

SECULAR AND RELIGIOUS COPING BY MOTHERS OF CHILDREN WITH
CANCER

by

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ABSTRACT

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The main purpose of this study was to investigate whether religious beliefs, coping, and social support explain additional variance in the prediction of psychological adjustment in mothers of children with cancer beyond the variance explained by secular predictors of these constructs. Ninety-four mothers of children with cancer completed standardized measures of anxiety, depression, satisfaction with life, self-esteem, optimism, social support, approach and avoidant coping, religious belief, and positive and negative religious coping. Of the religious coping variables studied, only negative religious coping accounted for variance in the adjustment of mothers beyond the variance accounted for by the secular measures. Specifically, negative religious coping explained additional variance in mother's satisfaction with life, anxiety and depression. In their responses to open-ended questions, the majority of mothers said that their religious beliefs and practices were helpful to them in coping with their child's illness. These

findings suggest that while, overall, secular variables are recommended in quantitative assessment and treatment for mothers of children with cancer, clinicians should consider negative religious coping as a potential risk factor for increased distress and decreases in satisfaction with life. In addition, open-ended questions about mother's religiosity can help in understanding how they may best cope with their child's illness.

I. INTRODUCTION

There has been an increasing amount of research on factors that influence the psychological adjustment of parents caring for a child with cancer. However, the empirical literature still does not provide a comprehensive picture of the factors contributing to parental adjustment at such a time. Inconsistent results and limited investigation into some variables suggests that further research is needed to better understand the factors that affect parental adjustment to the stress of childhood cancer. One area worthy of further investigation is how elements of religious and spiritual experience affect the adjustment of parents coping with the diagnosis of cancer in a child. Religious and spiritual variables may be important in this context as they often serve to provide support and reassurance, and give individuals hope and help them to find meaning during times of uncertainty and stress. To date, religious and spiritual variables, although of increasing interest in the general coping literature, have been less frequently studied in the context of parental adjustment to childhood cancer.

This paper will begin by reviewing statistics on cancer and death in children and the literature on the psychological adjustment of mothers who have a child with cancer. The second section will review literature on several factors thought to be associated with the psychological adjustment of mothers, including personal outlook, social support, and

coping style. Additionally, it will review literature on different elements of religion and spirituality, including religious belief, social support, and coping and examine how these might potentially affect the adjustment of mothers. Research hypotheses will be described and discussed in light of past research findings and the final section of this paper will discuss the design, implementation and results of a study which tested the role of both secular and religious elements in the psychological adjustment of mothers.

Prevalence and Major Causes of Death in Children

In the United States, approximately 55,000 infants and children die annually and another 500,000 are coping with life-threatening conditions (Himmelstein, Hilden, Bolt & Weissman, 2004). The current leading cause of death in children between the ages of one and 14 is unintentional injury. For children, five to 14 years old, cancer is the second most common cause of death (Guyer, Freedman, Strobino, & Sodnik, 2000; The Annie E. Casey Foundation, 2005). Approximately 1,340 children were projected to die from cancer in 2010, making it the leading cause of death from disease among children in the United States (American Cancer Society, 2010).

The rate of childhood death has declined dramatically in the past several decades, aided by technological advances and evolving medical knowledge. The 5-year relative survival rate for all childhood cancers has improved considerably, rising from around 30% in the 1970s to almost 80% today. However, despite the increased survival from childhood cancer, there are still many children and families who are facing the harsh realities of this life-limiting illness and death. In 2010, it was estimated that nearly 10,700 new cases of cancer were expected to occur in children under the age of 15

(American Cancer Society, 2010). Many of these diagnoses result in treatment side effects and ongoing care, rendering children increasingly dependent on their parents and caregivers (Pfund, 2007, p.4).

Psychological Adjustment

The diagnosis of cancer can have a profound impact on the entire family. Even for those children who ultimately survive their illness, there is often a long and stressful course of treatment both they and their families must learn to manage. Family roles, schedules, expectations, and goals can be disrupted as the family manages doctor visits, treatment, and care of their child. All of this, combined with the fear of potentially losing one's child and uncertainty of the future, can have a significant effect on parents. The diagnosis and treatment of cancer in a child is likely to involve many psychological challenges. A meta-analysis conducted by Pai et al. (2007) looked at 29 different studies investigating psychological distress and marital and family functioning among parents who had a child with cancer. The results of the meta-analysis indicated small, but significant, effect sizes suggesting that mothers of children with cancer report more distress than mothers of healthy children. The results also indicated that the experience of parental distress decreased as a function of the time that elapsed since the child's diagnosis.

Many studies have reported different types of emotional distress, including increased anxiety, depressive symptoms, and posttraumatic distress in parents of children diagnosed with cancer. However, not all parents of children with cancer show high levels of distress and there is considerable variation among parents within, and between,

studies (Sloper, 2000). Still, it is estimated that approximately 25-30% of parents are at increased risk for adjustment problems (Kupst, Natta, Richardson, & Shulman, 1995).

Sloper (2000) assessed the relationships among distress, coping, appraisal, psychosocial resources, and illness variables in 133 parents of children with cancer. Distress was measured with the Malaise Inventory, designed to assess psychosomatic symptoms associated with emotional disorders. Analyses indicated that over half of the mothers surveyed (55%) showed high levels of distress both at 6 months and 18 months post-diagnosis (51%). The results also showed strong correlations and similar means between Time 1 and Time 2 Malaise scores, suggesting consistency in distress levels over time. Sloper suggested that the early identification of parents at higher risk of psychological maladjustment leads to quicker provision of ongoing support to help them.

Several studies have used comparison groups to assess differences in distress levels between parents of children with cancer and other parents with either healthy children, or children with acute illness. Noll et al. (1995) conducted two studies comparing parental distress for parents of children who have cancer with matched comparison families. The first study used the Global Severity Index (GSI) of the Brief Symptom Index (BSI) as the measure of psychological distress. This index combined information on both the number of symptoms present and the reported intensity of the symptoms. Results of study 1 (N=50) showed no significant differences in scores on GSI between mothers of children with cancer and the comparison group. The authors noted several limitations to their first study, however, including the fact that many of the

children were not actively in treatment during the assessment and that participants were obtained from a much smaller clinic setting.

In the second study (N=84), Noll et al. (1995) used the SCL-90-R, the more extensive measure from which the BSI is drawn. Additionally, families were included only if their child was currently undergoing treatment. Results of this study showed modest significant differences between mothers of a child with cancer and comparison mothers in levels of psychological distress. Twenty of the 42 mothers with children who had cancer (48%) showed scores within the clinical range on the Global Severity Index of the SCL-90-R, compared to only 26% of the comparison mothers (11 mothers). The authors suggest that since many of the children in Study 1 were successfully out of treatment, many of the stressors present during treatment likely had been significantly reduced for these families. These findings are also in line with other research discussed below, which has suggested that for many parents, distress decreases over time.

Hoekstra-Weebers, Jaspers, Kamps and Klip (1999) examined risk factors for the development of psychological maladjustment in parents of children with cancer (N=128). Among their results, they found that parental psychological distress was higher in this group than a representative, randomly selected community group. The 12-item version of the General Health Questionnaire (GHQ-12), a self-report measure of psychiatric symptoms, was used as an overall index of psychological distress. The authors also focused on future development, short-term development, and continuation of distress. The strongest predictor of short-term and long-term distress was parents' trait anxiety level. Fathers' reports of social support-seeking and dissatisfaction with support were

short-term predictors of distress. Mothers' reports of the number of pleasant events they had experienced prior to diagnosis were a prospective predictor of lower distress, while assertiveness was a short-term predictor.

Dockerty, Williams, McGee and Skegg (2000) compared the mental health of parents of children with cancer with parents of children from the general population. Along with mood rating scales, they administered the General Health Questionnaire. They found that the parents of children with cancer had significantly poorer mood rating scores as well as poorer GHQ-12 scores than those of controls. Of note with these findings, however, was that although statistically significant, the differences between groups on mental health scores were small. The authors suggest that this might indicate that parents of children with cancer can be relatively resilient, despite what they are facing.

Larson, Wittrock and Sandgren (1994) compared parents of children who had influenza and those whose children had cancer. They found that the parents of children with cancer presented with more anxiety, but not more depressive symptoms, than the parents of children with influenza. Contrary to these findings, in a study that examined the psychological adjustment of mothers of children newly diagnosed with cancer compared to that of mothers of children with non-life threatening illnesses, Barrera et al. (2004) found, that parents of children with cancer reported more symptoms of depression, but found no difference in reported levels of anxiety. Twenty-two percent of mothers of children with cancer reported depression scores in the clinical range, as opposed to only 5% of the mothers of children with an acute condition. This study used the Beck

Depression Inventory and the State-Trait Anxiety Inventory for Adults to measure depression and anxiety, and also used the Symptom Checklist-90-Revised as a global measure of mental health.

Other studies have reported that mothers of children with cancer report more symptoms of post-traumatic stress. A study by Kazak et al. (2004) showed moderate to severe levels of post-traumatic stress symptoms on the Posttraumatic Stress Disorder Reaction Index for over 40% of mothers in their study (N=146). Nearly 30% of the mothers reported symptoms that met diagnostic criteria for PTSD based on the PTSD module of the Structured Clinical Interview for the Diagnostic and Statistical Manual of Mental Disorders (4th edition). The authors compared this with the lifetime prevalence rate for PTSD reported by the National Comorbidity Survey of 20.4% for females, which suggests that these mothers appeared to be experiencing PTSD at a greater rate than the general population.

As noted previously, even though many of these studies have found that parents of children with cancer have higher levels of distress than their counterparts with healthy children or children with acute illness, several longitudinal studies have found that these differences often decrease over time. Sawyer, Antoniou, Toogood and Rice (1997) found that parents of children with cancer did report significantly more strain, anxiety and sleep loss (as measured by the 28-item General Health Questionnaire) than parents in the general community immediately after diagnosis. However, their results also showed that total scores and scores on the Anxiety and Insomnia subscales within the cancer group decreased significantly over time. Differences between the scores across the groups

decreased, suggesting that parents' adjustment improved considerably during the year after diagnosis, to a level closer to that experienced by the general community group.

Dahlquist, Czyzewski, and Jones (1996) found that state anxiety scores, as measured by the State-Trait Anxiety Inventory, in both mothers and fathers (N=84) were elevated above nonclinical norms at the acute stage of their child's illness, approximately two months post diagnosis. However, in a follow-up study, the authors found that the mothers' anxiety levels had significantly decreased at 20 months post-diagnosis and that the mean scores on state and trait anxiety did not differ significantly from nonclinical norms.

A prospective longitudinal study of psychological functioning of parents of children with cancer by Wijnberg-Williams, Kamps, Klip, and Hoekstra-Weebers (2006) also found that parents' psychological distress had significantly decreased 5 years post-diagnosis (N=155). However, in this study the mean scores of parents with children with cancer were still higher than that of the norm group, suggesting that while there may be a decrease in parental distress over time, a significant number of parents may still suffer from clinical distress even years later.

As indicated by these studies, there is a significant amount of distress experienced by parents when a child is diagnosed with cancer. Although many of these studies have found correlations with elevated levels of anxiety and depression, and other measures of psychological distress in parents of children with cancer, it is important to note that others have not (e.g., Frank, Brown, Blout & Bunke, 2001), or have found elevations on some measures of distress but not others (e.g. Larson et al., 1994; Barrera, 2004). Also,

several researchers have found improved adjustment over time in parents (e.g., Saywer et al., 1993; Dahlquist et al., 1996; Wijnberg-Wiliams et al., 2006 & Pai, 2007). These varied results suggest that some people facing these circumstances may show improvement and positive outcomes in some areas.

There is some evidence that by coping with a major stressor, people show improved mental health. In the pediatric oncology literature, several researchers have shown evidence of posttraumatic growth, personal growth and faith in life as a result of the experience (Barakat, Alderfer, & Kazak, 2006; Norberg & Bowman, 2007). For example, Barakat, Alderfer and Kazak (2006) found that 86% of mothers in their study reported that the cancer had a positive impact on how they thought about their lives. Additionally, Steele and Davies (2006) found that parents who created positive meanings out of the experience felt more in control of their lives, were not as overwhelmed by negative emotions and believed that they had gained from the experience. Additional investigation into positive adjustment of parents is warranted.

