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Stressors and coping strategies of children with cancer and healthy children: A cross-sectional study

Bull, Beth Anne, Ph.D.

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STRESSORS AND COPING STRATEGIES
OF CHILDREN WITH CANCER AND HEALTHY CHILDREN:
A CROSS-SECTIONAL STUDY

by

BETH ANNE BULL

Submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy

Thesis Advisor: Dennis Drotar, Ph.D.

Department of Psychology
CASE WESTERN RESERVE UNIVERSITY
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GRADUATE STUDIES

We hereby approve the thesis of

Beth Anne Bull

candidate for the Doctoral degree. *

(signed) John Smith
(chair)

Elizabeth Daniel, 1990
Elizabeth Short
Daniel A. Wehby

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Abstract
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The present study described and compared the stressors and coping strategies of 60 children and adolescents ages 9-18: 20 recently diagnosed subjects with cancer, 20 long-term disease-free survivors of cancer, and 20 healthy subjects without a previous or present diagnosis of cancer. As expected, recently diagnosed subjects identified significantly more cancer-related stressors than survivors on the Children’s Stress Inventory (CSI), illustrating the breadth with which cancer affects their lives. Contrary to expectation, newly diagnosed youth did not use more emotion-management coping strategies in response to general stress than healthy youth. Developmental analyses found that, with the exception of survivors coping with cancer-related stress, young children (ages 9-13) and adolescents (ages 15-18) used comparable amounts of emotion-management coping strategies, a form
of coping that is conceptualized as requiring higher abstract reasoning skills. While this supported the hypothesis that recently diagnosed children and adolescents would use comparable amounts of emotion-management, it was contrary to the hypothesis that in both the Survivor and Healthy groups, adolescents (ages 15-18) would use more emotion-management than children (ages 9-13). One explanation for the children in this study generally using more emotion-management than would be expected for their cognitive maturity may be their significantly higher intelligence compared to the adolescents. However, this younger group of children also demonstrated use of another less complex and sophisticated form of emotion-management characterized by denial, which may account for their increased use of emotion-management. As expected, children and adolescents with cancer, for the most part, demonstrated variability (i.e., differences) in the types of coping strategies they used in cancer-related versus non-cancer-related stressful situations. This finding suggests that children with cancer use coping strategies flexibly in order to manage the changing context and demands of a variety of stressful situations. Finally, recently diagnosed subjects evidenced a significant negative relationship between state distress and self-
rated coping effectiveness, while healthy youth showed a similar relationship between trait distress and effectiveness. Study limitations as well as treatment and theoretical implications are discussed.
In Loving Memory of

Jimmy and Casey
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express my heartfelt appreciation to the children and families that participated in this study. Their brave and selfless contributions have made it possible to learn more about how children cope with cancer as well as general stressors, and to begin to identify ways to make the battle against cancer more manageable.
Cancer in children, although a relatively rare disease will strike approximately 8000 American children in 1993, and is the chief cause of death by disease in children aged 1-14 (American Cancer Society, 1993). The mortality rate from cancer in children, however, has declined from 8.3 per 100,000 in 1950 to 3.5 per 100,000 in 1987. Although cancer was an acute and fatal illness at one time, with improvements in diagnostic and therapeutic techniques childhood cancer is now a chronic, life threatening illness (Crist & Kun, 1991; Siegel, 1980). This extended life expectancy has necessitated increased attention to psychological adjustment of children with the disease, its treatment, and the short- and long-term psychological consequences of medical treatment. In the 1960’s and early 1970’s the primary emphasis was on helping the patient cope with imminent death (Kubler-Ross, 1969). Currently there is a growing interest in understanding and facilitating the coping strategies these children have used to manage the considerable stressors of this serious chronic disease (Katz & Jay, 1984; Koocher & O’Malley, 1981; Kupst & Schulman, 1988; Worchel, Copeland & Barker, 1987).

One focus of these research efforts has been to
of living with cancer. In an exploratory study by Chesler and Barbarin (1987), children with cancer identified several types of stress associated with childhood cancer including: "1) Understanding the diagnosis, prognosis, and treatment; 2) adapting to treatment and side effects; 3) relating to medical staff; 4) relating to one's family and peers; and, 5) dealing with two worlds-illness and health, specialness and normalcy" (p.164). In addition to coping with the various cancer-related stressors, children with cancer must simultaneously manage a range of everyday stressors, both minor and major (e.g. school, dating, relocation, divorce) that healthy children encounter (Koocher & O'Malley, 1981). Understanding how children with cancer perceive these two worlds of stressors and identifying the types of coping strategies they use to deal with them is a necessary first step for implementing psychosocial interventions for stress management.

Most research on coping strategies of children with cancer has focused on their reactions to stressful medical procedures directly related to treatment of cancer rather than general everyday stressors. For example, several studies (Dahlquist, Gil, Armstrong &
Ginsberg, 1985; Hubert, Jay, Saltoun & Hayes, 1988; Jay, Elliot, Ozolins, Olson & Pruitt, 1985) have examined children’s behavior before and/or during painful cancer-related procedures such as bone marrow aspirations, lumbar punctures and chemotherapy venopunctures. In these studies, however, coping strategies were modeled and/or taught as interventions to the children. Consequently, spontaneous, self-initiated coping strategies could not be assessed but are important to identify (Branson & Craig, 1988).

Although research has not focused on spontaneous coping strategies in children with cancer, at least one study (Curry and Russ, 1985) identified and classified the self-initiated coping strategies that healthy children employed during a stressful dental treatment. This study found that children used a variety of coping strategies and that age was related to the amount and type of strategies used. The coping measure used was a semi-structured interview in which children’s thoughts, self-statements and wishes were elicited in response to four phases of the dental procedure. The paucity of such studies underscores the conspicuous lack of research on the everyday stressors and coping strategies of children with cancer as well as children with other
chronic conditions, in addition to the need for a more
descriptive assessment of these children’s spontaneous,
self-initiated coping strategies. Research on
spontaneous coping strategies in children has also been
limited by a lack of attention to theory.

A Stress and Coping Paradigm

Lazarus and his colleagues (Folkman & Lazarus, 1980; Folkman, Lazarus, Dunkel-Schetter, DeLongis &
Greun, 1986; Lazarus, DeLongis, Folkman & Gruen, 1985;
Lazarus and Folkman, 1984) have developed and tested a
theory of psychological stress and coping that is
applicable to children. The proposed research is based
on this theoretical framework.

Stress. Lazarus and Folkman (1984) define
psychological stress as "a particular relationship
between the person and the environment that is appraised
by the person as taxing or exceeding his or her
resources and endangering his or her well-being" (p.
19). This view of stress emphasizes the person-
environment relationship and identifies two processes,
cognitive appraisal and coping, that mediate this
relationship.

Appraisal. Cognitive appraisal is the two-part
process whereby a person evaluates whether or not a
situation is potentially damaging or threatening to his or her well-being (primary appraisal) and what coping options or resources are personally available to him or her to neutralize harm or improve prospects for benefit (secondary appraisal).

Properties of Coping. Coping is defined as the "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus and Folkman, 1984, p. 141). There are three key concepts in this definition. First, coping is defined as process—rather than trait—oriented. Second, it emphasizes how a person copes within a specific context, and speaks to the changes that occur from one situation to the next based on the person-environment relationship. Finally, the definition of coping as "efforts to manage demands" implies that coping consists of anything that a person does or thinks to manage a stressful situation irrespective of the success of those methods. Furthermore, "managing" the situation is not limited to effective mastery over the condition, but also includes minimizing, avoiding, tolerating and accepting those situations.
Coping Strategies. Lazarus and colleagues have defined two major forms of coping, problem-focused and emotion-focused. Problem-focused coping includes strategies that are directed at changing the environment or changing one's own behaviors. This strategy focuses mainly on problem-solving within the environment (e.g. "I do my homework so I get better grades", Bull & Drotar, 1991). Emotion-focused coping is defined as efforts to regulate (decrease or increase) emotional states that are caused by or related to stressful events (Compas, Malcarne & Fondacaro, 1988; Lazarus & Folkman, 1984). Emotion-focused coping involves changing one's perception of a situation without altering the actual situation (e.g. "I think of treatment as something I have to go through to get better", Bull & Drotar, 1991).

The Lazarus and Folkman theory of stress and coping has several advantages for empirical studies of the stressors identified and spontaneous coping strategies used by children and adolescents with cancer. First, the concept of appraisal explicitly focuses on the identification of the range of situations that children with cancer regard as stressful as well as the specific strategies they deem available to them to handle the situations.
Second, the concept of the person-environment relationship takes into account personal and situational factors that may affect coping with a stressful situation. The situational context of stressors has generally not been well recognized by trait-oriented approaches as an influential factor in stress and coping (Lazarus & Folkman, 1984). However, what is stressful for a person in one situation is not necessarily stressful for him or her in another. For example, some children with cancer feel comfortable about their baldness in front of their families, but not in front of their peers (Bull & Drotar, 1991).

A third strength of this theory is that the classification of coping strategies as problem- or emotion-focused provides a way to summarize many thoughts and actions in the coping processes across various situations and among different samples into coherent categories.

Research involving Lazarus’ Stress and Coping Paradigm

The stress and coping paradigm outlined above has been utilized in several stress and coping studies. Several studies with healthy adults (Bombardier, D’Amico & Jordan, 1990; Folkman and Lazarus, 1980; Folkman et al., 1986; Irion & Blanchard-Fields, 1987; McCrae &
Costa, 1986) have utilized the Ways of Coping Checklist (Folkman & Lazarus, 1980) or the Ways of Coping Checklist-Revised (Folkman & Lazarus, 1985), measures of stress and coping based on the Lazarus paradigm. These semi-structured interviews contain a broad range of cognitive and behavioral coping strategies that people use to manage stressful encounters. Subjects are asked to describe stressful situations that they have experienced and indicate which of the coping strategies they used to manage these situations. Three of these studies have utilized the problem- versus emotion-focused classification to describe the coping strategies of healthy middle-aged men and women (Folkman & Lazarus, 1980; Folkman et al., 1986) and chronically ill men and women (ages 18-81, Bombardier et al., 1990). No effects of age were associated with type of coping (Folkman & Lazarus, 1980). Gender differences were revealed only in problem-solving coping, with men using more of this strategy in stressful situations requiring more information (Folkman & Lazarus, 1980).

Although the Lazarus and Folkman stress and coping framework was originally developed for use with adults, it has recently been applied to physically healthy children and adolescents (Band & Weisz, 1988; Compas,
Malcarne & Fondacaro 1988; Wertlieb, Weigel & Feldstein, 1987). To derive a taxonomy of children’s stress and coping processes based on the Lazarus paradigm, Wertlieb et al. (1987) developed the Children’s Stress Inventory (CSI), a semi-structured interview adapted from work by Lazarus and colleagues, and Greene and Yando (as cited in Wertlieb et al., 1987). Similar to the Ways of Coping Checklist, this interview allows the child to report his or her own general stressful experiences, but differs from the former procedure in that children also report the coping strategies that they actually used during the stressful encounter as opposed to choosing from a list of potential strategies.

The CSI is designed to elicit information in three areas: Focus, Mode and Function. In this measure, Focus of the coping effort is either on the self or environment. Mode distinguishes between a range of coping modes including information-seeking, support-seeking, direct action, inhibition of action, and intrapsychic/cognitive coping. Function, based on Lazarus and Folkman, indicates whether the child used emotion- or problem-focused coping. Wertlieb et al. (1987) used the CSI to describe the general stressors and coping strategies experienced by healthy 7-10 year
old children and to establish initial validity and reliability of this scale. They found that young children reported a wide range of coping strategies, although the most prevalent strategies focused on the self, on problem-solving and on direct action. Age and gender differences were also found. Older children (age 10) used more emotion-management than problem-solving, and girls were more likely than boys to focus their strategies on themselves. There were no gender differences, however, in use of problem- or emotion-focused strategies.

**Developmental effects.** Developmental aspects of coping have been examined in several other studies. The child’s developmental level is an important determinant of the child’s ability to initiate various kinds of coping responses (Peterson, Harbeck, Chaney, Farmer & Thomas, 1990). Compared to younger school-age children, older physically healthy children (age across studies: 9-14) have been found to use more cognitively-oriented coping methods, such as emotion-focused coping (Compas, Malcarne & Fondacaro, 1988; Wertlieb et al., 1987), intrapsychic coping (Wertlieb et al., 1987), information-seeking coping (Peterson & Toler, 1986) and secondary coping, which requires more abstract thinking
(Band & Weisz, 1988). Furthermore, older children (ages 12-18) have been found to use more coping strategies than younger children (ages 8-11; Brown, O’Keefe, Sanders & Baker, 1986) who more often report that "nothing helps" (Wertlieb et al., 1987). Finally, Band and Weisz (1988) found that young children (age 6) used more primary than secondary coping, indicating that they were more likely to perform some action to change the environment than to use cognitive strategies to manage the stress.

Until recently, developmental differences in problem- versus emotion-focused coping among children with cancer had not been studied. Worchel et al. (1987) described the control-related coping patterns in pediatric cancer patients, but did not delineate types of coping. They found that younger children (ages 7-12) reported less control over their coping behaviors, while older children (ages 13-17) used more cognitive and decisional control-related coping than younger children. Bull and Drotar (1991) found that adolescents with cancer in remission and adolescent survivors of cancer (ages 12-17) reported using more emotion-focused coping strategies than did younger children (ages 7-12). To the author’s knowledge, these findings have not been
investigated in children recently diagnosed with cancer.

