Sixty husbands and wives from a community setting comprised the normative sample. The items of the FSCOS were subjected to two pretests using the community sample, that when combined, resulted in a Cronbach's alpha of 0.921. Strong correlations were also found between scores on the Family Sense of Coherence Scale and scores on a measure of family adaptation, the Family Adaptation Scale, which provided evidence for convergent validity (Antonovsky & Sourani, 1988).

Measure of Current Functioning:

Outcome Questionnaire (OQ-45.2):

The Outcome Questionnaire (OQ-45.2) represents a revised version of the original Outcome Questionnaire published by Lambert, Lunnen, Umphress, Hansen, and Burlingame in 1994. The OQ-45 consists of 45 items and was developed as a screening instrument to “access common symptoms across a wide range of adult mental disorders and syndromes including stress related illness” (Lambert, Hansen, Umphress, Lunnen, Okiishi, Burlingame & Reisinger, 2002). Participants are asked to think about their feelings and functioning over the previous week and respond to the items using a 5-point Likert scale (1=Never, 2= Rarely, 3= Sometimes, 4 = Frequently, 5= Almost Always). The items contained in the OQ-45.2 are intended to provide information about how respondents are feeling inside, getting along with their significant others, and performing tasks at school or work (Lambert & Burlingame, 1996). For the current study, one of the 45 items pertaining to suicidal ideations was not included.

The OQ-45.2 provides a measure of overall functioning (total scores range from 0-180), as well as, three areas of specific functioning measured through three subscale scores (Symptom Distress, Interpersonal Relations, and Social Role). Symptom Distress (range 0-110) was designed to measure symptoms consistent with anxiety, depression, and substance abuse, while the Interpersonal Relations subscale (range 0-55) assesses “friction, conflict, isolation, inadequacy, and withdrawal” in friendships, family life, and marriage (Lambert et al., 2002). In addition, the Social Role subscale (range 0-45) measures respondents’ “level of dissatisfaction, conflict, distress, and

inadequacy” related to their functioning at home, work, and during their free time. Higher scores on the OQ-45.2 and its subscales are indicative of greater amounts of symptom distress, interpersonal difficulties, and performance of life tasks (Lambert et al., 2002).

Normative data for the OQ-45.2 were conducted using university and community samples. Reliability was assessed using college student and clinical samples. Test-retest reliability coefficients ranged between 0.780 and 0.840 for the total and three subscales scores. Furthermore, measures of internal consistency were reported to be between 0.700 and 0.930 for the college student sample and 0.710 and 0.930 for the clinical sample. Concurrent validity was assessed using a university sample by calculating Pearson Product moment correlation coefficients between the OQ-45.2 and a number of other instruments measuring depression, anxiety, and social/interpersonal functioning. Correlations ranged from 0.535 to 0.878 across 11 instruments, with eight of the correlations exceeding 0.782 (Lambert et al., 2002). Umphress (1995) conducted an additional validity study comprised of three clinical samples: students from a college counseling center, patients at an outpatient clinic, and an inpatient sample. Participants completed the OQ-45, the Symptom Checklist 90-R, Social Adjustment Ratings Scale, and the Inventory of Interpersonal Problems. Results of this study were similar to the findings of the above study, with correlation coefficients ranging from 0.490 to 0.920 across the three samples and instruments. The OQ-45 Total Score and Symptom Distress subscale correlated most highly with the General Severity Index of the Symptom Checklist-90R, with coefficients ranging

between 0.780 and 0.880; however, lower correlations were found between the Interpersonal Relations and Social Role subscales and other inventories purported to measure similar constructs (correlation coefficients ranged from 0.470- 0.730). Based on these findings, the authors concluded that the OQ-45 total score provides the most accurate assessment of current mental health functioning based on its high correlations with other instruments that measure “anxiety, depression, quality of life, social adjustment, and interpersonal functioning” (Lambert, et al., 2002). However, the validity of the three subscales remains unclear. Therefore, only the OQ-45 total score will be used for the current analyses.

QUALITATIVE COMPONENT

In order to better understand the impact of having a parent with cancer and/or heart disease, three essay questions were included in the analyses. Participants were asked to respond to the following questions: 1. Please write a short paragraph below describing the things you did, if any, to help your family and your ill parent during their illness, 2. Please describe below how you believe your parent’s illness changed your relationships with your ill parent and other members of your family? 3. Please discuss below the ways you believe other family members relationships with each other changed as a result of this experience. The computer program was designed so that if participants did not respond to the essays, they would encounter an error message asking them to answer the questions. However, after the second error message participants were allowed to continue with the study without responding to the essays in order to protect their rights as specified in university IRB policies.

In order to analyze the qualitative data, three independent raters were trained by the researcher. During the training, raters were provided with standardized instructions for coding the data. First, they were instructed to read all of the responses for one essay at a time, as opposed to reading each of the three essays for every participant one after another. Next, raters were instructed to keep a running list of the themes they saw in each of the three essays. In addition to the running list of themes, raters were told to keep tally of how many responses fit with that theme. Examples of sample essays and accompanying themes were presented to the raters. Then, the raters were given sample essays created by the researcher on an unrelated topic and instructed to use the previous guidelines to code the sample themselves. Once the three raters had finished coding the sample essay, they met as a group and discussed their findings. The raters were then provided with feedback from the researcher about any additional themes embodied in the essays and answered questions posed by the raters. At the end of the training, the raters were each given copies of the essay responses to code. After each of the raters had coded their data, they reconvened as a group to discuss their findings. The two lay people were asked to share their findings before the graduate student in order to minimize creating an “expert” bias. Each rater presented the themes that they found for Essay 1 and the group agreed on a set of core themes they had all seen throughout the responses for that essay before moving onto the next essay. During the meeting, the researcher kept notes about the sets of core themes for the essays. At the end of the meeting, the essay responses were collected from the raters, along with their running list of themes and tallies.

RESEARCH HYPOTHESES

Hypotheses for Quantitative Measures:

Hypothesis One: Participants in the parent with cancer, parent with heart disease, and parent with both cancer and heart disease groups were expected to function similarly to each other, but differently than subjects whose families did not have a chronic illness on measures of personal and family coping strategies and resources. More specifically, it was expected that the children of parents with a chronic illness would have lower levels of preventive coping resources and higher levels of emotion-focused coping, acceptance, behavioral disengagement, self-distraction, emotional and instrumental support, and family social support than no illness controls. No differences were expected between the groups on levels of problem-focused coping and other family coping strategies.

Rationale: This hypothesis was based on the research findings of a number of studies examining the impact of having a parent with cancer or another chronic illness on the patient's children. Prior research has shown that the children of parents with cancer or other chronic illnesses use emotion-focused coping strategies at higher rates than the children of families without a chronic illness (Compas, Worsham, Ey, & Howell, 1996; Veach & Nicholas, 1998). In order to cope with this event, previous research has noted that the children of patients tend to rely on the coping strategies of avoidance (or behavioral disengagement), self-distraction, and acceptance (Christ, Siegel, & Sperber, 1994; Aymanns, Filipp, & Klauer, 1995; Beard, Fouladi, Mercado,

& Seabee, 2002; Welch-McCaffrey, 1989). The importance of social support has also been well documented in the literature as a strategy children often employ at high rates to help them deal with their experiences of having a sick parent (Tringali, 1986; Mullen, Smith, & Hill, 1993). The families of cancer patients have also indicated that the use of instrumental support, or the seeking of information, has been an important mechanism for coping (Christ et al., 1994; Tringali, 1986). Although no differences were observed between the groups on measures of preventive coping resources in the pilot study, it was expected that participants whose parents were diagnosed with cancer, heart disease, or both would report lower levels of preventive coping resources due to the taxing nature of their parent's disease (Beard et al., 2002). In other words, children of chronically ill parents were expected to engage in more combative coping strategies and perceive having fewer preventive resources than no illness controls. It was not anticipated that the three groups would differ significantly on measures of problem-focused coping based on previous research (Compas et al., 1996).

Hypothesis Two: It was expected that participants in all three illness conditions would endorse similar characteristics of the family environment, while their responses would differ significantly from those of participants' who had not had a family member with a chronic illness. Furthermore, families with an ill parent were hypothesized to generally demonstrate higher levels of cohesion, expressiveness, organization, conflict, and achievement orientation and an increased familial sense of coherence.

Rationale: Currently, there are not consistent findings regarding the impact of having a parent with cancer, heart disease, or both on the family system. For example,

several studies found that adolescents of cancer patients who described their families as more cohesive, expressive, and less conflictual reported lower levels of distress than those with opposite characteristics (Harris & Zakowski, 2003, Weihs & Reiss, 1996, Schulz, Schulz, Schulz, & Kerekjarro, 1996). In addition, prior research has shown that only a small percentage of the children of patients experience such high levels of distress that they require intervention (Sales, Schulz, & Siegel, 1992). Conversely, other studies have shown children whose parents have a variety of chronic illnesses report lower levels of cohesion, organization, intellectual-cultural orientation, and moral-religious emphasis and higher amounts of conflict than no illness controls (Peters & Esses, 1985, Dura & Beck, 1988). Previous studies involving cancer patients and their spouses have found an association between a strong family sense of coherence and lower levels of psychological distress (Mullen et al., 1993). However, little remains known about the impact of having a parent with cancer or heart disease on the family environment and family sense of coherence. In regard to other aspects of the family environment, the results of the pilot study indicated that the families of cancer patients tend to endorse a strong achievement orientation. The researchers hypothesized that this characteristic of the family environment may function as a coping mechanism for individual family members (Beard et al., 2002).

Hypothesis Three: Participants from the three illness groups were expected to report lower levels of current functioning than the no illness condition. In addition, children of parents who had been diagnosed with both cancer and heart **disease were**

hypothesized to display lower levels of current functioning than the other illness groups where only one illness was present.

Rationale: Results of the Compas et al. (1994) study that included cancer patients, their spouses, and their children indicated that the children of patients endorsed moderate to high levels of emotional distress regarding their parent's illness. More specifically these children were found to exhibit moderate to high levels of anxiety, depression, and stress related symptoms, but symptoms were dependent upon additional factors including the age of the child and the current stage of their parent's illness. Therefore, participants in the illness conditions were expected to display lower levels of current functioning than their healthy family counterparts, especially those participants whose parents had both cancer and heart disease

Hypothesis Four: Participants from the illness conditions were expected to report different ways of personal and family coping and describe their family systems differently when asked specifically about their parents' illness as opposed to more global coping and family functioning.

Rationale: Little is known about the differences between how children of parents with cancer and/or heart disease describe their coping efforts and family environments in general versus specifically related to their parents' illness. The current hypothesis was exploratory in nature as it represents a new and understudied area of the literature. However, participants were expected to utilize greater amounts of emotion-focused coping, behavioral disengagement, self-distraction, and emotional and instrumental support and endorse greater levels of family wide seeking of social support when

responding to their parent's illness versus general life stressors based on the literature reviewed in Hypothesis I (Compas et al., 1996; Veach & Nicholas, 1998; Christ et al., 1994; Filipp & Klauer, 1995; Welch-McCaffrey, 1989; and Beard et al., 2002).

Hypothesis Five: Factors including the current stage of parental illness, the stage of the family life cycle at diagnosis, and whether or not counseling was sought during the illness, were expected to be associated with differing levels of family functioning, current personal functioning, coping, and preventive coping resources.

Rationale: Although previous studies have examined the developmental tasks and struggles consistent with a diagnosis of cancer in the various stages of the family life cycle and current stage of the illness, little is known about differences in coping, levels of distress, and characteristics of the family environment across these variables (Veach & Nicholas, 1998; Veach, 1999; Rait & Lederberg, 1989) . It was expected that participants would endorse differing coping strategies, perceptions of coping resources, levels of distress, and traits of the family environment at different stages of the family life cycle and stages of their parents' illness. However, this hypothesis was exploratory in nature due to a dearth of prior research in the area. Little is also known about the impact of seeking counseling during a parent's battle with cancer and/or heart disease on variables of coping, preventive resources, current functioning, and the family environment. Although mental health professionals would assert that counseling is a useful medium to decrease levels of distress and increase family functioning and coping, the issue becomes clouded by the fact that only the most distressed segment of

children with an ill parent are referred for professional mental health services (Sales, Schulz, & Siegel, 1992). Therefore, the impact of seeking counseling is unclear.

Hypotheses for Qualitative Measures:

Hypothesis One: The college-age children of parents with cancer, heart disease, or both were expected to take on additional roles and responsibilities during their parents' illness.

Rationale: The literature indicates that many children, adolescents, and adults take on additional roles and responsibilities when their parents develop a chronic illness like cancer or heart disease. Furthermore, adolescents may experience delays in their development by spending greater amounts of time with their family instead of the usual task of separating from them to spend more time with their friends (Veatch, 1999; Rait & Lederberg, 1989). Thus, it was hypothesized that participants would describe having a parent with cancer and/or heart disease as an event that provided them with additional roles and responsibilities.

Hypothesis Two: It was hypothesized that the children of parents with cancer, heart disease, or both would describe the experience of having a parent with a chronic illness as something that they believe has changed the dynamics of their and others' relationships within the family.

Rationale: Across the field of cancer research, there seems to be a widespread consensus that the experience of cancer profoundly impacts the family of the patient and each of its members; therefore, it was postulated that the children of patients will affirm this belief by describing that they perceived this event as one that altered the

structure of their family and family members' relationships (Tringali, 1986; Welch-McCaffrey, 1989; Veach & Nicholas, 1998).

CHAPTER IV

RESULTS

The results of the analyses presented in Chapter III are discussed in the following chapter. First, an overview of descriptive statistics for the measures is provided. Secondly, the findings of two MANOVAS investigating the differences in family and individual coping strategies, as well as preventive resources, between the illness and no illness groups on the BCOPE, F-COPES, FSCOS and PRI are discussed. In addition, differences between the three illness groups (parent with cancer, parent with heart disease, and parent(s) with both cancer and heart disease) on indices of coping strategies and resources are discussed. Next, analyses examining differences in the family environment between those participants who have had a parent with cancer and/or heart disease and those who have not had a chronic illness in their families are detailed. Furthermore, differences between the three health status groups on variables of the family environment are described. The impact of having a parent with cancer and/or heart disease on current levels of functioning is also explored by comparing levels of functioning between the illness groups and between the illness and no illness groups. Fifthly, repeated measures analyses conducted using the FES, BCOPE, and F-COPES are reviewed. The purpose of these analyses was to assess whether differences arose between how participants described their family environments and coping strategies in response to their parents' illness versus more general, life stressors and events. Results of the analyses exploring the impact of the current stage of parental illness, whether or not participants' families or family members sought counseling to

assist them in dealing with the parental illness, and the stage of the family life cycle at diagnosis on measures of coping strategies, coping resources, the family environment, and current functioning are also reviewed. Lastly, qualitative data gathered to supplement the quantitative data and provide additional insight into how families are changed in the face of cancer and heart disease are discussed.

DESCRIPTIVE STATISTICS

The demographic information gathered for this study is described in the following section. Data for the no illness and illness groups are discussed separately.

Demographic Data

Prior to being assigned to the study, participants answered several screening questions about whether they had a parent diagnosed with cancer and/or heart disease before they turned twelve years old, if they had a parent diagnosed with cancer and/or heart disease after they turned twelve years old, or if anyone in their immediate family (including themselves and siblings) had been diagnosed with a chronic illness (as defined as an illness that persists for three or more months). If subjects indicated they had no history of illness across the three screening questions, they were assigned to the no illness, control group. However, if participants reported having a parent diagnosed with cancer and/or heart disease *after* they turned twelve, denied having a parent with a diagnosis of cancer or heart disease *before* they were twelve, and did not have a history of other chronic illness in the family, they were assigned to the illness condition of the study. Potential subjects who experienced having a parent diagnosed with cancer or heart disease before they turned twelve or had a history of another chronic illness in the

family were excluded from the current study. After being assigned to the study, participants received an email asking them to review the criteria for participating in the study. Once participants gained access to the Website, they were again exposed to the same series of screening questions and were terminated from the study if their responses did not meet the aforementioned criteria. Of the students who successfully logged into the Web site, 34 of them were eliminated from the analyses: 10 indicated having a family member with a chronic illness, 3 had a family member with cancer, 11 had a parent diagnosed with cancer or heart disease before they turned twelve, 2 had a family member with heart disease, and 8 participants never finished the survey. The no illness and illness groups were composed of the remaining 303 participants.

No Illness Group

The no illness group consisted of 169 participants, 40 (23.7%) males and 129 (76.3%) females. The average age of group participants was 20.880 years (SD=1.580) and ranged from 18 to 30. Subjects between the ages of 19 and 22 accounted for 86.9% of the group. Ethnically, the group was comprised of 3 African Americans (1.76%), 20 Asians/Asian Americans (11.8%), 120 European Americans/Caucasians (71%), 20 Hispanics/Latino(a)s (11.8%), and 6 participants who classified themselves as “other” (3.6%). Subjects estimated their annual family income as follows: 12 reported incomes of less than \$30,000 (7.2%), 55 indicated their families make \$30,000-\$70,999 (33.1%), 36 reported incomes of \$71,000-\$110,999 (21.7%), 43 estimated making \$111,000-\$180,000 (25.9%), and 20 indicated their families make more than \$180,000 (12%).

Illness Group

The illness group was comprised of 130 participants, 48 males (36.9%) and 82 females (63.1%). The average age for participants in the illness group was 21.45 years (SD=2.19), ranged from 18 to 32, and 78.3% of participants were between the ages of 20 and 22. The following ethnic demographics were found for the illness group: 8 African Americans (6.2%), 13 Asians/Asian Americans (10%), 97 European Americans/Caucasians (74.6%), 6 Hispanics/Latino(a)s (4.6%), and 6 subjects who described themselves as “other” (4.6%). Estimates of annual family income were as follows: 12 reported incomes less than \$30,000 (9.3%), 31 indicated incomes between \$30,000 and \$70,999 (24%), 42 reported making \$71,000-\$110,999 (32.6%), 23 expressed incomes of \$111,000-\$180,000 (17.8%), and 21 reported incomes greater than \$180,000 (16.3%).

For the purpose of the current study, statistics for the remaining descriptive data and following analyses further divided the illness group into three categories: parent with cancer, parent with heart disease, and parent(s) with cancer and heart disease. Due to missing data, 10 participants were dropped from the analyses, which brought the total illness group participants to 120: 6 with a parent(s) with cancer and heart disease (5%), 89 with a parent with cancer (74.17%), and 25 with a parent with heart disease (20.83%).

Analyses and Results for the Demographic Data

Chi-squares were calculated to determine if differences existed between the four health status groups (no illness, parent with cancer, parent with heart disease, and

parent(s) with both cancer and heart disease) on the demographic variables of sex, ethnicity, and socioeconomic status. Results yielded significant differences between the health status groups for sex ($X^2=10.79$, $df=3$, $p=0.013$) and ethnicity ($X^2=30.361$, $df=12$, $p=0.002$). With respect to sex differences, females represented the majority of participants in the parent with cancer, parent with heart disease, and no illness groups (between 57.0-76.0%), while 66.0% of the participants in the parent(s) with cancer and heart disease group were males. In terms of ethnicity, more than 66.0% of the sample identified themselves as being European American/Caucasian across the health groups. However, the number of participants who identified themselves as African American, Hispanic/Latino(a), Asian/ Asian American, or “Other” were not evenly distributed across the health status groups. For instance, African American participants represented the second most prevalent ethnicity in the parent(s) with cancer and heart disease group (33.3%), while Asian/ Asian Americans comprised the second largest ethnic group in the parent with cancer (11.1%) and no illness conditions (11.8%).

In order to determine if differences existed between the four health status groups with regard to age, an ANOVA was conducted. Results of the MANOVA failed to yield significant differences in age of participants between the four health status groups ($F_{3, 285} = 2.350$, $p=0.073$). Frequency data indicated that over 50.0% of the participants were between the ages of 20 and 22 and the number of participants below or above that range varied between the four health status groups (parent with cancer, parent with heart disease, parent(s) with both cancer and heart disease, and no illness). For example, 12.0% of the parent with heart disease group consisted of participants who were 23

years old, while the other health status groups had between 3.3-6.0% of participants who were 23. (It should be noted that subjects entered their age in whole years; thus, age was not used as a continuous variable). Furthermore, these results should be viewed with caution due to the small number of subjects in some cells. More specifically, a number of cells contained between 0-2 participants in them. The researcher considered using sex and race as covariates in the following analyses, but chose not to so that post-hoc analyses could be conducted and a greater understanding of the data could be gleaned.

Descriptive Data for the Measures (BCOPE, F-COPES, PRI, FSCOS, FES, and OQ-45): Table1

The descriptive data for the instruments is provided in Tables 1 and 2. Table 1 contains descriptive information for the instruments completed by all four health status groups: the Brief COPE (BCOPE), Family Crisis Oriented Personal Evaluation Scales (F-COPES), Preventive Resources Inventory (PRI), Family Sense of Coherence Scale (FSCOS), Family Environment Scale (FES), and the Outcome Questionnaire-45 (OQ-45.2).

Preventive Resources Inventory (PRI)

A review of the descriptive data in Table 1 suggests that the children of ill parents perceive themselves as having fewer preventive coping resources than their counterparts from families with no illness. In addition, a pattern seems to emerge across the total PRI score and the Perceived Control, Maintaining Perspective, and Self-Acceptance subscale scores where the no illness group had the highest levels of

preventive resources, followed by the parent(s) with cancer and heart disease, then parent with cancer, and parent with heart disease groups. It should be noted that the Organization and Humor subscales of the PRI did not follow in this pattern. More specifically, families with a parent with cancer or a parent(s) with both illnesses seemed to perceive themselves as having fewer organizational or humor resources than the participants from the parent with heart disease and no illness groups.

Brief COPE (BCOPE)

Several differences in individual coping strategies also emerged in the expected directions. As hypothesized, the parent(s) with cancer and heart disease and parent with cancer groups appeared to utilize higher levels of Self-Distraction than participants in the no illness group. While not expected, several other differences between the health status groups appeared. For instance, participants who had a parent(s) with cancer and heart disease indicated using fewer Ineffective coping strategies than the parent with cancer group, which used fewer than the parent with heart disease group, and the no illness group seemed to use the most Ineffective coping strategies. However, there did not seem to be differences with respect to Emotion-focused or Problem-focused coping efforts, Denial, Behavioral Disengagement, Using Emotional Support, or Using Instrumental Support.

Family Crisis Oriented Personal Evaluation Scales (F-COPES)

In addition, it was expected that the families of ill parents would be perceived as engaging in greater social support efforts and a review of the means in Table 1 supports this tenet for the parent(s) with cancer and heart disease and parent with cancer groups.

