THE RELATIONSHIP BETWEEN EMOTIONAL INTELLIGENCE AND

PSYCHOLOGICAL ADJUSTMENT IN CHILDREN WITH CANCER

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THE RELATIONSHIP BETWEEN EMOTIONAL INTELLIGENCE AND PSYCHOLOGICAL ADJUSTMENT IN CHILDREN WITH CANCER

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Kerry Elaine Haffey, daughter of George and Sharon Haffey, was born in Pensacola, Florida on June 12, 1975. She attended Orange Park High School in Orange Park, Florida, and graduated from Incarnate Word Academy in Corpus Christi, Texas in 1993. Kerry attended Trinity University in San Antonio Texas, but transferred to St. Mary's College of Maryland in St. Mary's City, Maryland and graduated in 1998 with a Bachelor of Arts in Psychology. Before attending graduate school, she served as a research coordinator at Emory University in Atlanta, Georgia. Kerry entered graduate school at Auburn University in August of 2000.

DISSERTATION ABSTRACT

THE RELATIONSHIP BETWEEN EMOTIONAL INTELLIGENCE AND PSYCHOLOGICAL ADJUSTMENT IN CHILDREN WITH CANCER

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Limited research has been conducted to explore the relationship between physical health, emotional intelligence, and psychological adjustment in children. An important aim for research focusing on chronically ill children should include the identification factors that will aid in the acknowledgment of ill children who may need more support. The early identification of children with emotional intelligence levels of concern may possibly allow for appropriate interventions before coping and psychological adjustment is affected deleteriously. This study explored the relationship between emotional intelligence and psychological adjustment in children with cancer. Factors such as age, gender, and stage of illness were also considered. A total of 47 children and their parents participated in the study; children varied in diagnoses and stage of illness. Ages ranged

from 3 to 18. Children and their parents completed the Achenbach System of Empirically Based Assessment (Youth Self Report and Child Behavior Checklist, respectively) in order to assess for psychological adjustment, and children completed the Bar-On Emotional Quotient Inventory for Youth to assess for emotional intelligence. Regression analyses were conducted to assess the relationship between emotional intelligence (EQi:YV) scores and psychological adjustment (ASEBA scores), as well as additional moderator effects on adjustment. A major goal of the study was to examine the relationship between emotional intelligence and overall adjustment in a pediatric cancer population. Child reports of adjustment and emotional intelligence indicated that higher emotional intelligence scores may predict better overall adjustment, as well as better functioning in terms of internalizing and externalizing behaviors. More specifically, better adjustment may be predicted by greater stress management skills and adaptability in children with chronic illnesses. Stage of illness and gender were not found to be significant mediators of the relationships. Age also serves as a predictor of internalizing behaviors, and internalizing behaviors increase with age; however, age does not moderate adjustment with emotional intelligence. Results also indicated a trend for age to serve as a predictor of total adjustment and externalizing behaviors, and problems in these areas may increase with age. Findings from this study may inform health care providers and educators about the relationship between the role of emotional intelligence and potential effects on adjustment that can impact functioning throughout the lifespan.

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CHAPTER I: INTRODUCTION AND LITERATURE REVIEW

In the past decade or so, psychological research in the area of pediatric psychology has focused on long-term effects of cancer. The growing interest in this area enhances the need to address coping and adjustment issues that arise not only following diagnosis and the early stages of an illness, but also during remission and later in life. Appropriate long-term follow-up must include assessments of individual psychosocial and biological factors (such as late health effects), as well as their interactions, that may affect adjustment and functioning (Zebrack et al., 2002). Effective initial interventions, as well as long-term follow-up, should also account for emotional preparedness and the ability to handle or regulate emotion, as measured by emotional intelligence.

Van Veldhuizen and Last (1991) conducted an investigation of the intensity of emotional reactions of children with a chronic illness such as cancer. Among their results, they found that between the ages of 8 and 12, children with cancer are more depressed, anxious, and have lower levels of self-esteem when compared to their peers; children between the ages of 8 and 12 are more depressed than those children older or younger with cancer; and according to parents, the majority of children who participated exhibited at least one major behavioral problem, including sleeping problems, bed-wetting issues, eating problems, and academic or school difficulties. Bertges (2002) found that emotional intelligence may predict leadership in children and may actually serve to buffer and protect against negative life events. Certainly cancer or another

chronic illness may be considered a negative life event, and it is necessary to explore just how emotional intelligence may be a mitigating factor in the psychological adjustment and coping ability of children who experience such a significant event. This relationship may also prove quite significant in understanding implications for early interventions in affected children. Interventions may include the encouragement and development of emotional and social skills that may, in turn, enhance emotional competence.

At this time, emotional intelligence is a construct with minimal options in terms of the development and availability of assessment tools; this is particularly apparent when considering the lack of emotional assessment tools for children. The need, however, exists. There is evidence that even in very young children, verbal expressions can indicate emotional reactions, and they may be able to acknowledge emotional behavior of themselves and others; young children may also begin to understand the relationship between events that provoke emotion and their own emotional reactions (van Veldhuizen & Last, 1991). One "event" that may provoke strong emotional reactions in children may be the diagnosis, adjustment, and coping with a chronic illness. Very little, if any, research has been conducted to explore the relationship between physical health, emotional intelligence, and psychological adjustment or maladjustment in children. Only a handful of studies have focused on relationships between related concepts of those areas, and most involve an adult population. In a 2000 investigation of adult women with breast cancer, Cunningham found that emotional expression (by self-report) was negatively associated with depressive symptoms, as well as with trauma-related distress. This finding supported the idea that lower levels of emotional expression may predict poorer adjustment to cancer or other significant traumas. In addition, Cunningham's

study gave further backing for the suggestion that self-reported emotional expressivity may be strongly associated with emotional intelligence. Another study found that an important relationship may exist between emotional intelligence and the ability to regulate self-management practices in adults with type 1 diabetes (Samar, 2001). Extremera and Fernandez-Berrocal (2002) found that certain aspects of emotional intelligence may help to regulate the health-related quality of life during middle age, where quality of life is defined in terms of social, physical, and psychological symptoms. While it is certainly important to continue the exploration of these relationships in adults, it is as equally important to initiate such investigations in a pediatric population.