**Situational Consistency of Coping.** Another important concept of the Lazarus stress and coping paradigm that has recently been examined in children is the hypothesis that coping is a situationally specific rather than general process (Peterson, 1989). Lazarus and Folkman’s theory of stress and coping postulates that a person uses consistent strategies to cope with different situations only to the degree to which the same environmental stimuli are present (Peterson et al., 1990). At least two studies have examined consistency of coping strategies in adults. Folkman and Lazarus (1980) studied the consistency with which healthy middle-aged men and women used emotion- and problem-focused coping to manage different self-reported stressful situations. The coping strategies of the sample were characterized more by variability than consistency. A similar pattern of low consistency of coping across stressful situations was found in the Compas, Forsythe and Wagner (1988) study of adults’ coping strategies in response to academic and personal stressors. These authors suggested that the differences in coping may have reflected the different demands, perceptions or availability of resources associated with
the two stressors.

Until recently, studies of cross-situational consistency of children's coping have been restricted to physically healthy children. For example, Wills (1986) found a high consistency in the types of coping strategies used by 7th and 8th graders across five problematic domains: 1) school, 2) parents, 3) health, 4) feeling sad, and 5) problems with friends. Compas, Malcarne & Fondacaro (1988) found a moderate degree of consistency of coping strategies across two stressful situations: Children (10-14 years old) consistently used problem-focused and emotion-focused coping strategies to deal with both academic and interpersonal stressors. Together these findings suggest that children and young adolescents use more consistent coping strategies in response to different stressors compared with adults (Compas, Forsythe & Wagner, 1988; Folkman & Lazarus, 1980). The first study to assess situational consistency of coping strategies in children with cancer (Bull and Drotar, 1991) found that, unlike healthy children, children with cancer were consistent only in their use of one type of emotion-focused coping strategy (intrapsychic coping) across cancer- and non-cancer-related stressors. However, subjects in this
study were children with cancer in remission and long-term disease-free child survivors of cancer. Consequently, the question of whether children recently diagnosed with cancer would demonstrate similar patterns of coping strategies remains unanswered.

Coping Effectiveness. Coping is conceptualized as efforts to manage a stressful situation, regardless of the success of those efforts. For this reason, coping strategies can range from ineffective to very effective, depending on the characteristics of the person as well as environmental conditions. For example, a strategy that one person may find effective to reduce the stress of a situation may be ineffective for someone else. This suggests the need to evaluate perceived coping effectiveness over a range of stressful situations. Unfortunately, the lack of an explicit criterion or gold standard for efficacy of coping has limited research progress (Rutter, 1981). Neither "solving the problem" nor "resolution of the conflict" can necessarily be used as the criterion for efficacy (Lazarus & Folkman, 1984). This is particularly true in coping with cancer in which children face a host of unalterable stressors such as amputation, hair loss, or terminal disease. Although the child can not actually "solve" such situations as an
amputated limb, he or she can still manage the physical and emotional demands effectively and experience a sense of mastery over the problem.

Investigators have utilized several different operational definitions of efficacy of coping. Some studies have defined perceived effectiveness by asking subjects, "Did the coping strategy work?", and then correlating these responses with the frequency of use of the strategy (Irion, 1987; McCrae & Costa, 1986). However, this method would not detect situations in which a person rigidly persists in using a maladaptive strategy for lack of a better one. Others have used long-term health outcome or social functioning as indicators of effective coping style (Fritz, Williams & Amylon, 1988; McCrae & Costa, 1986). Fritz et al., (1988) assessed cancer-related coping strategies of childhood cancer survivors who had positive long-term health outcomes and found that survivors had effectively used a variety of different coping strategies during the treatment phase in response to the same cancer-related stressors. For example, some well-adjusted survivors showed assertiveness and argumentativeness toward their caregiver while others with good outcomes were compliant and passive.
The most direct approach to measuring effectiveness of coping was taken by Band and Weisz (1988) who described children's coping with everyday stress. Children described their coping responses to six stressful domains and then told whether or not each coping strategy they used "worked" to make the stressful situation better. Their coping responses were also independently rated by an adult investigator as "effective" or "noneffective". Efficacy was defined by the raters as the likelihood that the coping strategy would contribute to reduced stress in the stressful situation. Band and Weisz (1988) found that adult raters classified the majority of the children's coping efforts as efficacious. According to children's ratings of their effectiveness, younger children (age 6) identified themselves more often as effective at using strategies involving problem-solving than emotion-management. In comparison to boys, older girls (age 12) were more often effective with strategies used in response to medically-related stress.

Obtaining child-rated perceptions of coping effectiveness is an important step in describing the range of effectiveness of coping strategies of children with cancer. Such information may also be useful in
designing psychosocial interventions to help children with cancer maximize what they perceive as effective coping efforts and minimize what are regarded as less effective strategies. In the Band and Weisz (1988) study, however, children merely reported whether a strategy was or was not effective. Consequently the degree of effectiveness of coping strategies could not be assessed. This method may be improved by utilizing a 5-point Likert-type scale to more specifically describe the degree of perceived effectiveness (Bull & Drotar, 1991; Spirito, Stark & Williams, 1988).

In the past decade, theory and research methodology have been adapted from research with adults in order to study stress and coping in healthy children, and more recently, children with cancer in short- and long-term remission. To this author’s knowledge, however, no one has described the stressors and coping strategies of recently diagnosed children with cancer in an acute stage. Furthermore, there is a need to examine the stress and coping strategies of children with cancer in relation to healthy children. To address this need, the present research investigated the stressors and coping strategies of children in two stages of cancer (recently diagnosed and long-term disease-free survivors) as well
as healthy children without a history of cancer.

**Preliminary Research**

The present study extends a prior investigation of the stressors and coping strategies of children with cancer in remission and long-term child survivors of cancer. Bull and Drotar (1991) interviewed 39 children and their mothers using two stress and coping semi-structured interviews. The Children’s Stress Inventory (CSI; Wertlieb, et al., 1987) was used to assess perceived general life stressors and coping strategies, and the McCabe and Weisz measure (McCabe & Weisz, 1988) was used to describe cancer-related coping strategies in response to five cancer-related stressors. The CSI and McCabe and Weisz measure were both refined in this study. For each measure, after coping strategies were reported, children were prompted to explain why they chose that particular coping strategy and how it helped to make the situation better. This allowed for more accurate coding of the Function (i.e. emotion-management or problem-solving) of the strategy. Inter-rater reliability using percent agreement and Kappa coefficients was also determined for both measures. Reliability for categorizing stressors on the CSI ranged from 95.5% to 100% (Kappa coefficients: .94 to 1.00).
Reliability for coding coping strategies ranged from 80.3% to 91.7% (Kappa coefficients: .61 to .84) on the CSI, and 95.6% to 97.8% (Kappa coefficients: .91 to .94) on the McCabe and Weisz measure.

The Bull and Drotar study (1991) found that children with cancer in remission and long-term child survivors of cancer continued to identify some cancer-related stressors on the measure of general life stressors. However, it is important to note that the majority of their perceived stressors (86%) was not related to their cancer, but rather to general life stress. Furthermore, these children did not use a consistent pattern of coping strategies when dealing with cancer-related and general life stressors.

Finally, developmental trends were examined. Older children (ages 13-17) generated more coping strategies than younger children (ages 7-12). Also, older children used significantly more emotion-management coping strategies than younger children, and both groups used emotion-management more often than they used problem-solving coping strategies.

The data gathered by this prior study provided a description of the parameters of perceived stress and coping in children with cancer in remission and child
survivors of cancer. The study had several design and sampling limitations, however, that were addressed in the present study. First, the study sample was drawn from a population of children with cancer who attended a specialized summer camp and yielded findings of unknown generalizability to children who do not attend camp. Second, subjects in the Bull and Drotar (1991) study were children with cancer at only one stage, namely, in long-term remission. One would anticipate, however, that children at a different stage of their disease, for example recently diagnosed, might report different stressors or coping strategies. In addition, the preliminary study lacked a control group of healthy children which is necessary to determine to what extent any coping patterns, age and developmental effects are specific to childhood cancer.

The Present Study

The present study expanded and refined the preliminary study in the following ways: 1) The present sample included subjects from a general clinic population drawn from several centers in order to make the findings more generalizable, 2) The present study included a population of recently diagnosed cancer patients and a control group of healthy children. This
provided a way to compare perceived stressors, patterns of coping and developmental effects of children in two stages of cancer as well as healthy children, and 3) The present study added measures of distress, effectiveness, and life events to determine the relationship of these variables to the coping strategies that were utilized, and vice versa.

**Hypotheses and Rationale**

We presently know little about what children with cancer perceive as most stressful or how they cope with stressors. Not only is there a relative absence of measures to examine children’s perceptions of cancer-related stress and coping, but general measures of coping have not been applied to this population. Only recently have the everyday and illness-related concerns of children with cancer in long-term remission been studied (Bull & Drotar, 1991). Moreover, stressors and coping strategies of children recently diagnosed with cancer have not been assessed, nor have those of healthy children been compared to those of children with cancer.

For these reasons, the primary aim of the present study was to describe and compare the perceived stressors and coping strategies of children recently diagnosed with cancer, survivors of cancer and healthy
children. Specifically, it was hypothesized that the Recently Diagnosed group would identify more cancer-related stressors on the measure of general everyday stress than the Survivor group. The initial phase of cancer is often reported to be one of the most stressful experiences encountered (Koocher & O'Malley, 1980). Children are forced to alter their usual life routine to include frequent doctor and hospital visits for cancer treatment, and must cope with the changes that this incurs in their social and emotional arenas (e.g. school, relationships). Bull and Drotar (1991) found that children in long-term remission from their cancer still identified some cancer-related stressors on a measure of everyday stress and coping. Due to the salience of cancer-related experiences in recently diagnosed children, it was, therefore, expected that they would report more cancer-related stressors on the measure of general, everyday stress than survivors of childhood cancer.

A second hypothesis was that recently diagnosed subjects would use more emotion-focused coping strategies on the general stress and coping measure than the healthy subjects. The use of problem-focused coping strategies by healthy youth has been found to remain
relatively consistent across age, while emotion-focused strategies are added to the coping repertoire over time and maturation (Band & Weisz, 1988; Compas, Malcarne & Fondacaro, 1988). Children and adolescents with cancer in remission, however, used emotion-focused strategies more often than problem-solving in response to cancer-related stressors (Bull & Drotar, 1991). Curry and Russ (1985) also found that twice as many cognitive as behavioral coping strategies were utilized by children during a stressful medical procedure. The findings of these studies suggest that when children must undergo painful procedures in which little can be done to alter the circumstances, they make use of cognitive strategies that allow them to maintain psychological comfort.

Children and adolescents recently diagnosed with cancer must face similar uncontrollable medical procedures that may not be amenable to problem-solving strategies. Therefore, it was hypothesized that in response to situations they define as everyday general stress (including both cancer- and non-cancer-related stressors) recently diagnosed children and adolescents would use more emotion-focused coping than healthy children and adolescents. Survivors of cancer were not expected to be experiencing as many current cancer-
related stressors in their general everyday situations as recently diagnosed youth, that would necessitate emotion-management strategies. Therefore, it was not expected that they would have more emotion-management than healthy subjects.

A third hypothesis was that children newly diagnosed with cancer and survivors of cancer would, for the most part, utilize different coping strategies in response to cancer- versus non-cancer-related stressful situations. In other words, coping strategies used with cancer-related stress would not be related to those used with non-cancer-related stressful encounters. Bull and Drotar (1991) found that children with cancer in long-term remission were, for the most part, less consistent in their use of coping strategies across general and cancer-related stressors, suggesting that cancer-related stressors may pose extraordinary threats that require specialized coping strategies unlike those used in everyday stressful situations. In that study, however, the use of intrapsychic coping, a strategy that focuses on internal methods of dealing with stressful situations, was found to be used consistently across cancer- and non-cancer-related stressors. The authors suggested that when coping with the relatively
uncontrollable stressors related to cancer, children and adolescents have ample opportunities to practice these internal strategies, thereby making it more likely that they would use them on other stressful situations. Intrapsychic coping, therefore, was the only strategy expected to be used consistently across situations in the present study.

Although several studies have investigated age differences in the coping strategies of healthy children (Band & Weisz, 1988; Brown et al., 1986; Compas, Malcarne & Fondacaro, 1988; Wertlieb et al., 1987), developmental patterns of coping in children with cancer in remission have been only minimally examined (Bull & Drotar, 1991; Worchel et al., 1987). Furthermore, there is an absence of research describing the developmental effects of coping in children recently diagnosed with cancer. A second aim of this study, therefore, was to examine age differences in coping in the Recently Diagnosed, Survivor and Healthy groups. Hypotheses concerning age differences were 1) that healthy adolescents and adolescent survivors of cancer (age 15-18) would use more emotion-management than school-age (age 9-13) children in these groups, and 2) recently diagnosed adolescents and children would not differ in
their use of emotion-focused coping. Healthy adolescents generally report using emotion-management more often than do school-age children (Compas, Malcarne & Fondacaro, 1988; Wertlieb et al., 1987). Although school-age children with cancer in remission reported more emotion- than problem-focused coping, they still reported significantly less emotion-management than adolescents with cancer (Bull & Drotar, 1991).