However, this hypothesis does not seem to be supported for the parent with heart disease group.

Family Environment Scale (FES)

Participants who had an ill parent were expected to describe their families as having higher levels of cohesion, achievement orientation, expressiveness, organization, and conflict than families without an ill parent. A review of the means in Table 1 suggests that the children of cancer patients perceive their families as having a higher achievement orientation than the no illness group, but this does not appear to extend to the parent with heart disease and parent(s) with cancer and heart disease groups. The parent(s) with both cancer and heart disease group also reported higher levels of conflict than their peers in the other ill parent and no illness groups. Unexpectedly, the no illness group appeared to have higher levels of organization than three illness groups. In addition, no clear differences between the groups on indices of cohesion or expressiveness were evident.

Family Sense of Coherence Scale (FSCOS)

Participants who had an ill parent were hypothesized to perceive their families as having a greater sense of coherence than families with no illness. The means in Table 1 support this postulate. It seems the parent(s) with cancer and heart disease and parent with cancer groups endorsed the highest familial sense of coherence, followed by the parent with heart disease group, while the no illness group appears to have the lowest familial sense of coherence.

Outcome Questionnaire (OQ-45)

The results in Table 1 regarding levels of current functioning are somewhat surprising. The three illness groups were expected to endorse lower levels of current functioning (i.e. more problems in their relationships, roles, and greater numbers of symptoms experienced). However, the data suggest this is only supported for the parent with heart disease group. In fact, the parent(s) with cancer and heart disease and parent with cancer groups appear to endorse fewer difficulties in their functioning than their no illness counterparts.

Descriptive Data for the Illness Specific Measures (BCOPE, F-COPES, and FES)

Table 2 provides descriptive data for the versions of the BCOPE, F-COPES, and FES completed by the three illness groups when participants were asked to think specifically about their parents' illness in responding to the questions presented to them.

Brief COPE (BCOPE)

A review of the means in Table 2 suggests a downward stair-step pattern for the three health status groups (parent(s) with cancer and heart disease, parent with cancer, and parent with heart disease) with respect to Emotion-focused coping efforts, utilization of Self-Distraction, Positive Reframing, Planning, Acceptance, Religion, and Using Emotional and Instrumental Support. Thus, the parent(s) with cancer and heart disease group tended to utilize these strategies the most, followed by the parent with cancer group and so on. The means also seem to provide support for some of the hypothesized, but not seen, differences between the groups on the Brief COPE in Table 1.

Family Crisis Oriented Personal Evaluation Scales (F-COPES)

Families with both cancer and heart disease appear to engage in higher levels of social support. In addition, a similar downward stair-step pattern emerged where children whose parent(s) had cancer and heart disease reported the highest levels of total family coping efforts, Reframing, Seeking Spiritual Support, and Mobilizing the Family to Acquire and Accept Help.

Family Environment Scale (FES)

In terms of the family environment, subjects from families with both cancer and heart disease appeared to have higher levels of cohesion than families with cancer, who reported higher levels of cohesion than participants from families with heart disease. Similar patterns were also observed for the variables of Intellectual-Cultural Orientation, Moral-Religious Emphasis, Organization, and Control. However, the children of cancer and heart disease patients also reported greater amounts of conflict in their families.

Analysis of Skew and Kurtosis for Tables 1 & 2

In Table 1, one of the univariate skew indices for the parent with cancer group is greater than 3.000 (Behavioral Disengagement =3.199), which may be indicative of a sign of extreme skew (Kline, 1998). Similar findings appear in Table 2, where skew indices for the Substance Use (3.967) and Behavioral Disengagement (3.339) subscales for the cancer group are greater than 3.000. These results suggest a violation in the assumption of multivariate normality required for linear analyses; therefore, the results of the MANOVAs for these scales may be unreliable. However, there were no other

signs of extreme skew (>3.000) or kurtosis (>20.000) observed across the measures and groups listed in Tables 1 and 2 (Kline, 1998).

Analysis of Correlation Matrices in Tables 3 and 4

A review of the correlation matrix in Table 3 illustrates a number of relationships in the expected directions. For instance, it was expected that the measures of individual and family coping efforts would be positively correlated. In addition, correlations were also observed in the expected directions in terms of the relationships between the family environment and ineffective coping efforts. For example, two of the subscales of the FES, Cohesion and Expressiveness, are considered positive characteristics of the family environment and these were negatively correlated with the Ineffective coping subscale of the BCOPE. In addition, the Conflict subscale of the FES was positively correlated with Ineffective coping efforts.

One surprising finding was the inverse relationship between perceived preventive resources and the family sense of coherence (Pearson correlation coefficients ranging between -0.358 and -0.715 for the total PRI score and the scores of the three subscales of the FSCOS). Additional correlations using the subscales of both the PRI and FSCOS were computed to further explore this relationship (Table 4). The strongest negative correlations (ranging from -0.555 to -0.624) were found between the Maintaining Perspective, Perceived Control, and Self-Acceptance subscales of the PRI and the Comprehensibility and Manageability subscales of the FSCOS. However, Social Resources is the only subscale of the PRI that was positively correlated with all three subscales of the FSCOS. One hypothesis for this relationship is that as individual

family members perceive they have greater intrapersonal resources in these areas, they rely less on their family to provide a sense of control, create meaning out of their life experiences, and assist them in managing stress.

Descriptive Data for Qualitative Essays (Table 5)

A review of Table 5 suggests that participants reported taking on a number of additional roles and responsibilities during their parent's illness, as evidenced by the large number of core themes. Many of the themes centered around providing care and support for other family members in a variety of ways and taking care of household business. The most frequently cited changes in roles and responsibilities were performing more household duties, spending additional time with family members, caring for siblings, and providing emotional support for family members.

Themes for essay question two, regarding changes in participants' relationships with their family members, centered primarily around becoming closer to family members and realizing/appreciating life and their family members. The four most prevalent themes were becoming closer to other family members, closer to the ill parent, realizing the precious nature of life, and an increased appreciation for the family. One interesting finding was that only one of nine core themes was primarily negative—increased time spent worrying about possible parental death.

Similar themes as those discussed for essay two were also evidenced in essay three that asked participants about their perceptions of how their parent's illness changed other family members' relationships with each other. An increased closeness with other family members, appreciation of the family, and increased communication

were the most frequently cited changes among other family members' relationships. Despite the predominately positive changes reported by participants, several respondents expressed that their parent's illness had led to an increase in the expression of anger amongst family members. In summary, it seems that while the children of cancer and heart disease patients were faced with many additional roles and responsibilities they perceived their parent's illness as an event that created many positive changes in relationships among family members.

Table 1: Descriptive Statistics for the Standardized Forms of the PRI, BCOPE, FCOPEs, OQ-45, FES, and FSCOS

Instrument	Scale	Minimum	Maximum	Mean	Standard Deviation	Skewness	Kurtosis
BCOPE	Total Coping Score						
	Parent with Cancer and Heart Disease	56	71	62.500	5.788	0.404	-1.051
	Parent with Cancer	28	90	60.852	11.932	-0.632	0.567
	Parent with Heart Disease	36	76	56.115	10.941	-0.122	-0.520
	No Illness	28	85	60.782	13.413	-1.003	0.543
BCOPE	Ineffective Coping						
	Parent with Cancer and Heart Disease	8	15	10.000	2.757	1.460	1.918
	Parent with Cancer	8	21	10.636	2.866	1.298	1.302
	Parent with Heart Disease	8	20	10.846	3.343	1.300	1.176
	No Illness	8	25	12.167	3.399	0.792	0.403
BCOPE	Problem Focused Coping						
	Parent with Cancer and Heart Disease	12	19	16.500	2.429	-1.507	2.887
	Parent with Cancer	6	24	16.136	4.496	-0.484	-0.261
	Parent with Heart Disease	7	23	14.039	3.831	0.024	-0.252
	No Illness	6	24	15.383	4.501	-0.424	-0.349
BCOPE	Emotion Focused Coping						
	Parent with Cancer and Heart Disease	6	14	9.167	2.714	1.179	2.141
	Parent with Cancer	4	16	9.205	2.805	0.006	-0.294
	Parent with Heart Disease	4	15	8.308	2.909	0.187	-0.362
	No Illness	4	16	9.299	2.871	-0.226	-0.439
BCOPE	Self-Distracton						
	Parent with Cancer and Heart Disease	5	8	5.833	1.169	1.586	2.552
	Parent with Cancer	2	8	5.421	1.734	-0.215	-0.666
	Parent with Heart Disease	2	7	4.154	1.515	0.018	-1.070
	No Illness	2	8	4.935	1.696	-0.165	-0.820
BCOPE	Active Coping						
	Parent with Cancer and Heart Disease	5	8	6.167	1.169	0.668	-0.446
	Parent with Cancer	2	8	5.898	1.668	-0.61	-0.209
	Parent with Heart Disease	2	7	5.192	1.234	-0.673	0.403
	No Illness	2	8	5.339	1.688	-0.403	-0.623

Instrument	Scale	Minimum	Maximum	Mean	Standard Deviation	Skewness	Kurtosis
BCOPE	Denial						
	Parent with Cancer and Heart Disease	2	4	2.333	0.817	2.449	6.000
	Parent with Cancer	2	6	2.398	0.736	2.224	6.076
	Parent with Heart Disease	2	7	2.423	1.065	3.555	14.255
	No Illness	2	7	2.816	1.114	1.266	1.005
BCOPE	Substance Use						
	Parent with Cancer and Heart Disease	2	3	2.167	0.408	2.449	6.000
	Parent with Cancer	2	8	2.489	1.124	2.610	7.432
	Parent with Heart Disease	2	6	2.692	1.087	1.485	1.747
	No Illness	2	8	2.637	1.191	2.200	5.311
BCOPE	Using Emotional Support						
	Parent with Cancer and Heart Disease	4	6	5.167	0.983	-0.456	-2.39
	Parent with Cancer	2	8	5.182	1.772	-0.105	-0.834
	Parent with Heart Disease	2	8	4.385	1.835	0.305	-0.623
	No Illness	2	8	5.077	1.831	-0.163	-0.913
BCOPE	Behavioral Disengagement						
	Parent with Cancer and Heart Disease	2	5	2.833	1.169	1.586	2.552
	Parent with Cancer	2	8	2.421	0.991	3.199	12.604
	Parent with Heart Disease	2	5	2.692	1.123	1.219	-0.171
	No Illness	2	7	2.821	1.190	1.278	0.675
BCOPE	Venting						
	Parent with Cancer and Heart Disease	2	8	4.000	2.191	1.369	2.500
	Parent with Cancer	2	8	4.023	1.539	0.484	-0.074
	Parent with Heart Disease	2	7	3.923	1.412	0.516	-0.498
	No Illness	2	8	4.228	1.479	0.301	-0.373
BCOPE	Positive Reframing						
	Parent with Cancer and Heart Disease	2	7	5.333	1.966	-1.166	0.419
	Parent with Cancer	2	8	5.375	1.697	-0.09	-0.669
	Parent with Heart Disease	2	8	5.000	1.414	-0.092	-0.167
	No Illness	2	8	5.250	1.817	-0.287	-0.881

BCOPE	Planning						
	Parent with Cancer and Heart Disease	5	8	6.000	1.095	1.369	2.500
	Parent with Cancer	2	8	5.364	1.907	-0.202	-1.053
	Parent with Heart Disease	2	8	4.500	1.556	0.173	-0.334
	No Illness	2	8	5.125	1.685	-0.267	-0.674
BCOPE	Humor						
	Parent with Cancer and Heart Disease	2	8	3.500	2.345	1.884	3.593
	Parent with Cancer	2	8	3.273	1.588	1.335	1.290
	Parent with Heart Disease	2	8	3.846	1.953	0.791	-0.384
	No Illness	2	8	3.738	1.779	0.868	-0.160
BCOPE	Acceptance						
	Parent with Cancer and Heart Disease	4	8	6.333	1.506	-0.313	-0.104
	Parent with Cancer	2	8	6.205	1.555	-0.688	0.090
	Parent with Heart Disease	2	8	6.039	1.708	-0.43	-0.984
	No Illness	2	8	5.274	1.640	-0.498	-0.415
BCOPE	Religion						
	Parent with Cancer and Heart Disease	2	8	5.833	2.401	-0.879	-0.500
	Parent with Cancer	2	8	4.602	2.205	0.278	-1.298
	Parent with Heart Disease	2	8	3.885	1.633	0.857	0.678
	No Illness	2	8	4.702	2.198	0.156	-1.381
BCOPE	Self-Blame						
	Parent with Cancer and Heart Disease	2	6	2.667	1.633	2.449	6.000
	Parent with Cancer	2	8	3.330	1.537	1.040	0.298
	Parent with Heart Disease	2	8	3.039	1.732	1.739	2.138
	No Illness	2	8	3.893	1.710	0.656	-0.453
BCOPE	Using Instrumental Support						
	Parent with Cancer and Heart Disease	2	6	4.333	1.633	-0.383	-1.481
	Parent with Cancer	2	8	4.875	1.721	0.170	-0.601
	Parent with Heart Disease	2	8	4.436	2.019	0.559	-0.810
	No Illness	2	8	4.940	1.836	0.054	-0.859

Instrument	Scale	Minimum	Maximum	Mean	Standard Deviation	Skewness	Kurtosis
FCOPES	Total FCOPES Score						
	Parent with Cancer and Heart Disease	62	131	97.833	25.514	-0.350	-0.919
	Parent with Cancer	54	124	94.807	13.458	-0.211	0.166
	Parent with Heart Disease	60	104	85.384	11.254	-0.406	-0.147
	No Illness	52	126	88.593	15.867	0.101	-0.432
FCOPES	Acquiring Social Support						
	Parent with Cancer and Heart Disease	21	46	33.833	9.642	-0.320	-1.380
	Parent with Cancer	10	45	33.318	6.767	-0.704	0.912
	Parent with Heart Disease	13	43	27.192	8.060	-0.069	-0.651
	No Illness	10	49	29.473	8.097	-0.016	-0.363
FCOPES	Reframing						
	Parent with Cancer and Heart Disease	18	39	30.333	8.140	-0.404	-0.634
	Parent with Cancer	22	40	31.898	4.500	-0.219	-0.750
	Parent with Heart Disease	14	38	29.385	5.485	-1.133	1.245
	No Illness	16	40	30.168	5.288	-0.436	-0.062
FCOPES	Seeking Spiritual Support						
	Parent with Cancer and Heart Disease	4	20	14.000	7.239	-0.755	-1.836
	Parent with Cancer	4	20	12.932	5.110	-0.264	-1.094
	Parent with Heart Disease	4	20	12.154	4.505	-0.339	-0.922
	No Illness	4	20	12.880	4.828	-0.281	-1.017
FCOPES	Mobilizing Family to Aquire and Accept Help						
	Parent with Cancer and Heart Disease	7	17	12.500	4.278	-0.287	-1.766
	Parent with Cancer	4	18	10.841	3.220	-0.24	-0.362
	Parent with Heart Disease	4	19	9.385	3.287	0.882	1.471
	No Illness	4	19	9.826	3.640	0.238	-0.734
FCOPES	Passive Appraisal						
	Parent with Cancer and Heart Disease	7	13	10.333	2.160	-0.463	-0.300
	Parent with Cancer	4	15	8.909	2.839	0.430	-0.568
	Parent with Heart Disease	4	15	9.500	2.657	-0.076	-0.194
	No Illness	4	17	8.874	2.948	0.452	-0.282

Instrument	Scale	Minimum	Maximum	Mean	Standard Deviation	Skewness	Kurtosis
PRI	PRI Total						
	Parent with Cancer and Heart Disease	215	251	240.400	14.843	-1.801	3.29
	Parent with Cancer	165	290	228.044	21.58	0.241	1.294
	Parent with Heart Disease	145	266	218.960	29.474	-0.857	0.727
	No Illness	176.2	358.48	294.247	28.073	-1.082	2.903
PRI	PRI Total Without Org and Hum						
	Parent with Cancer and Heart Disease	158.76	194.4	177.336	15.990	-0.369	-2.775
	Parent with Cancer	112.32	212.76	164.030	18.448	0.010	0.866
	Parent with Heart Disease	96.12	207.36	157.118	27.256	-0.609	0.437
	No Illness	113.51	267.8	210.374	24.838	-0.698	1.594
PRI	Perceived Control						
	Parent with Cancer and Heart Disease	42	55	46.800	5.070	1.326	1.701
	Parent with Cancer	30	56	44.753	5.839	-0.372	-0.004
	Parent with Heart Disease	26	55	42.920	7.059	-0.405	0.052
	No Illness	25	70	56.562	7.250	-0.887	2.073
PRI	Maintaining Perspective						
	Parent with Cancer and Heart Disease	41	50	45.200	3.701	0.083	-1.621
	Parent with Cancer	27	55	40.882	5.480	0.111	0.272
	Parent with Heart Disease	18	51	38.480	8.042	-0.911	0.583
	No Illness	34	70	52.766	7.022	-0.437	0.434
PRI	Social Resources						
	Parent with Cancer and Heart Disease	38	51	46.400	6.025	-0.832	-1.913
	Parent with Cancer	30	56	41.847	5.768	0.068	0.131
	Parent with Heart Disease	25	56	41.320	6.860	-0.394	0.731
	No Illness	N/A	N/A	N/A	N/A	N/A	N/A
PRI	Self-Acceptance						
	Parent with Cancer and Heart Disease	23	28	25.800	2.280	-0.228	-2.507
	Parent with Cancer	12	32	24.417	3.283	-0.453	2.056
	Parent with Heart Disease	12	30	22.760	5.027	-0.477	-0.600
	No Illness	17	40	31.130	4.040	-0.524	0.550

Instrument	Scale	Minimum	Maximum	Mean	Standard Deviation	Skewness	Kurtosis
PRI	Organization						
	Parent with Cancer and Heart Disease	8	13	10.800	2.588	-0.502	-3.215
	Parent with Cancer	4	16	10.906	2.418	-0.337	0.432
	Parent with Heart Disease	4	16	9.680	2.996	0.023	-0.087
	No Illness	5	20	14.455	2.826	-0.321	0.031
PRI	Humor						
	Parent with Cancer and Heart Disease	10	16	13.000	2.236	0.000	0.200
	Parent with Cancer	4	16	12.388	2.416	-0.807	1.641
	Parent with Heart Disease	6	16	11.400	2.887	0.151	-1.138
	No Illness	4	20	15.538	3.072	-0.984	1.624
FES	Cohesion						
	Parent with Cancer and Heart Disease	5	9	6.800	1.789	0.052	-2.324
	Parent with Cancer	1	9	7.284	2.117	-1.522	1.739
	Parent with Heart Disease	2	9	6.640	2.099	-0.772	-0.396
	No Illness	1	9	7.331	1.935	-1.364	1.411
FES	Expressiveness						
	Parent with Cancer and Heart Disease	2	8	4.667	2.066	0.461	0.740
	Parent with Cancer	1	9	5.733	2.020	-0.633	-0.112
	Parent with Heart Disease	3	9	6.280	2.189	-0.26	-1.407
	No Illness	1	9	6.076	2.062	-0.486	-0.545
FES	Conflict						
	Parent with Cancer and Heart Disease	5	9	6.750	1.708	0.753	0.343
	Parent with Cancer	1	9	3.409	1.939	0.681	-0.109
	Parent with Heart Disease	1	7	4.000	1.947	0.190	-1.487
	No Illness	1	8	3.377	1.922	0.534	-0.502
FES	Independence						
	Parent with Cancer and Heart Disease	4	9	6.667	1.966	-0.254	-1.828
	Parent with Cancer	1	9	6.796	1.591	-0.899	1.365
	Parent with Heart Disease	3	9	6.640	1.890	-0.558	-0.405
	No Illness	1	9	6.963	1.458	-1.008	1.333

Instrument	Scale	Minimum	Maximum	Mean	Standard Deviation	Skewness	Kurtosis
FES	Achievement Orientation						
	Parent with Cancer and Heart Disease	3	8	5.333	2.338	0.245	-2.414
	Parent with Cancer	1	9	6.511	1.682	-0.733	0.743
	Parent with Heart Disease	2	9	5.840	2.444	-0.171	-1.269
	No Illness	1	9	6.113	1.484	-0.582	0.523
FES	Intellectual-Cultural Orientation						
	Parent with Cancer and Heart Disease	5	8	7.250	1.500	-2.000	4.000
	Parent with Cancer	1	9	5.648	2.0513	-0.237	-0.493
	Parent with Heart Disease	2	9	5.542	2.395	-0.17	-1.439
	No Illness	1	9	5.924	2.002	-0.498	-0.288
FES	Active-Recreational Orientation						
	Parent with Cancer and Heart Disease	1	8	5.000	2.608	-0.609	-0.649
	Parent with Cancer	1	9	6.102	1.954	-0.393	-0.809
	Parent with Heart Disease	2	9	6.000	1.934	-0.157	-0.858
	No Illness	1	9	6.140	2.080	-0.492	-0.642
FES	Moral-Religious Emphasis						
	Parent with Cancer and Heart Disease	2	8	5.333	2.338	-0.600	-1.289
	Parent with Cancer	1	9	5.318	2.277	-0.099	-1.144
	Parent with Heart Disease	1	9	5.200	1.979	-0.161	-0.071
	No Illness	1	9	5.866	2.205	-0.454	-0.706
FES	Organization						
	Parent with Cancer and Heart Disease	1	9	5.667	3.077	-0.705	-0.930
	Parent with Cancer	1	9	6.023	2.068	-0.637	-0.433
	Parent with Heart Disease	1	9	5.000	2.614	0.046	-1.343
	No Illness	1	9	5.866	1.961	-0.249	-0.731
FES	Control						
	Parent with Cancer and Heart Disease	3	7	5.000	1.414	0.000	-0.300
	Parent with Cancer	1	8	3.907	1.876	0.236	-0.631
	Parent with Heart Disease	1	8	3.591	1.843	1.072	1.380
	No Illness	1	9	4.107	2.119	0.393	-0.630