Chronic Illness in Children

The term "chronic illness" encompasses a variety of aspects, and might be considered an altered health state that will not be cured by a simple surgical procedure or a short course of medical therapy" (Miller, 1983, p. 4). Chronic illnesses may result in frequent hospitalizations, and limitations in daily functioning may also occur (Hobbs, Perin, & Ireys, 1985). A comprehensive definition was proposed by Stein, Bauman, Westbrook, Coupey, & Ireys (1993):

> Chronic illnesses are health disorders that:
>
> 1) have a biologic, psychologic, or cognitive basis AND
> 2) have lasted or are virtually certain to last for at least 1 year AND
> 3) produce on or more of the following sequelae:
>
> d) limitation of function, activities, or social role in comparison with healthy age peers in the general areas of physical, cognitive, or social role in comparison with health age peers in

the general areas of physical, cognitive, emotional, and social growth and development

e) dependency on one of the following to compensate for or minimize limitation of function, activities, or social role:

6. medications
7. special diet
8. medical technology
9. assistive device
10. personal assistance

k) need for medical care or related services, psychologic services, or educational services over and above the usual for the child's age, or for special ongoing treatments, interventions, or accommodations at home or in school (p. 345).

Many studies have categorized those illnesses that are often viewed as chronic. Cadman, Boyle, Szatmari, and Offord (1987) consider a chronic illness to last six months or longer, but list the following illnesses to be chronic, particularly in children:

> total blindness, visual problems even with glasses, deafness or other hearing problems, absence of speech or other speech problems, persistent moderate or severe pain, asthma, heart problems, epilepsy or convulsions without fever, kidney disease, arthritis, cerebral palsy or other paralysis, muscular dystrophy or other muscle diseases, spina bifida, diabetes, cancer, cystic fibrosis, missing limbs, physical deformities, and "other" health problems of comparable severity and chronicity. (p. 807)

Newacheck and Taylor (1992) recognize many of the same illnesses as chronic, but also include "sickle cell disease, anemia, allergies (respiratory and digestive), skin allergies (including eczema), frequent or repeated ear infections, frequent diarrhea/bowel trouble, and frequent or severe headaches" (p. 367). However, medical research and interventions have improved and progressed substantially, and as a result, it will be necessary to attend to the fact that children with chronic illnesses may be living longer than in the past. More specifically, 80% of children diagnosed with cancer today are predicted to be long-term survivors (Donaldson, 1993). As cancer or any other chronic illness may be considered a significant life event, it is not unrealistic to require that related studies focus on the mental health and well-being of these children at all stages of the illness. While there may exist an overall understanding of the obligation to focus on this issue, there is currently no general consensus on the specific effects of an illness on the well-being of the child.

Before explicitly discussing children with cancer, it is important to note that many studies have examined this population in conjunction with other chronic medical conditions. In 1992, Lavigne and Faier-Routman conducted a meta-analysis of related research and found a greater risk for mental health problems in children with physical health problems or disabilities. They found that risk was elevated for overall adjustment. Externalizing problems and internalizing problems were also elevated, particularly with physical disorders. In addition, the analysis identified sensory and neurologic disorders as having the strongest relationship with psychological problems. Various epidemiologic studies have indicated that the risk of psychological disorder is significantly increased in children with a chronic illness (Cadman et al., 1987; Combs-Orme, Heflinger, &

Simpkins, 2002; Gortmaker, Walker, Weitzman, & Sobol, 1990; Pless & Roghmann, 1971; Newacheck, McManus, & Fox, 1991; Weiland, Pless, & Roghmann, 1992). The overall risk of developing behavioral and social handicaps, and resulting psychological maladjustment, could increase by 1 ½ to 3 times in the chronically ill (Pless, 1984). Only a limited number of studies have been able to account for the adaptation of long-term survivors of chronic illnesses, in terms of the nature and extent of psychological difficulties (Allen & Zigler, 1986; Erickson & Steiner, 2001). However, Combs-Orme, Heflinger, and Simpkins (2002) found that children's physical functioning, general health perceptions, and global health status was predicted most powerfully by the number of chronic health conditions.

More specifically, pediatric oncology research has provided evidence to support that fact that children with cancer have significantly more psychological problems than others in their community (Eiser, 1998; Mulhern, Wasserman, Friedman, & Fairclough, 1989; Sawyer, Toogood, Rice, Haskell, & Baghurst, 1989; Sawyer, Crittenden, & Toogood, 1986). Investigators in this field have acknowledged the need to consider long-term effects of survivors, and, as suggested by Glazer in 1991, pediatric oncology requires that child and adolescent advocates, including psychiatrists, work to consider the "technological complexity and adverse neuropsychiatric effects of treatments for cancer, and the psychological issues faced by long-term survivors of childhood cancer" (p. 964). In a broad review of the literature involving childhood cancer survivors, Zebrack et al. (2002) found that young adult survivors of cancer (including childhood leukemia, Hodgkin's disease, and non-Hodgkin's lymphoma) exhibited an elevated risk for symptoms of depression and somatic distress when off treatment, and the risk was greater

with intensive chemotherapy. As children enter the remission and post-treatment stages of cancer, they may develop or continue to struggle with additional symptoms, medical complications, and cognitive late-effects of the illness (Armstrong & Mulhern, 2000). These complications may certainly be considered "chronic," and may also impact the child's perceptions of health and functioning.

On the other hand, certain research findings may suggest that there are relatively small differences in the number of psychological problems experienced by children with cancer compared to children in the community (Brown et al., 1992; Sawyer et al., 1995; Patenaude and Kupst, 2005). Allen and Zigler (1986) administered measures of adjustment, as well as cognitive development, to children with cancer and a matched comparison sample and found few differences between the groups. In a study of children who were survivors of cancer, Chang, Nesbit, Youngren, and Robison (1987) used the MMPI to identify emotional difficulty and adjustment and noted only minimal clinical evidence of problems in this population. In 1997, Kaplan, Busner, Weinhold, and Lenon used self-report measures to assess depressive symptoms and psychosocial adjustment in adolescent oncology patients and a general population sample and found that the mean level of adjustment and depressive symptoms for adolescents did not differ from the general population sample. Additionally, Kazak and Meadows (1989) found that adolescent survivors of childhood cancer scored within normative levels on measures of behavior, self-competence, and adaptability and adjustment.

Uncertainty about effects of cancer on adjustment in children on children might be attributed to the tendency for many studies to use only a single assessment of this group over a wide range of ages, and who vary in the length of time since the diagnosis

of the illness (Sawyer et al., 1995). Glazer (1991) also notes that no established theory exists to account for the ways that chronic illness may predispose a child to psychological disturbance, although the illness may be considered "stress" and that "adaptation" or "coping" may be the psychological task for the child.