Developmental trends in problem- and emotion-focused coping have not been studied in children whose cancer was recently diagnosed. However, research on child survivors of cancer as well as healthy children sheds some light on age trends in the use of emotion-focused coping. Band and Weisz (1988) found that younger healthy children used more problem-solving than emotion-focused types of strategies, suggesting that healthy children first learn to use more concrete and practical ways to cope before learning more sophisticated and abstract strategies. Children who have survived cancer, however, used almost 50% more emotion-focused than problem-focused strategies. This trend suggests that the specific stressful situations experienced by children with cancer facilitated the learning and use of more cognitive strategies. Similar
to the children undergoing a stressful medical procedure in Curry and Russ' (1985) study, recently diagnosed children and adolescents must cope with a host of medical as well as general stressors related to their cancer that are often beyond their control to manage with problem-solving strategies. In addition, due to their recent diagnosis, these children and adolescents may not have had ample time to experiment with more direct problem-focused strategies. It was expected, therefore, that recently diagnosed children would report as many emotion-focused coping strategies as adolescents in this group.

Effectiveness of children's coping has not been systematically measured in children with cancer. One important component of coping effectiveness may be children's and adolescents' perceptions of how effective they believe their coping strategies are. The third aim of this research study, therefore, was to examine the perceived effectiveness of children with cancer and healthy children. Specifically, it was hypothesized that across children with cancer and healthy children, effectiveness would be negatively correlated with state and trait distress. Distress was defined as a composite measure of depressed affect, anxiety, low self-esteem
and low well-being. A few investigators have speculated on the relationship between coping efficacy and psychological distress in children and adults. Walker and Greene (1987) found that healthy and chronically ill adolescents' sense of efficacy in dealing with stressful life events was related to their general feelings of well-being. Brown et al. (1986) studied the coping strategies of 8-18 year old children in response to two imagined and one actual stressor. Children identified as "copers", who effectively minimized stress, had less trait anxiety than children identified as "catastrophizers", who ineffectively focused on negative aspects of the stress. McCrae and Costa (1986) more directly studied the relationship between distress and effectiveness in adults. The percent of effective coping strategies (defined as solving the problem or making one feel better) was found to be positively correlated with scores of happiness and life satisfaction. Furthermore, among the types of coping strategies deemed most ineffective were two that are related to the concept of distress: isolation of affect and withdrawal. Based on these findings, it was expected that effectiveness would be negatively correlated with distress in healthy children as well as
children with cancer.
EXPERIMENTAL DESIGN AND METHOD

Study Design

The study design was a three group by two age-level cross-sectional comparison of the perceived general and cancer-related stressors and coping strategies of: 1) children and adolescents recently diagnosed with cancer, 2) long-term disease-free child and adolescent survivors of cancer, and 3) healthy children and adolescents with no history of cancer.

Subjects

A total of 60 subjects (28 females, 32 males) and their mothers/mother-figures were recruited from 4 hospitals and a pediatric clinic. Thirty-three 9-13 year olds and 27 15-18 year olds participated. The 20 recently diagnosed and 20 survivor subjects were recruited from an available pool of children and adolescents who were being treated at the following centers: MetroHealth Hospital (3 recently diagnosed, 3 survivors), University Hospital (Bolwell Ireland Cancer Center) (7 recently diagnosed, 4 survivors), Cleveland Clinic Foundation (5 recently diagnosed, 4 survivors), and Akron Children’s Hospital (5 recently diagnosed, 9 survivors). The 20 Healthy subjects were recruited from the University Hospital MedNet clinic.
Families were contacted by phone, letter or both (depending on the policy of each setting) and written consent was obtained during the in-home interview. A total of 86 families were contacted, with 26 declining participation (7 recently diagnosed, 2 survivors and 17 healthy). Children with cancer who declined participation did not differ from the study children with cancer on age, sex, race or diagnosis. The healthy children who declined participation did not differ from the healthy subjects on race or sex, but did differ significantly on age, with the refusal group having a significantly lower mean age ($M = 11.8$ years, $SD = 3.2$) than the study group ($M = 13.9$ years, $SD = 1.7$), $t(35) = 2.59$, $p = .015$. Although families were not paid for participation, a drawing was held at the end of the study as incentive, and one family from each group was awarded $25.00.

**Selection Criteria**

Selection criteria for the Recently Diagnosed group were: 1) subjects were recently diagnosed (2-8 months post-diagnosis) with any form of cancer excluding brain tumors, 2) subjects' cancer was not in relapse, 3) subjects were receiving treatment for their cancer, and 4) subjects did not have any other chronic illness
condition. Selection criteria for the Survivor group were: 1) subjects had previously been diagnosed with cancer, excluding brain tumors, 2) subjects were in remission for two to five years, 3) subjects were no longer being treated for cancer, and 4) subjects did not have any other chronic illness condition. For the two cancer groups, children with brain tumors were excluded from the study due to the likelihood that cognitive deficits associated with the brain tumor would impede their ability to express their stressors and coping strategies. The selection criteria for the Healthy group were: 1) subjects did not have cancer or any other chronic illness at the time of the interview, and 2) subjects did not have cancer or any other chronic illness at any time in the past. Healthy subjects were perfectly matched to recently diagnosed subjects on age (within 3 months) and gender, and survivors were matched as closely as possible to recently diagnosed subjects on diagnosis, age and gender. Of the 20 matched pairs of subjects with cancer, 7 were matched perfectly on diagnosis, age (within 12 months), and sex. Of the remaining 13 pairs nine were unable to be matched by diagnosis, two by sex, one by age, and one by both age and sex. It was most difficult to match by exact
diagnosis, particularly because many of the recently diagnosed youth had somewhat rare forms of cancer, for example acute myelocytic leukemia, thyroid carcinoma, and facial sarcoma.

**Measures**

Several different types of measures were obtained from the child and/or mother, including demographics, illness information (when applicable), a life events measure, two measures of subjective distress, a measure of IQ, and the primary variables, two measures of stress and coping with both cancer-related (cancer groups only) and non-cancer-related stressors (See Appendix for measures).

**Descriptive Measures**

**Demographics.** In order to identify and describe the sample, and implement subject matching procedures, mothers provided demographic data regarding the child and the family. Socioeconomic status, was measured by the Hollingshead Two-Factor Index of Social Position (Hollingshead, 1975). In addition, the Test Of Nonverbal Intelligence (TONI; Brown, Sherbenou & Johnsen, 1982) was administered to all of the children to describe the range of intellectual functioning within the sample.
History of Illness. For the cancer groups, information regarding the history, course and treatment of the child’s cancer was obtained from the mother and the hospital charts. These data were used to identify and describe the two groups of children with cancer.

Life Events Measure. The Family Inventory of Life Events (FILE, McCubbin, Patterson & Wilson, 1985) was administered to all mothers in order to describe and compare recent family life events in the three groups other than the diagnosis of the child with cancer. Mothers were asked to indicate from a list of events those that occurred both within the past year and prior to the past year. This measure was also used to identify other sources of stress for the children with cancer other than their illness.

Distress Measures. The distress scale of the Weinberger Adjustment Inventory-Short Form (WAI-SF, Weinberger, 1989) was used to describe and compare the subjective experience of trait distress in each of the three groups. The distress scale incorporates self-perceptions of anxiety, depression, self-esteem and well-being. The 12 items are rated by the children on two 1-5 Likert-type scales, one ranging from False to True and the other ranging from Almost Never to Almost
Always. Possible scores range from 12 to 60 with a lower score indicating less reported distress. Cronbach alpha reliability coefficients for the distress scale on the WAI range from .77 to .91 for non-clinic pre-adolescent/adolescent samples and .76 to .92 for clinic pre-adolescent/adolescent samples.

In addition, subjects were asked to complete the State portion of the State Trait Anxiety Inventory for Children (Speilberger, Edwards, Lushene, Monturi & Plaztek, 1973) based on their perceived anxiety/distress over the past week. This is a 20 item measure in which subjects must rate severity of subjective feeling states. Scores range from 20 to 60 with lower scores indicating lower anxiety/distress.

**Stress and Coping Measures**

**General Life Stress and Coping (CSI).** To assess coping strategies used for general life stressors spontaneously identified by children, the Children's Stress Inventory (CSI) was administered (Wertlieb, et al., 1987) to all the subjects. The CSI is an interview in which the child identified five situations he or she regarded as stressful and described his or her strategies for coping with the situations. A benefit of the CSI was its open-ended, interview format that
allowed the child to identify specific perceived stressors as opposed to checklist coping questionnaires which may include situations not appraised as stressful by some children (See Appendix for categorization manual). In addition, children could relate strategies they actually used as opposed to checking a coping strategy that may not have accurately or fully described the way they coped.

Each strategy was coded on three relevant dimensions: Focus (Self-, Environment- or Other-focused), Function (Problem-solving or Emotion-management) and Mode (Information-Seeking, Support-Seeking, Direct Action, Inhibition of Action, or Intrapsychic coping). In order to compare stress and coping responses across various ages, children were asked to describe experiences within the past six months. Coping strategies were also coded on a dichotomous variable called "deny/ignore" which defined whether or not the intention of the coping response was to deny and/or ignore the stressor (See Appendix for categorization manual).

Effectiveness Ratings on the CSI. The CSI also included ratings of effectiveness with respect to the coping strategies, which were rated on a five-point
Likert-type scale. In addition to having children rate the effectiveness of their strategies, mothers also rated the child's effectiveness for each coping strategy identified by the child.

**Reliability (CSI).** Overall inter-rater reliability between two independent raters' ratings of 15 randomly sampled CSI's containing 72 stressors was 88.8%. To correct for inter-rater agreement due to chance alone, a kappa coefficient was computed and was .78 for agreement on type of stressor. Inter-rater reliability was also calculated in the same fashion for the same 15 randomly sampled CSI's which contained 184 coping units. Percent agreement were 93.5% for Focus, 91.3% for Function, and 91.8% for Mode. Corresponding kappa coefficients were .87, .83, and .84, respectively. Percent agreement for the two ratings of the deny/ignore dimension was 95.1%, with a corresponding kappa of .90. Validity data has not been provided to date by the authors of the CSI. Bull and Drotar's (1991) data indicated a correspondence in the types of coping strategies reported on both the CSI and McCabe and Weisz measure. The distributions of direct action, intrapsychic, support-seeking, inhibition of action, and information-seeking coping strategies were quite similar between the two measures, and suggest
construct validity.

**Cancer-Related Stress and Coping.** An interview developed by McCabe and Weisz (1988) was used to examine perceived coping strategies used by subjects with cancer for the following specific cancer-related stressors: 1) having to stay in the hospital, 2) getting bone marrow aspirations and spinal taps, 3) losing one's hair, 4) vomiting or getting sick from one's medicine, and 5) having cancer in general. An advantage of this measure was its unique focus on stressors that were directly and specifically related to the experience of having cancer. To our knowledge, this is the only measure specifically designed to assess perceived coping strategies of cancer-related stress. Due to the cancer-related focus of this measure, it was not given to the healthy controls.

Like the CSI, children described the coping strategies used (if applicable) in each of these situations. The interview form of this measure allowed for it to be coded in the same manner as the CSI (i.e. Focus, Function and Mode) which made between-measure comparisons possible. Also similar to the CSI, the coping strategies on the McCabe and Weisz measure were coded on the "deny/ignore" dimension (See Appendix).
Effectiveness on the Cancer Measure (McCabe and Weisz). Like the CSI, the McCabe and Weisz cancer measure included both child and parent ratings of the child’s effectiveness of his/her coping strategies. Effectiveness was rated on the same five-point Likert scale as on the CSI.

Reliability (McCabe and Weisz). Inter-rater reliability was also calculated in the same fashion for 10 randomly sampled McCabe and Weisz measures which contained 108 coping units. Percent agreement were 94.4% for Focus, 85.2% for Function, and 88.9% for Mode. Corresponding kappa coefficients were .89, .70, and .78, respectively. Percent agreement for the two ratings of the deny/ignore dimension was 87.0%, with a corresponding kappa of .74. Construct validity was suggested in the preliminary study by the similar distributions of types of coping strategies across the McCabe and Weisz measure and CSI, as discussed above.

Procedure

Data were collected from August 1992 to August 1993. Interviews and questionnaires were administered in the child’s home at a convenient time for both the mother and child. Interviews with survivor and recently diagnosed subjects took approximately 1 1/2 hours, while
interviews with healthy subjects took about 1 hour. Measures were given by the author and an undergraduate research assistant trained by the author. The author informed the families that she was available to answer any questions that arose during or after testing. No individual measures were refused by any participants.

This study was conducted in family homes for two reasons. First, although it may have been more practical to see subjects with cancer before or after their clinic appointments, this would have created some procedural confounds for healthy controls who did not have clinic appointments. Second, it was felt that the temporal proximity of the clinic appointment, which sometimes included stressful procedures, may have biased children's descriptions of stressors and coping strategies. Prior experience (Bull & Droter, 1991) indicated that administering the measures in the home was efficient and well accepted.

Child Measures

The CSI was administered first. This measure was presented prior to the McCabe and Weisz cancer-related coping measure to eliminate the possible biasing influence of the cancer-related stressors on the child's report of general life stressors. The McCabe and Weisz
measure was administered next followed by the State Anxiety Scale, the WAI distress measure, and the TONI. **Parent Measures**

Background information, including demographics and illness data, were gathered from the mother. Next, the mother was asked to complete the FILE. Finally, the mother was administered the effectiveness portion of the child's CSI and McCabe and Weisz, as described in the Measures section.
RESULTS

Descriptive analyses of subject demographics and illness characteristics are presented first, followed by descriptive analyses of stressors for the CSI and coping strategies for both the CSI and McCabe and Weisz measure, major hypotheses, and finally, exploratory results. The overall design of the study is a 2 (Age: young, old) X 3 (Group: Recently Diagnosed, Survivor, Healthy) factorial. All comparisons were analyzed via this multivariate design and followed up by univariate tests of significance, where appropriate. Analyses involving non-cancer-related stressors and strategies utilized the full 2 X 3 design, and, therefore involve six conditions, whereas analyses involving cancer-related stressors and coping strategies utilized a 2 (Age) X 2 (Group: Recently Diagnosed, Survivors) and, thus, involve four conditions.