Instrument	Scale	Minimum	Maximum	Mean	Standard Deviation	Skewness	Kurtosis
FSCOS	Comprehensibility						
	Parent with Cancer and Heart Disease	28	56	42.800	10.826	-0.223	-0.578
	Parent with Cancer	14	52	41.659	6.507	-1.089	2.730
	Parent with Heart Disease	26	56	38.280	8.116	0.092	-0.488
	No Illness	11	40	21.293	5.886	0.740	-0.007
FSCOS	Manageability						
	Parent with Cancer and Heart Disease	41	57	50.600	6.878	-0.703	-1.573
	Parent with Cancer	31	58	48.306	6.800	-0.746	-0.205
	Parent with Heart Disease	21	62	44.455	10.271	-0.269	-0.295
	No Illness	22	46	32.028	4.948	0.423	0.018
FSCOS	Meaningfulness						
	Parent with Cancer and Heart Disease	36	61	50.000	9.381	-0.663	0.678
	Parent with Cancer	25	62	50.395	8.352	-1.197	1.063
	Parent with Heart Disease	26	62	47.875	10.356	-0.382	-0.622
	No Illness	31	62	41.872	5.031	1.160	3.377
OQ-45	OQ-45 Total						
	Parent with Cancer and Heart Disease	83	121	92.600	15.947	2.186	4.831
	Parent with Cancer	57	143	94.812	17.922	0.420	0.036
	Parent with Heart Disease	59	144	101.583	23.987	0.104	-0.839
	No Illness	51	147	91.916	19.873	0.395	-0.289
OQ-45	Symptom Distress						
	Parent with Cancer and Heart Disease	46	69	51.800	9.834	2.010	4.073
	Parent with Cancer	28	74	51.872	10.683	0.256	-0.383
	Parent with Heart Disease	31	79	56.040	14.690	-0.026	-0.895
	No Illness	24	83	50.481	11.471	0.361	-0.254
OQ-45	Interpersonal Relations						
	Parent with Cancer and Heart Disease	14	28	21.200	5.215	-0.118	0.264
	Parent with Cancer	13	42	22.835	5.602	0.760	0.705
	Parent with Heart Disease	16	41	24.833	6.895	0.783	0.072
	No Illness	11	36	21.930	6.285	0.460	-0.702

Instrument	Scale	Minimum	Maximum	Mean	Standard Deviation	Skewness	Kurtosis
OQ-45	Social Role						
	Parent with Cancer and Heart Disease	16	24	19.600	3.578	0.052	-2.324
	Parent with Cancer	12	30	20.200	3.933	0.259	-0.353
	Parent with Heart Disease	12	29	20.625	4.168	0.069	-0.004
	No Illness	12	31	19.439	4.161	0.381	-0.318

Table 2:
Descriptive Statistics for the Illness Versions of the BCOPE, FCOPES, and FES

Instrument	Scale	Minimum	Maximum	Mean	Standard Deviation	Skewness	Kurtosis
BCOPEI	Total Coping Score						
	Parent with Cancer and Heart Disease	50	67	59.167	6.882	-0.108	-1.918
	Parent with Cancer	28	88	51.85	11.636	0.318	0.118
	Parent with Heart Disease	34	66	48.423	8.659	0.175	-0.905
BCOPEI	Ineffective Coping						
	Parent with Cancer and Heart Disease	8	10	8.833	0.983	0.456	-2.390
	Parent with Cancer	8	20	9.618	2.489	2.232	5.510
	Parent with Heart Disease	8	17	9.539	2.249	1.888	-0.041
BCOPEI	Problem Focused Coping						
	Parent with Cancer and Heart Disease	10	18	13.833	2.639	0.268	1.252
	Parent with Cancer	6	24	11.889	4.268	-0.349	0.503
	Parent with Heart Disease	6	19	11.115	3.433	0.472	-0.502
BCOPEI	Emotion Focused Coping						
	Parent with Cancer and Heart Disease	4	12	8.167	3.251	0.249	-1.503
	Parent with Cancer	4	16	7.667	2.934	0.580	-0.299
	Parent with Heart Disease	4	10	6.808	2.079	0.133	4.915
BCOPEI	Self-Distraction						
	Parent with Cancer and Heart Disease	4	7	5.833	1.169	-0.668	-0.446
	Parent with Cancer	2	8	4.633	1.851	0.121	-1.138
	Parent with Heart Disease	2	7	3.346	1.495	0.906	-0.459
BCOPEI	Active Coping						
	Parent with Cancer and Heart Disease	3	8	5.333	1.751	0.248	-0.014
	Parent with Cancer	2	8	4.633	1.826	0.313	-0.849
	Parent with Heart Disease	2	8	4.615	1.627	0.260	-0.751
BCOPEI	Denial						
	Parent with Cancer and Heart Disease	2	3	2.333	0.516	0.968	-0.188
	Parent with Cancer	2	5	2.427	0.865	1.850	2.110
	Parent with Heart Disease	2	3	2.115	0.326	2.558	4.456

Instrument	Scale	Minimum	Maximum	Mean	Standard Deviation	Skewness	Kurtosis
BCOPEI	Substance Use						
	Parent with Cancer and Heart Disease	2	3	2.333	0.516	0.968	-1.875
	Parent with Cancer	2	8	2.333	1.091	3.967	16.605
	Parent with Heart Disease	2	4	2.500	0.860	1.225	-0.808
BCOPEI	Using Emotional Support						
	Parent with Cancer and Heart Disease	2	7	4.667	1.966	-0.254	-1.828
	Parent with Cancer	2	8	4.344	1.950	0.347	-1.125
	Parent with Heart Disease	2	7	3.692	1.517	0.569	-1.045
BCOPEI	Behavioral Disengagement						
	Parent with Cancer and Heart Disease	2	2	2.000	0.000	N/A	N/A
	Parent with Cancer	2	6	2.244	0.769	3.339	10.706
	Parent with Heart Disease	2	6	2.500	1.068	2.243	-0.268
BCOPEI	Venting						
	Parent with Cancer and Heart Disease	2	6	3.500	1.761	0.495	-1.925
	Parent with Cancer	2	8	3.322	1.348	1.191	1.728
	Parent with Heart Disease	2	5	3.115	1.071	0.602	3.713
BCOPEI	Positive Reframing						
	Parent with Cancer and Heart Disease	2	8	5.000	2.191	-0.171	-0.781
	Parent with Cancer	2	8	4.822	1.713	0.173	-0.786
	Parent with Heart Disease	2	8	4.385	1.878	0.215	-0.745
BCOPEI	Planning						
	Parent with Cancer and Heart Disease	3	8	5.167	1.722	0.678	0.814
	Parent with Cancer	2	8	3.944	1.685	0.507	-0.750
	Parent with Heart Disease	2	8	3.885	1.728	0.646	-0.877
BCOPEI	Humor						
	Parent with Cancer and Heart Disease	2	4	2.667	1.033	0.968	-1.875
	Parent with Cancer	2	8	2.600	1.198	2.389	5.739
	Parent with Heart Disease	2	8	3.000	1.600	1.968	6.445

Instrument	Scale	Minimum	Maximum	Mean	Standard Deviation	Skewness	Kurtosis
BCOPEI	Acceptance						
	Parent with Cancer and Heart Disease	6	8	7.500	0.837	-1.537	1.429
	Parent with Cancer	2	8	6.180	1.768	-0.658	-0.693
	Parent with Heart Disease	2	8	6.077	1.809	-0.563	1.009
BCOPEI	Religion						
	Parent with Cancer and Heart Disease	5	8	7.333	1.211	-1.952	3.657
	Parent with Cancer	2	8	4.456	2.083	0.407	-1.078
	Parent with Heart Disease	2	8	4.154	1.994	0.525	3.777
BCOPEI	Self-Blame						
	Parent with Cancer and Heart Disease	2	3	2.167	0.408	2.449	6.000
	Parent with Cancer	2	7	2.611	1.119	2.103	3.990
	Parent with Heart Disease	2	6	2.423	1.027	2.627	0.012
BCOPEI	Using Instrumental Support						
	Parent with Cancer and Heart Disease	2	4	3.333	0.817	-0.857	-0.300
	Parent with Cancer	2	8	3.311	1.481	1.206	1.183
	Parent with Heart Disease	2	5	2.615	0.852	1.290	-1.179
FCOPESI	Total FCOPES Score						
	Parent with Cancer and Heart Disease	84	130	99.667	16.813	1.422	1.901
	Parent with Cancer	30	124	93.400	16.220	-1.185	2.971
	Parent with Heart Disease	67	112	86.077	10.590	0.165	0.192
FCOPESI	Acquiring Social Support						
	Parent with Cancer and Heart Disease	19	47	32.667	9.606	0.064	0.283
	Parent with Cancer	10	48	32.833	8.007	-0.826	0.563
	Parent with Heart Disease	13	43	27.423	6.133	0.065	1.062
FCOPESI	Reframing						
	Parent with Cancer and Heart Disease	26	38	32.667	4.719	-0.561	-1.433
	Parent with Cancer	8	40	30.656	5.405	-1.712	5.557
	Parent with Heart Disease	19	38	29.077	4.270	-0.492	0.432

Instrument	Scale	Minimum	Maximum	Mean	Standard Deviation	Skewness	Kurtosis
FCOPESI	Seeking Spiritual Support						
	Parent with Cancer and Heart Disease	6	19	15.333	4.967	-1.708	2.958
	Parent with Cancer	4	20	12.811	4.771	-0.229	-0.965
	Parent with Heart Disease	4	20	12.885	4.607	-0.441	-0.735
FCOPESI	Mobilizing Family to Aquire and Accept Help						
	Parent with Cancer and Heart Disease	10	16	12.833	2.639	0.464	-2.094
	Parent with Cancer	4	19	11.500	3.033	-0.339	0.444
	Parent with Heart Disease	4	19	9.269	3.219	0.913	2.048
FCOPESI	Passive Appraisal						
	Parent with Cancer and Heart Disease	7	15	9.500	3.209	1.116	0.595
	Parent with Cancer	4	16	8.967	2.838	0.261	-0.587
	Parent with Heart Disease	6	13	9.577	2.194	-0.100	-0.969
FESI	Cohesion						
	Parent with Cancer and Heart Disease	7	9	8.000	0.707	0.000	2.000
	Parent with Cancer	1	9	7.460	1.910	-1.670	2.112
	Parent with Heart Disease	1	9	6.539	2.533	-1.000	-0.242
FESI	Expressiveness						
	Parent with Cancer and Heart Disease	1	8	4.833	2.994	-0.163	-2.038
	Parent with Cancer	2	9	5.733	1.906	-0.253	-0.720
	Parent with Heart Disease	3	9	5.923	1.831	0.292	-0.693
FESI	Conflict						
	Parent with Cancer and Heart Disease	1	7	4.800	2.387	-1.264	1.099
	Parent with Cancer	1	9	3.447	1.935	0.575	-0.305
	Parent with Heart Disease	1	7	3.640	2.039	0.085	-1.259
FESI	Independence						
	Parent with Cancer and Heart Disease	2	9	6.333	2.422	-1.215	2.111
	Parent with Cancer	3	9	6.989	1.343	-0.561	-0.173
	Parent with Heart Disease	1	9	6.423	2.248	-1.104	0.268

Instrument	Scale	Minimum	Maximum	Mean	Standard Deviation	Skewness	Kurtosis
FESI	Achievement Orientation						
	Parent with Cancer and Heart Disease	3	8	5.167	1.835	0.513	-0.621
	Parent with Cancer	1	9	6.284	1.869	-0.544	-0.185
	Parent with Heart Disease	3	9	6.077	2.077	-0.082	-1.162
FESI	Intellectual-Cultural Orientation						
	Parent with Cancer and Heart Disease	6	8	7.250	0.957	-0.855	-1.289
	Parent with Cancer	1	9	5.898	2.096	-0.567	-0.296
	Parent with Heart Disease	1	9	5.269	2.808	-0.123	-1.531
FESI	Active-Recreational Orientation						
	Parent with Cancer and Heart Disease	2	8	5.200	2.280	-0.405	-0.178
	Parent with Cancer	2	9	6.227	1.818	-0.535	-0.621
	Parent with Heart Disease	3	9	5.800	1.893	0.072	-1.002
FESI	Moral-Religious Emphasis						
	Parent with Cancer and Heart Disease	1	8	5.833	3.371	-1.006	-1.646
	Parent with Cancer	1	9	5.372	2.213	-0.172	-1.054
	Parent with Heart Disease	1	9	5.269	2.031	0.006	-0.530
FESI	Organization						
	Parent with Cancer and Heart Disease	1	9	5.800	3.421	-0.530	-1.142
	Parent with Cancer	1	9	5.759	2.085	-0.490	-0.617
	Parent with Heart Disease	1	9	4.923	2.576	0.046	-1.000
FESI	Control						
	Parent with Cancer and Heart Disease	2	7	4.833	2.317	-0.568	-2.001
	Parent with Cancer	1	9	4.379	2.289	0.258	-0.887
	Parent with Heart Disease	1	8	3.957	1.988	0.446	-0.328

Table 3:
Correlation Matrix for Total Scores of the BCOPE, FCOPES, PRI
and OQ-45 and Subscale Scores for the FSCOS and FES

	Total Cope	Ineff. Cope	Prb. Cope	Emot. Cope	Total FCOPES	Total OQ-45	FSCOS Comm.	FSCOS Man	FSCOS Mean.	PRI
Total Cope	1	0.518 **	0.866**	0.798**	0.256**	0.215**	-0.01	-0.039	-0.002	0.015
Ineff. Cope	0.518**	1	0.270**	0.322**	-0.075	0.470**	-0.141*	-0.175**	-0.275**	0.009
Prb. Cope	0.866**	0.270**	1	0.689**	0.265**	0.083	0.0202	-0.005	0.07	-0.006
Emot. Cope	0.798**	0.322**	0.689**	1	0.189**	0.112	-0.057	-0.098	0.009	0.044
Total FCOPES	0.256**	-0.075	0.265**	0.189**	1	-0.032	0.099	0.121	0.155**	0.064
Total OQ-45	0.215**	0.470**	0.083	0.112	-0.032	1	0.118	0.019	-0.214**	-0.393**
FSCOS Comm.	-0.01	-0.141*	0.02	-0.057	0.009	0.118	1	0.860**	0.595**	-0.715**
FSCOS Man.	-0.039	-0.175**	-0.005	-0.098	0.121	0.019	0.860**	1	0.670**	-0.653**
FSCOS Mean.	-0.002	-0.257**	0.07	0.009	0.155**	-0.214**	0.595**	0.670**	1	-0.358**
PRI	0.015	0.009	-0.006	0.044	0.064	-0.393**	-0.715**	-0.653**	-0.358**	1
Cohesion	0.022	-0.224**	0.088	0.051	0.227**	-0.449**	-0.018	0.067	0.429**	0.185**
Expressive	-0.043	-0.233**	-0.023	0.027	0.175**	-0.349**	-0.085	-0.017	0.327**	0.190**
Conflict	0.088	0.228**	0.034	0.032	-.165*	0.37**	0.026	-0.075	-0.345**	-0.180**
Indep.	-0.102	-0.148*	-0.097	-0.091	0.014	-0.205**	-0.054	0.018	0.087	0.177**
Achiev.	0.015	0.115	0.015	-0.078	0.098	0.022	0.122*	0.078	0.008	0.027
Intell.	0.021	-0.135*	0.107	0.017	0.182**	-0.262	-0.072	-0.014	0.147*	0.172**
Recreat.	-0.087	-0.215**	-0.067	-0.043	0.148*	-0.323**	-0.055	0.024	0.206**	0.150*
Moral	0.217**	0.003	0.175**	0.091	0.342**	-0.068	-0.099	-0.102	0.016	0.142*
Organ.	-0.052	-0.03	-0.013	-0.038	0.009	-0.17**	0.085	0.055	0.154*	0.08
Control	0.079	0.163**	0.07	-0.018	0.043	0.116	-0.051	-0.081	-0.179**	0.021

	Cohesion	Express.	Conflict	Indep.	Achiev.	Intellect.	Recreat.	Moral	Organ.	Control
Total Cope	0.022	-0.043	0.088	-0.102	0.015	0.021	-0.087	0.217**	-0.052	0.079
Ineff. Cope	-0.224**	-0.233**	0.228**	-0.148*	0.115	-0.135*	-0.215**	0.003	-0.03	0.163**
Prb. Cope	0.088	-0.023	0.034	-0.097	0.015	0.107	-0.067	0.175**	-0.013	0.07
Emot. Cope	0.051	0.027	0.032	-0.091	-0.078	0.017	-0.043	0.091	-0.038	-0.018
Total FCOPES	0.227**	0.175**	-0.165**	0.014	0.098	0.182**	0.148*	0.342**	0.099	0.043
Total OQ-45	-0.449**	-0.349**	0.370**	-0.205**	0.022	-0.262**	-0.323**	-0.068	-0.170**	0.116
FSCOS										
Comm.	-0.018	-0.085	0.026	-0.054	0.122*	-0.072	-0.055	-0.099	0.085	-0.051
Man.	0.067	-0.017	-0.075	0.018	0.078	-0.014	0.024	-0.102	0.055	-0.081
FSCOS										
Mean.	0.429**	0.327**	-0.345**	0.087	0.008	0.147**	0.206**	0.016	0.154*	-0.179**
PRI	0.185**	0.190**	-0.180**	0.177**	0.027	0.172**	0.150*	0.142*	0.08	0.021
Cohesion	1	0.457**	-0.540**	0.258**	0.05	0.377**	0.432**	0.155**	0.344**	-0.141*
Expressive	0.457**	1	-0.372**	0.220**	-0.106	0.295**	0.3	-0.051	-0.053	-0.424**
Conflict	-0.540**	-0.372**	1	-0.284**	0.212**	-0.145*	-0.215**	-0.072	-0.166*	0.257**
Indep.	0.258**	0.220**	-0.284**	1	0.173**	0.146*	0.140*	-0.125*	0.082	-0.243**
Achiev.	0.05	-0.106	0.212**	0.173**	1	0.017	-0.055	0.024	0.253**	0.269**
Intell.	0.377**	0.295**	-0.145*	0.146*	0.017	1	0.473**	0.028	0.120*	-0.076
Recreat.	0.432**	0.300**	-0.215**	0.14	-0.055	0.473**	1	0.006	0.171**	-0.148*
Moral	0.155**	-0.051	-0.072	-0.125*	0.024	0.028	0.006	1	0.128*	0.141*
Organ.	0.344**	-0.053	-0.166*	0.082	0.253**	0.120*	0.171**	0.128*	1	0.253**
Control	-0.141*	-0.424**	0.257**	-0.243**	0.269**	-0.076	-0.148*	0.141*	0.253**	1

Note: ** = significant at the 0.01 level and * = significant at the 0.05 level.

Table 4: Correlation Matrix for the Subscales of the PRI and FSCOS

	PRI Perc. Control	PRI Main. Persp.	PRI Soc Res	PRI Self Accept	PRI Org	PRI Humor	FSCOS Comp	FSCOS Manag	FSCOS Mean
PRI Perc. Control	1	0.866**	0.586**	0.858**	0.641**	0.606**	-0.614**	-0.555**	-0.247**
PRI Main. Persp.	0.866**	1	0.625**	0.881**	0.660**	0.628**	-0.624**	-0.559**	-0.283**
PRI Soc Res	0.586**	0.625**	1	0.659**	0.398**	0.460**	.317**	0.289**	0.258**
PRI Self Accept	0.858**	0.881**	0.659**	1	0.633**	0.658**	-0.601**	-0.520**	-0.214**
PRI Org	0.641**	0.660**	0.398**	0.633**	1	0.421**	-0.467**	-0.454**	-0.240**
PRI Humor	0.606**	0.628**	0.460**	0.658**	0.421**	1	-0.448**	-0.394**	-0.210**
FSCOS Comp	-0.614**	-0.624**	0.317**	-0.601**	-0.467**	-0.448**	1	0.860**	0.595**
FSCOS Manag	-0.555**	-0.559**	0.289**	-0.520**	-0.454	-0.394**	0.860**	1	0.670**
FSCOS Mean	-0.247**	-0.283**	0.258**	-0.214**	-0.240**	-0.210**	0.595**	0.670**	1

Note: ** = significant at the 0.01 level and * = significant at the 0.05 level.

Table 5: Frequency Data for the Qualitative Essays

Essay Question	Theme	Frequency (Obtained for Each Rater)
1. Roles and Responsibilities	Cared for Siblings	8, 8, 8
	Cared for Parent's Physical Needs	4,5,5
	Chores/Household Duties	12, 12, 13
	Spent Time With Family	14, 14, 14
	Researched Parent Illness	2,3,3
	Provided Emotional Support for Family	5,6,7
	Provided Financial Support to Family	3,3,3
	Gave Up Regular Activities to Care for Parent	4,4,4
	Tried to Keep a Positive Attitude for Other Family Members	4,5,5
	Monitor Eating Habits/Stress Levels of Ill Parent	4,4,5
	No Change in Roles and Responsibilities	1,1,1

Table 5 (Cont.)

Essay Question	Theme	Frequency (Obtained for Each Rater)
2. Changes in Participants' Relationships	Closer to the Ill Parent	13,13,13
	Closer to Other Family Members	16, 17, 17
	Realization of How Precious Life Is	12, 12, 13
	Increased Tolerance of Parent's Faults	3,3,3
	Spent More Time With Family	2,2,3
	Worried More About Possible Parental Death	6,6,6
	Increased Appreciation for Parents	8,9,9
	Increased Communication Within Family	3,3,3
	No Change in Relationships	2,2,2
3. Perceptions of Changes in Other Family Members' Relationships	Closer to Ill Parent	1, 1,1
	Closer to Other Family Members	19,20,20
	Increased Appreciation for Family	6,6,7
	Increased Communication Within Family	6,6,6
	Increased Anger and Resentment Towards Family Members	2,2,2
	No Change	4,4,4

HYPOTHESIS I

Differences in Total Coping Strategy Scores Between the Parent with Cancer, Parent with Heart Disease, Parent(s) with Cancer and Heart Disease, and No Illness Groups

It was hypothesized that participants who had a parent with cancer, parent with heart disease, or parent(s) with both cancer and heart disease would function similarly to each other, but differently from participants without any illness in their family on the Preventive Resources Inventory (PRI), Brief COPE (BCOPE), and Family Crisis Oriented Personal Evaluation Scales (F-COPES). More specifically, children from all three parental chronic illness groups were expected to use the strategies of behavioral disengagement, self-distraction, seeking emotional support and instrumental support, and family wide seeking of social support more frequently than the no illness group. In addition, the cancer, heart disease, and cancer and heart disease groups were hypothesized to utilize more emotion-focused coping strategies and fewer preventive coping strategies than their counterparts from families without a chronic illness.

The analyses conducted to explore these hypotheses involved several steps: first, main effects for the coping total scores were conducted; second, post-hoc differences between the groups' total scores were explored; third, main effects for the coping subscales were calculated; lastly post-hoc differences for the subscales were examined. A Multiple Analysis of Variance (MANOVA) was conducted using the total scores from the Preventive Resources Inventory (PRI), Brief COPE (BCOPE), and Family Crisis Oriented Personal Evaluation Scales (F-COPES) as the dependent variables and

health status (parent(s) with cancer and heart disease, parent with cancer, parent with heart disease, and no illness) as the independent variable. The F-COPES was included as measure of family coping strategies, the BCOPE as an index of individual coping strategies, and the PRI as a measure of perceived preventive coping resources. In order to control for the amount of Type I error incurred by using two separate MANOVAs to answer Hypothesis I, a Bonferroni type adjustment was made and the alpha level for the following analyses was set at 0.025 (Tabachnick & Fidell, 1996).