As stated earlier, adaptive style may impact the presence of depressive symptomatology, which can be considered a form of psychological maladjustment. If a child is a repressor (with difficulties recognizing and reporting distress) and this repressive-style continues past the treatment process, the effects may be problematic. This form of adaptive style may have relevant implications for the interpretation of self-reports psychological health and stress (Erickson & Steiner, 2001).

In order to consider a consequence of chronic illness to be psychological maladjustment, the nature of the chronic illness must be taken into account, particularly in terms of the implication for normal growth and development; the response of the particular child and his family to the illness must also be attended to (Milavic, 1985). Milavic does point out that psychological adjustment to a chronic illness or handicap is not illness-specific.

As mentioned earlier, it is necessary to attend to the stages of the illness. Grief in children may be caused by sudden and permanent loss, and while grief may be resolved normally in children without an illness, any impact on a child's mood, including childhood depressive illness, will not disappear spontaneously (Milavic, 1985). The actual diagnosis of an illness may provoke grief-related reactions. Children may experience considerable emotional distress immediately following diagnosis, and may exhibit elevated anxiety, dependence, tearfulness, and more sleep problems. This distress

may be accounted for by new exposure to hospitalization, chemotherapy, and invasive medical procedures (Sawyer et al, 1995). Other contributing factors may include lessened physical activity, sensory isolation, barrier nursing, separation from home, repeated treatment intervention, and sudden and severe loss of health (Milavic, 1985).

During the course of treatment, some children experience social and psychological maladjustment (Eiser, 1998). Children undergoing cancer treatment tend to exhibit increased levels of avoidant coping and adaptation that is repressive (Canning, Canning, & Boyce, 1992; Phipps, Fairclough, & Mulhern, 1995; Phipps & Srivastava, 1997). Current medical therapy can be quite effective, while at the same time very aggressive. Follow-up, both immediate and long-term, may be important to monitor both physical and psychological health of children who have experienced chronic illnesses (Eiser, Hill, & Blacklay, 2000). Variations in the adjustment of children with chronic illnesses may be accounted for by a number of factors, including risk factors (disease/disability parameters, functional independence, and psychosocial stressors) and resistance factors (intrapersonal factors, social-ecological factors, and stress processing) (Wallander & Marullo, 1993).

Coping and Psychological Adjustment

The effects of significant life events, including chronic illnesses, are often evaluated in terms of psychological adjustment or coping. These terms, however, may not necessarily be considered interchangeable. After a literature review to accurately define the term "coping", Roberts, Brown, Johnson, and Reinke (2002) noted that much support is given to a definition that considers coping "a positive response to the stress of a negative environmental situation or life event such as a chronic illness of parental

divorce" (p. 663). Psychological adjustment refers more to outcomes rather that coping efforts. When considering the two terms in relation to children with chronic illnesses, coping may refer to a positive response to the illness, and may be evaluated both during and after treatment. Psychological adjustment may also be evaluated at different stages of the illness.

At the same time, psychological adjustment and coping may not be considered mutually exclusive. Some debates have existed over the maladaptive results of emotional suppression as opposed to the negative aspects of coping that is emotion-oriented. However, Stanton, Parsa, and Austenfeld (2002) conducted a thorough research review and found that there may exist a relationship between coping considered emotion-oriented and poorer adjustment, where poorer adjustment may be measured in terms of depressive symptomatology, anxiety, reduced life satisfaction, and eating disturbance. In this sense, emotion-focused coping may be maladaptive. However, the authors also note that attention must be given to a number of related factors before forming a definitive statement about such coping and adjustment. Further research must attend to both dysfunctional and functional aspects of emotion-focused coping. Investigators must account for differences between emotion-focused attempts to move toward a stressful encounter or event, rather than away from such an event. This involves a comparison of avoidance-oriented processes and approach-oriented processed. There is a need to recognize the positive attributes of emotion-focused coping and acknowledge its adaptive potential. Attention must be given to properties of the stressor itself, such as its controllability. Other research supports similar findings, including the fact that individual differences in children, including emotional responsiveness to the

environment, may affect coping strategies and stress responses (Siegel, 1992). A child's individual adaptive style may play a role in long-term adjustment. Adaptive style may impact the presence of depressive symptomatology, as children who are repressors exhibit the lowest levels of self-reported depression (Canning, Canning, & Boyce, 1992; Phipps & Srivastava, 1997).

Some coping strategies may aid in adjustment and resilience to stressful life events. Stress associated with a chronic illness may have a varied effect on the psychological adjustment of children with cancer, and the effects often depend upon protective factors, include coping strategies (Kupst et al., 1995). A chronic illness, such as cancer, may have long-term effects on development and psychosocial adaptation (Chao, Chen, Wang, Wu, & Yeh, 2003). Children with chronic illnesses, such as chronic arthritis, may experience greater adjustment problems including low self-esteem and behavioral and emotional problems, when compared to published norms or healthy controls (Billings, Moos, Miller, & Gottleib, 1987; LeBovidge, Lavigne, Dononeberg, & Miller, 2003; McAnarney, Pless, Satterwhite, & Friedman, 1974; Timko, Stovel, Moos, & Miller, 1992). However, other studies report no significant differences (Huygen, Kuis, & Sinnema, 2000; Ungerer, Chaitow, & Champion, 1988).

In addition, it is also important to look at the positive aspects of good adjustment as opposed to problems or presence of negative symptoms. This type of approach may contribute to the ever-developing field of positive psychology, particularly if future research focuses less on psychological deficits and more approaches that are affirming and strength-building. Research can be directed at "the health status of children while they are children, rather than recognizing children's importance only because the children

will become adults in the future" (Roberts et al., 2002, p. 671). The fact that the survival rate continues to increase in these children has allowed for psychology to alter its focus from crisis intervention related to facing death, to adjustment and coping with a severe illness (Katz, Dolgin, & Varni, 1990; Varni & Katz, 1987).