An analysis of covariance was conducted to determine if there were multivariate effects for IQ. Given the significant relationship between age and IQ, all analyses were initially run with IQ as a covariate. Of the 37 analyses, only two had a significant covariate, and are reported as such in the results.

Because of the unequal number of coping strategies
generated per child, proportions were calculated to be used in some correlational analyses. In addition, following recommendations (Kirk, 1982; Winer, 1971), arcsine transformations were performed on those proportions to be used in subsequent t-test, ANOVA and MANOVA analyses to achieve homogeneity of error variance.

Sample Demographics

Table 1 summarizes the sample demographics. Of the 60 subjects, 33 were 9-13 year olds and 27 were 15-18 year olds. The mean age of the young recently diagnosed, survivor and healthy subjects were 11.4 (SD = 1.3), 12.3 (SD = 2.0), and 11.3 (SD = 1.3) years, respectively, while the mean age of the older groups were 17.1 (SD = 1.2), 17.6 (SD = 1.0), and 17.1 (SD = 1.1) years, respectively. Twenty eight of the subjects were female and 32 were male. Socioeconomic status (SES), as measured by the Hollingshead Two-Factor Index of Social Position, had a mean at the middle-class level for each of the three groups although SES ranged from lower- to upper-class across all three groups. All but one of the subjects were White, while the remaining one was Black.

The mean IQ score (Test Of Nonverbal Intelligence;
TONI; Brown, Sherbenou & Johnsen, 1982) for the Recently Diagnosed, Survivor and Healthy groups were 107.1 (SD = 16.0), 104.0 (SD = 13.4), and 107.1 (SD = 15.9), respectively. There was a significant age effect for IQ, with younger children demonstrating higher IQ scores (M = 110.3, SD = 18.0) than adolescents (M = 101.3, SD = 8.6), F(1,59) = 5.38, p = .024. There was a significant interaction for number of recent life events reported by mothers, F(2,54) = 4.64, p = .014, with mothers of both young recently diagnosed children (M = 12.7, SD = 4.6), and adolescent survivors (M = 12.7, SD = 4.5), reporting significantly more recent life events than mothers of young survivors (M = 8.3, SD = 4.2) and recently diagnosed adolescents (M = 7.3, SD = 5.2), t(18) = -2.25, p = .037 (See Table 2). All parents of the healthy children were married, while 85% and 90%, respectively, of the parents of recently diagnosed and survivor children were married. There were no significant differences between the three groups on age, sex, SES, race, IQ or marital status.

**Illness Characteristics**

Illness characteristics are summarized in Table 3. The mean age at diagnosis differed across age (school-age and adolescent) F(1,38) = 131.44, p = .000, with
younger children being diagnosed at an earlier age, and group (Recently Diagnosed and Survivor) F(1,38) = 101.82, p = .000, with recently diagnosed subjects being diagnosed at an older age. The average duration of the illness at the time of the study for recently diagnosed subjects was 4 months (range = 2 to 8 months), and for the survivors, 6.0 years (range = 3.4 to 9.1 years). Fifty-five percent of survivors and 45% of recently diagnosed subjects had a form of leukemia (ALL, AML, or ANLL), while 25% and 30% of these groups, respectively, had a type of sarcoma (Ewing's sarcoma, Osteosarcoma, Synovial Sarcoma, Rhabdomyosarcoma or facial sarcoma). The remaining 20% of survivors and 25% of recently diagnosed subjects had one of several other types of cancer including Hodgkin's Disease, Non-Hodgkin's lymphoma, dysgerminoma or thyroid cancer. Mothers' perceptions of their children's prognosis for survival (5-point Likert-type rating scale from "very bad" to "very good") did not differ across the two cancer groups, with mothers from both groups rating their child's prognosis between "somewhat good" (4) and "very good" (5).

Of the recently diagnosed subjects, half were in initial remission (mean length of remission = 3.9
months, SD = 2.6) and the other half were not, while half of the survivors were in long-term remission (mean length of remission = 4.0 years, SD = 0.6) with the other half considered cured (five or more years in continuous remission; mean length of remission = 6.4 years, SD = 1.2). Based on mothers' reports, all but one child in the two cancer groups were hospitalized overnight for their cancer. The mean number of days hospitalized to date for the Recently Diagnosed group was 35.5 days (range = 0 to 120 days), while children and adolescents in the Survivor group were hospitalized a mean of 46.5 days overall (range = 5 to 145 days). Prior to their diagnosis, 65% of recently diagnosed children and adolescents and 50% of survivors were hospitalized for another reason, while only 20% of healthy subjects had been hospitalized.

Children and adolescents in both cancer groups received between one and three types of treatment, including chemotherapy, radiation, surgery or radioactive iodine. The majority of subjects in each group (75% of survivors and 50% of recently diagnosed subjects) received two kinds of treatment, while the remainder of each group received either one or three types of treatment. The two cancer groups did not
differ on the types of treatment received. The most
common treatment for both groups was chemotherapy, with
95% of survivors and 90% of the recently diagnosed
subjects receiving chemotherapy.

Mothers' ratings of their children's current
physical limitations, \(F(1,36) = 7.64, p = .009\), and
pain, \(F(1,36) = 4.51, p = .041\), due to the cancer or
treatment differed between the two cancer groups.
Limitations were rated on a 5-point Likert-type scale
from "not at all limited" to "very limited", while pain
was rated on a similar scale of "no pain" to "quite a
bit of pain". Mothers of recently diagnosed children
and adolescents reported greater physical limitation
(mean rating slightly higher than "a little limited"; \(M = 2.10, SD = .91\)) than mothers of survivors of cancer
(mean rating between "not at all limited" and "a little
limited"; \(M = 1.40, SD = .68\)). A similar pattern was
found for pain ratings, with mothers of recently
diagnosed subjects rating their children's pain close to
"a little pain" (\(M = 1.70, SD = .80\)) and survivors'
mothers rating pain at almost "no pain" \(M = 1.25, SD =
.44\).

The two cancer groups did not differ in the
frequency of grades dropped or number of school days
missed due to cancer. Mothers reported that only 20% of children and adolescents from each cancer group experienced a drop in their grades as a result of having cancer. Outside of two survivors who missed 410 and 500 days of school, the range of missed days for the two groups was 0 to 180 for the Recently Diagnosed group to date (M = 56.8 days, SD = 43.8), and 2 to 200 days missed for the Survivor group (M = 77.0 days, SD = 53.0).

**Stressors: CSI and McCabe and Weisz measure**

**CSI**

Tables 4 and 5 summarize and cite examples of the life stressors spontaneously identified on the CSI by children and adolescents in each group. Overall, cancer-related stressors accounted for almost three quarters (73.0%) of stressors identified by recently diagnosed subjects on the CSI, while non-cancer-related stressors comprised the overwhelming majority (95.9%) of survivors’ reported stress in the past six months. It can be seen that many different non-cancer- and cancer-related stressors were identified. Of the non-cancer-related stressors, peer- and school-related stressors were the most common types of stressors reported, comprising nearly half of all stressors for each group.
Family stressors (parent and sibling) also comprised a moderate portion on non-cancer-related stressors for each group. Cancer-related stressors were primarily identified by the Recently Diagnosed group, while a total of only four cancer-related stressors were identified by cancer survivors. Among cancer-related stressors, those related to treatment as well as some handicapping condition of the cancer were the most notable stressors identified, followed by the general stress of having cancer, and stress related to managing school while having cancer. Of interest is that cancer-related stressors involving family and peers were substantially less frequent than with non-cancer-related stressors.

McCabe and Weisz Measure

On the McCabe and Weisz measure, percentages of subjects with cancer who experienced each of the four stressors other than "having cancer" were examined. All of the recently diagnosed and survivor subjects had been hospitalized overnight for their cancer. Ninety percent of both recently diagnosed (n = 18) and survivor subjects (n = 18) lost their hair during their treatment and experienced vomiting due to their treatment. Sixty percent of recently diagnosed (n = 12) and 80% of
survivor subjects (n = 16) received at least one bone marrow aspiration or spinal tap. These percentages for each of the four stressful conditions were not significantly different for recently diagnosed and survivor subjects, indicating that the two groups had similar exposure to stressful events during the course of their disease.

**Ratings of Severity of Stressors**

Comparisons were conducted on children's ratings of perceived severity of non-cancer- and cancer-related stressors identified on the CSI as well as of the five cancer-related stressors of the McCabe and Weisz. These analyses were performed for two reasons: (1) to assess whether the stressors on the CSI that were spontaneously identified were comparable in their degree of perceived stress across the three groups, and (2) to determine whether children in the two cancer groups experienced the five cancer-related stressors on the McCabe and Weisz with a similar degree of stress. On the five CSI variables, there were no significant multivariate effects for age, group, or age X group for severity of stressors reported, with all groups reporting stressors that were at least moderate in severity of stress. On the McCabe and Weisz measure, for the stressors "having
cancer", "being hospitalized overnight", and "losing one's hair", there were no significant multivariate effects for age, group, or age X group. For the stressor "getting bone marrow aspirations or spinal taps", an analysis of covariance, controlling for IQ, found that recently diagnosed youth rated bone marrow aspirations and spinal taps as less stressful than survivors, $F(1,27) = 4.79$, $p = .039$. Similarly, recently diagnosed subjects reported significantly lower stress ratings for vomiting than survivors, $F(1,35) = 11.50$, $p = .002$, and adolescents reported greater stress regarding vomiting than school-age children, $F(1,35) = 5.38$, $p = .027$.

**Frequency of Coping Strategies:**

**CSI and McCabe and Weisz Measure**

**Number of Coping Strategies Per Child: CSI and McCabe and Weisz**

The second phase of the analysis involved a tabulation of coping strategies categorized into Mode, Focus and Function, as well as the "deny/ignore" category. Table 6 summarizes the coping strategies identified on both the CSI (cancer and non-cancer) and McCabe and Weisz cancer measure. On the CSI, the total number of coping strategies given per child differed by
age but not by group, or age X group. Adolescents gave significantly more coping strategies on the CSI (M = 13.4, SD = 3.2) than younger children (M = 11.7, SD = 2.9), F(1,59) = 4.52, p = .038. There were no significant differences by age, group or age X group for the total number of coping strategies given per child on the McCabe and Weisz measure.

Mode, Focus, Function and Denial of Coping Efforts

Table 6 illustrates the overall comparability of percentages of types of coping strategies (Focus, Function, Mode) not only between groups but also across measures. Of the five Modes of coping, the most commonly used strategies were Direct Action (e.g. "I just study harder") and Intrapsychic (e.g. "I pretend it didn’t happen"), comprising at least three quarters of all strategies for each of the groups on each measure. For the most part, groups used Self-focused strategies (e.g. "I cry on the inside") about as often as they used Environment-focused strategies (e.g. "I squeeze my mom’s hand so it won’t hurt so much") on both measures. This was also true for the use of Emotion-Management and Problem-Solving when stressors were non-cancer-related. However, when stressors were cancer-related, both recently diagnosed subjects and survivors used more
Emotion-Management than Problem-Solving. Thus, it can be seen that despite having cancer or having had cancer in the past, cancer subjects looked remarkably similar to healthy children in the types of coping strategies they used in response to general, non-cancer-related stress. Furthermore, recently diagnosed and survivor subjects used comparable coping strategies in response to cancer-related stressors.

The Deny/Ignore category described how often the stated intent of a child’s coping strategy was to deny and/or ignore the stressor (e.g. "I went shopping so I wouldn’t have to think about the bad grade"). The use of this category did not differ by age, group or age X group for either non-cancer- or cancer-related coping strategies. It is of note that nearly one quarter of all strategies given by recently diagnosed and healthy subjects in response to non-illness-related stress of the CSI, and by both cancer groups in response to cancer-related stressors were used to deny or ignore stressors.

**Major Hypotheses**

**Frequency of Stressors**

The first major hypothesis, that recently diagnosed children and adolescents would report more cancer-
related stressors on the CSI than child and adolescent survivors, was confirmed. A 2 (Age) X 2 (Group) MANOVA conducted on number of cancer-related stressors and number of non-cancer-related stressors revealed a significant multivariate effect for group, $F(2,35) = 58.71$, $p = .000$. Univariate F-tests showed significant main effects for both number of cancer-related stressors, $F(1,36) = 120.61$, $p = .000$, and non-cancer-related stressors, $F(1,36) = 106.26$, $p = .000$. Recently diagnosed youth reported significantly more stressors related to cancer ($M = 3.7$, $SD = 1.4$) than survivors ($M = 0.2$, $SD = 0.4$). Likewise, recently diagnosed subjects reported significantly fewer non-cancer-related stressors ($M = 1.3$, $SD = 1.4$) than survivors ($M = 4.7$, $SD = 0.6$). Analyses revealed no significant effects for age or age X group.