Analysis of Total Scores for the Brief COPE, F-COPES, and PRI

An omnibus MANOVA was performed using the total scores of the BCOPE, F-COPES, PRI, PRI without the inclusion of the Humor and Organization subscales, and the Ineffective, Problem-focused, and Emotion-focused subscales of the BCOPE as the dependent variables and health status as the independent variable. Results of the MANOVA indicated participants in the different health status groups differed in their utilization/perception of coping strategies/resources ($F_{21,771} = 12.975, p < 0.001$).

Individual Coping Strategies (Brief COPE)

Follow-up univariate tests were conducted to further explore the differences between the groups and indicated a significant main effect for the Ineffective Coping score of the Brief COPE ($F_{3,261} = 5.649, p = 0.001$) across the four health groups (parent(s) with cancer and heart disease, parent with cancer, parent with heart disease, and no illness). No significant differences between the groups were found for the other scales of the Brief COPE included in the current analyses: the total score of the Brief

COPE ($F_{3,261} = 0.740$, $p=0.529$), Problem-focused coping ($F_{3,261} = 1.196$, $p=0.312$), or Emotion-focused coping scales ($F_{3,261} = 0.553$, $p=0.646$).

On the Ineffective Coping scale of the Brief COPE, post-hoc pair-wise comparisons indicated the parent with cancer group ($M=10.659$, $S= 2.901$) utilized significantly fewer ineffective coping strategies than did the no illness group ($M= 12.233$, $S=3.444$). No other significant differences were noted between the groups on the overall scales of the Brief COPE.

Family Coping Strategies (F-COPES)

An analysis of the contribution of the F-COPES total score toward the overall effect yielded significant results ($F_{3,261} = 5.335$, $p=0.001$). Post-hoc pair-wise comparisons of the total score for the F-COPES across the health groups resulted in higher levels of family coping in the parent with cancer group ($M= 94.565$, $S=13.420$) and parent(s) with cancer and heart disease group ($M= 105.000$, $S=20.7000$) than the parent with heart disease group ($M= 84.800$, $S=11.076$).

Preventive Coping Resources (PRI)

An examination of how the PRI scores contributed to the overall effect resulted in significant main effects for the PRI total score ($F_{3,261} = 146.003$, $p<0.001$) and the PRI total score without the Humor and Organization subscales ($F_{3,261} = 91.574$, $p<0.001$). (As a note, both PRI total scores were included in the analyses based on the authors' indication that the Humor and Organization subscales may not be distinct factors).

Post-hoc comparisons were conducted and indicated the participants from the no illness group (\underline{M} =294.499, \underline{S} =28.313) reported higher perceptions of preventive coping resources compared to the parent(s) with cancer and heart disease group (\underline{M} = 240.400, \underline{S} =14.843), parent with cancer group (\underline{M} = 228.0483, \underline{S} =21.581), and the parent heart disease group (\underline{M} = 218.960, \underline{S} =29.474). Similar findings were observed on the Preventive Resources Inventory (without Organization and Humor) between the no illness group (\underline{M} = 210.380, \underline{S} =24.936) and the parent(s) with cancer and heart disease group (\underline{M} = 177.336, \underline{S} =15.990), parent with cancer group (\underline{M} = 164.030, \underline{S} = 18.448), and the parent with heart disease group (\underline{M} = 157.118, \underline{S} =27.256). No significant differences were found between the three illness conditions on the PRI total scores

Analysis of Coping Subscale Scores

A second omnibus MANOVA was conducted using the subscales of the Brief COPE, F-COPES, and PRI and resulted in significant differences between the four health status groups on measures of coping and coping resources ($F_{72,720} = 4.509$, $p < 0.001$). The Self-Distraction, Active Coping, Denial, Substance Use, Using Emotional Support, Behavioral Disengagement, Venting, Positive Reframing, Planning, Humor, Religion, Self-Blame, and Using Instrumental Support subscales of the Brief COPE; the Acquiring Social Support, Reframing, Seeking Spiritual Support, Mobilizing the Family to Acquire and Accept Help, and Passive Appraisal subscales of F-COPES; and the Perceived Control, Maintaining Perspective, Self-Acceptance, Humor, and Organization subscales of the PRI were included in the analyses as dependent variables. (It should be noted that results from the Social Resources subscale of the PRI could not

be calculated due to large amounts of missing data on an item regarding constructive criticism. The reason for this missing data is unclear as some participants successfully responded to the question, while others did not. However, the most logical postulate for the missing data is that a technical error occurred when the data was being written into the database). Main effects for the individual subscales and follow-up post-hoc analyses for the Brief COPE, F-COPES, and PRI are detailed below.

Individual Coping Strategies (Brief COPE)

Further analyses examining the contribution of the individual Brief COPE subscales to the overall effect resulted in main effects for the Self-Distraction ($F_{3,261} = 3.549$, $p=0.015$), Denial ($F_{3,261} = 4.418$, $p=0.005$), Acceptance ($F_{3,261} = 6.863$, $p<0.001$), and Self-Blame ($F_{3,261} = 5.152$, $p=0.002$) subscales. For the remainder of the subscales of the Brief COPE, no significant differences were found in the utilization of coping strategies across the four health status groups: Substance Use ($F_{3,261} = 0.646$, $p=0.586$), Behavioral Disengagement ($F_{3,261} = 2.696$, $p=0.046$), Active Coping ($F_{3,261} = 2.739$, $p=0.044$), Using Emotional Support ($F_{3,261} = 0.848$, $p=0.469$), Venting ($F_{3,261} = 0.271$, $p=0.846$), Positive Reframing ($F_{3,261} = 0.533$, $p=0.660$), Planning ($F_{3,261} = 1.805$, $p=0.147$), Humor ($F_{3,261} = 2.231$, $p=0.085$), Religion ($F_{3,261} = 2.543$, $p=0.057$), and Using Instrumental Support ($F_{3,261} = 0.945$, $p=0.420$).

A number of significant findings arose through post-hoc pair-wise comparisons of the subscales of the Brief COPE. Respondents from the parent with cancer group ($\underline{M}=5.357$, $\underline{S}=1.740$) reported engaging in higher levels of self-distraction than did the parent with heart disease group ($\underline{M}=4.240$, $\underline{S}=1.480$). No other significant differences

were observed between the three illness groups on the Brief COPE subscales. However, the parent with cancer group (\underline{M} = 2.369, \underline{S} =0.636) reported lower levels of denial than the no illness group (\underline{M} = 2.795, \underline{S} =1.115). The parent with cancer group (\underline{M} = 6.202, \underline{S} =1.5428) also displayed higher levels of acceptance than the no illness group (\underline{M} = 5.278, \underline{S} =1.666).

Family Coping Strategies (FCOPES)

With respect to family coping strategies, additional analyses indicated that the Acquiring Social Support ($F_{3,261} = 6.926$, $p < 0.001$) and Mobilizing the Family to Acquire and Accept Help ($F_{3,261} = 3.214$, $p = 0.023$) subscales of the F-COPES contributed to the overall effect found in the omnibus MANOVA. The Reframing ($F_{3,261} = 2.408$, $p = 0.068$), Seeking Spiritual Support ($F_{3,261} = 0.951$, $p = 0.417$), and Passive Appraisal ($F_{3,261} = 0.663$, $p = 0.575$) subscales did not yield significant differences across the four health status groups.

Post-hoc comparisons revealed significant differences between groups on the Acquiring Social Support subscale of the F-COPES. More specifically, participants from the parent with cancer group (\underline{M} = 33.179, \underline{S} =6.765) reported a greater tendency for their family to seek out social support than did the parents with heart disease (\underline{M} = 26.920, \underline{S} =8.103) and no illness groups (\underline{M} = 29.437, \underline{S} =8.280). No other differences between the health status groups were observed on the F-COPES subscales.

Preventive Coping Resources (PRI)

Further analysis of the data revealed significant main effects for following subscales of the PRI: Perceived Control ($F_{3,261} = 69.455$, $p < 0.001$), Maintaining

Perspective ($F_{3,261} = 74.830$, $p < 0.001$), Self-Acceptance ($F_{3,261} = 71.882$, $p < 0.001$), Organization ($F_{3,261} = 42.807$, $p < 0.001$), and Humor ($F_{3,261} = 30.513$, $p < 0.001$).

Post-hoc pair-wise comparisons indicated the no illness group ($\underline{M} = 56.603$, $\underline{S} = 7.271$) reported higher levels of perceived control than the parent(s) with cancer and heart disease group ($\underline{M} = 46.800$, $\underline{S} = 5.070$), parent with cancer group ($\underline{M} = 44.881$, $\underline{S} = 5.753$), and parent with heart disease group ($\underline{M} = 42.920$, $\underline{S} = 7.059$). The no illness group ($\underline{M} = 52.801$, $\underline{S} = 7.061$) also had greater perceptions of resources related to maintaining perspective than the parent with cancer ($\underline{M} = 40.881$, $\underline{S} = 5.513$) and parent with heart disease groups ($\underline{M} = 38.480$, $\underline{S} = 8.042$). In addition, the no illness group ($\underline{M} = 31.159$, $\underline{S} = 4.051$) reported greater perceived resources of self-acceptance than the parent(s) with cancer and heart disease ($\underline{M} = 25.800$, $\underline{S} = 2.280$), parent with cancer ($\underline{M} = 24.417$, $\underline{S} = 3.283$), and parent with heart disease groups ($\underline{M} = 22.760$, $\underline{S} = 5.027$). With respect to humor and organization, the no illness group ($\underline{M} = 14.417$, $\underline{S} = 2.841$) also reported having more organizational resources to assist in preventing stressful situations than did the parent(s) with cancer and heart disease group ($\underline{M} = 10.800$, $\underline{S} = 2.588$), parent with cancer group ($\underline{M} = 10.917$, $\underline{S} = 2.431$), and the parent with heart disease group ($\underline{M} = 9.680$, $\underline{S} = 3.000$). The no illness group ($\underline{M} = 15.543$, $\underline{S} = 3.102$) also indicated having greater humor resources than the parent with cancer ($\underline{M} = 12.369$, $\underline{S} = 2.424$) and parent with heart disease groups ($\underline{M} = 11.400$, $\underline{S} = 2.887$). As aforementioned, differences between the groups on the Social Resources subscale could not be computed due to missing data.

Summary of the Results for Hypothesis I

The hypothesis that the three illness groups would function similarly in the coping strategies they employed was only partially supported. Participants who had a parent with cancer endorsed using greater amounts of self-distraction on the BCOPE, social support on the F-COPES, and total family coping as assessed by the F-COPES than did subjects who had a parent with heart disease. In addition, the parent(s) with cancer and heart disease group displayed higher levels of total family coping than the parent with only heart disease group. However, no other differences were found between the three illness groups.

In terms of differences between the three illness groups and the no illness control group, the hypothesis that the no illness group would engage in higher levels of preventive coping was supported on the overall PRI score as well as the Perceived Control, Maintaining Perspective, Self-Acceptance, Humor, and Organization subscales. On the F-COPES, differences were found in the expected direction between the parent with cancer and no illness groups with respect to Acquiring Social Support and total family coping efforts. In addition, the parent with cancer group reported lower levels of Ineffective coping efforts and denial and higher levels of acceptance than the no illness group. However, hypotheses regarding differences between the illness and no illness groups on variables of behavioral disengagement, self-distraction, and seeking emotional and instrumental support were not indicated. The proposed differences in emotion-focused, problem-focused coping and total coping efforts as assessed by the BCOPE were not supported by the current analyses.

HYPOTHESIS II

Differences in the Levels of Family Sense of Coherence and Conflict, Cohesion, Expressiveness, Organization, and Achievement Orientation in the Family Environment

It was hypothesized that participants in the illness groups would perceive their family environments differently than the respondents from the no illness group. More specifically, families of cancer or heart disease patients, or both, were expected to have higher levels of conflict; a stronger orientation towards educational pursuits, as measured by achievement; and higher levels of expressiveness and organization than the no illness control group. In addition, the majority of families with a parent diagnosed with cancer and/or heart disease were expected to endorse higher levels of family commitment to each other, measured by cohesion, and see their family life as more comprehensible, manageable, and meaningful as indicated by higher levels of a family sense of coherence.

To test these hypotheses, two Multiple Analyses of Variance (MANOVAs) were conducted: one used the subscales of the Family Environment Scale (FES) as the dependent variables and another utilized the subscales of the Family Sense of Coherence Scale (FSCOS) as dependent variables. To guard against inflated Type I error, the Bonferroni adjustment was also used in these analyses; thus, alpha was set at 0.025.

Cohesion, Conflict, Expressiveness, Organization, and Achievement Orientation in the Family Environment (FES)

An omnibus MANOVA was conducted using the Cohesion, Expressiveness, Conflict, Independence, Achievement Orientation, Intellectual-Cultural Orientation, Active-Recreational Orientation, Moral-Religious Emphasis, Organization, and Control subscales of the FES. The results of the overall MANOVA did not indicate any significant differences between the four health status groups on the subscales of the family environment ($F_{30,558} = 0.778$, $p=0.797$). Additional analyses examining the contributions of the individual subscales did not result in any significant main effects: Cohesion ($F_{3,193} = 1.410$, $p=0.241$), Expressiveness ($F_{3,193} = 0.611$, $p=0.609$), Conflict ($F_{3,193} = 1.741$, $p=0.160$), Independence ($F_{3,193} = 0.724$, $p=0.539$), Achievement Orientation ($F_{3,193} = 1.140$, $p=0.334$), Intellectual-Cultural Orientation ($F_{3,193} = 1.367$, $p=0.254$), Active-Recreational Orientation ($F_{3,193} = 0.120$, $p=0.948$), Moral-Religious Emphasis ($F_{3,193} = 0.357$, $p=0.784$), Organization ($F_{3,193} = 0.786$, $p=0.503$), and Control ($F_{3,193} = 0.452$, $p=0.717$).

Family Sense of Coherence (FSCOS)

A second omnibus MANOVA was conducted to examine the differences between the parent(s) with cancer and heart disease, parent with cancer, parent with heart disease, and no illness groups with respect to levels of a family sense of coherence. The three subscales of the Family Sense of Coherence Scale (FSCOS) (Comprehensibility, Manageability, and Meaningfulness) were included in the analyses as the dependent variables and health status was used as the independent variable. The

overall MANOVA indicated differences exist between the four health status groups on measures of family sense of coherence ($F_{9, 753} = 26.338, p < 0.001$). Follow-up analyses demonstrated significant main effects for all three subscales: Comprehensibility ($F_{3,251} = 190.638, p < 0.001$), Manageability ($F_{3,251} = 133.978, p < 0.001$), and Meaningfulness ($F_{3,251} = 39.007, p < 0.001$).

Post-hoc comparisons were conducted for the subscales of the FSCOS and the results are as follows. With respect to Comprehensibility, the no illness group ($M = 21.5455, S = 5.91456$) reported lower levels of a family sense of comprehensibility than did the parent(s) with cancer and heart disease group ($M = 42.800, S = 10.826$), parent with cancer group ($M = 41.659, S = 6.507$), and parent with heart disease group ($M = 38.046, S = 8.583$). The no illness group ($M = 32.028, S = 4.948$) also reported lower levels of manageability than the parent(s) with heart disease and cancer group ($M = 50.600, S = 6.878$), parent with cancer group ($M = 48.306, S = 6.800$), and parent with heart disease group ($M = 44.455, S = 10.271$). Lower levels of meaningfulness were also reported by the no illness group ($M = 41.224, S = 3.804$) when compared to the parent(s) with cancer and heart disease group ($M = 50.000, S = 9.381$), parent with cancer group ($M = 50.471, S = 8.372$), and parent with heart disease group ($M = 47.909, S = 10.240$). No significant differences between the three illness groups were found.

Summary of the Results of Hypothesis II

The expectation that illness and no illness groups would differ on levels of achievement, conflict, expression, organization, and cohesion was not supported by the current analyses. However, significant differences were noted between the groups with

respect to levels of a family sense of coherence as assessed by the Comprehensibility, Manageability, and Meaningfulness subscales of the FSCOS; thus, offering support to the hypothesis that participants from families with parents who had cancer and/or heart disease would report higher levels of familial sense of coherence than their counterparts from families with no chronic illness. In addition, the expectation that the three illness groups would function similarly to each other in terms of the family environment and family sense of coherence was also supported.

HYPOTHESIS III

Current Functioning (OQ-45)

Participants in the parent with cancer and heart disease group were expected to have lower levels of overall current functioning than participants in the parent with cancer and parent with heart disease groups. In addition, the three illness groups were hypothesized to exhibit lower levels of overall functioning than their counterparts in the no illness group. {It should be noted that the subscales scores of the OQ-45 were not utilized in the following analyses based upon the findings that they do not correlate highly with other indices of mental health (Lambert, et al., 2002)}

An ANOVA was conducted to explore whether the parent(s) with cancer and heart disease, parent with cancer, parent with heart disease, and no illness groups experienced differing levels of current functioning as detailed above. The total score of the OQ-45 was included in the analyses as dependent variable and health status was used as the independent variable. The results of the ANOVA did not yield significant

differences between the four health status groups in current functioning ($F_{3,265} = 1.814$, $p=0.145$).

Summary of Results for Hypothesis III

In summary, the current data do not support the hypotheses that participants from the parent(s) with cancer and heart disease, parent with cancer, and parent with heart disease groups would endorse lower levels of overall functioning than their counterparts from families without a chronic illness. In addition, the postulate that participants in the parent(s) with cancer and heart disease group would demonstrate lower levels of current functioning than the parent with cancer and parent with heart disease groups was not supported.

HYPOTHESIS IV

Comparison of General Perceptions to Illness Specific Perceptions of Coping and the Family Environment

Participants in the three illness conditions completed the Brief COPE, Family Crisis Oriented Personal Evaluation Scales (F-COPES), and the Family Environment Scale (FES) twice during the study. At the beginning, participants were instructed to think specifically about their parent(s)'s illness in responding to following set of questions. Later, participants were asked to complete the same measures using the standardized instructions that ask them to think about coping and the family environment in more general terms. It was hypothesized that differences in coping strategies and conceptions of the family environment would arise between the two administrations. More specifically, the illness groups were postulated to describe their

families as being more cohesive, conflictual, expressive, organized, and achievement oriented during their parents' illness compared to more global contexts. In addition, participants with an ill parent were expected to use more of the self-distraction, emotional and instrumental support, behavioral disengagement, and emotion-focused coping strategies on an individual basis in response to their parents' illness versus more general, life stressors. With respect to family coping strategies, when dealing with their parents' illness participants were hypothesized to report their families engaging in higher levels of family seeking of social support in comparison to dealing with more general stressors.

Four repeated measures MANOVAs were performed: one compared the total coping scores for the F-COPES and Brief COPE, as well as, the Emotion-focused coping, Problem-focused coping, and Ineffective coping scores of the Brief COPE between the two administrations; a second MANOVA examined differences between administrations for the subscales of the Brief COPE; a third compared results for the Acquiring Social Support and Mobilizing the Family to Acquire and Seek Help subscales of the F-COPES, and a fourth MANOVA compared the FES subscales of Cohesion, Achievement, Expressiveness, and Conflict across the two times. The alpha level was adjusted to 0.013 using the Bonferroni adjustment to account for inflated Type I error incurred when conducted multiple analyses.

It should also be noted that the results of these analyses are exploratory in nature and should be viewed with caution. More specifically, a repeated measures design, as the one utilized in the current analyses, represents what is known as a doubly

multivariate design because it contains a set of dependent variables that are measured more than once and contains the component of time as a within subjects factor. Studies that are doubly multivariate by nature require a large number of participants for each group included in the analyses. Thus, the current study seems to include fewer participants than would be required for the number of variables and repetitions explored in the current study (Tabachnick & Fidell, 1996).

In order to address the issue of a doubly multivariate design and the limited number of participants in the parent(s) with cancer and heart disease and parent with heart disease groups several modifications were made so the current analyses could be conducted. One such modification was to aggregate data from the three illness groups into a single group for each of these repeated measures MANOVAs. In addition, the number of subscales from the BCOPE, F-COPES, and FES to be included in the current repeated measures analyses had to be curtailed. Thus, the current analyses were not inclusive of all of the subscales of the Brief COPE, F-COPES, and FES.

Differences in Individual Coping Strategies (BCOPE)

Two repeated measures MANOVAs were conducted to explore the differences in individual coping strategies. The first MANOVA included the Problem-focused, Emotional-focused, and Ineffective coping scores and total score of the Brief COPE, as well as the total score of the F-COPES. Results of this repeated measures MANOVA revealed a significant interaction effect between the coping measures and repeated administrations ($F_{4,115} = 18.054, p < 0.001$). In addition, significant main effects were also found for the measures included in the analyses (subscales of the BCOPE and F-

COPES) ($F_{4,115} = 46.384$, $p < 0.001$) and the repetition of instruments or time factor ($F_{1,118} = 1978.475$, $p < 0.001$). An examination of the means and standard deviations in Tables 1 and 2 suggests that the children of parents with heart disease, cancer, or both have a tendency to report using the coping strategies assessed by the F-COPES and BCOPE more frequently in response in to general life events than their parents' illness. More specifically, when confronted with general stressors, participants reported utilizing personal, family, problem-focus, emotion-focused, and ineffective coping efforts more frequently than they did in coping specifically with their parents' illness.

A second repeated measures MANOVA was conducted using the subscales of the Brief COPE that demonstrated significant main effects in Hypothesis 1 (Denial, Self-Blame, Behavioral Disengagement, Acceptance, Active Coping, and Self-Distraction). A significant interaction effect between the repeated design and the measures was noted ($F_{5,114} = 12.205$, $p < 0.001$). In addition, main effects were found for both time ($F_{1,118} = 41.952$, $p < 0.001$) and the subscales of the Brief COPE ($F_{5,114} = 153.854$, $p < 0.001$). Although post-hoc analyses were not conducted, an examination of the means revealed several interesting differences between the groups. For example, when asked to describe their coping efforts related to their parents' illness, participants tended to report using less self-blame, behavioral disengagement, active coping, and self-distraction than they indicated using with more general stressors.