Overall, the research on psychological distress suggests that while there may be increased anxiety, depression, or levels of distress for mothers in dealing with a diagnosis of cancer in their child, it is not always as significant or long lasting as one might expect. There are likely many risk and protective factors influencing the amount of distress experienced and how long this distress lasts.

Stress

In the stress and coping literature, a distinction is made between major life stressors and daily life events and hassles. The diagnosis of cancer in one's child is most

certainly a major life stressor. Parents in this situation often face financial problems with the increased cost of doctor visits, treatments, hospital stays, marital distress, family tension, employment concerns, and changes to daily routines (Grootenhuis & Last, 1997). Several theorists have developed frameworks to help characterize the experience of stress, but one of the more commonly referenced models in the pediatric oncology literature is that of Lazarus and Folkman (1984). This model takes into account both environmental and individual factors, but focuses largely on how an individual appraises a situation or event. An event seen as positive or benign for the individual's health does not evoke a stress reaction, whereas events appraised as harmful or threatening do. Stress, then, is a function of the individual's appraisal of the event or situation being encountered. After determining whether something is a threat, secondary appraisal takes place in which people weigh the demands of the situation against the resources they have. The way a person appraises an event serves a key role not only in the amount of stress experienced, but also the kind of coping strategies they might use in trying to deal with the stress.

Taking this approach, it seems important then to understand individual characteristics, resources, and coping response strategies when investigating the impact of a potential stressor, as all are likely to play a role in either appraisal of or efforts to deal with such stressors and thus are likely to influence the impact an event might have on adjustment. Three of these variables, optimism, social support and coping will be discussed below.

2. SECULAR VARIABLES

Personal Outlook

People's outlook can have a significant impact on their adjustment to major life events. One type of outlook, optimism, may play a role in adjustment in mothers of children with cancer. Optimism has been described as general expectancies that good rather than bad events will happen (Scheier & Carver, 1985). Optimism has become an important theoretical factor in attempts to explain adjustment to distressing situations in positive and health psychology. People who are dispositional optimists tend to show better psychological adjustment to a number of stressors related to chronic illness (Fotaidou, Barlow, Powell, & Langton, 2008). Optimism, then, may be a particularly important factor for parents of children with cancer.

Despite its emerging role in the areas of health and adjustment, optimism has received limited empirical attention in the context of caring for a child with cancer. Optimism is assessed sometimes as one of many dimensions of a particular measure and may be grouped into a coping subscale along with other strategies. For example, a study by Greening and Stoppelenberg (2007) showed that parents with more frequent use of religious coping/optimism, decreased their risk for anxiety symptoms. The authors did not elaborate on the items included in this subscale, only that it was one of 6 factors that

were a result of an exploratory principal components factor analysis of the Brief COPE items.

Fotiadou et al. (2008) investigated the relationship between optimism and psychological distress in parents of children with cancer. Optimism was assessed using the Life Orientation Test – Revised (LOT-R) and psychological distress was assessed with the Hospital Anxiety and Depression Scale, a scale designed to detect the presence and severity of mood disorders in a non-psychiatric population. In comparisons of parents of children with cancer and parents of healthy children, they found that parents of children with cancer reported lower levels of optimism overall. Using the recommended cut-off points for their anxiety and depression measure, the authors also found a high level of psychological distress among parents of children with cancer. Sixty-eight percent were at risk of clinical anxiety symptoms and 27% for depression. More importantly, the results showed significant negative correlations between optimism and both anxiety and depression among parents of children with cancer. Additionally, optimism was positively correlated with satisfaction with life in this group. The authors suggested that based on these findings, optimistic people were less likely to experience mental health problems.

In another study of predictors of emotional adjustment to childhood cancer, Grootenhuis and Last (1997) found that lack of positive expectations about the course of the illness were most strongly related to negative emotions for parents. Among the measures used in this study was the Control Strategy Scale, a questionnaire that assessed secondary, cognitive control strategies. Six items on this scale measured predictive

control, described as positive expectations about the course of the illness. Secondary predictive control was found to predict less anxiety and depression, and helplessness and uncertainty for mothers. While they did not measure optimism specifically, the authors suggested that these results confirm the importance of having positive expectations. The authors suggested that whenever parents can continue to be hopeful, this protects them from negative emotions.

Although it has not been studied extensively in the literature specific to mothers of children with cancer, the findings from these studies suggest that optimism (or related positive expectations and hopefulness) appears to be a protective factor against developing psychological distress. Further research will help to add to the understanding the impact optimism has on measures of distress and well-being.

Social Support

Social support is a resource for many people in times of distress. Researchers have discussed social support in a variety of different ways. Barrera (1986) suggested three broad categories: social embeddedness, perceived support, and enacted support. Social embeddedness refers to the connections that individuals have to significant others in their lives. Perceived support refers to the cognitive appraisal by an individual that significant people in their life are available to them if needed and that they are satisfied by their interpersonal relationships. Enacted support refers to the actions others perform when they are giving assistance. A number of studies suggest that perceived support has the strongest negative relationship with psychological distress (see Barrera, 1986, for a review).

A number of studies have shown that the presence of social support and satisfaction with that support are related to parental adjustment. Consistent with more general findings on social support and distress, perceived support appears to be a stronger influence than other social network characteristics for parents of children with cancer (Sloper, 2000).

Morrow, Carpenter and Hoagland (1994) examined adjustment difficulties in parents of children with cancer (N=107). In relation to social support, subjects were asked to rate several potential sources of support (e.g., friends, spouse, neighbors, social workers, or relatives) on how helpful and supportive they felt each source of support had been over the course of their child's illness. The authors found that perceived support from spouses, relatives, and friends appeared to lessen difficulties with adjustment for the total group of parents studied. Dockerty et al. (2000) compared the mental health of parents of children with cancer and parents of children from the general population. Among the parents who had children with cancer, some subgroups had poorer emotional health scores than others, including those with poor social support. Similarly, Hoekstra-Weebers et al. (2001) found that mothers who reported receiving less support and being less satisfied with the support were at greater risk for psychological distress than mothers who received more support and were more satisfied with it.

Norberg, Lindbald, and Bowman (2006) examined support seeking, perceived support and anxiety in mothers (N=103) and fathers (N=81) whose children had completed cancer treatment. They found that support seeking and perceived support, were negatively related to anxiety for mothers. However, the level of perceived support

reported was more strongly associated with lower anxiety in parents than was support seeking. Perceived support was measured as part of a larger questionnaire designed to assess the psychosocial situation of parents. Similarly, in her longitudinal study on predictors of distress in parents, Sloper (2000) found a significant negative correlation between perceived social support and psychological distress for mothers. Social support was measured for the parents using the Support Network Satisfaction Scale from the Social Support Resources Measure.

Given these research outcomes, it appears that perceived support affects the adjustment to pediatric cancer for mothers. However, it may be useful to compare the magnitude of the benefit of social support on mother's adjustment with the relative benefit of optimism and coping.

Coping

Coping is an important term to define in understanding parents' adjustment to their children's cancer. Lazarus and Folkman (1984) have defined coping as the process by which individuals attempt to manage perceived discrepancies between the demands of the situation and the resources they feel they have after they have appraised the situation. Numerous studies have documented the importance of individual coping efforts in helping individuals maintain well-being (see Felton & Revenson, 1984). Generally, the literature on coping differentiates among problem-focused, emotion-focused, and avoidance strategies for coping. Problem-focused coping is defined usually as action taken to alter the source of the stress, which may include both initiating direct actions, and developing action strategies, or thinking about the best way to handle the problem.

Emotion focused coping, on the other hand, is generally aimed at reducing or managing the emotional distress the event may have caused. This type of coping may include acceptance of the situation or reinterpreting the situation more positively (Cohen, Scheier & Weintraub, 1989). Avoidance strategies generally are actions or attempts to avoid the stressor altogether and can include denial or substance use.

While most stressors are likely to elicit multiple types of coping, different strategies have been hypothesized to be more therapeutic in certain types of situations. For instance, emotion-focused coping has been hypothesized to be more therapeutic for coping with uncontrollable events, such as the diagnosis of disease or major medical concerns. Other strategies that focus more on resolving the presenting problem, such as problem-focused or approach-focused strategies have been less beneficial in uncontrollable situations (Felton & Reverson, 1984; Lazarus & Folkman, 1984). As Felton (1984) noted, the effectiveness of coping efforts directed at altering situations are limited when situations are largely beyond one's ability to control or change. Avoidant strategies are those that prevent the individual from dealing with the stressful event and are believed to be counterproductive in most situations.

As discussed earlier, the adjustment of parents varies, suggesting that not all are at risk for emotional distress, and that for many families, distress decreases over time. Along with personal outlook and perceived social support, coping efforts have been proposed as another means of accounting for differences in adjustment among parents. Indeed, cancer in a child is a stressful and often traumatic event, and it is likely to elicit a range of coping strategies in those close to the patient.

A study by Manne et al. (2003) found that emotional regulation strategies, such as humor and acceptance, reduced mothers' risk for depressive symptoms six months after their child underwent a bone marrow transplant. On the other hand, active, problem-solving and avoidant coping strategies increased their risk. This study used the abbreviated version of the COPE measure, the Brief COPE, to measure coping skills. These findings suggest evidence for the hypotheses that emotion focused strategies are more beneficial in response to an uncontrollable stressor. Greening and Stoppelbein (2005) found that anxiety increased as a function of using active coping strategies (also assessed in this study with the Brief COPE) in their study of risk for depressive, posttraumatic, and anxiety symptoms in mothers of children with cancer. The authors suggested that this provides partial support for a hypothesized relationship between active, problem-focused strategies and psychological symptoms when dealing with a relatively uncontrollable event. They suggest that confronting such a stressor in this way could be anxiety provoking. Additionally, parents' risk for depressive and PTSD symptoms increased with the use of avoidant coping strategies.

Norberg, Lindblad, and Bowman (2005) found that more frequent use of active, problem-focusing and less use of avoidance, passive coping, and expressing negative emotions were associated with less distress (anxiety and depression). While the findings related to active problem solving may seem contrary to other findings, the authors described the items of the active problem focusing scale as reflecting an emotional and cognitive approach, which they said may be described as appraisal-oriented problem focusing rather than hands-on solving of problems. Thus it seems that what they called

active coping was in fact a more appraisal-focused approach.

Particular kinds of emotion-focused coping may be detrimental. Greening and Stoppelbein (2005) found that parents that used negative self blame and affect, increased their risk of depressive, anxiety and PTSD symptoms. Likewise, Barrera (2004) found that mothers of children with cancer engaged in more emotion-focused coping than mothers of children with an acute illness. The use of emotion-focused coping in these mothers was positively related to depression, anxiety and global mental health (GMH symptoms measured by the SCL-90-R). Their findings suggested that emotion-focused coping influenced mothers' depression, anxiety and GMH through its impact on their perception or appraisal of concurrent stresses and strains. It is important to note that their measure of emotion-focused coping included both positive and negative activities, including distancing and escape/avoidance. Given these findings, it seems that certain types of emotion-focused coping have different effects on maternal adjustment. While some may be positive in nature, others may be more akin to avoidance or involve a negative interpretation of the event.

The coping literature reviewed has somewhat mixed findings on how different coping styles affect adjustment. Varied definitions of what constitutes different types of coping make it difficult to clearly understand this relationship and suggest further investigation into which kinds of coping are related to positive and negative adjustment in mothers of children with cancer.

Qualitative Research

In addition to the quantitative literature investigating the impact of childhood cancer on parents and resources used to manage the impact, several qualitative studies (or studies including qualitative components) have examined various aspects of this experience for families. Several of the factors described above (coping strategies, social support, personal outlook, and emotional response and adjustment) were present in the themes that parents consistently mentioned.

Sloper (1996) conducted semi-structured interviews as part of her study investigating parents' responses to childhood cancer. She interviewed primary caregivers from 98 families. Parents reported negative effects on employment, finances, and family life, including both positive (e.g., feeling the family became closer) and negative effects (e.g., separations and disruptions). They identified sources of support, specifically the importance of having someone to talk to who was not emotionally involved. Some parents (14%) reported feeling they had no one to talk to, which was strongly associated with higher scores on the Malaise index, used in this study to measure level of distress. The overall results suggested that when social and practical resources were either strained or were too sparse, levels of distress were high.