**Coping Strategies: Use of Emotion-Management by Age and Group**

For the following three hypotheses involving ANOVAs (numbers 2, 4, and 5), arcsine transformations of percentages of the coping strategy emotion-management were utilized to achieve homogeneity of error variance. Percentages, however, are reported in the results to make the findings more meaningful.
The second hypothesis that recently diagnosed subjects would use more emotion-management coping strategies on the CSI than healthy subjects was not confirmed, although the trend was in this direction. Emotion-management comprised 61.2% of all strategies used by recently diagnosed subjects, 59.4% by survivors, and 56.6% by healthy subjects. An ANOVA performed on use of emotion-management for these three groups found no significant differences. Follow-up group t-tests also were non-significant for the specific comparisons between emotion-management used by recently diagnosed versus healthy subjects.

Two MANOVAs were used to address the fourth and fifth hypotheses regarding age differences in use of coping strategies within each of the three groups. Tests of hypotheses involving cancer-related coping strategies of the McCabe and Weisz involved a 2 (Age) X 2 (Group) MANOVA, while those related to non-cancer-related strategies on the CSI involved a 2 (Age) X 3 (Group) MANOVA. A MANOVA conducted on emotion-management coping strategies used in response to non-cancer-related stressors found no significant differences. Follow-up t-tests to test specific hypotheses revealed no significant difference between
adolescent and young survivors on use of emotion-management, nor between adolescent and young healthy subjects. Similarly, a t-test revealed no significant differences between adolescent and young recently diagnosed subjects, as predicted.

A 2 X 2 MANOVA conducted on emotion-management strategies used in response to the cancer-related stressors of the McCabe and Weisz measure revealed a significant group X age interaction, \( F(1,39) = 5.03, p = .031 \). Adolescent survivors used significantly more emotion-management (79.8\%) than child survivors (62.3\%), \( t(18) = 2.78, p = .016 \), but older (62.5\%) versus younger (72.6\%) recently diagnosed subjects did not differ. Thus, as predicted, it was found that older survivors used significantly more emotion-management than younger survivors when dealing with cancer-related stress, but, contrary to expectations, neither older survivors nor older healthy subjects used more emotion-management than younger survivors or younger healthy subjects when dealing with non-cancer-related stress. As predicted, there were no differences between older and younger recently diagnosed subjects on use of emotion-management with either cancer- or non-cancer-related stressors.
Consistency of Coping Across Cancer- and Non-Cancer-Related Stressors

The consistency of coping strategies used in response to different stressors (i.e., similar frequency of utilization of coping strategies in response to both cancer- and non-cancer-related stressors) was assessed for each cancer group by Pearson product-moment correlations. The coping strategies (Mode, Focus, and Function) used in response to non-cancer-related stressors on the CSI were correlated with strategies reported in response to cancer-related stressors (McCabe and Weisz measure; see Table 7). Percentages were used in the correlations due to variation in the number of coping strategies given per child.

The hypothesis that Recently Diagnosed and Survivor groups would each utilize different coping strategies across cancer- versus non-cancer-related stressors, with the exception of intrapsychic strategies, was partially confirmed. For both recently diagnosed and survivor subjects, correlations for Function (problem-solving and emotion-management) and Focus (self and other) of coping strategies across cancer-and non-cancer-related stressors were non-significant, indicating that subjects were utilizing different strategies when dealing with
two different types of stressors.

Of the five Modes of coping (information-seeking, support-seeking, direct action, inhibition of action, and intrapsychic), the percentages of information-seeking coping strategies used by recently diagnosed youth were comparable in both cancer- and non-cancer-related stressful situations, \( r(12) = .61, p = .035 \), as were support-seeking strategies, \( r(12) = .74, p = .006 \), and intrapsychic coping strategies, \( r(12) = .71, p = .010 \). Subjects who used more of each of these three coping strategies in stressful cancer-related situations also used more of each of them in stressful life situations unrelated to their cancer. Information-seeking strategies, however, were so uncommon that the usefulness of this correlation is limited. Of note is that the above correlations were performed on only 12 of the 20 recently diagnosed subjects since the other 8 recently diagnosed subjects gave only cancer-related stressors on the CSI. Percentages of direct action and inhibition of action coping strategies were non-significant across cancer- and non-cancer-related stressful situations. For survivors, only the use of support-seeking strategies were comparable across both cancer- and non-cancer-related stressful situations,
\[ r(20) = .59, \ p = .006. \]

**Effectiveness and Distress**

The relationships among distress (both state distress/anxiety and trait distress) and subjects' ratings of how effective their coping strategies were on both the non-cancer-related stressors of the CSI and the cancer-related strategies of the McCabe and Weisz measure were assessed by Pearson product-moment correlations (See Table 8). The hypothesis that effectiveness would be negatively correlated with state and trait distress for all groups was partially confirmed. For the Recently Diagnosed group, recent state distress as measured by the STAIC was significantly negatively correlated with their ratings of how effective their coping strategies are when dealing with non-cancer-related stressors, \[ r(12) = -.65, \ p = .022, \] but was not related to their rating of effectiveness with stressful cancer situations. Trait distress as measured by the WAI was not correlated with coping effectiveness with either cancer- or non-cancer-related stressors.

Correlations of distress (state and trait) and coping effectiveness when dealing with both cancer- and non-cancer-related stressors were all nonsignificant for
survivors. For children and adolescent survivors of cancer, distress over the past week or over the person’s lifetime was not related to their ratings of how effective their coping strategies were, either in cancer- or non-cancer-related stressful situations.

For the Healthy group, the correlation between trait distress as measured by the WAI and self-ratings of effectiveness when managing non-cancer-related stressors neared significance, \( r(20) = -.42, p = .063 \). This trend suggests that those healthy children and adolescents who are by history more distressed (i.e., trait distress) tend to feel that their coping strategies are less effective when they try to manage general stressful situations.

**Exploratory Results: Distress and Effectiveness**

**Distress**

Exploratory analyses were conducted to determine whether children and adolescents with cancer as well as their mothers perceived their distress as different from that of healthy youth. Table 9 contains the means and standard deviations of the STAIC and the distress scores of the WAI by group as well as by age. A MANCOVA conducted on these two scores, holding constant IQ, revealed a significant multivariate effect for age,
F(2, 52) = 5.36, p = .008. Univariate F-tests found a significant effect for the STAIC only F(1, 53) = 10.89, p = .002, with adolescents reporting more state anxiety/distress (M = 35.9, SD = 6.1) than younger children (M = 31.8, SD = 6.5). No age or age X group effects were found. Subjects’ recent and past distress, as rated by mothers on a five point Likert-type scale was also compared. A MANOVA conducted on recent and past distress revealed a significant multivariate effect for group, F(4, 96) = 3.79, p = .007, with univariate F-tests finding a significant main effect for recent distress only, F(2, 48) = 5.20, p = .009. Group t-tests revealed that mothers of survivors reported lower recent distress for their child (mean ratings between "no distress" and "a little distress") than mothers of both recently diagnosed, (mean rating of "a little distress"), t(38) = 2.85, p = .007, and healthy subjects (mean rating slightly greater than "a little distress"), t(32) = -2.66, p = .012.

**Effectiveness**

The following analyses explored group and age differences of children’s views of their coping effectiveness, as well as maternal ratings of children’s effectiveness and the relationship between mothers and
their children regarding children's coping effectiveness.

Children's and adolescents' ratings of how effective they viewed their coping strategies were compared across all three groups. A 2 X 3 ANOVA conducted for subjects' ratings of coping effectiveness for non-cancer-related stressors on the CSI revealed an age X group interaction that neared significance, \( F(2,51) = 3.17, p = .052 \). Follow-up t-tests indicated that young recently diagnosed subjects rated their coping strategies as significantly more effective than all other subjects, \( t(13) = 2.23, p = .044 \). The ANOVA performed on coping effectiveness ratings for cancer-related stressors of the McCabe and Weisz measure revealed no significant multivariate effects for age, group and age X group. Two repeated measures MANOVAs comparing ratings of coping effectiveness between cancer- versus non-cancer-related stressors revealed no significant differences for either the recently diagnosed or survivor subjects.

Mothers' ratings of how effective they viewed their children's coping strategies were analyzed via three 2 X 2 ANOVAs. A significant age X group interaction, \( F(2,51) = 3.98, p = .026 \), and follow-up t-tests, \( t(10) = \)
2.71, p = .031, revealed that, similar to children's and adolescent's ratings of their effectiveness at coping with non-cancer-related stress, mother's of young recently diagnosed subjects rated their children as more effective when coping with non-cancer-related stress than did mothers of older recently diagnosed subjects, and young and old healthy subjects. There were no significant multivariate effects for ANOVAs conducted on effectiveness ratings for cancer-related stressors on either the CSI or the McCabe and Weisz measure.

Mothers' and children's/adolescent's ratings of the children's/adolescent's effectiveness when coping with non-cancer-related stressors were compared via Pearson product-moment correlations. Mother and child/adolescent ratings were not correlated for either the Recently Diagnosed or the Survivor group. There was a significant correlation, however, for mother and child/adolescent ratings of effectiveness for the Healthy group, \( r(20) = .46, p = .044 \). Similar correlations were conducted for effectiveness ratings on the cancer-related stressors of the McCabe and Weisz measure. Ratings of effectiveness of recently diagnosed mothers and children/adolescents were significantly related, \( r(20) = .54, p = .015 \), while there was no such
relationship for the Survivor group. Thus, mothers and children/adolescents of the Recently Diagnosed group agreed on how effective the child/adolescent was when dealing with cancer-related stress, while those of the Healthy group agreed on child effectiveness when managing general stress.

Finally, the relationship between subjects’ coping effectiveness ratings across cancer-versus non-cancer-related stressful situations was found to be non-significant. In other words, children’s own ratings of how effective they felt when dealing with cancer-related stressful situations was unrelated to their appraisal of their effectiveness when coping with non-cancer-related stress.
DISCUSSION

The findings of the present study emphasize the breadth (i.e., salience and extensiveness) with which cancer affects the lives of children and adolescents. The salience of the diagnosis of cancer was evident in the large percentage of cancer-related stressors identified on the general stress measure by recently diagnosed children and adolescents, even at 8 months post-diagnosis, as well as findings that both survivor and recently diagnosed youth experienced lengthy interruptions in their daily lives due to hospitalizations and treatment. Furthermore, the stress related to the diagnosis of cancer was extensive, including not only treatment and its side effects, but also children’s and adolescents' interactions with peers, families, school and work. These findings support previous studies which have noted the major impact of the diagnosis of cancer in the lives of children and families (Chesler & Barbarin, 1987; Koocher, O'Malley, Gogan & Foster, 1980).

Lazarus’ theory of stress and coping (Lazarus & Folkman, 1984) emphasizes the importance of one’s appraisal of stress, in which a person evaluates whether a situation is potentially damaging or threatening to
his/her well-being. With the challenges of treatment and its side effects, and the threat of death so imminent for recently diagnosed youth, this group of children and adolescents in the present study tended to appraise situations associated with their cancer as stressful. As hypothesized, recently diagnosed youth spontaneously identified significantly more cancer-related stressors than did survivors of cancer. For those children and adolescents who have been off treatment for 2 to 5 years, the associations to and demands of cancer are much fewer. It is interesting to note that the survivors who did identify cancer-related stress reported a fear of the cancer returning or an ongoing effect of the cancer or its treatment, such as an amputation.

Given the immediate and widespread effects of the diagnosis of cancer on children and adolescents recently diagnosed with cancer, the challenges to coping and psychological adaptation can be significant (Eiser, Havermans, Pancer & Eiser, 1992). While several studies have found children and adolescents with cancer to have more difficulties in adjustment in the areas of somatic concerns, social isolation, self-esteem, emotional lability and academic achievement (Eiser et al., 1992;
Koocher et al., 1980; Sanger, Copeland & Edwards, 1991), other studies have reported relatively normal psychosocial functioning (Kellerman, Zeltzer, Ellenberg, Dash & Rigler, 1980; Noll, LeRoy, Bukowski, Rogosch & Kulkarni, 1991). It has been suggested that an important predictor of adjustment to cancer may be the individual’s appraisal of the stress associated with the disease, that is how threatening the situation is as well as what coping strategies are available to him/her (Eiser, et al., 1992; Lazarus & Folkman, 1984). In the present study, despite findings that the stressors associated with cancer affected many aspects of the child’s and adolescent’s lives, it is striking that in response to cancer-related and non-cancer-related stress, recently diagnosed, survivor and healthy youth generally reported that they used quite comparable amounts and types of coping strategies (i.e., across Focus, Function and Mode categories). Not only did individuals with cancer appraise their coping options as comparable in quantity to healthy youth, they also felt their strategies were equally if not more effective than those of healthy individuals. This suggests some generalizability of coping processes across individuals and situations.
Developmental aspects of coping were also examined in light of research highlighting developmental differences for healthy children versus adolescents with respect to types of coping strategies used (Band & Weisz, 1988; Compas, Malcarne, & Fondacaro, 1988; Wertlieb et al., 1987). This study assessed the use of emotion-management coping strategies among young children versus adolescents. Coping theory (Lazarus & Folkman, 1984) distinguishes the function of coping (i.e. emotion-management versus problem-solving) as an important theoretical concept, and one which has provided some precedent for studying children’s and adolescents’ use of emotion-management (Band & Weisz, 1988; Compas, Malcarne & Fondacaro, 1988; Wertlieb et al., 1987. Lazarus and Folkman (1984) define emotion-management as the process of changing one’s perception of or emotions about a situation without altering the actual situation. Research applying this concept to coping in healthy youth, however, has further identified emotion-management coping as a more sophisticated form of coping, developed over time with increasing cognitive maturity, as comes with the development of formal operations (Band & Weisz, 1988; Wertlieb et al., 1987).