Differences in Family Coping Strategies (F-COPES)

Two repeated measures MANOVAs were conducted to assess differences in perceptions of family coping strategies between the contexts of dealing with general life

stressors and a parent's illness. The first MANOVA, as discussed in the previous section, included the total score of the F-COPES and scores from the Brief COPE. Results from this repeated measures MANOVA yielded an interaction effect between the coping measures and repeated administrations ($F_{4,115} = 18.054$, $p < 0.001$). Significant main effects were also found for the measures (subscales of the BCOPE and F-COPES) ($F_{4,115} = 46.384$, $p < 0.001$) and the factor of time ($F_{1,118} = 1978.475$, $p < 0.001$).

The second repeated measures MANOVA was conducted utilizing the F-COPES subscales of Acquiring Social Support and Mobilizing the Family to Acquire and Seek Help. However, this analysis did not produced any significant interaction effects ($F_{1,119} = 2.693$, $p = 0.103$) and no main effect for the time factor ($F_{1,119} = 0.096$, $p = 0.757$). However, results of the analyses demonstrated a main effect for the measures (F-COPES subscales of Acquiring Social Support and Mobilizing the Family to Acquire and Seek Help) ($F_{1,119} = 1665.531$, $p < 0.001$).

Differences in Perceptions of the Family Environment (FES)

The fourth repeated measures MANOVA was conducted to examine the different levels of the family environment aspects of Cohesion, Achievement, Expressiveness, and Conflict, across global and illness specific perceptions. The results of this MANOVA did not produce a significant interaction effect ($F_{3,87} = 0.639$, $p = 0.592$) or main effect for time ($F_{1,89} = 0.222$, $p = 0.638$), but did result in a significant main effect for the measures ($F_{3,87} = 39.098$, $p < 0.001$).

Summary of Results for Hypothesis IV

Results of the current analyses did not provide support for the hypotheses relating to a greater usage of total individual (BCOPE), family (F-COPES), and emotion-focused coping strategies by participants when dealing with their parents' illness as compared to more general life stressors. In addition, the current results did not support the hypotheses comparing perceptions of the family environment (FES) and family coping (F-COPES subscales) across illness specific and more general contexts.

HYPOTHESIS V

Current Stage of Illness, the Family Life Cycle, and Counseling

Children of parents with cancer, heart disease, and both cancer and heart disease were hypothesized to exhibit different coping behaviors and perceptions of their family environment based on the stage of the family life cycle at diagnosis, the current stage of their parents' illness, and whether or not they sought counseling during their parents' illness. (It should be noted that the FES, Brief COPE, and F-COPES scores utilized in these analyses were those where participants were asked to think particularly about their parents' illness.)

The hypothesis postulating differences in coping, current functioning, and the family environment in relation to the stage of the family life cycle at diagnosis could not be tested because analyses were not conducted due to small numbers of participants in several of the different stages of the family life cycle. For example, by nature of the selection criteria, most participants whose parents were diagnosed with cancer during the stages of the family life cycle best characterized by families with infants or young children starting school were not included in the study. These two categories were

collapsed; however, aggregating the data only yielded one participant. In addition, the researcher decided not to collapse the categories further because additional aggregation would violate the theoretical underpinnings of the stages of the family life cycle. The remaining hypotheses regarding the impact of stage of illness and seeking counseling were tested using a series of MANOVAs.

Current Stage of the Illness

The current stage of parental illness was initially described using seven categories: recently diagnosed but not yet receiving treatment, currently receiving treatment, in between treatments/remission, monitor diet and exercise, chose not to receive treatment, and deceased. However, the seven categories were collapsed into four due to a limited number of subjects in certain conditions. The four stage of illness categories used for the current analyses were: recently diagnosed or currently receiving treatment (n=13), in between treatments /in remission/monitor diet and exercise (n=74), chose not to receive treatment (n=17), and deceased (n=16). Four MANOVAs and one ANOVA were conducted to examine the effects of stage of illness on variables of the family environment, coping, and current functioning. To guard against inflated Type I error incurred by using multiple tests, the Bonferroni adjustment was calculated and alpha was set at 0.010 for the following analyses.

Analysis of Total Coping Scores for the Brief COPE, F-COPES, and PR and Stage of Parental Illness

The first MANOVA incorporated the BCOPE scales of Problem-focused, Emotion-focused, and Ineffective Coping, the total scores for the Brief COPE, the total

scores of the F-COPES, the total score of the PRI, and the total score of the PRI without including the Humor and Organization subscales as the dependent variables. The results of this omnibus MANOVA did not produce an overall effect for differences between the current stage of illness groups on the scales of the BCOPE, F-COPES, and PRI ($F_{21,315} = 1.5$, $p=0.075$). Main effects and post-hoc analyses for the coping total scores included in this omnibus MANOVA are provided in the following section.

Individual Coping Differences Based on Current Stage of Parental Illness (BCOPE)

Additional analyses were conducted to determine if there were any significant main effects for the scales of the BCOPE and the significant results were as follows: total score of the Brief COPE ($F_{3,109} = 6.631$, $p<0.001$), Problem-focused coping ($F_{3,109} = 5.257$, $p=0.002$), and Emotion-focused coping ($F_{3,109} = 8.418$, $p<0.001$). No significant differences were found for the level of Ineffective Coping ($F_{3,109} = 1.368$, $p=0.256$).

Post-hoc analyses were conducted for the significant main effects and demonstrated that participants whose parents had died ($\underline{M}=61.133$, $\underline{S}=12.188$) reported higher levels of total coping on the Brief COPE than those participants whose parents were currently in between treatments/in remission/monitoring diet and exercise ($\underline{M}=50.141$, $\underline{S}= 9.725$), and those whose parents had chosen not to receive treatment ($\underline{M}= 47.000$, $\underline{S}=10.078$). Post-hoc comparisons also revealed the group whose parent was deceased ($\underline{M}= 15.267$, $\underline{S}=4.743$) evidenced greater levels of problem-focused coping effort than did the group whose parents were in between treatments/in remission/monitoring diet and exercise ($\underline{M}= 11.352$, $\underline{S}=3.711$) and the group whose parent had chosen not to receive treatment ($\underline{M}= 10.533$, $\underline{S}=3.701$). The group with a

deceased parent (\underline{M} = 10.000, \underline{S} =2.619) also demonstrated greater levels of emotion-focused coping than the in between treatments/in remission/monitoring diet and exercise group (\underline{M} =7.141, \underline{S} =2.565) and the chose not to receive treatment group (\underline{M} = 6.200, \underline{S} =2.513). Those participants whose parents were recently diagnosed or currently receiving treatment (\underline{M} = 9.333, \underline{S} =2.605) also reported higher levels of emotion focused coping than the no treatment group (\underline{M} = 6.200, \underline{S} =2.513).

Differences in Family Coping Strategies With Respect to Current Stage of Parent's Illness (F-COPES)

A follow-up analysis was conducted to explore whether the total score of the F-COPES demonstrated a significant main effect across the stage of illness groups; however, the results were insignificant ($F_{3,109} = 0.731$, $p=0.536$).

Differences in Preventive Coping Resources by Current Stage of Parental Illness

Additional analyses examining the differences in preventive resources between the stage of illness groups (deceased parent, recently diagnosed/currently in treatment, in between treatment/in remission/monitoring diet and exercise, and chose not to receive treatment) failed to find significant differences for the PRI total score ($F_{3,109} = 0.159$, $p=0.924$) and PRI total score without Humor and Organization ($F_{3,109} = 0.357$, $p=0.784$).

Analysis of Subscale Scores of the Brief COPE, F-COPES, and PRI Relating to Stage of Parental Illness

A second omnibus MANOVA was conducted using all the subscales of the illness versions of the Brief COPE and F-COPES and the subscales of the PRI. The

Active Coping, Planning, Positive Reframing, Acceptance, Humor, Religion, Using Emotional Support, Using Instrumental Support, Self-Distraction, Self-Blame, Denial, Venting, Substance Use, and Behavioral Disengagement subscales of the Brief COPE; the Acquiring Social Support, Reframing, Seeking Spiritual Support, Mobilizing the Family to Acquire and Accept Help, and Passive Appraisal subscales of the F-COPES; and the Maintaining Perspective, Perceived Control, Self-Acceptance, Humor, and Organization subscales of the PRI were included in the analysis as the dependent variables and the current stage of illness was used as the independent variable. Results of the overall MANOVA were not significant ($F_{75,258} = 1.399$, $p=0.029$) at the alpha level chosen for these analyses. A discussion of the results of the main effects and post-hoc analyses for the individual subscales is detailed below.

Individual Coping Differences Based on Current Stage of Parental Illness (BCOPE)

Additional analyses revealed significant main effects for the following subscales of the BCOPE: Using Emotional Support ($F_{3,108} = 8.135$, $p<0.001$), Venting ($F_{3,108} = 3.978$, $p=0.010$), and Using Instrumental Support ($F_{3,108} = 7.458$, $p<0.001$). The remaining subscales of the BCOPE did not yield significant main effects: Self-Distraction ($F_{3,108} = 1.848$, $p=0.143$), Active Coping ($F_{3,108} = 3.415$, $p=0.020$), Denial ($F_{3,108} = 0.986$, $p=0.403$), Substance Use ($F_{3,108} = 2.672$, $p=0.051$), Behavioral Disengagement ($F_{3,108} = 0.692$, $p=0.559$), Positive Reframing ($F_{3,108} = 2.916$, $p=0.038$), Planning ($F_{3,108} = 1.543$, $p=0.208$), Humor ($F_{3,108} = 0.568$, $p=0.637$), Acceptance ($F_{3,108} = 2.112$, $p=0.103$), Religion ($F_{3,108} = 1.406$, $p=0.245$), and Self-Blame ($F_{3,108} = 1.626$, $p=0.188$).

Additional post-hoc analyses provided further information about the differences between the groups on the BCOPE subscales. The group who had a deceased parent (\underline{M} = 6.000, \underline{S} =1.558) reported higher levels of Using Emotional Support than their counterparts in the in between treatment/remission/diet and exercise (\underline{M} = 4.028, \underline{S} =1.724) and no treatment groups (\underline{M} = 3.289, \underline{S} =1.684). In addition, children of parents who had chosen not to receive treatment (\underline{M} = 2.643, \underline{S} =0.842) indicated lower levels of Using Instrumental Support than did the deceased parent (\underline{M} = 4.400, \underline{S} =1.920). Lower usage of instrumental support was also discovered in the in between treatments/remission/monitoring diet and exercise group (\underline{M} = 2.944, \underline{S} =1.182) when compared to the deceased (\underline{M} = 4.400, \underline{S} =1.920). No other significant differences were found between the stage of illness groups on the coping subscales.

Differences in Family Coping Strategies With Respect to Current Stage of Parent's Illness (F-COPES)

Follow-up analyses were conducted to determine if there were any main effects among the F-COPES subscales, but none of the results were significant {Acquiring Social Support ($F_{3,108} = 1.759$, $p=0.159$), Reframing($F_{3,108} = 0.993$, $p=0.399$) , Seeking Spiritual Support ($F_{3,108} = 0.158$, $p=0.924$), Mobilizing the Family to Acquire and Accept Help($F_{3,108} = 2.542$, $p=0.060$) , and Passive Appraisal($F_{3,108} = 0.581$, $p=0.629$)}.

Differences in Preventive Coping Resources by Current Stage of Parental Illness

No significant main effects were noted for any of the PRI subscales: Maintaining Perspective ($F_{3,108} = 0.783$, $p=0.506$), Perceived Control ($F_{3,108} = 0.773$,

$p=0.511$), Self-Acceptance ($F_{3,108} = 0.505$, $p=0.680$), Humor ($F_{3,108} = 0.455$, $p=0.714$), and Organization ($F_{3,108} = 0.112$, $p=0.953$).

Differences in the Family Environment and Family Sense of Coherence Relative to Current Stage of Parental Illness

To assess differences in family functioning, analyses consisted of two MANOVAs: one using the Cohesion, Expressiveness, Conflict, Independence, Achievement Orientation, Intellectual-Cultural Orientation, Active-Recreational Orientation, Moral-Religious Emphasis, Organization, and Control subscales of the illness version of the FES as dependent variables and another consisting of the Comprehensibility, Manageability, and Meaningfulness subscales of the FSCOS as dependent variables.

The first omnibus MANOVA consisting of the FES subscales as dependent variables and current stage of parental illness as the independent variable failed to produce an overall effect ($F_{30,249} = 1.163$, $p=0.263$). Additional analyses also failed to find significant main effects for the individual subscales across the four stage of illness groups (deceased parent, recently diagnosed/currently in treatment, in between treatment/in remission/monitoring diet and exercise, and chose not to receive treatment). The results were as follows: Cohesion($F_{3,90} = 1.073$, $p=0.365$), Expressiveness($F_{3,90} = 0.438$, $p=0.726$), Conflict ($F_{3,90} = 3.085$, $p=0.031$), Independence($F_{3,90} = 1.976$, $p=0.123$), Achievement Orientation($F_{3,90} = 2.359$, $p=0.077$), Intellectual-Cultural Orientation($F_{3,90} = 0.946$, $p=0.422$), Active-Recreational

Orientation($F_{3,90} = 0.353$, $p=0.787$), Moral-Religious Emphasis($F_{3,90} = 0.623$, $p=0.602$), Organization($F_{3,90} = 0.393$, $p=0.758$), and Control($F_{3,90} = 2.077$, $p=0.109$).

A second MANOVA was conducted using the three subscales of the FSCOS (Comprehensibility, Manageability, and Meaningfulness) as the dependent variables and the current stage of parental illness as the independent variable. The omnibus MANOVA did not indicate significant differences on the family sense of coherence subscales across the stage of illness groups ($F_{9,318} = 0.769$, $p=0.645$). Follow-up analyses examining the main effects of the individual subscales also failed to yield significant differences: Comprehensibility ($F_{3,106} = 0.744$, $p=0.528$), Manageability($F_{3,106} = 0.747$, $p=0.526$), and Meaningfulness($F_{3,106} = 1.919$, $p=0.131$).

Current Functioning and Current Stage of Parental Illness

An ANOVA was computed using the total score of the OQ-45 as the dependent variable and the current stage of parental illness as the independent variable. The ANOVA ($F_{3,108} = 0.151$, $p=0.929$) failed to indicate significant differences in current functioning amongst the four stage of illness groups.

Summary of Results Examining the Impact of Current Stage of Parental Illness on Variables of Coping, Family Environment, and Current Functioning

The hypothesis that children of patients would employ different coping strategies based on the stage of their parents' illness (deceased parent, recently diagnosed/currently in treatment, in between treatment/in remission/monitoring diet and exercise, and chose not to receive treatment) was partially supported. Differences between the stage of illness groups were found on indices of total individual coping

(BCOPE), problem and emotion-focused coping, and two subscales of the BCOPE (Using Emotional Support and Using Instrumental Support). However, no significant differences were found between the stage of illness groups with respect to family coping efforts, family sense of coherence, current functioning, preventive coping, and the family environment.

Impact of Seeking Counseling on Coping, the Family Environment, and Current Functioning

Four MANOVA analyses and one ANOVA analysis were conducted to test whether having a family member seek counseling during a parental illness was associated with coping, aspects of the family environment, and current functioning. The decision to seek counseling during a parental illness was addressed using questions in the demographic section of the survey. After responding to specific questions about their parent's cancer and/or heart disease, subjects were asked to indicate (yes or no) whether their family or any member of their immediate family decided to "seek counseling after your mother or father was diagnosed with cancer/heart disease to help them deal with this event?" Thirteen participants reported seeking counseling themselves, as a family, or having a family member seek counseling to help them deal with the parental illness, while the remaining 108 participants did not indicate seeking counseling services. In order to guard against inflated Type I error, the Bonferroni adjustment was employed and alpha was set at 0.010 for the following analyses.

Analysis of the Relationship Between Total Coping Scores and Seeking Counseling

An initial omnibus MANOVA was computed using the total scores of the PRI, BCOPE, and F-COPES, and the Problem-focused, Emotion-focused, and Ineffective coping scores of the BCOPE as independent variables and whether someone in a participant's family sought counseling to assist them in dealing with their parent's illness was used as the independent variable. Results of this omnibus MANOVA failed to produce significant results ($F_{7,106} = 1.465$, $p=0.187$). Information about the main effects for the coping total scores is provided in the following section.

Seeking Counseling and Individual Coping Strategies

Additional analyses were then conducted to examine whether the total BCOPE, Problem and Emotion-focused, and Ineffective coping indices were significantly different across participants whose family members sought counseling and those who did not. These analyses did not yield significant differences and are listed as follows: total BCOPE score ($F_{1,112} = 2.443$, $p=0.121$), Problem-focused coping ($F_{1,112} = 0.954$, $p=0.331$), Emotion-focused coping ($F_{1,112} = 4.348$, $p=0.039$), and Ineffective coping ($F_{1,112} = 1.521$, $p=0.220$).

Family Coping Strategies and the Decision of Family Members to Seek Counseling

Follow-up analyses yielded a significant main effect for the total score of the F-COPES ($F_{1,112} = 7.156$, $p=0.009$). While post-hoc analyses could not be conducted, an examination of the means suggests that the deceased parent group ($\underline{M}= 97.667$, $\underline{S}=9.317$) displayed higher levels of family coping efforts than the recently diagnosed/currently receiving treatment group ($\underline{M}= 92.083$, $\underline{S}=15.780$), in between

treatment/in remission/ monitoring diet and exercise group (\underline{M} = 90.901, \underline{S} =16.668), and chose not to receive treatment group (\underline{M} = 91.333, \underline{S} =14.864).

Seeking Counseling and Perceptions of Preventive Resources

No main effects were observed for the PRI total score ($F_{1,112} = 0.102$, $p=0.750$) and the PRI without Humor and Organization total score ($F_{1,112} = 0.090$, $p=0.765$).

Analysis of Coping Subscale Scores and Seeking Counseling

A second MANOVA included the subscales of the illness version of the Brief COPE (Active Coping, Planning, Positive Reframing, Acceptance, Humor, Religion, Using Emotional Support, Using Instrumental Support, Self-Distraction, Self-Blame, Denial, Venting, Substance Use, and Behavioral Disengagement), the F-COPES subscales (Acquiring Social Support, Reframing, Seeking Spiritual Support, Mobilizing the Family to Acquire and Accept Help, and Passive Appraisal), and the PRI subscales (Maintaining Perspective, Perceived Control, Self-Acceptance, Humor, and Organization) as dependent variables and whether family members sought counseling as the independent variable. The results of the omnibus MANOVA approached significance ($F_{24,88} = 1.878$, $p=0.018$). Details regarding the main effects for the various subscales are provided below.

Seeking Counseling and Individual Coping Strategies

In terms of main effects for the subscales of the Brief COPE, the Using Instrumental Support subscale approached significance ($F_{1,111} = 5.276$, $p=0.023$). No main effects were observed for the remaining subscales of the BCOPE based on whether family members sought counseling or not: Active Coping ($F_{1,111} = 0.017$,

$p=0.897$), Planning($F_{1,111} = 0.068$, $p=0.795$), Positive Reframing($F_{1,111} = 1.728$, $p=0.191$), Acceptance($F_{1,111} = 0.259$, $p=0.612$), Humor($F_{1,111} = 0.247$, $p=0.620$), Religion($F_{1,111} = 0.978$, $p=0.325$), Using Emotional Support($F_{1,111} = 3.968$, $p=0.049$), Self-Distraction($F_{1,111} = 0.479$, $p=0.490$), Self-Blame($F_{1,111} = 3.848$, $p=0.052$), Denial($F_{1,111} = 0.255$, $p=0.614$), Venting($F_{1,111} = 2.245$, $p=0.137$), Substance Use($F_{1,111} = 0.774$, $p=0.381$), and Behavioral Disengagement($F_{1,111} = 0.235$, $p=0.629$).

Family Coping Strategies and the Decision of Family Members to Seek Counseling

Follow-up analyses resulted in significant main effects for the Acquiring Social Support($F_{1,111} = 10.615$, $p=0.001$) and Mobilizing Family to Acquire and Accept Help ($F_{1,111} = 23.189$, $p<0.001$) subscales of the F-COPES. Based on the means for the two groups, it appears participants whose families/family member(s) received counseling services during their parent's illness ($\underline{M}= 37.727$, $\underline{S}=3.495$) reported a greater usage of social support in their families than those participants whose families/family member(s) did not attend counseling during their parent's illness ($\underline{M}=30.892$, $\underline{S}=7.868$). Participants whose families sought counseling ($\underline{M}=15.091$, $\underline{S}=2.386$) also reported seeking out more community and professional support than those whose families/family members did not seek counseling ($\underline{M}=10.588$, $\underline{S}=3.000$). No significant differences were found between the counseling groups on the other subscales of the F-COPES: Reframing ($F_{1,111} = 0.012$, $p=0.911$), Seeking Spiritual Support ($F_{1,111} = 0.782$, $p=0.379$), and Passive Appraisal ($F_{1,111} = 0.066$, $p=0.798$).

Seeking Counseling and Perceptions of Preventive Resources

No main effects were found for the PRI subscales {Maintaining Perspective ($F_{1,111} = 0.361$, $p=0.549$), Perceived Control ($F_{1,111} = 0.003$, $p=0.953$), Self-Acceptance ($F_{1,111} = 0.422$, $p=0.517$), Humor ($F_{1,111} = 0.563$, $p=0.455$), and Organization ($F_{1,111} = 0.382$, $p=0.538$)}.

Seeking Counseling and the Family Environment

Two MANOVAs pertaining to the family environment were conducted, one using the Cohesion, Expressiveness, Conflict, Independence, Achievement Orientation, Intellectual-Cultural Orientation, Active-Recreational Orientation, Moral-Religious Emphasis, Organization, and Control subscales of the FES and another using the Comprehensibility, Manageability, and Meaningfulness subscales of the FSCOS. The results of the omnibus MANOVA using the FES subscales as dependent variables was significant ($F_{10,84} = 02.577$, $p=0.009$). In addition, significant main effects were observed for the following subscales of the illness version of the FES: Achievement Orientation($F_{1,93} = 6.913$, $p=0.010$), Intellectual-Cultural Orientation($F_{1,93} = 7.406$, $p=0.008$), and Moral-Religious Emphasis($F_{1,93} = 7.094$, $p=0.009$). However, no significant differences were noted for the Cohesion ($F_{1,93} = 1.618$, $p=0.207$), Expressiveness($F_{1,93} = 2.417$, $p=0.123$), Conflict($F_{1,93} = 2.761$, $p=0.100$), Independence($F_{1,93} = 1.475$, $p=0.228$), Control($F_{1,93} = 4.823$, $p=0.031$), Organization ($F_{1,93} = 3.964$, $p=0.049$), and Active-Recreational Orientation ($F_{1,93} = 0.311$, $p=0.578$). From a review of the means in Table 2, it seems that those participants who sought counseling during their parent's illness endorsed lower levels of Achievement-

Orientation and Moral-Religious Emphasis and higher levels of Intellectual-Cultural Orientation in their family environments.