The assessment of adjustment in children with chronic illnesses has not seen much development in terms of a conceptual model, although Wallander and Marullo (1993) suggest that such assessment should "be done with instruments that cover a broad range of problem behaviors, that are suitable for a broad range of ages to facilitate follow-up, and that have well-developed norms for how children in general score" (p. 408). These authors tend to rely on the use of the Child Behavior Checklist, or CBCL (Achenbach & Edelbrock, 1983). The CBCL assesses adjustment rather than psychopathology, by taking into account variations within a range of normal responses to situations that are abnormal (Eiser, 1990). A large number of psychological studies, particularly meta-analyses, use this assessment of emotional and behavioral problems (based on internalizing and externalizing symptoms) to measure psychological adjustment in children (LeBovidge et al., 2003). The CBCL has recently been revised and is now known as the Achenbach System of Empirically Based Assessment (Achenbach, Rescorla, McConaughey, Pecora, Wetherbee, & Ruffle, 2001).

The Concept of Emotional Intelligence

The genesis of the emotional intelligence notion began in 1983 with the development of the Theory of Multiple Intelligences, as proposed by Gardner, where both intrapersonal and interpersonal intelligences were considered (Richburg & Fletcher, 2002). The construct of intelligence had progressed beyond the idea of a single,

underlying intelligence (Matthews, Zeidner, & Roberts, 2002). As far as psychological research is concerned, the construct of emotional intelligence is a fairly recent concept, with intensive exploration occurring only since the early 1990's. Emotional intelligence may be defined as "a set of abilities that accounts for how people's emotional reports vary in their accuracy and how the more accurate understanding of emotion leads to better problem solving in an individual's emotional life and the ability to perceive and express emotion, assimilate emotion in thought, understand and reason with emotion, and regulate emotion in the self and others" (Mayer, Salovey, & Caruso, 2000b, p. 396). In other words, this definition essentially considers emotional intelligence as the composition of the following abilities related to emotion: perception and expression, integration with thought, understanding and analysis, and reflective regulation. An alternative definition was proposed by Bar-On and Parker (2000b), where emotional intelligence consists of emotional, personal, and social abilities that affect our ability to cope with pressures and demands. The notion of emotional intelligence requires that the idea that people differ in "some generalized competence for handling emotion" is fundamental (Matthews, Zeidner, & Roberts, 2002, p. 173).

Emotional intelligence has been supported for a number of reasons, and its major proponents consider it one of the most important psychological constructs of all time, as it is proposed to be relevant to solving real-world problems (Matthews, Zeidner, & Roberts, 2002). Emotional intelligence may be able to predict life satisfaction, concern with task mastery, and symptoms of depression (Martinez-Pons, 1997).

Current research on emotional intelligence has concentrated on the development of theory, effective assessment measures, and relationships with life satisfaction (Palmer,

Donaldson, & Stough, 2002). It may be considered controversial, as critics have questioned the actual existence of the concept, and whether or not it can be considered independent from cognitive intelligence. In addition, others may challenge whether or not emotional intelligence measures a construct separate from traditional components of personality (Schulte, Ree, & Carretta, 2004; Warwick & Nettelbeck, 2004).

Newer inquiries into emotional intelligence have produced some interesting, and possibly very significant findings. Preliminary evidence suggests that there may exist an overlap between neural system components that regulate emotional and social intelligence (separate from those components that regulate cognitive intelligence) and the neural system components that support somatic state activation and personal judgment in decision-making (Bar-On, Tranel, Denburg, & Bechara, 2003). Bechara, Tranel, and Damasio (2000) suggested that emotional intelligence may relate to a prefrontal cortex regulating system that controls multiple modules. These investigations may lend support to the idea that emotional intelligence and social intelligence can be considered different from cognitive intelligence. Matthews, Zeidner, and Roberts (2002) summarize their examination of what intelligence is not: a property of modular brain systems for specific emotions; a property of subcortical brain systems such as the amygdala; any parameter of the neural architecture; appraisal; emotional learning ability; and any parameter of the cognitive architecture (pp. 281-282).

Emotional intelligence may be helpful in understanding the link between stress and mental health (Ciarrochi, Deane, & Anderson, 2002). By using a cross-sectional survey design with college students, Ciarrochi and collaborators found that individuals who are more emotionally perceptive may be affected by stress more strongly than those

who are less emotionally perceptive, and may exhibit greater depressive symptomatology, hopelessness, and suicidal ideation. The findings were based on self-reports of emotional intelligence, using a self-report questionnaire (Schutte et al., 1998). In addition, they used measures of objective emotion perception, everyday hassles, life experiences, suicidal ideation, depression, and hopelessness (see Ciarrochi, Deane, & Anderson, 2002 for more details). The overall findings were attributed to a proposed "insensitivity hypothesis", where people who are less perceptive may still experience and acknowledge many life hassles, but may ignore or repress them. In addition, those less-perceptive may still be sensitive to stress, yet may not acknowledge the degree to which they are negatively effected. Essentially, the stress-mental health relationship is stronger among highly perceptive people.

At this point in time, descriptions of emotional intelligence carry both strengths and weaknesses. Matthews, Zeidner, and Roberts (2002) highlight some of these. Conceptions of the construct may be positive in that components of emotional intelligence may be accurately described (self-awareness, coping abilities, and empathy). Emotional intelligence might be a significant personal quality that has been previously undiscovered or overlooked. The concept allows for the use of emotional skills as tools for everyday living and functioning. These authors also recognize negative aspects of emotional intelligence: the possibility that the construct is effectively being assessed, problems rooting the concept in psychological theory, and differentiating between emotional intelligence and personality, intelligence, and emotion itself.

In developmental approaches to studying emotional intelligence in children, "emotional competence" may be reliably and validly assessed. In this case, emotional

competence refers to components that make up emotional intelligence (Saarni, 1999). Bar-On's (1997) research in emotional intelligence focuses on competencies, which are noncognitive and sometimes lurk "amidst everyday traits and tendencies" (Mayer, Salovey, & Caruso, 2000b, p. 413). Matthews, Zeidner, and Roberts (2002) suggest that a concept such as emotional intelligence could be better labeled as "emotional competence", but should not be considered a construct independent of those frameworks of ability that already exist.

It is important to also consider past research on competence and traditional measures of intelligence. In a significant 1973 study, McClelland proposed that intelligence testing should be replaced by testing for competencies, and that aptitude and intelligence tests did not necessarily account for important life outcomes such as occupational success. He suggested that important behaviors might be better predicted by "competencies", as opposed to more traditional tests, and competencies may be identified by successful life outcome analysis and the competencies involved, criterion sampling, and communication skill assessment. More recently, Barrett and Depinet (1991) reported that the effectiveness of competency testing is still undetermined, and that existing evidence has not definitively indicated whether competency testing can demonstrate important relationships with aptitude and ability tests. A conclusive statement concerning the greater effectiveness of intelligence or competency testing may not be made at this point.