Patterson, Holm, and Gurney (2004) also carried out a qualitative study investigating the impact of childhood cancer on families with 45 parents who had a child one year or more out of active cancer treatment. More specifically, they looked at aspects that parents found particularly difficult during their children's treatment as well as the resources and coping behaviors they found to be helpful. They identified

numerous cancer-related, child, family, community, and healthcare system strains and resources, as well as appraisal-focused, problem-focused and emotion-focused strategies. Some of the strains identified that are most relevant to this review included financial and work related strains, lack of community support, avoidance or insensitivity of friends, strong emotional responses, uncertainty and loss of normality. In terms of resources, family interaction style, religious beliefs, family, friend and community supports, as well as support from people at church were noted. Some noted problem-focused coping behaviors, but many more parents used appraisal-focused coping behaviors, which the authors conceptualized largely as active behaviors aimed at making meaning.

Papaikonomou and Nieuwoudt (2004) also conducted a qualitative study exploring the stories of eight parents. Several indicated that they felt isolated, as most people did not understand or know to handle the situation or the intense emotions expressed. They also described a great deal of uncertainty that came with the diagnosis and anxiety and helplessness in a situation they cannot change or had little control. Many of the participants also reported that although they struggled, there was some sense of personal growth that was a positive outcome.

Additionally, Steele and Davies (2006) presented qualitative data from 8 families with a child with neurodegenerative diseases. While not specific to cancer, many of the events that families experienced were similar to those for families dealing with childhood cancer. The parents in this study were affected emotionally, physically, financially, and spiritually. Fear, uncertainty and grief were predominant, but changed in intensity. They also experienced depression, anxiety, and difficulty concentrating.

These studies provide a somewhat more intimate look into the experience of parents dealing with their child's cancer. As evidenced by the reports in these studies, a diagnosis of cancer has significant effects on most or many aspects of life. Many parents expressed the feeling that their entire world had been altered. Qualitative data can provide a deeper understanding of participant's perceptions and personal experience from their own words. This valuable information can help to develop a better understanding of what parents experience when managing all that comes with a diagnosis of cancer in a child.

3. RELIGIOUS VARIABLES

Religion and spirituality are important in many people's lives. A vast majority of adults in the United States (92%) have reported that they believe in God or a universal spirit. Additionally, 83.9% are reported to identify with a particular religion and more than half report religion as very important in their lives (The Pew Forum on Religion & Public Life, 2008). For many people living in America, it is also a common belief that people's faith and prayers can contribute to their health (Koenig, 1997).

There is a growing body of research that describes the effects of religion and spirituality on the enhancement of subjective well-being (Ellison, 1991) and psychological adjustment (Koenig & Larson, 2001). In a meta-analysis, Hackney and Sanders (2003) found a positive overall relationship between religiosity and mental health ($r=.10$).

Religion and spirituality have not been widely studied in the pediatric oncology literature. In studies of psychological adjustment in parents of children with cancer, faith and religion are typically measured as a demographic variable or variables, often as a single item question or as part of a larger measure assessing another construct. This kind of measurement of religion or spirituality likely overlooks the complexity of these constructs. A long history of efforts to conceptualize and measure multiple dimensions

of religiousness indicate that religious and spiritual variables cannot be simply combined into a single item or scale that examines the effects of “religiosity”. For a more accurate picture of the impact of religion and spirituality, each dimension of these constructs should be examined separately for its effects on adjustment.

There are some studies that have examined the impact of religion and spirituality on the lives of parents dealing with the diagnosis of cancer in their child. Overall, they suggest that religion and spirituality are important influences in many families’ experiences of childhood cancer. However, there is currently no consensus among researchers about which specific elements of religiosity contribute to health and adjustment. Additional research looking at the impact of religion and spirituality on psychological adjustment of parents is needed to determine which elements of these constructs may be beneficial and in what ways.

Religious social support and religious coping seem particularly relevant places to start for two reasons. First, these two variables have been studied recently in the general literature on mental health. Additionally, they correspond with secular variables of coping and social support, which have been shown to influence adjustment in parents. In addition to these two variables, religious beliefs also deserve further elaboration, as belief is the cornerstone of most faith and religious traditions.

Personal Outlook: Religious Beliefs

Belief is a central element of most religions. Most religious groups offer their members a comprehensive set of beliefs about God, life, death, relationships and ethics (Idler, 2003). It has been suggested that there are two kinds of beliefs associated with

religion that are particularly relevant to health: those that promote expectations of positive outcomes in life and/or those providing frameworks for the interpretation of experience, including human suffering and death. The former kinds of beliefs are similar to the construct of optimism. The latter kinds of belief are more unique to religion and faith. In her paper on religious beliefs, Idler (2003) suggested that religious beliefs offer cognitive resources beyond just the expectations of positive outcome. Beliefs about human suffering and death, she said, create “webs of meaning and comprehensibility” that may sustain and comfort individuals in the times of crisis. This “existential coherence”, as Ellison (1991) referred to it, provided by religion may be especially valuable for those confronting high levels of stress.

Ellison (1991), in his study looking at religious involvement and well-being, found that those who had strong religious beliefs had significantly higher levels of life satisfaction, greater personal happiness, and fewer negative psychosocial consequences to traumatic events. In addition, he noted that church attendance and private devotion contributed to well-being indirectly, by strengthening religious beliefs and worldviews. Ellison suggested that these findings support the view that religious beliefs can provide an interpretive framework, which help individuals make sense of reality.

Ellison (1991) also suggested that religion enhances well-being through a relationship with the divine that helps with coping. Having a partnership with a more powerful force may enhance people’s perceptions that both daily situations and major life events are manageable. These beliefs may also serve to reduce worry or blame, as people yield some psychological control of problems that appear irreconcilable and/or attribute

some responsibility for difficult situations to the divine. Additionally, interaction with the divine may improve perceived well-being by deepening the sense of orderliness and predictability of events by supplying difficult situations with meaning (Ellison, 1991).

Elkin et al. (2007) investigated the religious beliefs and behaviors of mothers of children with cancer (N=27). Overall, 30% of the mothers reported elevated depressive symptoms on the Beck Depression Inventory. These mothers, who were classified as having mild, moderate, or severe depressive symptoms, reported significantly less religious belief than those who classified as minimally depressed. In addition, most of the participants reported increased religious behaviors after the diagnosis of their child. There was, however, no significant relationship between religious behaviors and depressive symptoms.

Religious Social Support

Social relationships within the church have been a focus in the sociological study of religion since the discipline started (Krause, Ellison, Shaw, Marcum, & Boardman, 2001). Participation in a church or faith community provides opportunities for social interaction with others who have similar values and philosophies about life (Ellison, 1991). People who are active in a congregation also become part of larger social networks that they can call upon for support in times of crisis and adversity. A number of studies suggest that greater involvement in religion improves health and subjective well-being (Krause 2003). Some researchers have suggested that the health-related impact of religion is best explained by the social relationships that flourish in church settings (Ellison, 1991; Krause et al., 2001). Several participants in one study mentioned support

from church members as a community resource that was helpful in dealing with the experience of having a child with cancer (Patterson et al., 2004).

While the amount of help provided by others is important, there are some studies that suggest support *given* to others may also have beneficial effects. Reciprocity in social relationships may be especially salient for religious social support, as many religious traditions emphasize the importance of helping others (Krause, 2003).

Measures of social support within the context of religion have not been well developed or tested. However, the wider literature on measurement of social support is extensive and many sophisticated, multidimensional scales assessing secular social support exist (Krause, 2003) that could be adapted to a religious context.

Religious/Spiritual Coping

Some research has indicated that in times of stress, many people turn to religious coping to help them manage. Pargament (1998) suggested that major life events threaten or harm many of the significant things in people's life, including the sense of meaning, intimacy with others, personal control, physical health, and the sense of personal comfort. Religion, he suggested, offers people a variety of ways to conserve objects of significance in times of stress, or for transforming them when maintaining them as they were is not possible.

There is evidence to suggest that religious and spiritual methods of coping can affect the psychological, social, physical and spiritual adjustment of people to crisis (Pargament, 2003). Research has indicated that religious and spiritual coping techniques do not duplicate those of nonreligious coping and therefore cannot be reduced to

nonreligious forms of coping. They have been found to add unique variance to the prediction of health and well-being after removing the effects of nonreligious coping measures (Pargament, 1998; 2003).

Recent research has investigated religious coping with major life events and found a connection between stressful life events and various forms of religious and spiritual involvement (Pargament, 1998). Koenig et al. (1997) surveyed 267 patients about how they coped with life-threatening physical illness. Over 40% of participants referred to religion or religious themes as being important for them. More notable is the fact that all of these individuals mentioned religion spontaneously, even before being asked specific questions about the role of religion or spirituality in their coping. Additionally, when later asked to rate the extent to which they used religion to cope, 40% ranked it as the most important factor that enabled them to cope. The researchers noted that the more severe the stressor and the less controllable it was, the more likely individuals were to turn to religion.

A few qualitative studies have mentioned religion and spirituality as it relates to coping in parents of children with cancer. Splika, Zwartjes and Zwartjes (1991) interviewed 265 family members of children with cancer and found less denial and better acceptance of the disease on the part of more religious mothers. Based on the relationships observed in the data, they suggested that religion seemed to be serving as a protective-defensive system, which helped family members cope in a more active and constructive way. The qualitative study by Patterson, Holm and Gurney (2004) discussed previously also found that religious beliefs were mentioned by 31% of their families as

being a helpful resource in dealing with their child's diagnosis. The authors suggested that religious beliefs not only provided comfort for many of the families, but mobilized active coping, prompting people to search for the strength to accept and find meaning in the situation.

Schneider and Mannell (2006) conducted a qualitative study with twelve parents whose children had cancer, exploring the coping mechanisms they used to deal with their child's illness. The role of religion and spirituality in the coping process of these parents was a main focus of their study. The results of their interviews indicated that most participants described spirituality and faith as a source of comfort. The deeply personal, highly complex nature of faith also emerged as a theme for these parents as it was difficult to describe what their faith meant to others. Overall, the authors concluded that religious faith served as an effective coping mechanism and was part of an active, rather than passive, coping style for these participants.

Papaikonomou and Nieuwoudt (2004) also identified themes related to religion and spirituality in their qualitative study. Responses were somewhat mixed, but overall, religion and spirituality appeared to be positive factors for these individuals. One of the mothers found support through her religious beliefs in times of isolation, while a father reported feeling "cut off" from God. Several participants stated that their faith in God or spirituality helped offer a sense of control, personal strength, and relief from suffering.

In their research with parents of terminally ill children, Ross and Davies (2006) also found that spiritual impact was a major theme from interviews. Most of the 29

parents acknowledged some religious affiliation and stated that religion or spirituality had a place in their lives.

Some other quantitative studies have included elements of religion as part of a broader coping scale. Greening and Stoppelbein (2007) noted that parents' risk for anxiety decreased after use of religious coping/optimism, measured from the Brief COPE. Additionally, the coping scale used by Goldbeck (2001) included a dimension described as seeking stability through religion. This dimension signified a religious attitude and the search for religious meaning in the disease. They found that parents who had complementary coping styles including religious strategies experienced increased personal quality of life.

These studies all indicate positive outcomes of religious coping. However, as discussed previously, different coping strategies can be both effective and ineffective. It is also important, then, to consider potentially harmful forms of religious coping. There is some evidence that certain religious responses to stressful events are associated with greater distress (Pargament, 1997; Pargament, Zinnbauer et al., 1998). Researchers have described responses such as punishing God, spiritual discontent, and pleading for direct intervention by God as potentially negative. For example, Steele and Davies (2006) found that some parents lost their relationship with God, or described feeling angry and blaming God, or feeling personally punished. Some temporarily lost or questioned their faith, but later reaffirmed it. The authors indicated that parents who reaffirmed their faith in God were more likely to accept the situation and were more satisfied with their lives than parents who had lost their faith.

In order to help determine whether religion helps individuals to cope better with stress, additional research needs to examine whether those who use religion as a coping mechanism are more satisfied and better adjusted than those who do not (Koenig, 1997). Assessing for both positive and negative religious variables will help researchers understand the impact of religion on coping and adjustment.

The research on religion and spirituality suggests that it is often an important factor for many parents. It seems that questioning or losing faith may have the potential to be a negative influence on parent's adjustment. Further focus on the ways in which religious and spiritual factors affect adjustment to childhood cancer would help to improve the understanding of this experience for parents.