A second MANOVA was conducted using the Comprehensibility, Manageability, and Meaningfulness subscales of the FSCOS as the dependent variables and whether or not participants' family/family members sought counseling to help them cope with their parents' illness as the independent variable. The omnibus MANOVA did not indicate significant differences on the family sense of coherence subscales based on whether or not counseling was sought ($F_{3,108} = 0.418$, $p=0.740$). Follow-up analyses examining the main effects of the individual subscales also failed to yield significant differences: Comprehensibility ($F_{1,110} = 0.155$, $p=0.695$), Manageability($F_{1,110} = 0.735$, $p=0.393$), and Meaningfulness($F_{1,110} = 0.995$, $p=0.321$).

Current Functioning and Seeking Counseling

Since participants may not have attended the counseling services utilized by their family/family members, it was not expected that there would be a relationship between their own levels of distress and the decision of someone in their family to seek mental health treatment. However, the following analysis was conducted to determine if a relationship existed between having a family member/family seek counseling and current levels of functioning. An ANOVA was computed using the total score of the OQ-45 as dependent variable and whether or not counseling was sought as the independent variable. The ANOVA ($F_{1,112} = 0.006$, $p=0.940$) was not significant.

Summary of Results Examining the Impact of Having a Family/Family Member that Sought Counseling During Parental Illness on Coping, the Family Environment, and Current Functioning

The results indicate some differences in family coping efforts and perceptions of the family environment based whether or not participants' families/family members sought counseling to assist them in dealing with the parental illness. Differences were found between those participants whose families sought counseling during their parents' illness and those who did not on indices of the family's ability to seek social support and accept help, and the Achievement Orientation, Intellectual-Cultural Orientation, and Moral-Religious Emphasis subscales of the FES. No other differences were found relating to seeking counseling on measures of current functioning, preventive coping, or other subscales of the BCOPE, F-COPES, or the FES.

Stage of Family Life Cycle at Diagnosis

A series of MANOVAs were attempted to explore differences in coping, the family environment, and current functioning based on the stage of the family life cycle participants reported their families to be in when their parents were diagnosed with cancer or heart disease. However, due to the small number of participants in the families with infants and young children group (n=1) and concerns that further collapsing the data would violate the framework of family life cycle theory, the analyses could not be completed.

Summary of Results for Hypothesis V

The hypothesis that children of cancer and/or heart disease patients would cope differently based on the stage of their parents' illness was partially supported. Differences between the stage of illness groups were found on indices of total individual coping (BCOPE), problem and emotion-focused coping, and a couple of the subscales of the BCOPE (Using Emotional Support and Using Instrumental Support). However, no differences were found between the stage of illness groups with respect to family coping efforts, family sense of coherence, current functioning, preventive coping, and variables of the family environment.

In addition, the hypothesis predicting differences in coping efforts and perceptions of the family environment based on seeking counseling was also partially supported. Differences were found between those participants whose families/family members sought counseling during their parents' illness and those who did not in terms the family's ability to seek social support, and several subscales of the FES (Achievement Orientation, Intellectual-Cultural Orientation, and Moral-Religious Emphasis). No other differences were found relating to seeking counseling on measures of current functioning, preventive coping, or other subscales of the BCOPE, FCOPES, or the FES.

HYPOTHESES VI AND VII

Qualitative Data Regarding Roles and Interpersonal Relationship Changes During and After a Parent's Illness

The qualitative essay component was included in the current study to provide a forum where participants could describe how they and their families responded to their parents' illness in an open-ended format and allow for additional information not available through the quantitative data to be collected. Children of cancer and heart disease patients were hypothesized to take on additional roles and responsibilities during their parent's illness. In addition, the children of cancer and heart disease patients were expected to describe the experience of having a parent with a chronic illness as something that they believe has changed the dynamics of their family in their relationships with family members and other member's relationships with each other. More specifically, it was hypothesized that participants would report having a parent with cancer, heart disease, or both illnesses as an event that brought their family closer together.

Data regarding these hypotheses was collected through the use of three short essay questions included in the study: "1. Please write a short paragraph below describing the things you did, if any, to help your family and your ill parent during their illness, 2. Please describe below how you believe you parent's illness changed your relationships with your ill parent and other members of the family, and 3. Please discuss the ways you believe other family members' relationships with each other changed as a result of this experience." (It should be noted that of the 130 participants included in the three illness groups, only 50 participants completed the essays).

In order to test the above hypotheses, three independent raters were asked to review the results of the essays and document themes they noticed across participants

for each of the three essays. The raters included one psychology graduate student and two lay people. The raters were trained by the researcher and given examples of sample responses and possible accompanying themes. However, care was taken not to provide raters with examples too close to the current content in order to not bias their results. Raters were instructed to examine all of the responses to one essay question and write down possible themes before moving on to the response set for the next essay. They were also instructed to keep count of the number of responses containing the various themes embodied in each essay. After each rater independently read the essays and wrote down possible themes across each of the three essay questions, the raters convened as a group and discussed the results of their findings. The two lay persons shared their responses first, followed by the graduate student. A discussion of the themes followed and all three raters noted many of the same themes and their consensus led to a set of core response themes for each question. Each of the raters also reported the frequency of the themes evidenced in each essay and this data can be found in Table 5.

Essay 1: Roles and Responsibilities (Hypothesis VI)

For the first essay question, raters noticed the children of cancer and heart disease patients took on additional roles in the family including caring for siblings; performing additional household tasks such as cooking and cleaning; gathering information about their parent's illness; assisting their ill parent with physical needs; providing emotional, spiritual, and financial support to their ill parent and family; and monitoring their parent's stress levels and eating/exercise habits. For example, one

participant stated, “I visited my mother in the hospital very frequently. I made sure everything was taken care of in my home, such as preparing dinner, cleaning the house, and other activities my mother usually took care of.” Another participant wrote, “I would do everything that I could to help my mom around the house. I also had a good job so I helped with some expenses that my mom could not pay while my dad was in treatment.”

Participants also reported spending additional time with their families (face-to-face and via telephone), keeping a positive attitude for other family members, and sacrificing their regular activities to take on these additional roles and responsibilities. For instance, one person expressed, “We spent a lot of time together. We had many family dinners and all came home for the holidays,” while another respondent stated, “I quit school for a year and worked to support my mother.”

Essay 2: Participants’ Relationships with Family Members (Hypothesis VII)

When asked how their relationships with their ill parent and other family members changed as a result of the illness, raters noticed the most frequently cited effect was that the illness seemed to bring these children closer to their ill parent and other family members. A number of respondents also reported the illness seemed to increase communication/emotional expression in the family system, appreciation for their parent and each other, and the realization that each day is precious and not to be taken for granted. One participant stated, “I believe it made our relationship closer, we were able to talk about things more openly.” In addition, another respondent wrote, “I

am more close with my mother, but when my father became ill we grew closer fast. For the first time in my life I couldn't take my parents for granted."

Raters also observed that some participants stated becoming more tolerant of their parent's faults and concerned about their parent's possible death. Several participants denied the illness changed their relationships in anyway; however, it should be noted these usually involved skin cancer or other health crises that took precedence over the cancer and heart disease diagnoses. For example, one person wrote, "Actually not a lot, my parents were in a serious car accident about a week after my parent's diagnosis and one of them was in the hospital for several months, so the cancer was put on the back burner and the accident brought the family closer." Another participant stated there was no "real change" in their relationships, but they have learned it is "very important now to wear sunscreen."

Essay 3: Perceptions of the Impact on Other Family Members' Relationships (Hypothesis VII)

In terms of participants' perceptions about how other family members' relationships changed during the illness, several prevalent themes emerged. For example, the illness was reported to bring family members closer together, increase family members' appreciation for each other, and increase levels of communication between family members as evidenced in the quote, "In general, the members have gotten closer to one another. We communicate more and express our feelings more." However, several respondents also reported seeing increased levels of anger and resentment acted out between family members. While a small number of participants

indicated their parent's illness did not affect their relationships, some subjects who reported changes in their relationships in question two did not perceive the illness as changing other family members' relationships in the subsequent question. For example, one respondent reported that the parental illness brought "a sense of closeness to the family. When you almost lose a parent it makes you realize what you have. It is sad to say to say that the illness has done this because we probably should have been closer before." However, in response to the current question about family members' relationships, that same participant wrote, "Overall, I honestly do not think many things have changed within my family. We all now understand that a great illness can be one test away, but in a lot of ways nothing has changed."

Summary of the Findings for Hypotheses VI and VII

In summary, the hypothesis regarding children taking on additional roles and responsibilities during the illness was supported. In addition, many participants reported changes in both their relationships and other family members' relationships with each other. More specifically, three dominate themes emerged: the illness brought the family closer together, a greater appreciation for other family members developed, and an increased realization of the preciousness of life. Thus, the hypotheses involving changes in family relationships were also supported.

The qualitative data provide further insight into the quantitative findings, by indicating that participants do perceive changes in the structure and relationships of their family systems even though these results were not supported in the quantitative data. More specifically, it appears that the quantitative measures may not be sensitive

enough to measure the changes in the family environment related to having a parent with cancer, heart disease, or both. This issue will be further addressed in Chapter V.

REVIEW OF THE CURRENT FINDINGS

Hypothesis I postulated that the three illness groups would function similarly in the coping strategies they employed and this was only partially supported. Participants who had a parent with cancer endorsed using greater amounts of self-distraction on the BCOPE, social support on the F-COPES, and total family coping as assessed by the F-COPES than did subjects who had a parent with heart disease. In addition, the parent(s) with cancer and heart disease reported higher levels of total family coping than their parent with heart disease counterparts. However, no other differences were found between the three illness groups.

In terms of differences between the illness and no illness groups, the hypothesis that the no illness group would engage in higher levels of preventive coping was supported by the overall PRI score as well as the Perceived Control, Maintaining Perspective, Self-Acceptance, Humor, and Organization subscales. On the F-COPES, the parent with cancer group reported greater utilization of Acquiring Social Support and total family coping efforts than the no illness group. In addition, the parent with cancer group reported lower levels of Ineffective coping efforts and Denial and higher levels of Acceptance than the no illness group. However, hypotheses regarding differences between the illness and no illness groups on variables of behavioral disengagement, self-distraction, and seeking emotional and instrumental support were not indicated. The proposed differences in Emotion-focused, Problem-focused coping

and total coping efforts as assessed by the BCOPE were not supported by the current analyses.

Hypothesis II expected the illness and no illness groups would differ on levels of achievement, conflict, expression, organization, and cohesion and was not supported by the current analyses. However, significant differences were noted between the groups with respect to levels of a family sense of coherence as assessed by the Comprehensibility, Manageability, and Meaningfulness subscales of the FSCOS; thus, offering support to the second part of Hypothesis II that participants from families with an ill parent would report higher levels of familial sense of coherence than their counterparts from families with no chronic illness.

With respect to Hypothesis III, the current data did not support the notion that participants from the parent(s) with cancer and heart disease, parent with cancer, and parent with heart disease groups would endorse lower levels of overall functioning and satisfaction from interpersonal relationships and higher levels of symptom distress and social role difficulties than their counterparts from families without a chronic illness. The current findings also failed to support the hypothesis that the parent(s) with cancer and heart disease groups would report lower levels of current functioning than the parent with cancer and parent with heart disease groups.

Results of the current analyses did not provide support for Hypothesis IV, which purported participants dealing with their parents' illness would employ more of the total individual (BCOPE), family (F-COPES), and Emotion-focused coping strategies as compared to more general life stressors. In addition, the current results did not support

the tenet in Hypothesis IV expressing perceptions of the family environment (FES) and family coping (F-COPES subscales) would differ across illness specific and more general contexts.

Hypothesis V expected the current stage of parental illness would impact the ways children cope and this tenet was partially supported. Differences between the stage of illness groups were found on indices of total individual coping (BCOPE), problem and emotion-focused coping, and a couple of the subscales of the BCOPE (Using Emotional Support and Using Instrumental Support). However, no differences were found between the stage of illness groups with respect to family coping efforts, family sense of coherence, current functioning, preventive coping, and variables of the family environment. The hypothesis predicting differences in coping efforts and perceptions of the family environment based on seeking counseling was also supported. Differences were found between those participants whose families/family members sought counseling during their parents' illness and those who did not in terms of the family's ability to seek social support and accept help and several subscales of the FES (Achievement Orientation, Intellectual-Cultural Orientation, and Moral-Religious Emphasis). No other differences were found relating to seeking counseling on measures of current functioning, preventive coping, or other subscales of the BCOPE, F-COPES, or the FES.

Hypothesis VI, regarding children taking on additional roles and responsibilities during their parent's illness, was supported. In addition, many participants reported changes in both their relationships and other family members' relationships with each

other. More specifically, three dominate themes emerged: the illness brought the family closer together, a greater appreciation for other family members developed, and an increased realization of the preciousness of life. Thus, these themes offered support for Hypothesis VII that participants would view their parent's illness as an event that led to changes in family relationships.

CHAPTER V

DISCUSSION

The current chapter provides a discussion of the results of the study examining how college-age children of cancer and heart disease patients cope with their parents' illness and perceive their family environments and compares them to their peers from families without any form of chronic illness. The chapter will include a summary of the findings for the hypotheses discussed in Chapters III and IV, as well as, draw connections between the current findings and those discussed in the literature review in Chapter II. Limitations of the current study and implications for future research will also be addressed.

SUMMARY OF THE FINDINGS

Differences in Coping Between the Parent with Cancer, Parent with Heart Disease, Parent(s) with Cancer and Heart Disease, and No Illness Groups

Participants from the parent with cancer group were hypothesized to function similarly to the other illness groups (parent with heart disease and parent(s) with cancer and heart disease) and differently from the no illness group on measures of individual and family coping strategies. In terms of individual coping, the three illness groups were expected to employ the strategies of behavioral disengagement, self-distraction, seeking emotional and instrument support, acceptance, and engage in emotion-focused coping efforts at greater frequencies than their peers in the no illness group. The illness groups were also thought to employ fewer problem-focused strategies and have fewer

preventive coping resources than the control group. In addition, the parent with cancer, heart disease, or both illness groups were hypothesized to perceive their families as employing the strategy of social support more frequently than the no illness group. These hypotheses were tested using two MANOVAs consisting of the total and subscale scores of the F-COPES, Brief COPE, and PRI. The findings of these analyses partially supported the above hypotheses. The parent with cancer group endorsed using greater amounts of self-distraction (BCOPE), social support (F-COPES), and total family coping (F-COPES) than the parent with heart disease group. Few studies have incorporated a comparison group into their design and the current study provides preliminary support that subtle differences may exist with respect to individual and family coping across varying types of illnesses.

Several differences were observed between the three illness groups, providing support for the tenet that the type of parental illness may influence coping. For example, higher levels of family coping were seen in the parent with cancer group and parent(s) with cancer and heart disease group than the parent with heart disease group. In addition, the parent with cancer group reported engaging in higher levels of self-distraction than did the parent with heart disease group. The parent with cancer group also reported a greater tendency for their family to seek out social support than did the parents with heart disease.

With respect to differences between the illness and no illness groups, the hypothesis that the no illness group would employ greater amounts of preventive coping efforts was supported for each of the three illness groups on both total preventive

coping efforts and specific efforts in the areas of Perceived Control, Self-Acceptance, and Organization. Significant differences were also found between the no illness and parent with cancer and parent with heart disease groups on the Maintaining Perspective and Humor subscales of the PRI, but did not extend to the parent(s) with cancer and heart disease group. These findings readily fit within the stress and coping literature by providing evidence for the tenet that high-stakes situations, like cancer, evoke more primitive, rigid, and reflexive coping efforts—leaving little time and energy to devote to preventive efforts (Lazarus, Averill, & Opton, 1974).

Differences were also observed between the cancer and no illness groups in terms of individual coping, with the parent with cancer group reporting lower levels of Ineffective Coping (BCOPE), denial, and self-blame and higher levels of acceptance. These findings were somewhat surprising given that much of the previous research in the field has noted that the children of cancer patients tend to employ more ineffective coping efforts, including avoidance and distancing (Compas et al., 1996; Christ et al., 1993; Aymanns et al., 1995). However, results from the current study indicate that the children of cancer patients tend to employ fewer ineffective coping strategies than participants from no illness families. Several potential explanations exist for the differing findings. First and foremost, the previous studies have been within subjects designs and lacked comparison and control groups. Secondly, the families of cancer patients are experiencing high levels of stress and may be faced with maximal demands on their resources over a long period of time (Rowland, 1989). Thus, one possible explanation would be that the families of cancer patients learn how to maximize their

resources by choosing to rely on fewer ineffective strategies and become more sophisticated copers.

With respect to family coping, the parent with cancer group indicated using greater amounts of overall family coping and seeking social support than the no illness group, which supports the numerous studies in the field that postulate cancer is a disease that the entire family must learn to cope with (Veatch, 1999; Faulkner & Davey, 2002). Hypotheses regarding differences in individual coping (BCOPE) between the no illness and illness groups on indices of avoidance, emotional and instrumental support, emotion-focused, and problem-focused coping efforts were not confirmed. Failure to find these differences between the children of cancer patients and no illness controls may rest in methodological issues. As previously discussed, the studies that referenced higher levels of emotion-focused coping, information seeking/instrumental support, and avoidance and less problem-focused coping have failed to include comparison groups in their design (Rowland, 1989; Compas, et al, 1996; Christ et al., 1994; Mullen et al., 1993). In addition, no differences were found between the illness and no illness groups on measures of problem and emotion-focused coping in the pilot study conducted by Beard et al. (2002). Therefore, previous research only indicates that the children of cancer patients employ these strategies more than other strategies, but results from the pilot study (Beard et al, 2002) and the current study suggest these differences may be related to pervasive, general differences in the employment of coping strategies by children and adolescents instead of specific differences related to the illness experience itself. The lack of individual differences in seeking emotional

support coupled with the finding of significant differences between the groups in terms of the family's utilization of social support may be explained by the differences in the measures used to assess the two dimensions of coping. The Brief COPE includes two very broad questions regarding emotional/social support; whereas, the F-COPES has a number of questions that ask respondents about many different ways their family relied on social support as a coping mechanism. An alternative hypothesis for the differences in social support may be that individual family members who have a parent with cancer may not perceive seeking additional emotional support by themselves, but perceive their family system as the mechanism through which social support is attained. In summary, the present findings indicate the need for further research in the area of coping with a parent with cancer, heart disease, or both in comparison to children from families without chronic illness.

Differences in the Family Environment

It was hypothesized that participants from all three illness conditions would perceive their family environments in similar ways, but differently than those from the no illness group. More specifically, subjects from the illness groups were expected to describe their families as having higher levels of cohesion, conflict, organization, expressiveness, and achievement orientation (FES) and a stronger family sense of coherence (as assessed through the Manageability, Comprehensibility, and Meaningfulness subscales of the FSCOS) than no illness controls. In order to test these hypotheses, two MANOVAs were conducted: one using the subscales of the FES and another with the subscales of the FSCOS.

No differences were found between the four health status groups on the conflict, cohesion, expressiveness, organization, or achievement subscales of the FES as predicted by the previous findings in the pilot study (Beard et al., 2002). It should also be noted that these findings are different than those presented in the chronic illness literature related to diabetes, multiple sclerosis, and chronic back pain that found higher levels of conflict and lower levels of cohesion in family members of patients when compared to no illness controls (Dura & Beck, 1988; Peters & Esses, 1985). The lack of similarity of findings across illnesses provides preliminary support for the notion that different illnesses affect the family system in unique ways.

Hypothesized differences between the illness and no illness groups emerged as expected with respect to participants' perceptions of their family's sense of coherence. As predicted, no differences were observed between the three illness groups. However, significant differences were found between each of the three illness groups and the no illness group on the FSCOS subscales of Comprehensibility, Manageability, and Meaningfulness. An examination of the means of the no illness and illness groups provides a clear indication of the differences in family sense of coherence. These findings provide support for the theory that as families undergo a stressor, like the diagnosis of cancer or heart disease in a parent, they better develop the collective ability to see the world as ordered, develop clarity about the current stressors they face, search for resources that will assist them in managing the current stressor, and develop a sense of unity to combat the stressor. A strong family sense of coherence has been defined as the foundation underlying "general resistance resources" and has been linked to family

adaptation (Antonovsky & Sourani, 1988; Mullen et al., 1993). More specifically, the family sense of coherence captures a family's unique abilities to be flexible in the coping skills they employ in the face of differing stressors (Antonovsky & Sourani, 1988). In addition, these results provide valuable insight into the family environments of cancer and heart disease patients. More specifically, given that high levels of a familial sense of coherence have been associated with system flexibility and ease to reorganize in the face of crisis, the implication seems to be that children whose parents have been diagnosed with cancer or heart disease have a tendency to perceive their families as more flexible than those who have not had a chronic illness in their family system.

Differences in Current Functioning

Based on previous research, it was hypothesized that the children of cancer patients, heart disease patients, or both would experience lower levels of current functioning (Compas et al, 1994; Compas et al, 1996; Veach, 1999). However, results of the current study did not support this expectation. One potential rationale for the current findings may be that previous research in the area has not included control and comparison groups and lower levels of functioning that have been previously reported may be due to additional variables. Furthermore, previous studies have surveyed participants in the hospital with their parents, which may have been at the height of their stress and the low point of functioning. Whereas, the current study incorporated participants whose parents were at various stages of the illnesses and differing time intervals since diagnosis.

Comparison of General Perceptions to Illness Specific Perceptions of Coping and the Family Environment

Little remains known about how the children of cancer and heart disease patients perceive their coping abilities and family environment specifically related to their parents' illness versus in general. In the current study, the children of parents with cancer, heart disease, or both were asked to respond to measures of individual and family coping and their perceptions about their family environment twice. The first time participants responded to the questions, they were asked to think specifically about their parents' illness; whereas, the second time they were given the standardized, more general instructions. The analyses consisted of four repeated measures MANOVAs and data for the three illness groups was aggregated to increase statistical power: one compared the total scores for the Brief COPE and F-COPES, a second compared individual subscales of the Brief COPE, a third examined differences between administrations for the Acquiring Social Support and Mobilizing the Family to Acquire and Seek Help subscales of the F-COPES, and a fourth that compared the FES subscales of Cohesion, Achievement Orientation, Expressiveness, and Conflict. It was hypothesized that the children of patients would describe utilizing different coping strategies and perceive their family environments differently when asked specifically about the experience of their parents' illness versus other, general stressors. Furthermore, participants were expected to employ emotion-focused coping, denial, self-distraction, self-blame, acceptance, active coping, and behavioral-disengagement strategies and family wide seeking of social support at greater frequencies when

responding to questions pertaining to their parent's illness versus more global, life events based on the literature previously reviewed in the above sections (Compas et al., 1996; Veach & Nicholas, 1998; Christ et al., 1993; Aymanns et al., 1995; & Beard et al., 2002).