Assessment of Emotional Intelligence

One criticism of the emotional intelligence concept involves assessment of the construct, as some emotional intelligence measures have indicated poor reliabilities; other

opponents cite fairly heavy loadings on personality factors that are well-known and have been long-established, such as Neuroticism, Extroversion, Psychoticism, Agreeableness, and Openness (Davies, Stankov, & Roberts, 1998). In traditional intelligence research, performance scales can be considered standard, as they rely on measuring the capacity to solve mental tasks (Carroll, 1993). Researchers are more recently reporting differences between self-report measures and performance-based measures, where the latter may yield higher predictive validities (Mayer, Caruso, & Salovey, 2000a). According to Mayer (2001), performance-based assessments essentially measure the ability to process emotional information (Mayer, 2001). With self-report measures, individuals rate their own emotional intelligence abilities, and therefore questions arise concerning whether or not it's an accurate assessment. Such measures are based on an individual's endorsement of descriptive statements about himself or herself, yet most people are not necessarily reporters of their own abilities (Brackett & Mayer, 2003). Some research indicates that correlations between self-report and ability measures of intelligence are generally low (Paulhus, Lysy, & Yik, 1998). In addition, self-report measures may assess for the ability to process emotional information, but might overlap with mixed scales of personality traits (Mayer, 2001).

On the other hand, performance-based measures tend to look at "ability" as similar to a cognitive ability, rather than those traits and characteristics that may be considered noncognitive (as self-report measures tend to do); ability-based measures may therefore be able to indicate emotional intelligence as separate from personality (O'Connor & Little, 2003). Intelligence tests and tests of academic achievement require

individuals to perform criterion tasks, rather than asking for a report of how well and individual believes he or she can do.

It is necessary to recall, however, cutting edge research such as that discussed earlier by Bar-On et al. (2003). They proposed that emotional intelligence and social intelligence can be considered different from cognitive intelligence, based on an investigation of the neural subsystems that regulate emotional, social, and cognitive intelligence. With further research, the previously-discussed arguments supporting the use of performance-based measures might be less persuasive. Support for the use of self-report measures does exist. When evaluating family coping strategies for children with chronic illnesses (diabetes), researchers note that the expression of affect both within and outside the family is better assessed individually, and that individual expressions may still indicate ways that the family handles stressful events and the emotions that result (Hauser et al., 1993). It will be necessary to continue to assess emotional intelligence through both self-report and performance-based measures until more conclusive findings occur.

Schutte at al. (1998) claim that although interest in emotional intelligence continues to develop and grow, proper assessment tools for the construct have not followed suit. At this time, there exist in the psychological literature only three full-scale tests of emotional intelligence that have available preliminary empirical data: the Mayer-Salovey-Caruso Emotional Intelligence Test, or MSCEIT (Mayer, Salovey, & Caruso, 2000b); the Emotional Quotient-Inventory, or EQ-I (Bar-On, 1997); and Schutte et al.'s (1998) self-report emotional intelligence test, or SREIT (Brackett & Mayer, 2003).

Currently, the Emotional Quotient-Inventory (EQ-I) is considered the most comprehensive and multifactorial self-report instrument to measure emotional intelligence in adults (Bar-On, 1997; 2000; Dawda & Hart, 2000). It is currently the only major assessment tool of emotional intelligence that is available in both adult and youth versions. The Emotional Quotient-Inventory Youth Version (EQi:YV) was introduced in 2000 by Bar-On and Parker, and considers the "emotional health" of children and teenagers by assessing emotional and interpersonal skills. The EQi:YV is a self-report measure; Matthews, Zeidner, and Roberts (2002) consider evaluative or self-reflective conceptions of emotion as the most "workable rationale" for emotional intelligence, and Bar-On's constructs, such as self-regard and adaptability, may be viewed as evaluative in nature. The EQi:YV yields a total emotional quotient scale score, which indicates effectiveness in dealing with daily demands and overall happiness. In addition, this measure yields a general mood scale score (which indicates level of optimism and general outlook), a positive impression scale score, and an inconsistency index score. Four subscale scores are also provided, which include the following: (1) an intrapersonal scale, indicating an ability to understand emotions, as well as express and communicate feelings and needs; (2) an interpersonal scale, which assesses satisfaction in interpersonal relationships, the ability to listen well, and the understanding and appreciation of the feelings of others; (3) an adaptability scale, which considers flexibility and efficiency in managing change, as well as the ability to effectively solve everyday problems; and (4) a stress management scale, which assesses the ability to remain calm and work well under pressure, level of impulsivity, and responsiveness to stressful events.

Although it would be ideal to be able to use both self-report and performance or ability measures of emotional intelligence in children, this is currently not possible. While the MSCEIT is an ability or performance-based tool, it is currently not available in a version for children or adolescents. However, a preliminary research version (the MSCEIT-YV, or Mayer-Salovey-Caruso Emotional Intelligence Test-Youth Version) has been pilot tested and is in development (Mayer, Salovey, & Caruso, 2003). The Schutte instrument is a self-report measure, developed and based on the theoretical model of emotional intelligence as proposed by Salovey and Mayer (1990). This model, as described earlier, focuses on the cognitive aspects of emotional intelligence and looks at potential for intellectual and emotional growth. Salovey was also involved in the development of an emotional intelligence measure, the Mayer-Salovey-Caruso Emotional Intelligence Test, or MSCEIT. However, the Schutte instrument is also currently available for adult use only (Schutte et al., 1998).

Summary

An important aim for future researchers focusing on chronically ill children should include the identification factors that will aid in the acknowledgment of ill children who may need more support (Sawyer, Antoniou, Toogood, & Rice, 1997). Assessment of emotional intelligence may assist in this process. We do know that there exists little empirical research on which to definitively address the role of emotional intelligence in adapting or coping, and future research should focus on "empirical research on the relationship between emotional intelligence and coping in general and under various environmental conditions (controllable vs. uncontrollable, highly stressful vs. moderately stressful, etc.)" (Matthews, Zeidner, & Roberts, 2002, p. 319). Certainly

chronic illness can for the most part be considered a highly stressful, uncontrollable environmental condition in children that warrants ongoing examination.