4. RATIOALE FOR CURRENT STUDY

Although there are several studies that have explored one of the relationships among personal outlook, social support, coping, and adjustment of parents of child with cancer, none have investigated the associations among secular and religious measures of each of these constructs and psychological adjustment. The main purpose of this study is to investigate whether religious beliefs, coping, and social support contribute additional variance in the prediction of adjustment in mothers of children with cancer beyond the variance explained by secular predictors of these constructs. The decision to focus on mothers rather than fathers or both was based on literature that suggests mothers, in many settings, continue to be the primary caregivers of ill children. Additionally, mothers of pediatric cancer patients have been found to experience higher distress than fathers (Frank et al, 2001; Sloper, 2000)

5. HYPOTHESES

Secular predictors

1. Mother's reports of optimism will correlate positively with their reports of life satisfaction and self-esteem, and correlate negatively with their reports of anxiety and depression.
2. Mother's reports of family and friend social support will correlate positively with their reports of life satisfaction and self-esteem, and correlate negatively with their reports of anxiety and depression.
3. Mother's reports of approach coping will correlate positively with their reports of life satisfaction and self-esteem, and correlate negatively with their reports of anxiety and depression.
4. Mother's reports of avoidant coping will correlate negatively with their reports of life satisfaction and self-esteem, and correlate positively with their reports of anxiety and depression.

Religious predictors

5. Mother's reports of spiritual transcendence will correlate positively with their reports of life satisfaction and self-esteem, and correlate negatively with their reports of anxiety and depression.

6. Mother's reports of faith community social support will correlate positively with their reports of life satisfaction and self-esteem, and correlate negatively with their reports of anxiety and depression.
7. Mother's reports of positive religious coping will correlate positively with their reports of life satisfaction and self-esteem, and correlate negatively with their reports of anxiety and depression.
8. Mother's reports of negative religious coping will correlate negatively with their reports of life satisfaction and self-esteem, and correlate positively with their reports of anxiety and depression.
9. The religious predictors of spiritual transcendence, faith community social support, and religious coping will contribute additional variance in the prediction of life satisfaction, self-esteem, anxiety, and depression, beyond the variance explained by secular predictors of optimism, friend and family social support, and approach and avoidant coping.

6. METHOD

Sample

The sample consisted of 94 (N=94) mothers who had a child between the ages of 0 and 12 with a diagnosis of cancer, or a child who had cancer while between the ages of 0 and 12. Their children also underwent medical treatment in the past 5 years or had ongoing complications from cancer or its treatment. A sample size of 91 is recommended for a regression analysis with five predictors in order to detect moderate effect size ($f^2=0.15$), for a power of 0.80 at an alpha of 0.05. The effect size is assumed to be moderate (0.15) and this combined with the desired risk of Type I and Type II error contributed to the sample size determination.

The decision to focus on mothers rather than fathers or both parents was based on research that suggests mothers, in many settings, continue to be the primary caregivers of ill children. Additionally, mothers of pediatric cancer patients have been found to experience higher distress than fathers in several studies (Frank et al, 2001; Sloper, 2000)

Participants were recruited for this study through support groups, posting flyers at local churches and clinics, and placing the flyer information on the researcher's own website. In addition, recruitment requests were emailed to administrators of online support groups, and websites devoted to children's cancer, asking if they would agree to

post it for their members. Interested mothers were invited to call or e-mail the primary investigator regarding the study.

The flyer distributed had information on the study and the researchers contact information and website. The study description did not provide any information on the specific hypotheses. The flyer and advertisement stated that mothers who have a child with cancer were invited to participate in a study working towards identifying and understanding ways of coping. Participants were offered \$10 or a \$10 gift certificate for their participation.

The mean age of the participant sample was 39.5 (range 23-56). Approximately ninety-four percent (93.6%) of the participants described themselves as White/Caucasian, while 3.2% of the participants described themselves as Asian and 3.2% described themselves as African American/Black. None of the participants reported being Hispanic, or "Other."

Thirty two percent (32.3%) of the participants reported attending graduate school, 41.9% graduated from college, 18.3% completed some college or technical school, and 7.5% graduated from high school. Eighty-five percent (85.1%) of the sample reported their marital status as married, while the remaining 14.9% of the sample was single, separated, divorced, or widowed.

The participants were asked questions about their employment and household income. Fifty-nine percent (59.2%) of the mothers reported currently being employed outside the house. The other 40.8% were unemployed, on leave (paid or unpaid) or working as full time students. Thirty-one percent (31.5%) reported a yearly household

income of over \$100,000, 13% between \$80,001 and \$100,000, 25% between \$60,001 and \$80,000, 14.1% between \$40,001 and \$60,000, 8.7% between \$20,001 and \$40,000 and 7.6% between \$0 and \$20,000 a year.

Participants were asked questions regarding their religious identification and activities as well. When asked about their current religious affiliation, the percentages were 52.1% Protestant or other Christian religion, 21.3% Catholic, 2.1% Jewish, 2.1% as Unitarian-Universalist, and 1.1% Muslim. Six percent (6.4%) reported identifying with another religion that was not listed and 14.9% reported that they did not identify with any particular religion. Fifty-one percent (51.1%) indicated that they considered themselves an active member of a religious community and 48.9% indicated they did not. Twenty-five percent (25.5%) reported attending religious services less than once a year, 25.5% reported attending between one and four times a year, 12.8% reported attending services one or two times a month, 23.4% once a week, and 7.4% more than once a week. Five of the participants (5.3%) chose not to respond to this question.

Informed Consent and Confidentiality Procedures.

Several measures were implemented to assure confidentiality of subjects. The purpose, content and process of participation in the study was explained to all prospective participants. They were informed that all study responses were confidential, and contained no information identifying them as an individual participant. Additionally, completed data was accessible only by the research investigators. They were also informed that no information regarding individual responses would be revealed in reports or presentation of results. Participants were also advised that they had the right to end

their participation in the study at any time and could decline to answer any questions. These guidelines were given verbally to those who contacted the researchers and in written form to all participants before participation in the study. Participants were asked to indicate their consent to participate in the study, either by signing a consent form or selecting “submit” on an online version of the consent form.

Measures

Participants were asked to complete a series of questionnaires containing measures designed to assess demographic characteristics, social support, coping, religious/spiritual beliefs, and psychological adjustment. The measures included were as follows:

Anxiety and Depression

The *Symptom Checklist-90-Revised* (SCL-90-R; Derogatis, 1994) was used to assess anxiety and depression. The SCL-90-R is a 90-item self-report that was created to assess the presence of psychiatric symptoms. The participants responded on a 5-point scale according to how distressing each symptom has been for them over the past 7 days, including that day. The scale ranges from “not at all,” to “extremely.” Responses were summed to provide symptom scores. The SCL-90 –R yields scores for nine primary symptom dimensions, including somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism, and for three global indices of distress. Only the 13-item depression (excluding the suicide item) and 10-item anxiety dimensions were used in this study.

The SCL-90-R depression dimension has been found to have high correlation (.80) with the Beck Depression Inventory and the anxiety factor corresponds closely with empirical anxiety and depression factors derived from the MMPI. For the 13-item depression factor, Derogatis reported a coefficient alpha of .90 in both a symptomatic volunteer sample and a psychiatric population. Test-retest reliability coefficients were also good at .75 and .82, respectively. The 10-item anxiety score had coefficient alphas of .85 and .88 and test-retest reliability coefficients of .80 in both populations. In the current study, the Chronbach's alpha was .89 for the depression scale and .91 for the anxiety scale.

Life Satisfaction

The five-item *Satisfaction with Life Scale* (Diener, Emmons, Larsen, & Griffin, 1985) was used to measure general life satisfaction. Items were rated on a seven-point scale from "strongly disagree" to "strongly agree." An example item is "In most ways my life is close to me ideal." Diener et al. reported a coefficient alpha of .87 in a sample of college undergraduates and test-retest reliability of .82 over a two-month period. The Chronbach's alpha in the present study was .87.

Self-Esteem

The ten-item *Rosenberg Self-Esteem Scale* (Rosenberg, 1965) was used to measure global self-esteem. An example item is "I am able to do things as well as most people." Participants were asked to rate items on a four-point scale from "strongly agree" to

“strongly disagree.” Rosenberg (1979) has reported two-week test-retest reliabilities of .85 and .88. In the present study the Chronbach’s alpha for the Rosenberg Self-Esteem Scale was .92.

Optimism

Six items from the *Life-Orientation Test - Revised Version* (Scheier, Carver, & Bridges, 1994) were used to measure their level of optimism. Respondents were asked to indicate their degree of agreement with statements such as “In uncertain times, I usually expect the best,” using a 5-point response scale from 0 (strongly disagree) to 4 (strongly agree). Scheier et al. reported internal consistency of .80 and test-retest reliability of .68 over four months and .79 over 28 months for this measure. The Chronbach’s alpha in the present study for the Life-Orientation Test - Revised Version was .81.

Spiritual Transcendence Index

Seidlitz et al. (2002) developed a scale to assess spiritual transcendence, which they defined as the perceived experience of the sacred that affects one’s self-perception, goals, and ability to transcend one’s difficulties (*Spiritual Transcendence Index*). Participants were asked to rate the items to the extent that they agree or disagree with each. The response format included “strongly agree,” “agree,” “slightly agree,” “slightly disagree,” “disagree,” and “strongly disagree.” The 8-item STI consists of two scales, the God scale and the Spirit sale. The authors reported internal consistency across four separate samples, with mean Cronbach alpha coefficients ranging from .90 in a seminary sample

to .97 in a large community sample. In the present study, the Chronbach's alpha for the God scale was .95 and .94 for the Spirit scale. For the overall total Spiritual Transcendence Index scale, the Chronbach's alpha was .97. This overall scale was the one used in the present study's analyses.

Active and Avoidant Coping

The *COPE* (Carver, Scheier, and Weintraub, 1989) was used to assess coping responses. The COPE was derived in part from the then extant literature on coping, in part from the Lazarus and Folkman (1984) model of coping and in part from the Carver and Scheier model of behavioral self-regulation. The COPE consists of 14 conceptually different coping subscales, each subscale consisting of four items. Some of the coping responses measured are known to be generally adaptive, while others are believed to be more problematic.

For the purposes of this study, 16 items from the COPE scale were used that measure planning, active coping, denial, and behavioral disengagement. Mothers were asked to rate the extent to which they had been engaging in particular responses. The response format was a 4-point Likert scale ranging from 1 ("I haven't been doing this at all") to 4 ("I've been doing this a lot.") Carver et al. reported coefficient alphas ranging from .62 to .80 for each of the four subscales. The planning and active coping scales were correlated above .4, as were the denial and behavioral disengagement coping scale, and will be combined to form scales of approach and avoidant coping. The Chronbach's

alphas for the COPE approach coping and avoidant coping scales in the present study were .86 and .85, respectively.

Emotion Focused Coping

The *Emotional Processing and Emotional Expression Scales*, developed by Stanton et al. (2000) were used to assess emotion-focused coping. Both scales contain 4 items, such as “I take time to figure out what I’m really feeling” and “I let my feelings out freely”. Mothers were asked to rate the extent to which they have been engaging in particular responses. The response format was a four-point Likert scale with options 1 (“I usually don't do this at all”) to 4 (“I usually do this a lot”). The authors reported coefficient alphas of 0.91 for each of the two scales. In the current study, the Chronbach’s alpha for the Emotional Processing and Emotional Expression Scale was .92.

Religious Coping

Religious coping was measured with the *Brief RCOPE* (Pargament, Smith, Koenig & Perez, 1998). The Brief RCOPE is a shorter, revised version of the RCOPE and was designed to assess positive and negative religious coping methods. It consists of 14 items, 7 for each subscale. Mothers were asked the extent to which they used religious coping methods in relation to their child’s illness. Items included “focused on religion to stop worrying about my problems” and “wondered whether God had abandoned me.” The 4-point response format for the Brief RCOPE was as follows: “a great deal,” “quite a bit,” “somewhat,” “not at all”. The authors reported internal consistency estimates of

.90 and .81 for the positive and negative scales, respectively, in a college sample and .87 and .69 in a hospital sample. In the present study, the Chronbach's alpha was .94 for the positive scale and .86 for the negative scale.

Social Support

Social support was measured from the mothers' perspective with the *Social Support Appraisals Scale* (SS-A) (Vaux et al., 1986). This measure was chosen because perceived social support has shown a stronger relationship to well-being than number of support persons, or number of supportive acts (Barrera, 1986). Mothers were asked to rate how much they agreed or disagreed with statements regarding their relationships with family and friends. The response format included "strongly agree," "agree," "disagree," and "strongly disagree."