Based on the above theory and studies, the present
study expected that adolescents (ages 15-18), both the healthy youth as well as survivors, who were many years removed from the immediate stressors of cancer, would utilize more emotion-management than healthy or survivor children (ages 9-13). For the recently diagnosed youth, however, it was expected that in the face of many uncontrollable stressors (i.e. stressors unable to be managed by action-oriented problem-solving strategies), even younger children would learn to use complex, palliative coping techniques, similar to adolescents. Contrary to expectation, with the exception of survivors coping with cancer-related stress, all children and adolescents used comparable amounts of emotion-management. In general the younger children in these groups tended to use more emotion-management than would be expected given their age (Band & Weisz, 1988; Wertlieb et al., 1987). In this study, however, the younger group of subjects had significantly higher IQ scores than adolescents, and 10 points higher than the norm. Their higher intelligence may have facilitated the use of the more sophisticated, types of emotion-focused coping strategies, involving abstract reasoning, such as "I told myself to relax because I realized that the more uptight I was, the more painful it would be in
the long run".

On the other hand, the higher frequency of emotion-management by young children may be explained in part by their use of more cognitively simplistic emotion-management strategies. About one-fifth of all coping strategies were used by young subjects for the purpose of denying or ignoring the stressor, for example, "I just tried to forget about it". This strategy requires little if any abstract reasoning like the former example, yet is still categorized as an emotion-management strategy. Thus, young children’s use of emotion-management may be characterized by more basic denial strategies as opposed to adolescents who may have used more abstract types of strategies, such as "I tried to think about getting through one day at a time". These findings underscore the need to carefully differentiate among the type, quality and level of articulation of coping strategies that are labeled as emotion-management.

Variability in the way an individual copes with different stressful situations has been conceptualized as a more flexible approach to managing stress, and one which implies effective adaptation (Compas, Forsythe & Wagner, 1988; Folkman & Lazarus, 1984; Moos & Billings,
1982). Following from Folkman and Lazarus (1984), the specific context of any given stressful situation would suggest varying demands and coping resources inherent in each encounter. To manage a variety of situations effectively, therefore, one's coping strategies would conceivably change to fit with the demands of each stressful event (Compas, Forsythe & Wagner, 1988). In the present study, the hypothesis that children and adolescents would, with the exception of intrapsychic strategies, utilize different coping strategies in general versus cancer-related situations was partially confirmed. For the majority of types of coping strategies (e.g. self-focused, environment-focused, direct action, inhibition of action, emotion-management, problem-solving), using these strategies in cancer-related stressful situations was not related to their use with general stressors. Consistent with the findings in the preliminary study (Bull & Drotar, 1991), these results suggest that, given the special demands of cancer-related stress, children and adolescents with cancer may rely on different coping strategies when managing stress associated with their disease than those they use in everyday stressful situations.

A notable expected difference, however, was that
recently diagnosed children and adolescents did use intrapsychic coping strategies consistently in response to cancer- and non-cancer-related stress. This internal emotion-based form of coping may reflect underlying personality characteristics such as the capacity to use fantasy which may generalize across different situations (Folkman, Lazarus, Greun, & DeLongis, 1986; McCrae & Costa, 1986), for example, "I pretend that I am somewhere else". Recently diagnosed patients also have had ample opportunity to use these internal, palliative types of strategies in the face of disease-related uncontrollable stress. This, however, was not found to be true for survivors, contrary to prediction.

The lack of consistency of intrapsychic coping strategies across stressors for survivors was in contrast to the findings in the preliminary study (Bull & Drotar, 1991). These two studies differed, however, in the time span between coping with cancer- versus non-cancer-related stressors. In the present study, survivors' reports of general stressors were confined to the past six months while their cancer-related stressors took place several years ago. Perhaps, the time span in between the different experiences of stress diminished the influence of using emotion-management as a coping
technique for managing, not only cancer-related
uncontrollable stress, but general stressors as well.

Finally the relationship between coping
effectiveness and psychological distress was examined.
Ratings by the three groups of the effectiveness of
their coping strategies were, on average, moderately
high, indicating that, overall, they felt that the
coping strategies they chose to manage their cancer-
and/or non-cancer-related stress worked to substantially
reduce their subjective stress. Likewise, all three
groups reported similar levels of state and trait
distress, which, overall, fell within the average range.
Thus, on average, no group was experiencing higher than
average distress and each group felt at least moderately
effective in its use of coping strategies. It was
somewhat surprising that recently diagnosed youth in the
throes of their disease did not report higher subjective
distress, although this may be related to their use of
denial as a coping strategy. In addition, recently
diagnosed children and adolescents were interviewed at
least 2 months after their diagnosis, which may have
allowed ample time for initial adjustment to the disease
and its effects. Youth interviewed just after their
diagnosis may endorse higher levels of distress. The
resilience of children and adolescents with cancer in this study, as seen in their overall coping effectiveness and average distress levels may be, in part, a result of the psychoeducational services they receive via physicians, social workers and child life workers.

Correlations between distress and effectiveness for each of the groups, however, showed some interesting group distinctions. For recently diagnosed subjects, the more recent state distress they experienced, the less effective they felt their coping was in response to non-cancer-related stress. Given the opportunity for recently diagnosed children and adolescents to experience distress/anxiety in their everyday management of their disease, it is conceivable that the distress/anxiety hampered their effective use of coping even when dealing with general stress, or at least colored their subjective rating of how effective they felt. For Healthy subjects, more lifelong, trait distress as opposed to state distress was associated with less perceived effectiveness when coping with general stress. Thus, their long-term history of feeling dissatisfied with themselves and their ability to achieve preferred outcomes (Weinberger & Schwartz,
was related to their feelings of ineffectiveness at managing stress.

While it was also expected that effectiveness and distress would be negatively correlated for both recently diagnosed and survivor subjects when coping with cancer-related stress, this hypothesis was not confirmed. Thus, even when the child or adolescent with cancer was experiencing high levels of distress, he/she did not necessarily report feeling ineffective when coping with stress related to his/her cancer. This may point to a resiliency that children and adolescents with cancer have which buffers them from feeling overwhelmed or beaten by the stresses of their disease, even when they do feel less effective with general stress, as was the case with recently diagnosed youth. On the other hand, it may demonstrate the child’s self-protection against admitting that their cancer is affecting their abilities to cope. For survivors, a generally good level of adjustment and felt resiliency to their disease (or denial of its negative effects) may have persisted over time, explaining the similar pattern seen for them when dealing also with general everyday stress.

Several design and sampling considerations should be kept in mind when interpreting these findings.
First, the present sample included two groups of children and adolescents with a heterogeneous group of cancers. The range of different types and severities of cancers may have influenced the cancer-related experiences as well as coping strategies of children and adolescents. Furthermore, matching of diagnoses, as well as age and sex from recently diagnosed to survivor subjects was imperfect due to several less common forms of cancer found in recently diagnosed children and adolescents. Therefore, it was not possible to assess to what degree, if any, results were affected by diagnostic differences between groups.

In addition, although the present study aimed to include a more racially diverse sample, only one minority, a black adolescent, was identified who fit the selection criteria. Given that three of the four hospitals involved in this study serviced inner city children, it was unexpected that so few would be identified as appropriate for this study. Incidence data (rate per 1,000,000 population) from the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) Program for the 10-year period of 1973-1982 showed that cancer is diagnosed about 1.25 times more often in white than black children age 14 and under
(Young, Ries, Silverberg, Horm & Miller, 1986). The national study surveyed nine population-based registries, four of which were in major metropolitan cities. At this rate, it would be expected that more black children with cancer would have been identified during the recruitment stage. A more careful examination of where and how black children with cancer receive medical care is needed to recruit larger numbers of black subjects for future studies.

The findings concerning developmental differences should be interpreted cautiously because survivors' coping strategies for managing cancer-related stressors were reported from the memories of the survivors, who actually employed the strategies several years earlier. These strategies were then compared with their current non-cancer-related coping strategies as well as those of recently diagnosed youth. A more accurate procedure would be a prospective design, in which the same subjects are followed over time, and retrospective material is eliminated.

Finally, given the Age X Group design of the present study, up to six conditions were being compared in any given analysis. The sample size was sometimes too small to accommodate some analyses. In the present
study, with an interest in detecting a medium effect, and setting alpha at .05 and power to detect that difference at .80, power estimates suggested a total sample size of 52. Although this study had a total sample of 60, some analyses were conducted on fewer subjects. It is recommended, therefore, that future similar studies collect a larger sample in order to increase statistical power.

Despite these limitations, some implications can be made for clinical application and measure refinement. The findings that emotion-management was used quite frequently by children as well as adolescents suggests a need to reconsider the definition of emotion-management, by carefully looking at individual differences in the quality of coping strategies subsumed under this category. Categorizing coping strategies as emotion-management based on the palliative nature of the strategy (i.e. changing one’s view of the stressor) was not specific enough to distinguish between the cognitively mature and immature types of emotion-management. In the present study, the addition of the deny/ignore categorization of coping strategies demonstrated one way to illuminate the more immature form of emotion-management which utilizes denial and
ignoring of demands to change one's view of the stressor. This broad but important category of emotion-management needs to be refined to identify and discriminate more sophisticated from less mature responses.

The study of children's and adolescents' views of their effectiveness when coping with stressful situations also needs further research. It is encouraging that, on average, all subjects in this study felt more than moderately effective when dealing with cancer-related and/or general stress. A larger sample size is necessary, however, to look at effectiveness of groups by age and sex, as well as by type of stressor (e.g. controllable versus uncontrollable). In addition, identifying the types of coping strategies that are rated as most versus least effective would have clinical relevance for teaching of specific coping strategies based on the demand characteristics of the situation, as well as for helping the child relinquish ineffective strategies. For example, given the large number of coping strategies used to deny stressors, it would be important to determine whether these strategies are perceived as effective at reducing stress, and/or whether the individual uses them for lack of more
effective options.

This study has expanded upon its preliminary study by comparing and describing the stressors and coping strategies of two groups of children and adolescents with cancer and a group of healthy controls. The next step, however, is to a larger prospective study to facilitate a clearer understanding of the process of coping with childhood cancer throughout its course and across the various stages of the disease.
REFERENCES


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Psychology and Psychiatry, 22, 323-356.


Table 1. Sample Demographics.

<table>
<thead>
<tr>
<th></th>
<th>Recently Diagnosed</th>
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<tr>
<td></td>
<td>M</td>
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<tr>
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<tr>
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Table 2. Means and Standard Deviations of the Recent and Past Life Events Reported on the FILE by Age and Group.

<table>
<thead>
<tr>
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<td>Table 3. Illness Characteristics.</td>
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<td></td>
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<td>Survivor</td>
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<td>Age at Diagnosis (yrs)</td>
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<td>Diagnostic Status and Duration of Remission (mos)</td>
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<tr>
<td>Pain***</td>
<td>1.7</td>
<td>0.8</td>
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</table>

* Prognosis ratings by mother: 1 = very bad, 2 = somewhat bad, 3 = not sure, 4 = somewhat good, 5 = very good
** Physical limitation ratings by mother: 1 = not at all, 2 = a little, 3 = somewhat, 4 = quite, 5 = very
*** Pain ratings by mother: 1 = none, 2 = a little, 3 = some, 4 = quite a bit, 5 = a great deal
Table 4. Percentages and Frequencies of Stressors Identified on the Children’s Stress Inventory.

<table>
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<th></th>
<th>RD</th>
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</tr>
<tr>
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<td>3.7</td>
<td>2</td>
<td>2.1</td>
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<td>5.2</td>
</tr>
<tr>
<td><strong>Total # of Stressors</strong></td>
<td>27</td>
<td>27.0</td>
<td>94</td>
<td>95.9</td>
<td>97</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Cancer-Related</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stressors</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
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<td></td>
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<td>Treatment</td>
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<td>25.0</td>
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<tr>
<td>Peer</td>
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<td></td>
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<td></td>
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<td>Miscellaneous</td>
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<td>2.7</td>
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<td>4.1</td>
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<tr>
<td><strong>Grand Total # of Stressors on CSI</strong></td>
<td>100</td>
<td></td>
<td>98</td>
<td></td>
<td>97</td>
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</tr>
</tbody>
</table>

RD = Recently Diagnosed  
S = Survivors  
H = Healthy
Table 5. Examples of Cancer- and Non-Cancer-Related Stressors Spontaneously Identified on the CSI, and Categorizations

**Cancer-Related Stressors**

When my family goes swimming, I can’t go in the water because of my catheter (Handicap)

I am always so tired now from the cancer and the chemotherapy that I can’t do all the things I used to (Handicap)

Having to go into the hospital everyday to get my chemotherapy (Treatment)

Homework has been piling up since I’ve been in the hospital and I am going to be way behind (School)

I’m in a fight with my friend because she told everyone about my neck being numb from my cancer surgery and I was really embarrassed (Peer)

When the doctors diagnosed me with cancer and I found out I had to have chemotherapy (General)

Worrying that people were going to treat me like an outcast because I lost my hair (Self-Concept)

**Non-Cancer-related Stressors**

Worrying that I might get a bad grade on a Math test (School)

Taking tests in school is very stressful (School)

Having to babysit my little brother who doesn’t listen to me (Sibling)

My mom and I don’t get along because she limits my freedom too much (Parent)

I was really sad when my grandfather died (Death)

At work someone was promoted before me and I had been there longer (Work)

I got in a fight with my friend cuz he got mad at me when I wouldn’t talk to him at a party (Peer)