Results of the analyses provided support for the hypotheses that differences would arise between illness specific and more global individual and family coping efforts. For instance, differences were found between administrations for time, the measures, and interaction effects between time and the following group of measures: F-COPES and Brief COPE total scale scores and the Problem-focused coping, Emotion-focused coping, and Ineffective coping subscales Brief COPE. In addition, a review of the means suggests that the children of cancer and heart disease patients tend to report engaging in greater amounts of individual and family coping, problem-focused, emotion-focused, and ineffective coping efforts when asked about general life events as opposed to their parents' illness. In essence, when confronted with general, life events, participants tended to employ more coping strategies contained in the Brief COPE and F-COPES, regardless of type.

The Denial, Self-Blame, Behavioral Disengagement, Acceptance, Active Coping, and Self-Distraction subscales of the Brief Cope were used as the measures of a second MANOVA and significant effects were found for time, measures, and the interaction between time and measures. Thus, further evidence was provided for differences between the groups dependent upon whether participants were asked about their parent's illness or more general life contexts. An examination of the means

suggests participants reported using less self-blame, behavioral disengagement, active coping, and self-distraction with respect to their parent's illness. However, since post-hoc analyses could not be conducted due to issues of power, further research is warranted to determine whether the specific hypotheses regarding each of these strategies are supported.

Despite these findings, the hypotheses that participants would differ in their perceptions of their family coping efforts, as assessed by the subscales of the F-COPES, was not supported. In addition, no significant differences were noted between administrations with respect to dimensions of the family environment.

The current findings are exploratory in nature and need to be replicated with larger sample sizes where post-hoc analyses can be conducted to better understand participants' differing perceptions about their coping and family environments when asked about their parents' illness versus more global functioning. Furthermore, in light of the small number of participants in the parent with heart disease and parent(s) with cancer and heart disease groups, additional investigation is warranted to better understand the differences in how the children of cancer and heart disease patients employ different coping strategies and describe their family environment differently when asked about these variables in a more global context as opposed to specifically relating to their parents' illness. Further investigations may also help determine if differences exist between the health status groups (parent with cancer, parent with heart disease, and parent(s) with cancer and heart disease) in the areas of individual coping

strategies, family coping strategies, and the family environment with regard to these two scenarios (parental illness vs. more global, life events).

Current Stage of Illness, Stage of the Family Life Cycle at Diagnosis, and Decision to Seek Counseling

In previous research, the current stage of illness and stage of the family life cycle at diagnosis have been associated with levels of distress; however, to date little is known about the impact of these variables on how the college-age children of patients cope, perceive their family as coping, and view their family environments (Veatch & Nicholas, 1998; Veatch, 1999; Rait & Ledderberg, 1989). The impact of seeking counseling during the parent's illness on variables of coping, family environment, and current functioning represents another understudied area. To date, the research has focused on the development of several intervention strategies for working with the children of patients and indicates only a small segment of the most distressed children require professional mental health treatment (Hoke, 1997; Johnston & Martin, 1992; Sales et al., 1992). The current hypotheses were exploratory in nature, but predicted that participants would endorse different coping strategies, levels of distress, and traits of the family environment at various stages of the illness, stages of the family life cycle at diagnosis, and whether or not participants' families/family members sought counseling during their parents' treatment.

In order to assess whether the current hypotheses were supported, a series of MANOVAs were conducted for each variable in question: one set of MANOVAs for

stage of illness, another for stage of the family life cycle, and a third group of MANOVAs for the decision to seek counseling.

Stage of the Family Life Cycle at Diagnosis

The analyses examining the impact of the stage of the family life cycle at diagnosis on variables of coping, family environment, and current functioning could not be conducted due to a small number of participants in several of the different stages of the family life cycle.

Current Stage of Parental Illness

In terms of the current stage of parental illness, the hypothesis that children whose parents were at distinctive stages of the illness would cope and perceive their family environments differently was partially supported. Variations were found between the stage of illness groups with respect to total levels of individual coping efforts, problem and emotion-focused coping, and the following subscales of the BCOPE: Using Emotional Support, Using Instrumental Support, and Venting. More specifically, children whose parent had died as a result of their illness reported higher levels of total coping on the BCOPE than children of patients who were currently in between treatment/in remission/monitoring diet and exercise or chose not to receive treatment.

The children of deceased parents also indicated using greater amounts of problem and emotion-focused coping compared to their counterparts in the parents who chose not to receive treatment and in between treatment/in remission/monitoring diet and exercise groups. Participants whose parents were recently diagnosed or currently

receiving treatment also indicated using higher levels of emotion-focused coping than the in between and no treatment groups. With respect to specific coping strategies, lower levels of Using Emotional Support were observed in the no treatment and in between treatment/in remission/monitoring diet and exercise groups when compared to the deceased parent group. The no treatment group also reported lower levels of Using Instrumental Support than the deceased parent and diagnosis/treatment groups. Lower levels of Using Instrumental support were also evidenced in the in between treatment/in remission/monitoring diet and exercise group and the no treatment groups when compared to the deceased group. No differences were found in the levels of family or preventive coping efforts across the stage of illness. In summary, the current data provide partial support to the tenet that different coping mechanisms are utilized at various stages of the illness.

Perceptions of the family environment were also predicted to be impacted by the current stage of illness, but this hypothesis was not supported. No differences in the family environment or the family sense of coherence were observed across the various stages of illness. Therefore, it seems that the relationship between the current stage of illness and how the family structure changes in response to having a parent with cancer or heart disease remains unclear.

A somewhat surprising finding of the current study was that no differences in current functioning were observed across the different stages of illness. Based on the previous research in the field detailing the emotional struggles families face at each stage of the illness, especially those surrounding death, it was expected their current

functioning would be affected (Veatch & Nicholas, 1998; Christ et al., 1994). As this was not observed, the possibility must be considered that the OQ-45 did not assess functioning in the same way that previously used measures have and alternatives should be considered for future research.

Impact of Seeking Counseling

The decision to seek counseling in response to a parent's illness was found to be related to several aspects of coping and the family environment. For example, participants whose families/family members sought counseling during their parents' illness tended to perceive their families as relying on greater amounts of community and social support than those participants whose families did not seek counseling. A higher utilization of social support mirrors literature from the field that suggests that those families where a member seeks counseling might be provided with or seek out additional social support resources (Hoke, 1997).

The current study also provided interesting information regarding differences in the family environments between participants whose families seek counseling and those who do not when their parent has cancer and/or heart disease. The results suggest that those participants whose families sought counseling during their parents' illness perceived their family environments as having lower levels of Achievement Orientation and Moral-Religious Emphasis and higher levels of Intellectual-Cultural Orientation than those participants who did not seek counseling. Thus, those participants who sought counseling were more likely to describe their families as having lower levels of

competition to achieve at work or school; a lower emphasis on ethics and religious issues; and a greater interest in political, social, and cultural endeavors.

In summary, it seems that the current stage of treatment and the decision to seek counseling are additional variables that need to be considered when assessing the impact of having a parent with cancer and/or heart disease on individual coping, family coping, current functioning, and the family environment. (It should be noted that the researcher did not expect that participants' levels of distress would be associated with having a family member seek counseling; therefore, the role counseling plays in moderating the impact of parental illness would be best explored by examining whether participants themselves sought therapy.)

Qualitative Data Regarding Roles and Interpersonal Relationship Changes During and After a Parent's Illness

In order to better understand the impact of having a parent with cancer and/or heart disease on the family system, the college-age children of patients were asked to write brief essays describing the additional roles and responsibilities they took on, if any, during their parent's illness and the ways they believed the illness altered family members' relationships. The results of these essays were then analyzed by three independent raters for common themes and frequencies of the theme were calculated. It was hypothesized that the children of patients would report taking on additional roles and responsibilities during their parents' illness based on previous research in the field (Veach & Nicholas, 1998; Rait & Lederberg, 1989). Results from the essay questions supported this expectation and common themes revolved around caring for siblings,

performing additional household tasks, gathering information about the parent's illness, caring for the ill parent's physical needs, providing emotional and financial support to the family, and monitoring their parent's stress, eating, and exercise habits. Therefore, it seems that many children of patients assume various adult responsibilities in order to aid their families during their parents' illness. These findings lend additional support to previous findings in the field regarding the increased roles and responsibilities family members adopt when a family member has cancer (Tringali, 1974).

The children of cancer and heart disease patients were also hypothesized to describe the experience of having an ill parent as something that changed their relationships with other family members and other members' relationships with one another. The responses of the majority of participants supported this postulate; however, several subjects indicated their parents' illness did not change their family at all. For the preponderance of participants that indicated changes in their family relationships, the most commonly noted differences were an increased level of closeness or cohesion, a greater appreciation for family members and the time together, and increased levels of communication. In addition, several respondents expressed being more tolerant of their parents' weaknesses and concerned about the potential death of their parents as a result of the illness. A few participants also indicated that the illness increased levels of anger and resentment between family members. Although not evident from participants' responses on the FES, the essays provided important data regarding the ways the children of patients perceive their family environment and relationships as altered by their parents' illness.

An examination of the qualitative and quantitative data conjointly provided several insights. First, the most frequently cited theme throughout the essays regarding changes in family members' relationships was that it brought them closer together. However, the FES failed to find significant differences between the illness and no illness groups on the subscale of Cohesion. At first, this seemed counterintuitive; however, a closer examination of the items on the Cohesion subscale of the FES and respondents essays responses provided some additional information. The Cohesion subscale of the FES consists of 10 True/False items that pertain to supporting family members, volunteering for family projects and investing a lot of energy in family activities, staying busy with the family while at home, having a "group spirit," getting along well with other family members, and a sense that every family member gets attention from others. However, in the essays, the theme of cohesion or closeness was more related to feelings of closeness that were manifested through perceptions that a stronger bond or relationship with other family members had developed and included spending additional time with the family/family member and communicating more openly with the family about the illness, their emotions, and their life situations.

In addition, the Expressiveness subscale of the FES pertains to a variety of communications between family members regarding everything from money to venting emotions. However, items regarding stronger interpersonal exchanges regarding emotions and life events seem lacking. Thus, the qualitative data provided insight into the ways that families are changed in terms of closeness and communication that were not evident from the quantitative data. Based on the qualitative data, additional

research needs to develop instruments with more items that include a broader scope of the ways families communicate and conceptualize being close to other family members. Furthermore, these new instruments should incorporate Likert scales so that a broader range of agreement or disagreement with the items can be gleaned.

The qualitative data also garnered additional support for the quantitative results that no differences in current functioning were observed between the illness and no illness groups. More specifically, when participants were asked to discuss the changes in their family relationships, few negative changes were reported. In fact, many of the changes in family relationships resulting from parental illness could be characterized as positive (increased closeness, communication, and appreciation of other family member). Given that many of the changes within the family were reported to be positive, the results of the quantitative findings on current functioning seem less surprising. Thus, if participants reported positive changes to their family relationships in spite of the illness, they may also be more likely use this positive reframe to maintain high levels of current functioning.

An examination of the additional roles and responsibilities the children of cancer and/or heart disease patients took on during their parent's illness provided further understanding for the limited preventive resources reported by the illness groups. Many children of patients took on multiple adult activities to assist their families cope with the illness and continue in their day-to-day functioning. However, by spending additional time caring for the family, participants may have had less time for themselves to process the emotional stressors they were facing. In addition, due to the intense and

chronic nature of stressors like cancer and heart disease, participants may continue forgoing trying to organizing and make sense of their own lives, evaluating their current circumstances and feelings, and planning steps to take to prevent future stress in order to care for their families. Therefore, it seems that the increased roles and responsibilities taken on by the children of patients may limit their development of preventive resources.

CONTRIBUTIONS OF THE FINDINGS

The goal of the present study was to examine the impact of having a parent with cancer on individual and family coping strategies and the family environment. The study design sought to incorporate control and comparison groups in order to better understand how the children of cancer patients cope and perceive their family environments in comparison to participants who have a parent with heart disease, cancer and heart disease, or no illness in their immediate family. The results of the current study are noteworthy because they provide valuable insight into a field where little is known about how the children of cancer patients cope and perceive their family environments. In addition, the current research suggests that many differences exist between the strategies employed by the children of cancer patients and their peers who do not have anyone with a chronic illness in their family. Furthermore, slight differences in coping were observed in the current study between the cancer, heart disease, and cancer and heart disease groups. Thus, the study provides a foundation for the tenet that the health status of the parent and the type of illness they are afflicted with may influence both family and individual coping patterns.

The study also yielded valuable information about the differences between families with an ill parent and those from healthy families in regard to a family sense of coherence. The results indicate that having an ill parent may strengthen a family's belief that they can confront stressors and effectively make sense of and manage them. Clarity about the ways families are changed as a result of having a parent with cancer or heart disease was also derived from the essay responses in the study. It seems that the children of patients take on many additional roles and responsibilities during their parents' illness. Furthermore, having an ill parent was primarily described as an event that brought family members closer together, communicate more effectively, and develop a greater appreciation for each other and life itself.

Including the decision to seek counseling and the current stage of illness as additional variables that might impact coping and perceptions of the family environment proved to be an important aspect of the study. By incorporating these variables, additional data was gathered to provide a better understanding of how the children of patients cope during the various stages of the illness. Furthermore, the results linking the decision to seek counseling with coping styles and characteristics of the family environment provide validation that much more research is needed in the area and additional intervention strategies may need to be developed.

While the findings provide new contributions to the current body of the literature in the field, the primary aim of these findings is to assist treatment professionals in better understanding the processes the children of cancer and heart disease patients go through after their parent is diagnosed. These findings may also aid

in the provision of services to families at the onset of illness by helping to decipher which families may need additional assistance and provide information with which to educate families about the strengths they already possess that will help them deal with having an ill member. More specifically, one surprising finding of the study was that no differences in current functioning were observed between the illness and no illness groups or amongst the three illness conditions. Furthermore, it seems that certain coping strategies, like self-distraction, are not related to lower functioning in the current sample. This is noteworthy because coping theory would suggest strategies, like self-distraction, function to inhibit people from actively confronting the stressor and dealing with it may be useful in the short-run, but more problematic as long-term strategies (Carver, et al., 1994). While the retrospective nature of the data makes it difficult to ascertain the length of time coping strategies like self-distraction were employed, this finding remains useful for mental health providers in that it illustrates that various coping strategies can function differently for various individuals. More specifically, psychologists and counselors should be careful to place judgments on the utility of the coping strategies employed by their clients and first evaluate the impact these strategies are having on their levels of current functioning.

While the coping strategies family members employ to confront the stressors of cancer and heart disease remain important, researchers in the field of preventive coping would argue that families need be taught how to develop adequate shores of preventive coping resources because they have the ability to prevent future stress. In addition, preventive resources have been conceptualized as a foundational element in the

development of a repertoire of coping strategies (McCarthy, Lambert, Beard, & Dematatis, 2002). In the current study, persons who had a parent with cancer and/or heart disease demonstrated lower levels of preventive resources. Thus, it seems they have few resources to help them avoid or minimize future stressors. In light of these findings, mental health professionals are encouraged to try to bolster these resources in their clients when possible. This aim might be achieved through the use of cognitive behavioral techniques that focus on assisting them develop ways to be more flexible in their assessment of and response to life events and evaluate the impact of stressful situations in a more rational way. Patients could also be taught to use positive affirmations about themselves as a mechanism to bolster their perceptions of control in their lives and taught organizational skills.

Another important finding of the study for mental health providers was the increased seeking of social support on a family level by those participants who had an ill parent. When families come into treatment, providers should assess the current levels of social support the family has, the amount of additional support they perceive they need, and the family's previous efforts to meet these needs. After the professional has gathered enough information to make an adequate referral, they should assist the family in developing additional social and community support systems. Mental health providers should also remain cognizant of the additional roles and responsibilities many family members take on when there is an ill parent and assist the family in knowing their limits and asking for additional help when they become overwhelmed.

Psychologists and counselors should also be prudent in following up with families about whether they are in fact receiving the support they sought.

In terms of family systems theory, families were expected to perceive changes in their family environments based upon the tenet that all family members will be affected when there is a change in one member of the family (Peters & Esses, 1985; Faulkner & Davey, 2002). The quantitative findings provide support for increased levels of social support and family sense of coherence in family members, but did not yield any differences between the illness and no illness groups in terms of the family environment. However, the qualitative findings indicated differences in levels of closeness, communication, and conflict. Thus, whether working with an individual family member or the entire family, the use of standardized assessments in evaluating the family environment may not provide the desired information. A thorough clinical interview should be conducted individually with each family member to assess their coping, functioning, and perceptions of the family environment before treatment should begin. The various members of the family may be coping and perceiving the family very differently than other members and by conducting individual interviews at the onset the practitioner has the necessary information to decide whether members should be treated as a family, individual, or in a group with non family members who have similar concerns.

Finally, the data regarding the current stage of parental illness and the decision to seek counseling on coping, coping resources, current functioning, and the family environment serves as a useful reminder to mental health providers that a number of

variables impact coping, functioning, and the family environment. More specifically, treatment providers need to become familiar with the stages of the various illnesses their clients' family members' possess. In addition, professionals should remain cognizant that in the midst of the illness their clients must continue to function in their daily lives and may experience other stressors outside of the illness that need to be addressed.

LIMITATIONS OF THE CURRENT STUDY

Although the current study provides a significant contribution to a very understudied area of research by incorporating heart disease and cancer and heart disease comparison groups and a no illness control group into its design, containing a proportionately larger sample than many previous studies, and gaining participants for all four groups from the same population, several limitations remain. First and foremost, the study relied heavily on self-report measures. The literature states that self-report measures are subjective in nature, "vulnerable to distortions by the participant," and inherently involve potential sources for error regarding differing interpretations of the questions (Heppner, Kivlinghan, & Wampold, 1999). In addition, the study was conducted on the Internet and it is unclear whether students put forth their best efforts to answer the questions or carefully read each item. Similarly, the data collected was predominately retrospective in nature, which allowed for additional sources of variance in responses and made it difficult to ascertain whether the observed differences were related to the diagnosis of cancer or heart disease or some additional, unknown variable(s).

Another potential limitation of this study was that it did not sample the entire family and may have lost additional perspectives about how having a parent with cancer or heart disease may influence adolescent and college-age children. However, it is easier to attain larger sample sizes when only individual data is collected and therefore represents a dilemma that future researchers must face.

Despite the gains the current study made to incorporate a large sample, a third limitation was the small number of participants in the parent with heart disease and parent(s) with cancer and heart disease groups. Too few participants in these groups compromised the ability of the researcher to conduct all relevant analyses. More specifically, the three illness groups had to be condensed into one group in order to conduct the repeated measures analyses; thus, eliminating the ability to conduct post-hoc analyses. In addition, some of the findings of the study could have been due to error given the small sample size and the number of comparisons conducted. Therefore, the results of the current study need to be replicated to provide further support for the current findings.

Despite the small sample size, it should be noted that the current study still found differences between each of the three illness groups and the no illness group. In addition, differences were observed between the three illness groups. Therefore, it appears that there was sufficient power within the study to yield significant differences between the three illness groups and between the illness and no illness groups.

The small number of participants in the various stages of the family life cycle was also a limitation of the study because the impact of the stage of the family life cycle

at diagnosis on coping, current functioning, and the family environment could not be explored. In addition, only a small number of participants indicated their families/family members sought counseling during their parents' illness and further research is needed to clarify which family members sought counseling, the specific reasons they pursued counseling, the type of person who provided such services, and the effectiveness of such services. However, based on the current findings, there was still sufficient power to yield differences between the two counseling groups.

A fourth limitation of the study was its rather homogenous sample in terms of ethnicity. The majority of the participants consisted of Caucasian/European American descent, which compromises the ability for the study to be generalized to persons from different racial and ethnic backgrounds. Similarly, the study was not balanced in terms of sex or age with the majority of participants being female and close to 21 years of age. A final limitation of the study was its failure to find any substantial perceived changes in the family environment (FES) and current functioning (OQ-45) across the four health status groups. With regard to the family environment, further research should target the development of additional questionnaires that assess some of the unique dimensions of change associated with having a parent with cancer or heart disease. In addition, alternative measures of current functioning should be explored.

AREAS FOR FUTURE RESEARCH

Further research is greatly needed in this understudied area in order to develop a more comprehensive understanding of how children of cancer and heart disease patients

are affected (Kahle & Jones, 1999; Leedham & Meyerowitz, 2000). Additional studies are needed to replicate the current findings and elaborate upon them. Future researchers should consider developing a new scale to better assess aspects of the family environment that are believed to be affected by having an ill parent. The new scale should incorporate more items describing how family members might conceptualize being close to each other and communicate with their family members. In addition, future instruments should include a Likert scale instead of having participants use “True/False” responses. Future efforts to measure differences in coping between health status groups may also benefit from using longer versions of individual coping measures in hopes of providing additional information about which coping strategies are utilized more frequently. Studies should continue to incorporate control and comparison groups and ensure large and approximately equal numbers of participants in the different health conditions. Participants should also be balanced with respect to ethnicity, sex, and age in order to maximize the generalizability of results and avoid using these variables as covariates in order to preserve the ability to conduct post-hoc analyses.

Future studies are also needed that include longitudinal designs, sample the children of patients and their families, and follow subjects through the various stages of their parents’ illness in order to better understand the ways they cope and perceive their family environments at each stage of the illness. Furthermore, studies should incorporate interviews, essays, and possibly discussion groups to better understand the processes involved when a parent has cancer or heart disease.

Additional research is needed within the area of the decision to seek counseling regarding a parent's illness and its effectiveness. Only a small portion of articles in the field of oncology even mention the children of patients who need or seek professional mental health services. Further research is needed to clarify which children and family members seek treatment, the reasons they decide to pursue professional help, the type of therapy conducted, the type of person providing the therapy (volunteer, professional counselor, psychologist, clergy, or friend), and its effectiveness so that better interventions can be developed.