The SS-A is a 23-item self-report instrument designed to measure the extent to which an individual believes that he or she is loved by, esteemed by, and involved with family, friends, and others. Three scores were computed for this scale: SS-A total (sum of all 23 items), SS-A family (sum of 8 "family" items), and SS-A friends (sum of 7 "friends" items). The eight remaining items refer to "people" or "others" in a general way. Examples include "I can rely on my friends" and "My family cares for me very much." The authors reported good internal consistency with Cronbach alpha coefficients for the three scales of .90, .81, .84 for a community sample; and .90, .81, and .84 for student samples. Expected convergent and divergent validity were found across appraisals of

support from different sources and other support appraisals scales. Where convergence was expected, relationships were in the moderate to strong range (.50 to .80) (Vaux et al., 1986). Weak relationships were found between the SS-A and network variables, generally less than .30, lending support to the contention that perceived support is distinct from social networks. Network variables included aspects of the individual's social environment such as number of supportive individuals and the characteristics and nature of the relationship. The SS-A also demonstrated predicted associations across various measures of distress and well-being. In the present study, the Chronbach's alpha for the overall Social Support Appraisal scale was .82.

Religious Social Support

To date there are no well-studied measures of religious social support. Krause (2003) suggests two major approaches to measure religious social support. One approach is to modify an existing social support measure to specify support as coming from a faith community. Another approach is to create items that reflect social support that is specifically religious in nature. The first option has considerable advantages. To begin with, the psychometric properties of already existing, secular social support measures are well known. Additionally, decades of research with secular support items have already established clear links between these measures and health. Modifying the source of support for such items would allow one to capitalize on this previous work by maintaining the content (Krause, 2003).

In order to create a measure of religious social support for this study, ten items from the Social Support Appraisal Scale (Vaux et al., 1986) were modified to reflect support from the mothers' faith community. Examples included "I can rely on my faith community" and "My faith community cares for me very much." The response format was "strongly agree," "agree," "disagree," and "strongly disagree." Due to the potential overlap between relationships with faith community members and relationships outside of the faith community, mothers were asked to consider their faith community separately from friends and family. In the current study, the Chronbach's alpha for this measure of faith community social support was .94.

Demographics

Demographic variables included race, years of education, family income, and marital status. The amount of time spent participating in individual and group religious activities was assessed with individual items. There were also three optional questions designed to get qualitative feedback about the participants' perceptions of their experiences in adjusting to their child's illness. The questions were: How have religious or spiritual beliefs or practices impacted your adjustment to your child's illness? Thinking about your experience with your child's cancer, in what ways has it impacted your life? Is there anything else that you would like us to know about your experience?

7. RESULTS

Table 1 provides a description of the major variables from the participant questionnaires. The sample size was 94. Included in the table are the means, standard deviations, observed ranges, and possible ranges for each variable.

Table 1
Description of Self-Report Variables

Variable	Mean	SD	Observed Range	Possible Range
Depressive Symptoms	27.90	9.93	13-56	12-60
Anxiety Symptoms	18.96	8.38	10 – 50	10-50
Life Satisfaction	19.35	7.69	5– 35	5 – 35
Self-Esteem	23.85	2.36	16 - 40	10 – 40
Optimism	19.24	5.11	6 - 30	6 – 30
Religious Transcendence	30.19	12.16	8 – 48	8 – 48
Social Support	57.61	10.90	33 – 72	23 – 92
Religious Social Support	25.36	9.43	10 – 40	10 – 40
Approach Coping	27.90	4.38	13 – 32	8 - 32
Avoidant Coping	10.84	4.04	8 – 28	8 – 32
Emotional Coping	20.68	6.60	8 – 32	8 – 32
Positive Religious Coping	15.58	6.90	7 – 28	7 – 28
Negative Religious Coping	11.19	4.91	7 – 25	7 – 28

Preliminary Analyses of Demographic Variables

Pearson's correlations and Independent Samples T-tests were conducted first to test whether any of the demographic characteristics including age, education, income, religious affiliation, number of hours per month spent in religious activities, related systematically to the outcome variables of anxiety, depression, self-esteem, and life satisfaction, and the predictor variables of religious and secular belief, support, and coping.

The demographic variables were not related to life satisfaction, self-esteem, anxiety, or depression. However, several of the demographic variables were related to predictor variables. The number of minutes spent per week in religious activity was positively related to religious identification (Spiritual Transcendence Index; $r=.43$, $p<.01$) and positive religious coping ($r=.29$, $p<.01$). Mothers' level of income was related to the use of approach coping techniques ($r=.21$, $p<.05$). The other demographic variables were not related to predictor variables.

Independent Samples T-tests were computed to determine whether the outcome variables of anxiety, depression, life satisfaction, and self-esteem differed by marital status (married vs. unmarried), and race (Caucasian vs. non-Caucasian). Married mothers reported greater satisfaction with life ($M=20.3$, $SD=7.40$) than unmarried mothers ($M=14.1$, $SD=7.95$), $t(89)=-2.91$, $p = 0.005$. Additionally, unmarried mothers reported greater anxiety ($M=23.1$, $SD=9.70$) than married mothers ($M=18.2$, $SD=7.84$), $t(92)=2.13$, $p=.036$. The other outcome variables did not differ by marital status or race.

Primary Data Analyses

Individual Predictors of Dependent Variables

Pearson correlations were calculated to test each of the components of Hypotheses 1-8. The results of these correlations are presented in Table 2 (secular predictors) and Table 3 (religious predictors). The first four of the hypotheses focused on the secular predictors. Hypothesis 1 predicted that mother's reports of optimism would correlate positively with their reports of life satisfaction and self-esteem, and correlate negatively with their reports of anxiety, and depression. Optimism was positively related to life satisfaction ($r=.47, p<.01$) and self-esteem ($r=.63, p<.01$), and negatively related to anxiety ($r=-.35, p<.01$) and depression ($r=-.51, p<.01$). These results supported hypothesis 1.

Hypothesis 2 predicted that mother's reports of family and friend social support would correlate positively with their reports of life satisfaction and self-esteem, and correlate negatively with their reports of anxiety and depression. Friend and family social support was positively related to life satisfaction ($r=.41, p<.01$) and self-esteem ($r=.61, p<.01$), and negatively related to depression ($r=-.28, p<.01$). Friend and family support was not significantly related to anxiety; therefore, there was partial support for hypothesis 2.

Hypothesis 3 predicted that mother's reports of approach coping would correlate positively with their reports of life satisfaction and self-esteem, and correlate negatively with their reports of anxiety and depression. Approach coping was positively correlated with self-esteem ($r=.40, p<.01$) and negatively correlated with depression ($r=-.22, p<.05$)

and anxiety ($r=-.21, p<.05$).. There were no significant correlations between approach coping and life satisfaction. These results provided limited support for hypothesis 3.

Hypothesis 4 predicted that mother’s reports of avoidant coping would correlate negatively with their reports of life satisfaction and self-esteem, and correlate positively with their reports of anxiety and depression. Avoidant coping was negatively related to life satisfaction ($r=-.25, p<.01$) and self-esteem ($r=-.46, p<.01$), and positively related to anxiety ($r=.27, p<.01$) and depression ($r=.36, p<.01$). The results of these correlations supported hypothesis 4.

Table 2
Pearson’s Correlations of Dependent Variables with Secular Variables

	DEP	SAT	EST	OPT	SOC	APP	AV
ANX	.77**	-.32**	-.39**	-.35**	-.03	-.21*	.27**
DEP		-.61**	-.54**	-.51**	-.34**	-.22*	.36**
SAT			.52**	.47**	.48**	.11	-.25*
EST				.63**	.66**	.40**	-.46**
OPT					.54**	.37**	-.32**
SOC						.33**	-.28**
APP							-.17
AV							

ANX=Anxiety Scale from the Symptom Checklist-90-R; DEP=Depression Scale from the Symptom Checklist-90-R; SAT=Life Satisfaction Scale; EST=Rosenberg Self-Esteem Inventory; OPT=optimism from the Life-Orientation Test-R; SOC=family and friend social support from the Social Support Appraisals Scale; APP=Approach Coping from the COPE; AV=Avoidant Coping from the COPE. * $p<.05$
** $p<.01$ ***= $p<.001$

Hypotheses 5 through 8 focused on the religious predictors. Hypothesis 5 predicted that mother's reports of spiritual transcendence would correlate positively with their reports of life satisfaction and self-esteem, and correlate negatively with their reports of anxiety and depression. Spiritual transcendence was positively related to satisfaction with life ($r=.27, p<.05$) and self-esteem ($r=.22, p<.05$), but was not related to anxiety, or depression. There was limited support for hypothesis 5.

Hypothesis 6 predicted that mother's reports of faith community social support would correlate positively with their reports of life satisfaction and self-esteem, and correlate negatively with their reports of anxiety and depression. Faith community social support was positively related to self-esteem ($r=.66, p<.01$) and satisfaction with life ($r=.48, p<.01$), but was not significantly related to anxiety or depression. These results provide limited support for hypothesis 6.

Hypothesis 7 predicted that mother's reports of positive religious coping would correlate positively with their reports of life satisfaction and self-esteem, and correlate negatively with their reports of anxiety and depression. None of these correlations were statistically significant and thus hypothesis 7 was not supported.

Hypothesis 8 predicted that mother's reports of negative religious coping would correlate negatively with their reports of life satisfaction and self-esteem, and correlate positively with their reports of anxiety and depression. Negative religious coping was negatively related to satisfaction with life ($r=-.33, p<.01$) and self-esteem ($r=-.27, p<.01$), and positively related to anxiety ($r=.35, p<.01$) and depression ($r=.37, p<.01$). These results supported hypothesis 8.

Table 3
Pearson's Correlations of Dependent Variables with Religious Variables

	DEP	SAT	EST	REL	RSOC	POS	NEG
ANX	.77**	-.32**	-.39**	.03	-.05	.15	.35**
DEP		-.61**	-.54**	-.05	-.15	.10	.37**
SAT			.52**	.27*	.23*	.08	-.33**
EST				.22*	.28*	.02	-.27**
REL					.37**	.75**	-.07
RSOC						.47**	.06
POS							.21*

ANX=Anxiety Scale from the Symptom Checklist-90-R; DEP=Depression Scale from the Symptom Checklist-90-R; SAT=Life Satisfaction Scale; EST=Rosenberg Self-Esteem Inventory; REL=religious belief from the Spiritual Transcendence Index; RSOC=Religious Social Support adapted from the Social Support Appraisals Scale for faith community; POS=Positive Religious Coping Scale from the Brief RCOPE; NEG=Negative Religious Coping Scale from the Brief RCOPE. *p<.05 **p<.01 ***=p<.001

Multiple Predictors of Psychological Adjustment

Hypothesis nine was analyzed with regressions including secular and religious predictors and dependent variables (life satisfaction, self-esteem, anxiety, and depression). This hypothesis predicted that spiritual transcendence, faith community social support, and religious coping would contribute additional variance in the prediction of life satisfaction, self-esteem, anxiety and depression, beyond the variance explained by secular predictors of optimism, friend and family social support, and approach and avoidant coping. Four different regressions were run to test this hypothesis, with each regression including only the variables that significantly related to the dependent variable in question.

A hierarchical regression was performed between life satisfaction and the correlated predictors of optimism, social support, and avoidant coping (step one) and spiritual transcendence, religious social support, and negative religious coping (step two). After step one, the secular variables accounted for 42% of the variance in life satisfaction, $R^2=.42$, $F(3, 86)= 16.40$ $p<.01$. After step two, the combination of negative religious coping, religious social support, and spiritual transcendence accounted for additional variance in life satisfaction, R^2 Change=.05, F Change (3, 83)=2.07, $p<.01$. Negative religious coping ($\beta=-.21$, $p = <.05$) was a significant predictor of life satisfaction and religious social support and spiritual transcendence were not. The results provided limited support for hypothesis nine.

**Table 4:
Hierarchical Regression Life Satisfaction**

Predictor Variables	Life Satisfaction		
	R^2 Change	F Change	β
Step 1.	.42	16.40	
Optimism			.25*
Social Support			.36**
Avoidant Coping			-.07
Step 2.	.05	2.07	
Spiritual Transcendence			.09
Religious Social Support			.02
Negative Religious Coping			-.21*

* $p<.05$

** $p<.01$

*** $p<.001$

A hierarchical regression was performed between self-esteem and the correlated predictors of optimism, social support, approach and avoidant coping (step one) and religious belief, religious social support, and negative religious coping (step two). After step one, the secular variables accounted for 59% of the variance in anxiety, $R^2=.59$, $F(4, 86)=23.21$ $p<.001$. When adding the religious predictors to the model, no additional variance was accounted for. These results did not support the predictions about self-esteem in hypothesis nine.