I’m worried that I’m going to fail my driver’s license test because my driving isn’t very good (Worries)
Table 6. Coping Strategies Used in Response to Non-Cancer-Related and Cancer-Related Stressors on the CSI and Cancer-Related Stressors on the McCabe and Weisz Measure.

| Coping Strategies | CSI (Non-Cancer) | | | | |
|-------------------|------------------|---|---|---|---|---|
|                   | RD | S | H | n  | %  | n  | %  | n  | %  | |
| **Mode**          |    |   |   |    |    |    |    |    |    | |
| DA                | 26 | 43.3 | 95 | 39.9 | 119 | 43.8 |    |   |   | |
| IP                | 20 | 33.3 | 88 | 37.0 | 90  | 33.1 |    |   |   | |
| SS                | 8  | 13.3 | 39 | 16.4 | 34  | 12.5 |    |   |   | |
| IA                | 3  | 5.0  | 10 | 4.2  | 14  | 5.2  |    |   |   | |
| IS                | 3  | 5.0  | 6  | 2.5  | 15  | 5.5  |    |   |   | |
| **Focus**         |    |   |   |    |    |    |    |    |    | |
| E                 | 32 | 53.3 | 128| 53.8 | 144 | 52.9 |    |   |   | |
| S                 | 28 | 46.7 | 110| 46.2 | 128 | 47.1 |    |   |   | |
| **Function**      |    |   |   |    |    |    |    |    |    | |
| EM                | 28 | 46.7 | 141| 59.2 | 154 | 56.6 |    |   |   | |
| PS                | 32 | 53.3 | 97 | 40.8 | 118 | 43.4 |    |   |   | |
| **Deny/Ignore**   |    |   |   |    |    |    |    |    |    | |
|                  | 14 | 23.4 | 37 | 15.6 | 50  | 23.5 |    |   |   | |
| **Total Strategies** | 60 | 238 | 272 |    |    |    |    |    |    | |

CSI = Children's Stress Inventory, MW = McCabe and Weisz Cancer-Related Measure
RD = Recently Diagnosed, S = Survivors, H = Healthy
DA = Direct Action, IP = Intrapsychic, SS = Support Seeking,
IA = Inhibition of Action, IS = Information Seeking
E = Environment, S = Self
EM = Emotion Management, PS = Problem Solving

Table 6 continued
Table 6. (continued)

<table>
<thead>
<tr>
<th>Coping Strategies</th>
<th>CSI (Cancer)</th>
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<th>MW (Cancer)</th>
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<tr>
<td></td>
<td>RD</td>
<td>%</td>
<td>S</td>
<td>%</td>
</tr>
<tr>
<td>Mode</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>DA</td>
<td>72</td>
<td>43.1</td>
<td>8</td>
<td>61.5</td>
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<tr>
<td>IP</td>
<td>56</td>
<td>33.5</td>
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<td>30.8</td>
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<td>Deny/Ignore</td>
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<td>15.4</td>
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<tr>
<td>Total Strategies</td>
<td>167</td>
<td>13</td>
<td>201</td>
<td>225</td>
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</table>

CSI = Children’s Stress Inventory, MW = McCabe and Weisz Cancer-Related Measure
RD = Recently Diagnosed, S = Survivors, H = Healthy
DA = Direct Action, IP = Intrapsychic, SS = Support Seeking,
IA = Inhibition of Action, IS = Information Seeking
E = Environment, S = Self
EM = Emotion Management, PS = Problem Solving
Table 7. Pearson Product-Moment Correlations for Mode, Function and Focus for Non-Cancer-Related Stressors on the CSI and Cancer-Related Stressors on the McCabe and Weisz Measure for Both Recently Diagnosed and Survivor Subjects.

<table>
<thead>
<tr>
<th>Non-Cancer-Related Stressors</th>
<th>Focus</th>
<th>Function</th>
<th>Mode</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>S</td>
<td>E</td>
<td>PS</td>
</tr>
<tr>
<td>Focus</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>E</td>
<td>.47</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>(.26)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Function</td>
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</tr>
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<td>PS</td>
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<tr>
<td>EM</td>
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<td>(-.13)</td>
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<td></td>
</tr>
<tr>
<td>Mode</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IS</td>
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</tr>
</tbody>
</table>

( ) = Survivors
No parentheses = Recently Diagnosed
Focus: S = Self, E = Environment
Function: PS = Problem-Solving, EM = Emotion-Management
Mode: IS = Information-Seeking, SS = Support-Seeking, DA = Direct Action, IA = Inhibition of Action, IP = Intrapsychic
* = p < .05
** = p ≤ .01
Table 8. Pearson Product Moment Correlations Between Children’s Coping Effectiveness Ratings and Ratings of State and Trait Distress for Recently Diagnosed, Survivor and Healthy Subjects.

<table>
<thead>
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<th>Distress</th>
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<td>RD</td>
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<td>RD</td>
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</tr>
<tr>
<td>S</td>
<td></td>
<td>-.17</td>
</tr>
<tr>
<td>H</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAIC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RD</td>
<td></td>
<td>-.65*</td>
</tr>
<tr>
<td>S</td>
<td></td>
<td>.01</td>
</tr>
<tr>
<td>H</td>
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</table>

WAI = Weinberger Adjustment Inventory-Distress  
STAIC = State Trait Anxiety Inventory for Children  
RD = Recently Diagnosed  
S = Survivors  
H = Healthy  
* = p < .05  
** = p = .063
Table 9. Means and Standard Deviations on the STAIC and the WAI by Age and Group.

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<td></td>
<td>M</td>
<td>SD</td>
<td>n</td>
<td>M</td>
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<td>Old</td>
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APPENDIX: Categorization Manuals and Measures for Stressors and Coping Strategies
SCORING MANUAL FOR CATEGORIZING STRESSORS ON THE CHILDREN’S STRESS INVENTORY

Each stressor will be categorized in one of the 43 mutually exclusive categories. There are two main groups of categories: Non-cancer-related and cancer-related stressors which comprise the 43 specific categories. The non-cancer-related stressors have nothing to do with the children’s cancer, although they may be related to another illness/injury the child has or someone else’s illness/injury/death. The cancer-related stressors are all related to the child’s cancer. There are 13 major non-cancer-related stressors which are further subdivided into categories, making a total of 33 non-cancer-related categories. There are 8 major cancer-related categories which are further subdivided into categories, making a total of 10 cancer-related categories.

The categories, definitions and examples of each of the 43 categories are as follows:

NON-CANCER-RELATED CATEGORIES—denoted by the prefix NON

1. NONMISC—This group of categories refers to those MISCELLANEOUS stressors that did not fit into any of the other categories but were of too low frequency to create a separate category.
   Exs: It’s hard to get to sleep at night; I ran into a wall and it hurt

NONSIB—this group of categories refers to stressors involving SIBLINGS. This broad category was broken down into more specific categories:

2. NONSIBR—the R stands for RESPONSIBILITY. These stressors involve the child’s responsibility over his/her sibling. These are coded NONSIBR even if conflict is involved, and not coded NONSIBC.
   Exs: Babysitting for my baby brother and sister when I have to yell at them; watching my brother and he runs off and I have to get him

3. NONSIBJ—the J stands for JEALOUSY. These stressors involve jealousy or envy on the part of the sibling or the child.
   Exs: It’s stressful that my brother can do things that I can’t do; my sister always wants to do what I do and have what I have

4. NONSIBC—the C stands for CONFLICT. These stressors are those that involve some kind of conflict (actual or perceived) between the child and his/her sibling(s) OTHER THAN that which would be coded
under NONSIBR and NONSIBJ. The conflict can range from mild to severe.

Exs: When my sister tells me what to do; when my brother bothers me; I sometimes feel blamed for what my sister does; when I'm trying to watch TV and my brother plays his guitar real loud

5. NONSIBO--the O stands for OTHER. These stressors are all of the other SIBLING related stressors that did not fit into one of the above categories

Exs: when my brother embarrasses me; when I drive with my brother when he's driving

NONPEER--This group of categories involves stress with PEERS in and out of school (including friends, enemies, boyfriends and girlfriends. When a stressor involves a peer AT school, it is coded NONPEER as opposed to NONSCH (the SCHOOL category). The child must have specified that the person involved is a PEER in order to be coded in one of the NONPEER categories. In other words, if the other involved are referred to as "someone" or "people", the stressor is not coded NONPEER. This broad category was broken down into more specific categories:

6. NONPEERC--the C stands for CONFLICT. These stressors involve some kind of conflict between the child and a peer/mate, or a conflict between two peers in which the child becomes involved. This category does not include peer teasing or peer rejection.

Exs: Being in the middle of an argument between two friends; my friend bothers me alot; when my boyfriend and I fight; when kids try to start fights with me

7. NONPEERT--the T stands for TEASING. These stressors include teasing of the child by his/her peers. Although the teasing may include conflict, it is not coded as NONPEERC.

Exs: When kids tease me about being the shortest in my class; some of the things kids say mean to me

8. NONPEERR--the R stands for REJECTION. These stressors include instances when the child is rejected or excluded by his/her peers. Although some conflict may be involved, it is not coded NONPEERC.

Exs: when my friends tell secrets and won't let me join in; when my friends don't want to play with me; when I don't get invited to a party

9. NONPEERLS--the LS stands for LOSS/SEPARATION. These are stressors in which the child is separated or apart from a peer or loses some part of his/her
relationship with a peer/mate.
Exs: my friend is moving away; my boyfriend is moving to
a different state; I broke up with my boyfriend

10. NONPEERO--the O stands for OTHER. These stressors are
those peer-related stressors that do not fit into
any of the above categories.
Exs: when friends are inconsistent; relationships with
friends

NONPAR--This group of categories includes stressors involving
the child’s PARENTS. The stress can be problems
occurring or about to occur between parent and child
or between parents. This broad category was broken down
into the following specific subcategories:

11. NONPARC--the C stands for CONFLICT. These stressors
involve conflict between the child and his/her
parent(s)/grandparent(s), including punishment.
Exs: general teenage/parent conflict; when my mother
punishes me; when my mother nags me when I’m
driving; when my dad gets mad at me

12. NONPARPC--the PC stands for PARENT CONFLICT. These
stressors involve conflict between the child’s
parents and/or family members, including
divorce issues.
Exs: when there are arguments in the family; having
divorced parents; when my parents fight

13. NONPARL--the L stands for LIMIT-SETTING. These stressors
involve some form of limit-setting
for the child on the part of the parent, such as
controlling what the child can do or see.
Exs: when I can’t watch a movie I want to see; my mom
wouldn’t let me go swimming in the deep end; my mom
is too strict

14. NONPARLS--the LS stands for LOSS/SEPARATION. These
stressors involve the child’s feelings of
loss and/or separation from the parent(s).
Exs: I’m not able to see my dad that much; when my
mom told me I had to say good-bye to my dad cuz he
was leaving; I get worried about my dad not
calling me

15. NONPARO--the O stands for OTHER. These stressors are
those parent-related stressors that do not fit
into any of the above NONPAR categories.
Exs: trying to make my parents happy; when my dad used to
pick me up when I was little cuz I was afraid of him

NONSCH--this group of categories includes stressors related to
SCHOOL. If, however, the stressor involves a peer in
the school environment, it is coded in one of the NONPEER
categories instead of the NONSCH categories. In addition, if the stressor involves a sports activity in school, it is coded under NONSPORT rather than in one of the NONSCH categories. This broad group has been broken down into more specific categories:

16. NONSCHH--the H stands for HOMEWORK, but this category also includes stress surrounding TESTS and GRADES. Doing projects, problems, etc., studying as well as taking tests, and concerns about grades are all included in this category.
   Exs: not getting good grades; studying for finals; going to reading class without my homework; having to bring home homework; taking tests in school; worrying about getting good grades

17. NONSCHT--the T stands for TEACHER. These stressors include the child’s difficulties with his/her school teacher(s). This can include the things the teacher has said or done to the child or things the child has said or done to the teacher.
   Exs: doing something for a teacher that I was mad at; when my teacher embarrassed me in front of my class; my teacher bugs me

18. NONSCHSW--the SW stands for SCHOOL WORK. These stressors include work that the child does in school as well as the child’s ability to pay attention in school. It also includes schoolwork that is exhibited outside of the school. Taking tests in school is NOT coded in this category, but is coded under NONSCHH instead.
   Exs: it was stressful being in the national finals of a contest for a school project; doing hard work in school; it’s hard to pay attention in school

19. NONSCHO--the O stands for OTHER. These stressors are those school-related stressors that do not fit into any of the above NONSCH categories.
   Exs: having a bad day at school; I don’t like the drugs in my school; just going to school; sitting in school all day long; waking up early for school

NONWOR--This group of categories includes stressors that involve WORRIES. These worries can be about oneself, others or pets, or they can be fears about something or someone. This broad group has been broken down into more specific subcategories:

20. NONWORF--the F stands for FEAR. These stressors include fears that are relatively broad, such as fear of the dark. With these stressors the child does not express fear of his/her wellbeing or safety (which is coded under NONWORFV). These stressors can involve a fear of one’s own feelings or of
phenomenon that are not necessarily harmful.

Exs: going to sleep after I just watched a scary movie; I have very short episodes in my dreams that often come true and it freaks me out; worrying about nuclear war

21. NONWORPV--the PV stands for PERSONAL VULNERABILITY. These stressors include worries about one’s own safety and well being (both psychological and physical).

Exs: walking outside in the dark cuz I was afraid the drunk people would hurt me; times when I don’t know whether I’ll be safe in a situation; riding in a car that goes too fast

22. NONWOROT--the OT stands for OTHERS. These stressors include the child’s worries about the wellbeing of others, including both people and pets. It also includes worries about being able to have/keep pets.