The early identification of children with emotional intelligence levels of concern may possibly allow for appropriate interventions before coping and psychological adjustment is affected deleteriously. In addition, it may be beneficial to educate children with cancer to recognize and identify controllable and uncontrollable situations in related problems. They may be taught relevant coping skills to match appraisals of control. Educators must recognize individual differences in children and recognize that they may exhibit signs of helplessness after experiencing several situations in which there is a lack of contingency between coping efforts and outcomes (Sorgen & Manne, 2002).

It is possible that understanding the role of emotional intelligence in the role of chronically ill children may aid in the identification of a significant factor affecting adjustment. Research must continue to be conducted that improves the well-being of children with a chronic illness such as cancer, by preventing negative outcomes and promoting positive outcomes (Gerhardt, Walders, Rosenthal, & Drotar, 2004). In addition, "the identification of subgroups of individuals with a chronic illness who experience greater risk or resistance is especially important" (Gerhardt et al., 2004, pp. 184-185). An investigation such as the one proposed in this study may provide more information related to this need. Examination of levels of emotional intelligence may contribute to a greater understanding of a subgroup that may, indeed, be more at-risk.

Emotional intelligence may actually serve to buffer and protect against negative life events (Bertges, 2002). Emotional intelligence may be an important factor in the psychological adjustment and coping ability of children who experience negative life

event such as cancer. This relationship may also prove quite significant in understanding implications for early interventions in affected children. In general, the need for early interventions may be determined by preventive health care screening, which should include mental health care issues (Combs-Orme, Heflinger, & Simpkins, 2002). In fact, such screening is mandated through the Medicaid Program (Health Care Financing Administration, 1995; National Institute for Health Care Management, 1996). In the future, it may be possible for this type of screening to include emotional intelligence assessment, if research findings indicate that it may, indeed, play a significant role in the well being of chronically ill children.

Slaski and Cartwright (2003) report that it is possible to teach and learn emotional intelligence, which can, in turn, be useful in reducing stress and improving health, well-being, and performance. Past outcomes research proposes that, when developing appropriate emotional intelligence curricula, a significant focus can be placed on self-motivation skills, as well as the management of moods and emotions, as well as on training in order to enhance skills for realistic goal setting, strategy usage, and self-evaluation in emotional self-regulation (Martinez-Pons, 2000, p. 347).

If the results of this study provide information concerning a possible relationship between emotional intelligence and adjustment in children with chronic illnesses, we may find evidence to support a need to identify chronically ill children who are at greater or lesser risk, based on emotional intelligence as a risk factor. Results will also be useful in informing health care providers and educators about the relationship between the possible mitigating role of emotional intelligence and potential effects on adjustment that can

impact on functioning throughout the lifespan and the need to monitor these in comprehensive long-term follow-up.

The Purpose of This Study

The primary goal of this study is to explore the relationship between emotional intelligence and psychological adjustment or maladjustment in children with cancer. No existing study has investigated this relationship, particularly in children. Past research based on adult women with breast cancer indicated that levels of emotional expression may predict poorer adjustment to cancer or other significant traumas (Cunningham, 2000). While this information does not necessarily pertain to a child population, it does provide direction for the hypotheses in this study. The inability to regulate negative emotions, indeed even the belief that one does not have strong skills in this domain, seems to make one vulnerable to stress (Salovey, 2001). It is not unrealistic to assume that chronic illness is certainly a major form of stress, and that complications with emotion regulation may affect vulnerability and the ability to cope.

One major hypothesis for this study will assume that chronically ill children with lower emotional intelligence levels will report poorer adjustment. Regardless of the findings, results from this study may contribute one way or another to the inconclusive literature surrounding psychological adjustment in chronically ill children.

A study conducted by van Veldhuizen and Last (1991) found some differences in the intensity of emotional reactions of children with a chronic illness such as cancer, particularly among different age groups. This study will also consider age differences in adjustment of chronically ill children, based on emotional intelligence levels.

Sawyer et al. (1997) reported that age, as well as length of time since the diagnosis of the illness (or current stage of the illness) may account for discrepancies among the nature and extent of psychological difficulties in chronically ill children. Therefore, this study will consider how length of time since diagnosis, or varying stages of the illness, may contribute to adjustment of ill children, based on emotional intelligence levels.

METHOD

Participants

A total of 47 children, ages 13-18, participated in the study. The mean age of the participants was 14.7 (SD = 1.49). These participants were identified through two sources: (1) Camp Smile-A-Mile, a summer camp for children with cancer in Alabama (the camp is located at Lake Martin, Alabama, and is based out of Birmingham) and (2) B.A.S.E. Camp, a year-round camp for children with cancer in Florida (the camp is located in the Orlando suburb of Winter Park). Study participants varied in terms of stages of illness. Because participants were recruited from cancer camps, which require active participation from children with moderate to few functional difficulties, no participants were in the early stages of an illness or recent diagnoses. All participants were either in end stages of treatment (10 subjects; 21.3%), in early remission (21 subjects; 44.7%), or were survivors in status post-treatment (16 subjects; 34%). Patients participated on a voluntary basis. The Institutional Review Board for the Protection of Human Subjects (IRB) at Auburn University approved this study. Of the sample, 21 participants (44.7%) were female and 26 were male (55.3%). Most guardian participants (87.2%) were biological parents (41), with 4 grandparents (8.5%), 1 foster parent (2.1%), and 1 adoptive parent (2.1%) responding. Participants represented the following types of childhood cancers: (1) 17 children (36.2%) with leukemias, or cancers of the blood cells including acute lymphoblastic leukemia (ALL), acute myelogenous leukemia

(AML), and chronic myelogenous leukemia (CML); (2) 5 children (10.6%) with lymphomas, or tumors of the lymph tissues, including Hodgkin's disease, Non-Hodgkin's lymphoma, and Burkitt's lymphoma; (3) 5 children (10.6%) with bone cancers, including osteosarcoma or osteogenic sarcoma, Ewing's sarcoma, and chondrosarcoma; (4) 2 children (4.3%) with liver cancers, including hepatoblastoma and hepatocellular cancer; (5) 4 children (8.5%) with soft-tissue sarcomas, including rhabdomyosarcoma and other soft tissue sarcomas; (6) 6 children (12.8%) with brain cancers, including gliomas; (7) 3 children (6.4%) with kidney cancer, such as Wilms' tumor or nephroblastoma; (8) 4 children (8.5%) with neuroblastomas, or cancer or certain nerve cells; and (9) 1 child (2.1%) with retinoblastoma, or cancer of the eye.