**Table 5:
Hierarchical Regression Self-Esteem**

Predictor Variables	Self-Esteem		
	R ² Change	F Change	β
Step 1.	.59	23.21	
Optimism			.24*
Social Support			.36***
Approach Coping			.16
Avoidant Coping			-.21**
Step 2.	.03	1.32	
Spiritual Transcendence			.13
Religious Social Support			.04
Negative Religious Coping			-.07

* $p<.05$

** $p<.01$

*** $p<.001$

A hierarchical regression was performed for anxiety and the correlated predictors of optimism, approach coping and avoidant coping (step one) and negative religious coping (step two). After step one, the secular variables accounted for 15% of the variance in anxiety, $R^2=.15$, $F(3, 90)=5.47$ $p<.001$. When adding the religious predictor to the model, additional variance was accounted for, R^2 Change=.06, F Change (1, 89)=6.53, $p<.01$ (see Table 6). Negative religious coping ($\beta=.26$, $p = <.01$) accounted for an additional 6% of the variance in anxiety symptoms, supporting the prediction about anxiety in hypothesis nine.

Table 6:
Hierarchical Regression Anxiety

Predictor Variables	Anxiety		
	R^2 Change	F Change	β
Step 1.	.15	5.47	
Optimism			-.21*
Avoidant Coping			.11
Step 2.	.06	6.53	
Negative Religious Coping			.26*

* $p<.05$

** $p<.01$

*** $p<.001$

A hierarchical regression was performed between depression and the correlated predictors of optimism, social support, approach coping, and avoidant coping (step one) and negative religious coping (step two). After step one, the secular variables accounted

for 31% of the variance in anxiety, $R^2=.31$, $F(4, 88)=9.80$ $p<.001$. When adding the religious predictor to the model, additional variance was accounted for, R^2 Change=.04, F Change (1, 86)=4.88, $p<.05$ (see Table 7). Negative religious coping ($\beta=.21$, $p <.05$) accounted for an additional 4% of the variance seen in depression symptoms, supporting the prediction about depression in hypothesis nine.

**Table 7:
Hierarchical Regression Depression**

Predictor Variables	Depression		
	R^2 Change	F Change	β
Step 1.	.31	9.80	
Optimism			-.36**
Social Support			-.02
Approach Coping			-.04
Avoidant Coping			.20*
Step 2.	.04	4.88	
Negative Religious Coping			.21*

* $p<.05$

** $p<.01$

*** $p<.001$

Analysis of Qualitative Responses

There were three optional questions designed to obtain qualitative feedback about the participants' perceptions of their experiences in adjusting to their child's illness.

While this research project was not undertaken as a qualitative study, these questions provided valuable information about the individual experiences of these mothers. Several different themes were identified in looking at participants' responses to each of these

open-ended questions. The responses to the questions will be discussed individually below. It should also be noted that some responses had multiple themes present, and therefore could be counted under more than one theme.

The first question was: How have religious or spiritual beliefs or practices impacted your adjustment to your child's illness? The majority of the sample (n=69; 73.4%) gave responses to this question. Out of those responses, there were several themes that emerged which indicated a positive impact, as well as some that were more negative. Many of the mothers' responses (N=14; ~20% of respondents) indicated that they felt their religious beliefs/faith and practices were a source of support or offered them strength, comfort or peace during this difficult time. Four of these mothers more directly implied that their belief in God or their faith was fundamental to their ability to cope and survive the experience and without it they would not know how to get by. Several of the respondents indicated an increase in the frequency of their prayer since their child's diagnosis.

Responses indicating trust in God's plan, or trust that God was in control, emerged as another theme (N= 16; 23%). This appeared to offer some sense of meaning for many of these mothers, in that as part of God's larger plan, there was a purpose for their child's illness or suffering, whether they are able to know or understand this purpose or not. For some, these statements indicated the participants felt reassured, supported and stronger knowing they had God to rely on or knowing God was with them during the experience. This trust in God was also mentioned as helping to buffer from negative emotions. Three mothers indicated that their beliefs gave them some comfort in knowing

they would see their child again or that their child would go to a better place if he or she were to die. Putting their trust in God appeared to offer some sense of control in a largely uncontrollable situation.

Five participants indicated that they were working on or searching for their place in spiritual a community or their relationship with God. One mother indicated that she felt having stronger faith would have been beneficial to her during this time. One individual stated she was agnostic.

Some mothers (n=7) indicated finding comfort in meditation or other spiritual practices and exploration that were not explicitly religious. A few identified as spiritual but not religious. Most felt that this more secular aspect of faith was also beneficial to them during this time.

Five of the mothers stated that other people's prayers and positive energy were comforting and believed to have a positive impact for their child and family. Two of these mothers, however, indicated that this support dwindled over time and they felt forgotten and/or disconnected from the faith community.

Several participants (N=12; 17%) described either some level of ambivalence or feeling conflicted about faith or beliefs, questioning faith or questioning God. Several (n=5) questioned how or why God would allow children to suffer. Six participants mentioned feeling they were being forsaken or punished, or questioned if they had done something wrong. Two indicated that they were questioning their faith or beliefs overall. Some participants (n=5) indicated that their faith fluctuated through the experience, or that they were conflicted or struggling with maintaining their faith.

There were a few participants who indicated a decrease in religious or spiritual practice or a decrease in their faith in God. For two mothers, the decrease in religious or spiritual practice was because of isolation due to treatment or feeling too worn down to maintain spiritual needs. One indicated she became an atheist as a result of her child's illness.

Taken as a whole, these responses from participants suggest that individual experiences with faith and spirituality varied greatly in both the type and extent of impact they had for these mothers during this stressful time. Despite the varied responses, it is clear that religion and spirituality were present and played some role in how they responded to their child's illness for many of the mothers participating in this study.

The second open-ended question was: Thinking about your experience with your child's cancer, in what ways has it impacted your life? Out of the total sample, 76 mothers (80.8%) responded to this question. About one-third of those who responded indicated that the experience impacted or changed every, or nearly every aspect of their life (N=25; 33%). The participant's responses acknowledged a myriad of ways in which their child's illness had impacted their lives, including lost careers, change in educational or career choice, or altered hours and schedules (n=10), numerous types of financial impact (n=11), impact on relationships with family and friends (n=18), emotions (sadness, anger, resentment, worry/anxiety), perspectives and priorities. Many indicated grappling with or becoming more aware of the instability, unpredictability and increased uncertainty of life (n=9).

Despite all that they were managing, approximately 30% of those who responded indicated that the experience had some positive impact. These participants noted improved relationships with children and spouses (n=11), and that their family became stronger (n=4). Eighteen mothers noted a positive change in perspective including greater appreciation for life and taking less for granted, and increased focus on the important things in life. Some mothers indicated they became less judgmental, had more patience, were more sympathetic, empathic, or sensitive to others (n=6), and four mothers noted that they are now less anxious or less likely to get “worked up” about things. A few mentioned increased support from others (n=5). From these answers it appears that many of the mother’s facing illness in their child were able to transcend or see beyond the pain and stress of their situation to see the positive and experience personal growth.

Many (n=40; 52%) also offered examples and explanations of how cancer had negatively impacted their life. Several who had indicated positive impacts also described negative effects within the same response. Six mothers reported feeling overwhelmed, isolated or trapped by a life dictated by treatment protocol and repercussions of treatment. A few (n=5) mentioned that they felt separate from others or that no one really understood or could relate to what they were going through or had seen what they had seen. Several mothers mentioned losing relationships, due to non-supportive family or friends, or feeling disconnected and some reported that they withdrew or became more reserved as a result (n=5). Others indicated less time and that medical complications impacted their ability to have guests, leave the home, and their family functioning in general (n=4). Some mentioned feeling less optimistic, or experiencing significantly

increased anxiety and depression, devastation, anger and resentment (n=9). Four mothers indicated increased fear for the future or of other illness (n=4)

Whether positive, negative or some amount of both, this experience clearly had significant and potentially lasting effects on all of the participants who responded to this question. Perhaps one mother captured this best in saying, “We are all forever altered.”

The third and final open-ended question was: Is there anything else that you would like us to know about your experience? Fifty-two participants (55%) responded to this question. Given that this was question was so open-ended, there was a wide range of responses, making it more difficult to group them together. However, many mentioned the burden of care and that it made a large difference whether they received support from their extended families, the medical community, and religious community or became isolated. Some mentioned that others could not understand, or that they chose not to share with others, what they were going through in caring for their child. A small number said that they had grown from the experience.

8. DISCUSSION

The current study sought to evaluate the relationships among secular variables (optimism, social support, approach and avoidant coping), religious variables (religious beliefs, religious social support, religious coping) and outcome variables (satisfaction with life, self-esteem, anxiety and depression). Much of the prior research investigating maternal adjustment to the diagnosis and treatment of cancer in their child has focused on secular variables. No studies to date have investigated the associations among secular and religious measures of each construct and psychological adjustment. This study sought to explore if the religious variables added additional prediction to adjustment, beyond that predicted by secular factors. Findings from this study related to the four outcome variables (satisfaction with life, self-esteem, anxiety and depression) will be discussed. Additionally, results from the qualitative findings will be discussed, particularly as they relate to religion and spirituality.

Optimism and Adjustment

The current study found optimism to be positively related to satisfaction with life and self-esteem, and negatively related to anxiety and depression, as hypothesized. These findings are consistent with research by Fotiadou (2008), who reported a negative correlation between optimism and both anxiety and depression in parents who had a child

with cancer, as well as a positive relationship between optimism and satisfaction with life. As Groothenhuis and Last (1997) suggested, remaining hopeful or having a more positive outlook seems to protect parents from negative emotions. In reviewing the qualitative responses from the current study, many mothers indicated worry about whether their children would stay healthy and the isolation they had experienced in caring for their children. A small number of mothers reported that their child's illness had devastated them and brought about anxiety disorders and depression. However, a somewhat larger number of mothers indicated that they had grown from the experience. Whether it is optimism specifically or not, it does seem that those who were able to find something positive or see the good in the situation were less likely to focus on, or to report, the negative. This is similar to finding of Steele and Davies (2006) who indicated that parents who accepted the situation and found positive meanings out of the experience felt more in control of their lives, were not overwhelmed by emotions such as anxiety and depression, and believed that they had gained from the experience

Family and Friend Social Support and Adjustment

The current study found that family and friend social support was positively related to satisfaction with life and self-esteem and negatively related to depression. These findings were similar to the studies by Sloper (1996, 2000) who found that lack of social support related to higher distress in mothers and Hoekstra-Weebers (2001) who found that mothers who perceived receiving less social support were at greater risk for psychological distress. However, family and friend support was not related to anxiety. This finding seems to be somewhat inconsistent with previous research. One explanation

for the lack of relationship could be the length of time since initial diagnosis and long-term treatment. Hoekstra-Weeber, Jaspers, Kamps, and Klip (2001) found that support was highest at time of diagnosis when compared to 6 and 12 months later. In the current sample a majority of mothers (84%) reported receiving their child's diagnosis two or more years prior to completion of the survey. Qualitative responses obtained from the open-ended study questions suggest that many mothers experienced a distancing from members of their social networks. In particular, some reported that while initially family and friends were supportive, over time, people seemed to forget or were unable to relate to or handle what they were going through. This is consistent with previous qualitative research, which indicates that many parents experience similar feelings of disconnect and distancing (Papaikonomou & Nieuwoudt, 2004; Patterson et al, 2004). Patterson, Holms and Gureny (2004) also noted that some participants indicated conflicted relationships with people who were both supportive at times and at times a source of strain. Perhaps the kind or quality of support changes in various situations and there is not a consistent positive impact on anxiety. Another possible explanation is that family and friend social support is an external factor and may not provide the same sense of control or affect circumstances as much as optimism and personal coping strategies.