Exs: when my brother does something to get me worried that he might hurt himself; sometimes I wake up and think my bird is dead; worrying that my dog might be locked outside at night

23. NONWORO--the O stands for OTHER. These stressors are those worry-related stressors that do not fit into any of the above NONWOR categories.

Exs: I worry about getting my license

NONSOC--These categories include stressors involving some aspect of the child’s social life that does not necessarily fit into one of the other categories. It may or may not involve other people.

24. NONSOCP--the P stands for PEOPLE. These stressors include social situations with people in which the people are not specifically identified as siblings, parents, peers, teachers, or other specific family members. Rather, they must be labelled "people" or "someone" etc. If the child does specifically label the person as peer, sibling etc., it would be categorized in the NONPEER, NONSIB etc. categories.

Exs: when people call me names; feeling like I’m being forced to do something I don’t want to do; being late to an important appointment I have with someone; when people ask for information that I don’t want to give them.

25. NONSOCG--the G stands for GENERAL. These are stressors involving the child’s social life that do not necessarily involve other people.

Exs: having two things planned at once and I don’t know which one to go to; fitting everything I do
into my schedule; when there is an upcoming event and I'm not sure if I can do it well

NOND—the D stands for DEATH. This group of categories includes stressors involving the death of others, including people and pets.

26. NONPPL—the PPL stands for PEOPLE. These stressors are those in which the child identifies that a person has died.
   Exs: When my grandmother died while I was at camp; when one of my relatives died; my boyfriend died

27. NONPET—the PET stands for the child’s PETS that have died, and also animals in the wild that the child has witnessed die.
   Exs: my fish died; my bird crashed into the window and died; it’s hard to think about my cat who died

NONILL—This group of categories includes those stressors related to ILLNESS. This can include any illness in another person, or any illness other than cancer in the child.

28. NONILLOT—the OT stands for OTHERS. This category involves the stress occurring for the child when other people are sick, dying or recovering from a medical procedure.
   Exs: when someone I know is really sick and I don’t want to do anything cuz I’m really sad; when people I know are going to die; when my dad had surgery

29. NONILLS—the S stands for SELF. These stressors involve an illness, injury or medical procedure NOT related to the child’s cancer.
   Exs: It was scary when I got shots in my leg for the chicken pox; when I broke my wrist; not being able to sleep because of my allergies

30. NONSC—the SC stands for SELF-CONCEPT. These stressors refer to the child’s feelings about his/her physical appearance.
   Exs: when my appearance isn’t how I want it to be-hair, makeup, etc.; having to lose weight

31. NONSPORT—the SPORT stands for SPORTS ACTIVITIES both in and out of school, including the playing of musical instruments.
   Exs: playing a bad game of golf while on the golf team at school; when I get tired when I’m running; thinking about whether I’ll get my piano test right; trying to get better at sports

32. NONWORK—the WORK stands for WORK that the child must do other than homework. These stressors include
various aspects of paid jobs as well as household chores.
Exs: having to go to work when I don’t want to; when I want to play but I have to clean my room; quitting my job; putting up with people’s attitudes at my job

33. NONTRAUMA—the TRAUMA stands for TRAUMAS that the child has endured other than his/her cancer. These stressors involve accidents or near accidents that the child and/or others have had.
Exs: It was scary when we almost got into a car accident; when my mom’s car accident happened; I got run over by a car

CANCER-RELATED CATEGORIES—denoted by the prefix CAN. These categories include stressors that have to do with the child’s cancer and cancer treatment.

CANTX—this group of categories includes those stressors involving the child’s TREATMENT for his/her cancer (but not for any other illnesses).

34. CANTXP—the P stands for PAIN. These stressors refer to the pain that the child experiences due to his/her medical treatment or the cancer itself.
Exs: getting bone marrows every nine weeks hurts; having to walk every half hour in the hospital was painful

35. CANTXF—the F stands for FEAR. These stressors refer to the fear or anxiety experienced by the child during treatment.
Exs: when I got my bone marrows and spinal taps I got scared; when I got my tube out it was scary

36. CANTXG—the G stands for GENERAL. These stressors are those treatment-related stressors that do not fit into either of the other CANTX categories. They refer to the broader stress of having to get treatment and check-ups.
Exs: going to clinic every three weeks; getting up in the morning and having to go to the hospital; getting a four hour treatment when I thought I was getting a regular one

37. CANGEN—the GEN stands for GENERAL. This category is not to be confused with the CANTXG category. It does not refer to the child’s treatment but rather to the more general stressors of simply having gotten cancer and the worry that the cancer may return.
Exs: getting cancer; having cancer; wondering if the cancer will ever come back; thinking about how long I’ll be in remission; being scared that the
doctor will tell me I have cancer again

38. CANFAM—the FAM stands for FAMILY. This category includes stress between the child and his/her family members surrounding issues of the child’s cancer.

   Exs: my sister was jealous of me when I had cancer because of the things I got to do; my parents yelling at me to exercise because I was weak after losing so much weight from the cancer; I am worried about how my dad will pay for my medical bills

39. CANSC—the SC stands for SELF-CONCEPT. These stressors refer to the child’s appearance due to the effects of the cancer or treatment. They can be based on the child’s own feelings about his/her appearance or on the teasing by others about the child’s appearance.

   Exs: weighing 117 when I had cancer when I used to weigh 165; when I got my phonic ear it was hard; when people laughed at me when I had my wig

40. CANPEER—the PEER stands for the child’s PEERS. This category includes stressors that the child has with peers surrounding issues of his/her cancer.

   Exs: a kid threatened to beat me up and pull out my tube; my new friend didn’t know I had leukemia and I had to tell her; when I had cancer I was afraid my friends wouldn’t accept me

41. CANSCH—the SCH stands for SCHOOL. These are stressors that the child encounters related to school, surrounding issues of his/her cancer, including homework, schoolwork, tutoring and tests.

   Exs: having to catch up on two months worth of homework when I first got cancer; having to make up schoolwork when I’m sick and miss school; missing school when I have to go for my checkups and having to catch up

42. CANHANDI—the HANDI stands for HANDICAP. These are stressors that involve some kind of physical handicap, limitation or difficulty (temporary or permanent) due to the effects of having cancer. They can range from mild to severe.

   Exs: not being able to wash my right arm without someone helping me since I don’t have a left arm; dealing with the frustration of my prosthetic leg not fitting and working properly; tying my shoes with my arm paralyzed from my cancer; I’m not allowed to hold my niece because she might give me germs; I’ll never be able to go into the marines as I planned because I had cancer; I’m too tired to do the
things I usually do

43. CANMISC--the MISC stands for MISCELLANEOUS. This category is for those cancer-related stressors that do not fit into one of the above categories.

Exs: When my bedpan spilled into my cast; I was worried about what the summer would be like with having cancer.
SCORING MANUAL FOR CATEGORIZING COPING STRATEGIES ON THE CHILDREN’S STRESS INVENTORY AND McCABE AND WEISZ MEASURE

Each "Coping Unit" will be scored on three dimensions: Focus, Function and Mode, to be elaborated below. Coping Units are enumerated on measure and no more than 5 Coping Units are recorded per stressor. In addition, Coping Units are scored on a dichotomous Deny/Ignore category.

1. FOCUS--coded as SELF or ENVIRONMENT.

SELF--Focus is coded as Self when the child’s coping behavior is directed at his or her own action or subjective distress. It involves a transaction within the self and does not involve any environmental mediator. Most (but not all) Self codings will involve situations in which the person thinks or doesn't think about something in order to cope.

Examples: I go up to my room and just sit down; when I go to play I just make up an imaginary friend; I cry myself to sleep; I think about happier things; I pray; I try not to think about it; I think about something else; I ignore her

ENVIRONMENT--Focus is coded as Environment when the child’s behavior is directed toward persons or things other than self. It involves a transaction with an object, person or resource in the environment, including less obvious things such as TV, food, toys, etc.

Examples: I go and ask my mother for help; I just ask him questions; I punch him back; I go for a bike ride; I had my mom stay with me; I eat; I watch TV; I clean my room

2. FUNCTION--coded as PROBLEM-SOLVING or EMOTION-MANAGEMENT

PROBLEM-SOLVING--Problem-solving is problem-focused and instrumental. The function of the behavior is to change the problematic situation either by a) changing one's own behavior or action (Focus on Self) or b) changing the damaging or threatening environment (Focus on Environment).

In order to code a coping strategy as Problem-solving, the stressor must be an event; it cannot be a stressful thought.

Examples: I talk to her about it and we make up; when I dropped a bottle I cleaned it up; I study harder for the next test to help me do better next time; I walk away when they tease me so I don’t have to heat the teasing; I have my mom help me do it to get it done quicker

NOTE: Because the medical stressors are already enumerated for the child on the McCabe and Weisz, they are pretty broadly defined. Therefore, sometimes children subtly define their own
sub-stressors within the broad category. When the 'new' stressor is defined clearly and obviously enough, it may be used. For example, for the stressor "losing one's hair", the child may say, I pulled it out so it wouldn't fall in my food". In this case, pulling it out doesn't change the threatening situation of losing one's hair (i.e., it doesn't make you get your hair back), but it does change the 'sub-situation' of hair falling into one's food. In this case code this Problem-focused.

EMOTION-MANAGEMENT--Emotion-management coping is palliative in nature (i.e., tends to make less severe or intense; eases). The function of this kind of coping is to manage or regulate somatic, subjective and affective components of stress-related experiences. This is accomplished through a) accepting the stressful situation, b) denying or repressing the stressful situation, c) changing one's own view of the stressful situation, d) purging of one's emotions, or e) performing some action that does not change the situation, but which makes the person feel better about the stressor. Generally, emotion-management serves to make the person feel better about the situation.

Examples: I think about something fun, get tired and fall asleep; I look on the bright side; I think about how there are worse things happening in the world; I cry myself to sleep; I yell at him to get the anger out of me; I do things to occupy my mind or my time.

NOTE: After coping strategies were given, children were probed to define why they did what they did. This gives the most information in determining whether the intent (i.e., function) of their coping strategy was to problem-solve or emotion-manage.

3. MODE--coded as INFORMATION-SEEKING, SUPPORT-SEEKING, DIRECT ACTION, INHIBITION OF ACTION, or INTRAPSYCHIC

INFORMATION-SEEKING--Information-Seeking refers to any behavior in which the child tries to gain more information or knowledge about the stress or problematic situation.

Examples: I just ask him questions about it; I read about the disease; I talked to her to figure out why she acted like that; I asked others who had the disease about it.

SUPPORT-SEEKING--Support-seeking refers to any behavior in which the child tries to elicit the assistance of another person with the intent to gain support. Help other than information is sought. Help and support include direct bids for materials, privileges, moral support, or empathy. The emphasis is on the child's behavior or goal rather than on the responsiveness of the environment. Sources of support include parents, other adults, siblings, and peers/mates. Support-seeking does not include stuffed animals or toys, even if the child says they were comforting.
Examples: I asked my dad to help me with it; I stayed with my friend so I wouldn’t be scared; I told my mom and she punished him; I asked the doctor to try to hypnotize me to block the pain.

NOTE: Do not code Support-seeking when there is another person involved, but the service merely takes the child’s mind off his/her problem.

DIRECT ACTION--Direct Action refers to anything the child does to handle the stressful situation besides cognitive/intrapsychic maneuvers, support-seeking or information-seeking. Where the goal is the assistance of another person, support-seeking rather than Direct Action is coded.

Examples: I tell her to stop; I punch him; I tell her how I feel about what she did so she won’t do it anymore; I sleep; I study harder so I’ll get a good grade.

INHIBITION OF ACTION--Inhibition of Action is coded when preventing, containing, holding back, or otherwise limiting impulses or behavior is described as the coping strategy. All (Inhibition of Action strategies are always coded as Self).

Examples: I stop playing with them; I walk away from them; I try not to punch him; I try not to cry about it.

INTRAPSYCHIC--Intrapsychic coping refers to all the cognitive processes designed to regulate emotion. This covers a wide range of responses: self-deceptive mechanisms or defenses as well as avoidance and efforts to obtain detachment from or insulation from a threat in an effort to feel in control of it. This strategy is primarily palliative in nature.

Examples: I think about fun, happy things; I try not to think about it; I put it out of my mind; I think about doing something nice for someone; I tell myself it’s not so bad; I ignore her.

DENY/IGNORE CATEGORY--This category indicates whether or not the coping strategy functioned to deny or ignore the actual stressor. Once the Coping Units have been coded into the above categories, each Coping Unit is scored for either the presence or absence of the Deny/Ignore category. In order to label the Coping Unit as Deny/Ignore the Coping Unit must indicate one of two things:

1) that the child denied or ignored the stressor. This includes blocking it out, forgetting about it, getting/walking away from it, not worrying about it, avoiding it, putting it aside, not doing it, not thinking about it, pretending that it didn’t happen, pretending he/she is somewhere else, thinking about something else, doing something else,
Examples: I try to forget about it; I ignore them; I walk away from them; I don’t think about my grandmother; I do something else instead.

2) that the child DID SOMETHING ELSE IN ORDER TO deny or ignore the stressor, such as doing something to make it disappear, doing something to take one’s mind off it or occupy one’s mind, doing something to block it out or forget it, etc.

Examples: I bring my friends with me--it takes my mind off going to clinic; I visited with some nurses or doctors--cuz then I didn’t think about what was going on; I go into my room and play video games--it gets my mind off the problem; I go out with friends--then I don’t have to do my homework.
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