SUMMARY

In conclusion, the findings of the present study yielded valuable information in the understudied field of oncology research regarding how the college-age children of cancer patients coped with this experience and perceived their family environments. Insights regarding how the children of patients cope and perceive their families' coping were gained through this study. For instance, the children of cancer patients were discovered to employ greater amounts of self-distraction and perceive their families as using greater amounts of social support and overall coping skills when compared to participants whose parents had heart disease. In addition, participants from the no illness group endorsed significantly higher levels of preventive coping resources than subjects from the three illness conditions (parent with cancer, parent with heart disease, and parent(s) with cancer and heart disease). Participants who had a parent with cancer reported using fewer ineffective coping strategies and less denial, behavioral

disengagement, and self-blame than the no illness group. The parent with cancer group also endorsed perceptions that their families sought out greater amounts of social support than the no illness group. Differences between the illness and no illness groups emerged with respect to a family sense of coherence with all three illness groups reporting higher levels of a family sense of coherence than the no illness group. However, no differences emerged between the groups on the Family Environment Scale, measuring participants' perceptions of their family environment. In addition, no differences in current functioning, with respect to the parent's health status, were observed in the current analyses. Consequently, it appears that the children of cancer patients and their families employ varying levels of individual and family coping skills compared to the children of heart disease patients and no illness controls, which supports prior research in the field.

When comparing the coping patterns and perceptions of the family environment of participants in the illness group when they were asked to think specifically about their parent's illness instead of more global functioning, several differences were found. Significant differences were found between the total scores of the BCOPE and the F-COPES scores and emotion, problem-focused, and ineffective coping during the two administrations. Significant differences also emerged for the Denial, Self-Blame, Behavioral Disengagement, Acceptance, Active Coping, and Self-Distraction subscales of the BCOPE. No differences were noted between administrations for the subscales of the F-COPES or indices of the family environment measured by the FES. Thus, the

current findings indicate that differences exist in how the children of cancer patients cope with their parent's illness and other life events.

The current stage of the parent's illness and whether the participant's family/family members sought counseling during their parent's treatment were found to be associated with individual and family coping strategies and the family environment. Based on the current findings, it appears that illness related factors such as the stage of illness and seeking professional mental health treatment are additional variables in how the children of patients cope and perceive their families' coping. In addition, it appears college-age children's perceptions of their family environment are more dependent upon the decision to seek counseling than the health status of their parents or the current stage of their parent's illness. Therefore, the importance of examining additional variables to better understand how families cope and alter the family environment in the face of cancer or heart disease was underscored.

The qualitative data gathered in the study provided valuable insight into how the children of patients take on additional roles and responsibilities to assist their families in meeting the demands of the illness. In addition, the essay responses exposed the themes of increased cohesion and appreciation for the lives of family members that would not have otherwise been known. These themes should be further researched and expanded upon in order to develop an instrument that better assesses how families change when affected by cancer or heart disease.

Appendix A

Informed Consent to Participate in Research The University of Texas at Austin

You are being asked to participate in a research study investigating the relationship between family/parental health, coping, and aspects of family environment. The purpose of this study is to investigate how 300 college students perceive their family relationships and coping are affected by stress related to daily life and/or having a parent with cancer or heart disease. This form provides you with information about the study. Please read the information below and ask questions about anything you don't understand before deciding whether or not to take part. Your participation is entirely voluntary and you can refuse to participate without penalty or loss of benefits to which you are otherwise entitled.

The name of the study you are about to participate in is **“Family/Parental Health, Coping, and the Family Environment”**. The project is under the direction of Michelle Beard, M.Ed., a graduate student in Educational Psychology and supervised by Christopher J. McCarthy, Ph.D., an Associate Professor in Educational Psychology. If you have any questions about the study, you may contact Michelle Beard at 713-426-6559 or via email at lmbeard@mail.utexas.edu or Christopher McCarthy at chris.mccarthy@mail.utexas.edu.

You should know that while your participation in this study may not directly benefit you, other than giving you experience in participating in a research project, knowledge gained from this study may assist health care providers in working with clients experiencing family changes related to daily stress and/or having a family member with cancer or heart disease.

The information gathered from you will be anonymous. Once you log onto the Web page, you will be randomly assigned a new ID and password that cannot be traced to your name or your original login ID or password. A report of the general and combined results from this project will be prepared and may be submitted to a professional publication or conference at a later time. In addition, authorized persons from The University of Texas at Austin and the Institutional Review Board have the legal right to review your research records and will protect the confidentiality of those records to the extent permitted by law. Otherwise, your research records will not be released without your consent unless required by law or a court order. If the results of this research are published or presented at scientific meetings, your identity will not be disclosed.

There are no foreseeable physical risks associated with participation in this study; however, some of the questions may cause you to remember painful events associated with your family member having cancer or heart disease (if they had cancer or heart disease). You should know that you are able to skip questions that you do not wish to answer. You also have the right to discontinue your participation at any time during the study. If you experience any distress or uncomfortable feelings, you are encouraged to contact the Counseling and Mental Health Center at UT. The Counseling and Mental Health Center offers free services to students if you desire to discuss your concerns with a professional counselor. The number for the Counseling and Mental Health Center is 471-3515 and the number for their 24-hour Telephone Counseling program is 471-2255.

You should know that taking part in this study will not cost you anything nor will you receive any type of financial compensation for your participation.

Your participation in this study is entirely voluntary. If you wish to stop your participation in this research study for any reason, you should contact: Michelle Beard at (713) 426-6559 or via email at

lmbeard@mail.utexas.edu. You are free to withdraw your consent and stop participation in this research study at any time without penalty or loss of benefits for which you may be entitled. Throughout the study, the researchers will notify you of new information that may become available and that might affect your decision to remain in the study. In addition, if you have questions about your rights as a research participant, please contact Clarke A. Burnham, Ph.D., Chair, The University of Texas at Austin Institutional Review Board for the Protection of Human Subjects, 512/232-4383.

☐ Marking here indicates that you have read the above information and agree to participate in this study at this time.

Appendix B

Carver's (1997) Brief COPE

Instructions: The following questions ask you to indicate what you usually do and feel when you experience stressful events. Please respond to each statement using the following ratings scale (All groups respond to this stem).

Cancer and Heart Disease groups were asked to respond a second time to this measure using the stem below:

If you have a PARENT that has CANCER or HEART DISEASE, please indicate what you did(do) and how you felt (feel) about this experience.

Ratings Scale:

- 1 = I haven't been doing this at all
- 2 = I've been doing this a little bit
- 3 = I've been doing this a medium amount
- 4 = I've been doing this a lot

Questions:

1. I've been concentrating my efforts on doing something about the situation I am in.
2. I've been trying to come up with a strategy about what to do.
3. I've been trying to see it in a different light, to make it seem more positive.
4. I've been accepting the reality of the fact that it has happened.
5. I've been making jokes about it.
6. I've been getting help or advice from other people.
7. I've been trying to find comfort in my religion or spiritual beliefs.
8. I've been getting emotional support from others.
9. I've been expressing my negative feelings.
10. I've been refusing to believe that it has happened.
11. I've been making fun of the situation.
12. I've been blaming myself for things that happened.
13. I've been trying to get advice or help from other people about what to do.
14. I've been turning to work or other activities to take my mind off things.
15. I've been saying to myself "this isn't real".
16. I've been learning to live with it.
17. I've been using drugs or alcohol to help get me through it.
18. I've been looking for something good in what is happening.
19. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.
20. I've been saying things to let my unpleasant feelings escape.

21. I've been using alcohol or other drugs to make myself feel better.
22. I've been thinking hard about what steps to take.
23. I've been giving up the attempt to cope.
24. I've been getting comfort or understanding from someone.
25. I've been giving up trying to deal with it.
26. I've been criticizing myself.
27. I've been praying or meditating.
28. I've been taking action to try to make the situation better.

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Appendix C

Family Crisis Oriented Personal Evaluation Scales (F-COPES) (McCubbin, Thompson, & McCubbin, 2001)

The Family Crisis Oriented Personal Evaluation Scales is a copyrighted instrument. In order to obtain a copy of the instrument, contact the University of Wisconsin Madison general bookstore and Hamilton McCubbin, Ph.D. at the University of Hawaii at Manoa.

All groups were provided with standardized instructions for the F-COPES.

However, participants in the three illness conditions were also asked to respond to the

F-COPES a second time using the following stem:

When you face(d) problems or difficulties in your family related to your parent's illness, your family responded by:

Appendix D

McCarthy and Lambert's (2001) Preventive Resources Inventory (PRI)

To obtain a copy of the Preventive Resources Inventory, please contact Christopher J. McCarthy, Ph.D. at the University of Texas at Austin or Richard G. Lambert, Ph.D. at the University of North Carolina at Charlotte.

Appendix E

Moos and Moos' (1981) Family Environment Scale (FES)

The Family Environment Scale (FES) is copyrighted material. To obtain a copy of the FES, contact Mind Garden, Inc.

All groups were provided with standardized instructions for the FES. However, participants in the three illness conditions were also asked to respond to the FES a second time using the following stem:

When you face(d) problems or difficulties in your family during your parent's illness, your family usually:

Appendix F

Antonovsky and Sourani's (1988) Family Sense of Coherence Scale

Instructions: The following statements contain questions about the way your family handles various problems. The questions are related to your immediate family. In answering, try to think of the behavior of the entire family, and not only of specific individuals. There are no right or wrong answers. Each family has its own way of behaving in different situations. **Choose the best response for each question that describes your family on the provided continuum.**

Questions:

1. Is there a feeling in your family that *everyone* understands everyone else well?
1 2 3 4 5 6 7
There's a full understanding among family members. There's no understanding among all family members.
2. When you have to get things done which depend on cooperation among all members of the family, your feeling is:
1 2 3 4 5 6 7
There's almost no chance that the things will get done. Things will always get done.
3. Do you have the feelings that it's always possible, in your family, to get help one from another when a problem arises?
1 2 3 4 5 6 7
You can always get help from all family members. You can't get help from family members.

4. Let's assume that unexpected guests are about to arrive and the house isn't set up to receive them. Does it seem to you that:
- | | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| The job will fall on one person to get the house ready. | | | | | All members of the family will pitch in to get the house ready. | |
5. In case an important decision has to be taken which concerns the whole family, do you have the feeling that:
- | | | | | | | |
|---|---|---|---|---|--|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| A decision will always be taken that is for the good of all family members. | | | | | The decision that will be taken won't be for the good of all family members. | |
6. Family life seems to you:
- | | | | | | | |
|-------------------|---|---|---|---|------------------|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Full of interest. | | | | | Totally routine. | |
7. Does it happen that someone in the family feels as if it isn't clear to him/her what his/her jobs are in the house?
- | | | | | | | |
|-----------------------------------|---|---|---|---|----------------------------------|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| This feeling exists all the time. | | | | | This feeling very rarely exists. | |
8. When a problem comes up in the family (like: unusual behavior of a family member, an unexpected overdraft in the bank account, being fired from work, unusual tension), do you think that you can together clarify how it happened?
- | | | | | | | |
|--------------------|---|---|---|---|-------------------|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Very little chance | | | | | To a great extent | |
9. Many people, even those with a strong character, sometimes feel like sad sacks (losers). In the past, has there been a feeling like this in your family?
- | | | | | | | |
|---|---|---|---|---|-----------------------------|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| There's never been a feeling like this in the family. | | | | | This feeling always exists. | |

10. Think of a situation in which your family moved to a new house. Does it seem to you that:
- | | | | | | | |
|---|---|---|---|---|--|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| All family members would be able to adjust easily to the new situation. | | | | | It would be very hard for family members to adjust to the new situation. | |
11. Let's assume that your family has been annoyed by something in your neighborhood. Does it seem to you that:
- | | | | | | | |
|---|---|---|---|---|--|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Nothing can be done to prevent the annoyance. | | | | | It's possible to do a great deal to prevent the annoyance. | |
12. Until now your family has had
- | | | | | | | |
|-----------------------------------|---|---|---|---|-------------------------------|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| No clear goals or purpose at all. | | | | | Very clear goals and purpose. | |
13. When you think about your family life, you very often
- | | | | | | | |
|----------------------------------|---|---|---|---|-------------------------------------|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Feel how good it is to be alive. | | | | | Ask yourself why the family exists. | |
14. Let's say you're tired, disappointed, angry, or the like. Does it seem to you that *all* the members of the family will sense your feelings?
- | | | | | | | |
|--------------------------------|---|---|---|---|--|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| No one will sense my feelings. | | | | | All the family members will sense my feelings. | |
15. Do you sometimes feel that there's no clear and sure knowledge of what's going to happen in the family?
- | | | | | | | |
|---------------------------------|---|---|---|---|-------------------------------------|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| There's no such feeling at all. | | | | | There's always a feeling like this. | |

16. When the family faces a tough problem, the feeling is
- | | | | | | | |
|---|---|---|---|---|------------------------|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| There's no hope of overcoming the difficulties. | | | | | We'll overcome it all. | |
17. To succeed in things that are important to the family or to one of you
- | | | | | | | |
|--------------------------------|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Isn't important in the family. | | | | | Is a very important thing for all family members. | |
18. To what extent does it seem to you that family rules are clear?
- | | | | | | | |
|---|---|---|---|---|--------------------------------|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| The rules in the family are completely clear. | | | | | The rules aren't clear at all. | |
19. When something very difficult happened in your family (like a critical illness of a family member), the feeling was
- | | | | | | | |
|--|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| There's no point in going on living in the family. | | | | | This is a challenge to go on living in the family despite everything. | |
20. When you think of possible difficulties in important areas of family life, is the feeling
- | | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| There are many problems which have no solution. | | | | | It's possible in every case to find a solution. | |
21. Think of your feeling about the extent of planning money matters in your family
- | | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| There's full planning of money matters. | | | | | There's no planning about money matters at all in the family. | |

22. When you're in the midst of a rough period, does the family
- | | | | | | | |
|---|---|---|---|---|--|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Always feel cheered
up by the thought
better things that can
happen. | | | | | Feel disappointed
and despairing
about life. | |
23. Does it happen that you feel that there's really not much meaning in maintaining the family framework?
- | | | | | | | |
|---------------------------------|---|---|---|---|--|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| We always have
this feeling. | | | | | We've never had a
feeling like this in
our family. | |
24. Think of your feelings about the extent of order in your home. Is the case that
- | | | | | | | |
|-------------------------------|---|---|---|---|------------------------------------|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| The house is
well-ordered. | | | | | The house isn't at
all ordered. | |
25. Let's assume that your family is the target of criticism in the neighborhood. Does it seem to you that your reactions will be
- | | | | | | | |
|--|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| The whole family
will join together
against the criticism. | | | | | Family members
will move apart
from each other. | |
26. To what extent do family members share sad experiences with each other?
- | | | | | | | |
|---|---|---|---|---|--|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| There's complete
sharing with all
family members. | | | | | We don't share our
sad experiences
with family
members. | |

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Appendix G

Lambert and Burlingame's (1996) Outcome Questionnaire (OQ-45.2):

The Outcome Questionnaire-45 is copyrighted material. To obtain a copy of the OQ-45, contact the American Professional Credentialing Services, LLC.

Appendix H

Demographic Information

1. What is your sex?
 1. Male
 2. Female
2. How old are you?

Respondents were asked to enter their age in years (Months and partial years were not allowed).
3. What is your race/ethnicity?
 1. African/African American/Caribbean
 2. Asian/Asian American/Pacific Islander
 3. European American/Caucasian/Anglo
 4. Hispanic/Latino(a)
 5. Other
4. What is your marital status?
 1. Single
 2. Committed relationship
 3. Married
 4. Divorced/Separated
 5. Widowed
5. Which description best fits your parent(s) or guardians?
 1. Father and Mother
 2. Mother only
 3. Father only
 4. Other
6. What is the marital status of your mother?
 1. Married to your father
 2. Remarried
 3. Single
 4. Divorced
 5. Deceased

7. If your mother is deceased, please indicate her marital status before she died.
(Only appears if student chooses response 5 for question 6).
1. Married to your father
 2. Remarried
 3. Single
 4. Divorced
8. What is the marital status of your father?
1. Married to your mother
 2. Remarried
 3. Single
 4. Divorced
 5. Deceased
9. If your father is deceased, please indicate his marital status before he died. (Only appears if student chooses response 5 for question 8).
1. Married to your mother
 2. Remarried
 3. Single
 4. Divorced
10. Please indicate the highest level of education for your mother or guardian:
1. Elementary
 2. Some high school
 3. High School
 4. Some college
 5. College Graduate, Masters, or Doctorate holder
11. Please indicate the highest level of education for your father or guardian:
1. Elementary
 2. Some high school
 3. High School
 4. Some college
 5. College Graduate, Masters, or Doctorate holder
12. Is your mother or guardian currently employed or working?
1. Yes, full time
 2. Yes, part-time
 3. No

13. Is your father or guardian currently employed or working?
1. Yes, full time
 2. Yes, part-time
 3. No
14. Please provide an estimate of your family income:
1. Less than \$30,000
 2. \$30,000-70,999
 3. \$71,000-110,999
 4. \$111,000-180,000
 5. More than \$180,000
15. Have you or any of your immediate family members had any chronic illness other than cancer or heart disease during your lifetime? A chronic illness is defined as an illness that is ongoing and lasts for three or more months.
1. Mother
 2. Father
 3. Sibling
 4. Yourself
 5. Step-Mother
 6. Step-Father
 7. No one in my immediate family has had a chronic illness.
16. Has your father been diagnosed with cancer at any time after you turned twelve years old?
1. Yes
 2. No
17. Has your mother been diagnosed with cancer at any time after you turned twelve years old?
1. Yes
 2. No
18. Did your mother or father have cancer before you were twelve?
1. Yes
 2. No

19. Have any other immediate family members had cancer during your lifetime?
1. Sibling
 2. Yourself
 3. Step-Mother
 4. Step-Father
 5. No immediate family members have had cancer

If subjects indicated that their parents have not had cancer, they were sent directly ahead to question 30. If subjects indicate that their mother or father had cancer, they continued with the remainder of the cancer questions.

20. What type of cancer did your father or mother have?

1. prostate
2. colon
3. lung
4. breast
5. ovarian
6. mouth or throat
7. skin cancer
8. uterine or cervical
9. brain
10. stomach
11. intestinal
12. liver or kidney
13. other internal organs
14. other

21. How upsetting has your parent's illness been to you?

1. Not at all upsetting
2. Somewhat upsetting
3. Upsetting
4. Extremely upsetting

22. How many times has your father or mother had cancer?

1. one
2. two
3. three
4. more than three

23. Please list the types of treatment your mother or father has received?
1. Surgery
 2. Radiation/Chemotherapy
 3. Both surgery and radiation/chemotherapy
 4. Another type of treatment
 5. No treatment
24. Where is your father or mother in their treatment?
1. Recently diagnosed and not yet receiving treatment
 2. Currently undergoing treatment
 3. Finished treatment but not yet in remission
 4. In remission
 5. Deceased
 6. Did not received treatment
25. When your father or mother underwent the treatment above, how long did he/she stay in the hospital overnight?
1. Never stayed overnight
 2. 1-3 nights
 2. 3-7 nights
 3. 1-2 weeks
 4. 2-4 weeks
 5. one month or more
26. How old were you when your father or mother was first diagnosed with cancer?
1. under 12 years old
 2. 12-14 years old
 3. 15-17 years old
 4. 18-20 years old
 5. 21 and over
27. Did your family or any member of it seek counseling after your mother or father was diagnosed with cancer to help them deal with this event?
1. Yes
 2. No
28. How long did your family or family member attend counseling?
1. 1 month or less
 2. 2-5 months
 4. 6 months- 1 year
 5. More than 1 year

29. Please indicate which of the following best describes your family when your father or mother was FIRST DIAGNOSED (Mark all that apply) :
1. Family with infant (s)
 2. Family sending children to school for the first time
 3. Family with children in school (Approximate Ages 6-12)
 4. Family with child or children who were moving into adolescence.
 5. Family with adolescent children.
 6. Family with children going off to college or moving out of the house.
 7. Family with grown children living outside of the home.
 8. Family with adult children living in the home.

30. Has your father been diagnosed with any type of heart disease at any time after you turned twelve years old?
1. Yes
 2. No
31. Has your mother been diagnosed with heart disease at any time after you turned twelve years old?
1. Yes
 2. No
32. Was your mother or father diagnosed with heart disease before you were twelve?
1. Yes
 2. No
33. Have any other immediate family members had any kind of heart disease during your lifetime?
1. Sibling
 2. Yourself
 3. Step-Mother
 4. Step-Father
 5. No immediate family members have had cancer

If the subject did not have a parent with heart disease, they will be forwarded on to the surveys. If they indicated having a parent with heart disease, they were asked the following questions:

34. What type/symptoms of heart disease has your mother or father been diagnosed with?
1. Heart Attack that was not fatal (Acute Myocardial Infarction)
 2. Sudden cardiac death
 3. Plaque build-up on the arteries
 4. Irregular heart beat
 5. Chest pain
 6. Cardiogenic shock (Inability of the heart to pump enough oxygen to organs)
 7. Heart murmur or valve leak
 8. None of the above, but has been diagnosed with heart disease
35. How upsetting has your parent's illness been to you?
1. Not at all upsetting
 2. Somewhat upsetting
 3. Upsetting
 4. Extremely upsetting
36. Where is your father or mother in their treatment?
1. Recently diagnosed and not yet receiving treatment
 2. Currently undergoing treatment
 3. Currently not undergoing treatment
 4. Deceased
37. When your father or mother underwent the treatment above, how long did he/she stay in the hospital overnight?
1. 0 nights
 2. 1-3 nights
 3. 3-7 nights
 4. 1-2 weeks
 5. 2-4 weeks
 6. one month or more
38. How old were you when your father or mother was first diagnosed with cancer?
1. under 12 years old
 2. 12-14 years old
 3. 15-17 years old
 4. 18-20 years old
 5. 21 and over

39. Did your family or any member of your family seek counseling after your mother or father was diagnosed with heart disease to help them deal with this event?
1. Yes
 2. No
40. How long did your family or family member attend counseling? (Only appears of answer “yes” to question 39).
1. 1 month or less
 2. 2-5 months
 3. 6 months- 1 year
 4. More than 1 year
41. Please describe which of the following best describes your family when your father or mother was FIRST DIAGNOSED (Mark all that apply) :
1. Family with infant (s)
 2. Family sending children to school for the first time
 3. Family with children in school (Approximate Ages 6-12)
 4. Family with child or children who were moving into adolescence.
 5. Family with adolescent children.
 6. Family with children going off to college or moving out of the house.
 7. Family with grown children living outside of the home.
 8. Family with adult children living in the home.

Appendix I

Essay Questions: (Only administered to subjects with an ill parent)

1. Please write a short paragraph below describing the things you did, if any, to help your family and your ill parent during their illness.
2. Please describe below how you believe your parent's illness changed your relationships with your ill parent and other members of your family?
3. Please discuss below the ways you believe other family members relationships with each other changed as a result of this experience.

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