Approach Coping and Adjustment

The current study found that approach coping was positively related to self-esteem and negatively related to depression and anxiety. Approach coping was not related to satisfaction with life as hypothesized. This is somewhat inconsistent with previous research. Specifically, Carver, Sheier and Weintraub's (1989) study found that

problem focused coping (approach coping) was linked to individuals engaging in direct actions to alter the source of stress, which in turn led to greater self-efficacy and satisfaction in day to day life. However, as Felton (1984) noted, the effectiveness of coping efforts that are directed at altering situations are limited when the situation is largely beyond one's ability to control or change. Many parent's responses in this and other studies indicated the largely uncontrollable nature of many cancer-related stressors. In the current study, the uncertainty, instability and unpredictability of life while caring for a child with cancer was indicated by many mothers in the qualitative responses. Likewise, Steele and Davies (2006), Papaikonomou and Nieuwoudt (2004) and Patterson et al. (2004) all indicated some sense of uncertainty or feeling out of control as a frequently mentioned theme for parents. Perhaps taking an active, planning approach offered the positive feeling of doing what one could, yet still did not alter the circumstances, mainly, that their child and family are dealing with a potentially terminal illness, often with unknown outcomes including potential relapse or remission, which in turn affects their satisfaction with life.

Avoidant Coping and Adjustment

The current study found that an avoidant style of coping was negatively related to satisfaction with life and self-esteem and positively related to both anxiety and depression, as was hypothesized. This result is consistent with Greening and Stoppelbein's (2005) findings that parent's risk of depressive symptoms increased with the use of avoidant coping strategies. Additionally, Manne et al. (2003) found that avoidant coping strategies appeared to increase mothers' risk of depressive symptoms. This is

consistent with the general idea that actions or attempts to avoid a stressor altogether prevent an individual from dealing with the stressful event or taking necessary action and this may further negatively impact psychological adjustment.

Religious Belief and Adjustment

The current study found that spiritual transcendence, or religious belief, was positively related to both satisfaction with life and self-esteem. It was not related to anxiety and depression in this study. These findings are consistent with research by Ellison (1991), who found that those who had strong religious beliefs had higher levels of life satisfaction. These results are also consistent with findings from Salsman (2005) that some religious and spiritual variables were related to subjective well-being but overall were not consistently related to measures of psychological distress. Perhaps, as Salsman suggested, there are other variables (i.e., optimism and social support), which moderate or mediate the relationship between elements of religious belief and psychological distress.

Religious Social Support and Adjustment

The current study found a significant relationship between religious social support and satisfaction with life and self-esteem, but no relationship between religious social support and either anxiety or depression. This is consistent with Ellison's (1991) findings that people who are more religious tend to enjoy better subjective well-being than individuals who are less involved in religion. One possible explanation for the lack of relationship between religious social support and anxiety and depression could be that while participants with a specific faith or religion may have had an overall sense of being

connected and supported by the faith community which affected overall sense of well-being, this support did not have an impact on day to day struggles and resultant emotions. In the qualitative responses of the current study, one mother indicated receiving a great deal of support and help from her faith community at the beginning; however as time went on, that support dwindled. She indicated belief that they would respond to a crisis, but that most had seemed to forget the family still needed help years later. Additionally, approximately half the sample said that they were not actively involved in a religious community. Several of the participants indicated difficulty maintaining religious activities due to the time and physical constraints that arose from managing treatment and side effects. Several others described a personal faith or spirituality but were not active in a religious community. Perhaps the availability, accessibility, or quality of religious support was not sufficient to impact major medical, financial, and family stressors faced daily by these parents.

Positive Religious Coping and Adjustment

The current study did not find a significant relationship between positive religious coping and any of the outcome variables of anxiety, depression, life satisfaction, or self-esteem. This is similar to findings from Herbert et al. (2009) that indicated positive religious coping was not related to any of the measures of well-being in their study. In contrast, the research of Splika, Zwartjes and Zwartjes (1991) suggested that religion appeared to act as a protective-defensive system that motivated efforts by family members to cope constructively. Additionally qualitative reports of mothers in the current study suggest that a positive, trusting view of God and faith in many cases helped

provide strength, guidance and comfort. It may be that positive religious coping as measured by Pargament et al.'s (2000) scale helped provide and create some support and meaning, but the items may not be specific enough to describe the coping needed for the kind of medical, family, and financial problems encountered. It may also not be accurately describing or assessing the benefits that positive religious/faith responses can offer.

Negative Religious Coping and Adjustment

The current study found a positive relationship between negative religious coping and anxiety and depression, and a negative relationship between negative religious coping and satisfaction with life and self-esteem. This is consistent with findings from previous research that certain religious responses to stressful events are associated with greater distress (Pargament, 1997; Pargament, Zinnbauer et al., 1998). A study with women diagnosed with breast cancer also found similar results, namely that negative religious coping predicted declining mental health, increased depression and less life satisfaction (Herbert, 2009). The mean for negative religious coping in the current study was rather low (11.19 on a scale with a possible range of 7 to 28) and some participants did not report doing this type of coping. The items on this scale focus on questioning God, or feeling abandoned or punished by God. This type of response did emerge as a theme in the qualitative data and has also been noted by previous qualitative research (Steele & Davies, 2006). While this type of response is clearly present for some parents during this intensely stressful experience, it is important to consider that these items may be better indicators of depression or anger rather than of a type of coping.

Secular and Religious Predictors of Satisfaction with Life and Self-Esteem

Negative religious coping explained additional variance in satisfaction with life above that explained by the secular variables. This suggests that negative religious coping is a unique predictor of decrease in satisfaction with life. Negative religious coping did not explain additional variance in self-esteem beyond the variance explained by the secular predictors, however. Additionally, although spiritual transcendence and religious social support were related to both satisfaction with life and self-esteem, neither predicted additional variance in these two outcome variables. These results are contrary to previous research, which has lent support to religion as a protective factor. It may be that optimism and secular support are more central to people's daily experiences than similar religious measures. Religious coping may play a stronger role in people's self-esteem and satisfaction with life in a more devoutly religious community, or in a less secular society.

Secular and Religious Predictors of Anxiety and Depression

The religious risk factor of negative religious coping did explain symptoms of both anxiety and depression above what was explained by secular measures. This would suggest that negative religious coping uniquely predicted an increase in negative affect and is a risk factor for developing difficulties with psychological adjustment. This is consistent with Pargament's (1997) findings that indicated that certain religious responses to stressful events are associated with greater distress. It raises the question, though, of whether this scale is appropriately defined as coping or if it is measuring a type of distress.

Qualitative Religious Coping Responses

Approximately 73% of the total sample responded to the open-ended question that asked: How have religious or spiritual beliefs or practices impacted your adjustment to your child's illness? This question was one of three added to the study in order to give participants a chance to share their experience in a more personal way.

Responses to this question were varied, representing both seemingly positive and negative forms of religious coping or response. Many found strength and comfort from their beliefs. Some questioned God or their faith or, for one reason or another, experienced decreased practice or belief. Only one reported losing faith entirely. For several of the participants that responded, it appears that their religious response had both positive and negative qualities, or that it fluctuated over the course of their experience of diagnosis and treatment. It seems that these individual's definition of personal faith was influenced more by changes in outcome or perspective. Steele and Davies (2006) reported that several of the parents they interviewed lost then regained their faith throughout the process their child's illness. Those that regained it ultimately were more likely to accept the illness and were less impacted by negative emotions.

The range of responses points to the very complex and individual nature of religious and spiritual experience. Additionally, the fact that a majority of participants responded to this question suggests that religion and spirituality are factors present for many individuals during a stressful, life-altering experience such as this.

Summary

Previous studies have highlighted the potential importance of optimism, social support, specific personal coping strategies and religious variables in the adjustment of mothers facing cancer in a child. Several of the findings from this study are consistent with what others have found. Specifically, lower reports of optimism, perceived social support and approach coping were related to higher levels of emotional distress, in this case anxiety and depression, and decreased well-being, as measured by satisfaction with life and self-esteem. Additionally, increased reports of avoidant coping were related to decreased well-being and increases in distress.

However, this study did not find a quantitative relationship between many of the religious variables purported to be helpful or protective for parents. Specifically, while measures of well-being were related to faith community social support and religious belief, emotional distress was not related to the religious variables of belief, social support or positive religious coping. One religious variable stood out as the exception to this. Increased use of negative religious coping was related to higher levels of emotional distress and a decrease in reports of well-being. This variable was also the only religious variable shown to be a unique predictor of distress and well-being.

On the surface it seems that these results point to minimal impact of religious coping for mothers experiencing cancer in a child. However, looking more closely at the qualitative information gathered, it is clear that religion, spirituality and personal faith played some role for most of the participants. This qualitative data also suggests the complex and potentially variable nature of this relationship for many people. It appears

that the impact of religion and spirituality on coping with a major life stressor such as childhood cancer cannot be fully understood through quantitative measures alone.

Taken together the results of this study help to give some insight into what factors impact adjustment and coping for mothers as they deal with the diagnosis and treatment of cancer in a child. However, they also suggest that, in particular, religious and spiritual factors are complex and deserve further investigation both quantitatively and qualitatively.

Clinical Implications

The quantitative findings from the current study suggest that overall, secular measures of optimism, social support and coping are recommended over religious measures when assessing risk and protective factors of mothers who have a child with cancer. However, for many, religious and spiritual factors may be an important aspect of their experience and although, as measured quantitatively in this study, they did not add as much to the prediction of psychological adjustment as secular measures, they should not be entirely ignored. Results from the qualitative information gathered did indicate that religion and spirituality were a factor or played a role for many of the participants. Additionally, as indicated by these qualitative reports, as well as results from previous qualitative research, religious and spiritual responses to major life events appear to be deeply personal and highly complex. It may be that the existing measures are not sensitive enough to fully capture this complex phenomenon and that use of open-ended assessment questions are beneficial when assessing this area of functioning. Clinicians

should be mindful of the potential importance of religion and spirituality for some mothers. Talking with and listening to those for whom this is important and/or helping to facilitate better access to spiritual resources is likely to help support these individuals, particularly those who feel conflicted in their faith.

Focusing on increasing optimism and friend and family social support when working with mothers may be important, as these variables showed high correlations with well-being and distress variables. Additionally, a focus on increasing certain approach coping behaviors and decreasing avoidant behaviors in treatment is suggested, as these were moderately correlated with negative emotions and sense of well-being.

Clinicians should also be aware that individuals engaging in negative religious coping responses, as defined by the scale used in this study, are at risk for poorer emotional adjustment. By asking about this type of coping or response, clinicians could help intervene with mothers at risk for anxiety and depressive disorders.

Limitations and Future Directions

There were several limitations to this study. This study sample consisted primarily of Caucasian, well-educated women. Additionally a majority of the participants (73.4%) identified with Catholic or other Christian faiths. The expression and experience of faith and belief can vary greatly across religions and thus it would be helpful to try to conduct similar studies with other groups, to study more individuals of other faiths and also those who identify with more a secular spirituality.

Another limitation of this study is in the measures used. Religion and spirituality are multifaceted and often very personal constructs. Although the measures in this study were chosen in an attempt to assess multiple aspects of the religious experience, they are still likely limited in their scope. Additionally, most of the measures available for use are Judeo-Christian oriented and do not encompass the full spectrum of beliefs. Thus, our quantitative measurement of religious or spiritual beliefs and behaviors likely does not fully capture the complexity of these constructs. More conceptual and analytical work is needed with scales of religious belief, support, and behaviors to improve their reliability and validity to better assess the range of people's religious experience.

Many of the themes gathered from the qualitative responses do not appear to be accurately represented in the items of existing measures. In particular, several of the items in the measure of positive religious coping focused on an active seeking of support and care from God, looking for a deeper connection, or putting plans into action. Given that the experience of coping with cancer in a child can be so life-altering and leaves little room for anything other than managing the care of the child, perhaps items that focus more on what people take from their faith or feel it gives them would better assess the positive elements of religious belief and response. Additionally, the measure of religious belief or transcendence used may be a valid measure of the experience of the sacred and how it affects self-perceptions, feelings, goals, and ability to transcend difficulties in daily life circumstances for the general population, but may not accurately assess how this process looks or works during a crisis or prolonged stressful experience.