Measures

The Achenbach System of Empirically Based Assessment (ASEBA). The Child Behavior Checklist was developed in 1983 by Achenbach and Edelbrock, with a widely-used version presented in 1991 (Achenbach, 1991) and a more recent revision introduced in 2001 (Achenbach et al., 2001). This recent revision has also resulted in changing the name of the instrument to the Achenbach System of Empirically Based Assessment (ASEBA). The most recent revision included the following major changes: an increase in the beginning age for the school-aged forms (from age 5 to 6); updated norms, assigned to raw scores for each gender at two age levels (6-11 and 12-18); elimination of some items that had previously been endorsed by fewer than five percent of respondents; replacement of 6 items with more effective wording; and name changes to two syndrome scales (Withdrawn to Withdrawn/Depressed and Delinquent Behavior to Rule-Breaking Behavior) (Flanagan, 2005). Both parent (CBCL, or Child Behavior Checklist) and child

reports (YSR, or Youth Self Report) are available. While this instrument was not specifically developed for use in children with medical illnesses, it is often used with this population due to its "broad use, ease of administration, sound empirical grounding, and available norms" (Harris, Canning, & Kelleher, 1996, p. 1026). The survey items question parents about a series of 113 behavior problems, and is regularly used in investigations of behavioral and emotional problems in children. A total problem score, two broadband scores (for Externalizing and Internalizing), and eight syndrome scale scores are provided. The eight syndrome scale scores reflect Withdrawn/Depressed, Somatic Complaints, Anxious/Depressed, Social Problems, Thought Problems, Attention Problems, Rule-Breaking Behavior, and Aggressive Behavior. *T*-scores were normed on a clinical population, and the *T* score cutoff of (greater than or equal to) 64, for Total, Internalizing, and Externalizing, is considered the clinical range designation. This borderline clinical range was extended downward from the previous version of the CBCL, where the *T* score cutoff was 60. Higher scores indicate greater behavioral and emotional problems. The ASEBA has been norm-referenced for large populations, and has demonstrated adequate internal and test-retest reliability. Flanagan (2005) completed a comprehensive review of the ASEBA and noted that psychometric properties are generally strong. Internal consistency reliability ranges from .55 to .90 for Competence and Adaptive scales and from .71 to .97 for the Syndrome scales. Test-retest reliability for the CBCL ranged from .88 to .90 for the CBCL and from .79 to .88 for the YSR. Because this instrument is considered the "standard" by which other instruments of adjustment or pathology are measured, traditional measures of current validity are difficult; however, Achenbach has repeatedly provided information concerning high

concurrent correlations with related instruments (Furlong & Wood, 1998). For more information on the CBCL, see Achenbach et al. (2001).

For the 2001 version of the ASEBA, two types of factor analysis were conducted for both the CBCL and YSR: Exploratory Factory Analysis and Confirmatory Factor Analysis (Achenbach and Rescorla, 2001). Results yielded eight factors (as described above) that had equivalencies in most of the analyses. All eight resembled the factors that were derived from the 1991 analyses of the CBCL and YSR, although some of the items that loaded onto current factors differed from the earlier versions. These differences may have resulted from larger and more diverse samples of children, exclusion of children younger than 6 from the CBCL, replacement of some CBCL and YSR problem items with new items, use of tetrachoric correlations for items scored 0 versus 1 and 2, use of a greater variety of more advanced exploratory and confirmatory methods, and derivation of final factors for each instrument from all gender and age groups. The authors evaluated the goodness-of-fit between the data and factor models by computing the Root Mean Square Error of Approximation (RMSEA; Browne & Cudek, 1993), which yielded values within the range of .03 to .07 (.06 for the CBCL and .05 for the YSR) and generally indicated good fit. Because the ASEBA is generally considered a widely-used, reliable, and well-validated measure additional factor analysis for data used in this study was not completed.

The Bar-On Emotional Quotient-Inventory Youth Version (Bar-On EQ-i:YV). The Bar-On Emotional Quotient-Inventory Youth Version was developed by Bar-On and Parker in 2000 to assess emotional and interpersonal skills, and specifically emotional intelligence. The test consists of 60 items, with a total score and five subscale scores:

interpersonal abilities, intrapersonal abilities, stress management, adaptability, and general mood. In addition, a positive impression scale score and inconsistency index scores are provided. Standard scores are generated for each of the five subscale scores, the total score, positive impression scale score, and inconsistency index. Standard scores under 70 are considered markedly low and indicate atypically impaired emotional and social capacity. Standard scores ranging from 70 to 79 indicate extremely underdeveloped emotional and social capacity, with considerable room for improvement. Standard scores between 80 and 89 indicate underdeveloped emotional and social capacity, with some room for improvement. Scores between 90 and 109 are considered average and point to adequate emotional and social capacity. A well-developed emotional and social capacity is indicated in scores within the high range, which involves standard scores from 110 to 119. Standard scores within the very high range (120-129) indicate an extremely well-developed emotional and social capacity. Finally, standard scores from 130 and higher indicate an atypically well-developed social and emotional capacity. The EQ-i:YV has been norm-referenced for large populations, and demonstrates sound reliability and validity. Internal reliability (Cronbach's alpha) was acceptable for all domain scales (0.65 to 0.90), with the lowest reliability coefficients for the six-item Intrapersonal Scale. Mean correlations of items within scales were low to moderate for each scale (0.14 to 0.55). Test-retest reliability after three weeks was moderate to high for each scale (0.77 to 0.89) (Ballard, 2001). For more information, see Bar-On and Parker (2000a).

Exploratory Factor Analysis was used to examine the structure of to 40 items from the Interpersonal, Intrapersonal, Stress Management, and Adaptability Scales (Bar-On and Parker, 2000a). Using a varimax rotation, the four empirical factors that emerged from the analysis closely matched the four Bar-On EQ-I:YV scales that were developed to measure emotional intelligence. All 40 items loaded at least moderately on their matching factor and had very low loadings on the other three factors. Intercorrelations of the scales also provided additional support for the multidimensionality of the measure, as low to moderate correlations were found among the Interpersonal, Intrapersonal, Stress Management, and Adaptability Scales. Because the Bar-On EQ-I:YV is a newer measure, a factor analysis using the data from this study is presented in the results section.