Additional qualitative research specifically aimed at understanding religious and spiritual responses throughout the coping process could help to further inform development of scales that better capture the experience and the potential benefits and/or negative impact different kinds of responses may elicit

This study also looked at only one point in time. Further research using longitudinal design would be beneficial. A diagnosis of cancer is not a single event, but rather a series of demands and challenges. It is likely that changes in symptomatology, beliefs and behaviors occur as families go through the course of diagnosis, treatment and possible remission/relapse. Assessing mothers at more than one time point may allow a better understanding of the effects of religious variables on psychological adjustment and well-being over time. Future research should also examine potential moderators or mediators of religious belief, coping, or social support on psychological adjustment, such as personality traits, severity of child's illness, and where on the trajectory of diagnosis, treatment, recovery or relapse a family is. Better understanding of these types of variables can contribute to more effective prevention or treatment programs to aid in mothers' psychological adjustment.

9. APPENDICES

Appendix A: Symptom Checklist-90 (Depression and Anxiety Scales)

In the PAST WEEK INCLUDING TODAY, how much were you distressed by each of the following

0=Not at all 1=A little bit 2=Moderately 3=Quite a bit 4=Extremely

1.	Nervousness or shakiness inside	0	1	2	3	4
2.	Loss of sexual interest or pleasure	0	1	2	3	4
3.	Feeling low energy or slowed down	0	1	2	3	4
4.	Trembling	0	1	2	3	4
5.	Crying easily	0	1	2	3	4
6.	Feelings or being trapped or caught	0	1	2	3	4
7.	Suddenly scared for no reason	0	1	2	3	4
8.	Blaming yourself for things	0	1	2	3	4
9.	Feeling lonely	0	1	2	3	4
10.	Feeling blue	0	1	2	3	4
11.	Worrying too much about things	0	1	2	3	4
12.	Feeling not interest in things	0	1	2	3	4
13.	Feeling fearful	0	1	2	3	4
14.	Heart pounding or racing	0	1	2	3	4
15.	Feeling hopeless about the future	0	1	2	3	4
16.	Feeling tense or keyed up	0	1	2	3	4
17.	Feeling everything is an effort	0	1	2	3	4
18.	Spells of terror or panic	0	1	2	3	4
19.	Feeling so restless you couldn't sit still	0	1	2	3	4
20.	Feelings of worthlessness	0	1	2	3	4
21.	The feeling that something bad is going to happen to you	0	1	2	3	4
22.	Thoughts and images of a frightening nature	0	1	2	3	4

Appendix B: Satisfaction With Life Scale

Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

- 1=Strongly disagree
- 2=Disagree
- 3=Slightly disagree
- 4=Neither agree nor disagree
- 5=Slightly agree
- 6=Agree
- 7=Strongly agree

- | | | | | | | | |
|--|---|---|---|---|---|---|---|
| 1. In most ways my life is close to my ideal | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. The conditions of my life are excellent | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. I am satisfied with my life | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. So far I have gotten the important things I want in life | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. If I could live my life over, I would change almost nothing | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Appendix C: Global Self-Esteem

1=Strongly agree 2=Agree 3=Disagree 4=Strongly disagree

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

Appendix D: LOT-R

Please be as honest and accurate as you can throughout. Try not to let your response to one statement influence your responses to other statements. There are no "correct" or "incorrect" answers. Answer according to your own feelings, rather than how you think "most people" would answer.

A = I agree a lot
B = I agree a little
C = I neither agree nor disagree
D = I disagree a little
E = I disagree a lot

- | | | | | | |
|--|---|---|---|---|---|
| 1. In uncertain times, I usually expect the best. | A | B | C | D | E |
| 2. It's easy for me to relax. | A | B | C | D | E |
| 3. If something can go wrong for me, it will. | A | B | C | D | E |
| 4. I'm always optimistic about my future. | A | B | C | D | E |
| 5. I enjoy my friends a lot. | A | B | C | D | E |
| 6. It's important for me to keep busy. | A | B | C | D | E |
| 7. I hardly ever expect things to go my way. | A | B | C | D | E |
| 8. I don't get upset too easily. | A | B | C | D | E |
| 9. I rarely count on good things happening to me. | A | B | C | D | E |
| 10. Overall, I expect more good things to happen to me than bad. | A | B | C | D | E |

Appendix E: The Spiritual Transcendence Index

Please respond to each of the items below by circling one number that most closely describes the extent to which you agree or disagree with the statement.

- 1 = strongly disagree
- 2 = disagree
- 3 = slightly disagree
- 4 = slightly agree
- 5 = agree
- 6 = strongly agree

1. My spirituality gives me a feeling of fulfillment
2. I maintain an inner awareness of God's presence in my life
3. Even when I experience problems, I can find a spiritual peace within
4. I try to strengthen my relationship with God
5. Maintaining my spirituality is a priority for me
6. God helps me to rise above my immediate circumstances
7. My spirituality helps me to understand my life's purpose
8. I experience a deep communion with God

Appendix F: COPE

We are interested in how people respond when they confront difficult or stressful events in their lives. There are lots of ways to try to deal with stress. Please indicate the extent to which you did the following in the PAST MONTH when experiencing stressful events.

- 1 = I usually don't do this at all
2 = I usually do this a little bit
3 = I usually do this a medium amount
4 = I usually do this a lot

1.	I try to come up with a strategy about what to do.	1	2	3	4
2.	I take additional action to try to get rid of the problem.	1	2	3	4
3.	I refuse to believe that it has happened.	1	2	3	4
4.	I give up the attempt to get what I want.	1	2	3	4
5.	I make a plan of action.	1	2	3	4
6.	I concentrate my efforts on doing something about it.	1	2	3	4
7.	I pretend that it hasn't really happened.	1	2	3	4
8.	I just give up trying to reach my goal.	1	2	3	4
9.	I think hard about what steps to take.	1	2	3	4
10.	I do what has to be done, one step at a time.	1	2	3	4
11.	I act as though it hasn't even happened.	1	2	3	4
12.	I admit to myself that I can't deal with it, and quit trying.	1	2	3	4
13.	I think about how I might best handle the problem.	1	2	3	4
14.	I take direct action to get around the problem.	1	2	3	4
15.	I say to myself "this isn't real."	1	2	3	4
16.	I reduce the amount of effort I'm putting into solving the problem.	1	2	3	4

Appendix G: Emotional Processing and Emotional Expression

Take a minute to think about dealing with your child's cancer. With this in mind, please answer the following questions:

- 1 = I usually don't do this at all
- 2 = I usually do this a little bit
- 3 = I usually do this a medium amount
- 4 = I usually do this a lot

1. I take time to figure out what I'm really feeling.
2. I delve into my feelings to get a thorough understanding of them.
3. I realize that my feelings are valid and important.
4. I acknowledge my emotions.
5. I let my feelings come out freely.
6. I take time to express my emotions.
7. I allow myself to express my emotions.
8. I feel free to express my emotions

Appendix H: Brief RCOPE

To what extent have you used the following in coping with your child's illness

1 = Not at all

2 = Somewhat

3 = Quite a bit

4 = A great deal

1.	Looked for a stronger connection with God	1	2	3	4
2.	Sought God's love and care.	1	2	3	4
3.	Sought help from God in letting go of my anger.	1	2	3	4
4.	Tried to put my plans into action together with God.	1	2	3	4
5.	Tried to see how God might be trying to strengthen me in this situation.	1	2	3	4
6.	Asked forgiveness of my sins.	1	2	3	4
7.	Focused on religion to stop worrying about my problems.	1	2	3	4
8.	Wondered whether God had abandoned me.	1	2	3	4
9.	Felt punished by God for my lack of devotion.	1	2	3	4
10.	Wondered what I did for God to punish me.	1	2	3	4
11.	Questioned God's love for me.	1	2	3	4
12.	Wondered whether my church had abandoned me.	1	2	3	4
13.	Decided the devil made this happen.	1	2	3	4
14.	Questioned the power of God.	1	2	3	4

Appendix I: Social Support Appraisal Scale

Below are a list of statements about your relationships with family and friends. Please indicate how much you agree or disagree with each statement as being true.

1=Strongly disagree	2=Disagree	3=Agree	4=Strongly agree
1. My friends respect me.	1	2	3 4
2. My family cares for me very much.	1	2	3 4
3. I am not important to others.	1	2	3 4
4. My family holds me in high esteem.	1	2	3 4
5. I am well liked.	1	2	3 4
6. I can rely on my friends.	1	2	3 4
7. I am really admired by my family.	1	2	3 4
8. I am respected by other people.	1	2	3 4
9. I am loved dearly by my family.	1	2	3 4
10. My friends don't care about my welfare.	1	2	3 4
11. Members of my family rely on me.	1	2	3 4
12. I am held in high esteem.	1	2	3 4
13. I can't rely on my family for support.	1	2	3 4
14. People admire me.	1	2	3 4
15. I feel a strong bond with my friends.	1	2	3 4
16. My friends look out for me.	1	2	3 4
17. I feel valued by other people.	1	2	3 4
18. My family really respects me.	1	2	3 4
19. My friends and I are really important to each other.	1	2	3 4
20. I feel like I belong.	1	2	3 4
21. If I died tomorrow, very few people would miss me.	1	2	3 4
22. I don't feel close to members of my family.	1	2	3 4
23. My friends and I have done a lot for one another.	1	2	3 4

Appendix J: Religious Social Support

Below are a list of statements about your relationships with people in your faith community. Please indicate how much you agree or disagree with each statement as being true.

	1=Strongly disagree	2=Disagree	3=Agree	4=Strongly agree
1. My faith community cares for me very much	1	2	3	4
2. I am not important to others in my faith community	1	2	3	4
3. My faith community holds me in high esteem	1	2	3	4
4. I can rely on people in my faith community	1	2	3	4
5. I am loved dearly by my faith community	1	2	3	4
6. My faith community doesn't care about my welfare	1	2	3	4
7. I can't rely on my faith community for support	1	2	3	4
8. I feel a strong bond with my faith community	1	2	3	4
9. My faith community looks out for me	1	2	3	4
10. I feel like I belong.	1	2	3	4

Appendix K: Demographic Items

Mother's Age: _____

Your race or ethnic background:

- _____ African American/Black
- _____ White
- _____ Hispanic
- _____ Asian American
- _____ Other _____

Child's gender: Male ____ Female ____

Child's age: _____

Child's race or ethnic background:

- _____ African American/Black
- _____ White
- _____ Hispanic
- _____ Asian American
- _____ Other _____

Marital status:

- _____ Never married and not involved in a romantic relationship currently
- _____ Never married and involved in a romantic relationship currently
- _____ Married for ____ years
- _____ Separated for ____ years
- _____ Divorced for ____ years
- _____ Widowed for ____ years

Education level:

- _____ Did not graduate from high school
- _____ Graduated from high school
- _____ Had some college or technical school
- _____ Graduated from college
- _____ Attended graduate school

Child's other parent's educational level:

- _____ Did not graduate from high school
- _____ Graduated from high school
- _____ Had some college or technical school
- _____ Graduated from college
- _____ Attended graduate school

Child currently lives with:

- Both biological parents
- One biological parent
- Someone other than parents

Are you currently employed outside the home? Yes ___ No ___

Occupation: _____

Spouse's occupation (if married): _____

Yearly household income:

- Between 0 and \$20,000
- Between \$20,000 and \$40,000
- Between \$40,000 and \$60,000
- Between \$60,000 and \$80,000
- Between \$80,000 and \$100,000
- Over \$100,000

When did you first learn of your child's cancer? (dd/mm/yyyy) ____/____/____

What is your child's diagnosis? _____

What was the date of your child's last medical treatment? _____

Are there any ongoing medical consequences from your child's cancer or medical treatment? _____

Is your child currently being primarily cared for:

- At home
- At a hospital or other support facility

How much do you believe that your child's illness can be changed or cured?

- Not at all
- Somewhat
- Very much
- Extremely

How many hours of child care relief do you receive per week? _____(hrs)

What is your current religious affiliation? (Please circle one)

Catholic Protestant (Specify_____) Other Christian_____ Jewish
Muslim Hindu Buddhist Unitarian-Universalist Other _____
None

Do you consider yourself an active member of a religious community?

Yes___No___

How often do you attend religious services or other religious activities? (Please circle one)

Less than Once a Year Once or Twice per Year Three or Four times per Year
Once a Month Two times a Month Once a Week More than Once a Week

How many hours per week do you spend in group religious activities? _____(hrs)

How many hours per week do you spend in *individual* religious or spiritual activities?
_____ (hrs)

OPTIONAL QUESTIONS:

How have religious or spiritual beliefs or practices affected your adjustment to your child's illness?

Thinking about your experience with your child's cancer, in what ways has it affected your life?

Is there anything else that you would like us to know about your experience?

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CURRICULUM VITAE

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