Design and Procedure

Individuals who attended Camp Smile-A-Mile (summer camp in Alabama for children with chronic illnesses) and BASE Camp (year-round Florida camp for children with cancer) participated in this study. Patients and their parents were informed by camp's director about the opportunity to participate in the study on a voluntary basis. Interested participants were given a packet that included informed consent forms, both parent and child report forms of the surveys or tests to be used, and a postage-paid envelope to return the forms anonymously to the researcher. When the parent and child elected to participate, the parent signed the informed consent form to allow their child to participate in this study. The parent was asked to complete the parent report form for the Achenbach System of Empirically Based Assessment. The child was be given the child/self-report versions of the Achenbach System of Empirically Based Assessment and

the Bar-On Emotional Quotient Inventory Youth Version; completion time was approximately 30 minutes. After the initial materials were returned to the researcher, both parent and child forms were assigned and identified only by a subject number, and any contact/identifying information (although not requested) was destroyed. Participants were provided a postage-paid envelope so that the materials could be returned anonymously to the researcher when completed. A total of 150 packets were distributed and 47 were returned, for a response rate of 31.3 percent.

RESULTS

The findings are presented in four sections: (1) reliability on the scales that compromise the ASEBA forms (CBCL and YSR) and the EQ-I:YV; (2) reliability check using factor analysis of the EQ-I:YV; (3) regression analyses to assess the relationship between emotional intelligence (EQi:YV) scores and psychological adjustment (ASEBA scores); and (4) regression analyses to consider additional moderator effects on adjustment.

Reliability

The ASEBA involves parent and self-report measures of adjustment. The CBCL and YSR measures both included 112 items asking the frequency of behaviors and the frequencies were rated on a 3-point scale from Not True or Not At All (0) to Very True or Often True (2). As stated earlier, the ASEBA is comprised of eight empirically-based problem scales: Withdrawn/Depressed, Somatic Complaints, Anxious/Depressed, Social Problems, Thought Problems, Attention Problems, Rule-Breaking Behavior, and Aggressive Behavior. On the CBCL, or parent-report of the ASEBA, all scales had high internal reliabilities, ranging from .81 to .92; *T* scores on the Internalizing behaviors scale (summation of anxious/depressed, withdrawn/depressed, and somatic complaints items) ranged from 32 to 92, with a coefficient alpha of .95, while *T* scores on the Externalizing behaviors scale (summation of rule-breaking behavior and aggressive behavior items) ranged from 30 to 77, with a coefficient alpha of .93. A total score of adjustment was

based on summation of the items from the empirically-based problem scales, as well as additional items considered as "other problems." On the CBCL, total *T* scores of adjustment ranged from 33 to 85 and the coefficient alpha was .97. A summary of reliability data for the CBCL, as well as *T* score means and standard deviations, are presented in Table 1.

Reliability information for the YSR, or child-report of the ASEBA, was also completed. Most scales had acceptable internal reliabilities (coefficient alpha ranging from .70 to .85), with the exception of the Rule-Breaking behavior scale, where the coefficient alpha was .48. *T* scores on the YSR Internalizing behaviors scale ranged from 26 to 73, with a coefficient alpha of .88, while *T* scores on the Externalizing behaviors scale ranged from 26 to 66, with a coefficient alpha of .85. On the YSR, total *T* scores of adjustment ranged from 24 to 70 and the coefficient alpha for the YSR was .96. A summary of reliability data for the YSR, as well as *T* score means and standard deviations, are presented in Table 2.

Poorer internal reliability on the Rule-Breaking behavior scale could be attributed to zero variance in responses to some of the items, particularly the more severe behaviors, such as running away and destroying property. Low reliability could also be due to the fact that the YSR is a self-report and that children may not respond as honestly as parents do, or to the fact that a pediatric cancer population exhibits fewer of these behaviors.

The EQ-I:YV involves self-reports of emotional intelligence in children. This measure included 60 items asking for the best description of the child for a number of abilities and characteristics. The descriptions were rated on a 4-point scale from Very Seldom True of Me (1) to Very Often True of Me (4). The EQ-I:YV is comprised of four

scale scores, including an Adaptability index, Stress Management index, Interpersonal index, and Intrapersonal index. All four scales had acceptable reliabilities, with coefficient alpha ranging from .75 to .89. A Total Emotional Quotient score was also generated, and standard scores on this scale ranged from 65 to 130. The coefficient alpha for the total emotional intelligence scale was .92. A summary of reliability data for the EQ-I:YV, as well as standard score means and standard deviations, are presented in Table 3.

Factor Analysis

On the EQ-I:YV, the factor structure of the 40 items that comprise the Interpersonal, Intrapersonal, Stress Management, and Adaptability scales was examined using exploratory factor analysis with the total normative sample (*N*=47). A principal components factor analysis using a varmiax rotation was performed as a reliability check using the EQ-I:YV (see Table 6). This procedure provided a solution with the minimum number of factors accounting for the maximum amount of variance.

Based on the factor extraction data, eigenvalues, scree plot, and variance, four factors were identified for this measure (Table 4). The four factors shared 58.39% of the variance. Over half (31.31%) of the variance was accounted for by the first factor, which involved most Interpersonal Scale items (as identified by Bar-On and Parker). Table 4 lists these items. The item, "I usually know how other people are feeling", cross-loaded on factor 2. The following items had moderate loadings on this factor but higher loadings on factor 2: "I like doing things for others" and "I feel bad when other people have their feelings hurt". These last three items also involve communication with others and such characteristics are properties of both the Intrapersonal Scale (expression and

communication of feelings and needs) and Interpersonal Scale (understanding and appreciation of the feelings of others).

Factor 2 (mean loading 11.05%) is defined by relatively high loadings of Intrapersonal Scale items. Most items that loaded highly on this factor are identified as Intrapersonal Scale items and are noted in Table 4. Two items that are associated with the Intrapersonal Scale (and did not load on factor 2) include "It is hard to talk about my deep feelings" and "I have trouble letting others about my feelings"; neither of these items loaded significantly on any of the scales, which may be a function of the small sample size.

Factor 3 (mean loading 9.54%) accounted for a majority of items on the Stress Management scale. Some of the items that comprise this scale ("I know how to keep calm" and I fight with people") also loaded on the Interpersonal and Intrapersonal scales, which is not surprising, considering that the items involve stress- or anger-related interactions with others.

Finally, Factor 4 (mean loading 6.49%) accounted for a majority of the items on the Adaptability Scale. In the original factor analysis for the EQ-I:YV, Bar-On and Parker (2000a) also reported the generation of four scales. This analysis provided four factors that correspond to those generated by Bar-On and Parker. It is also important to note that Bar-On and Parker acknowledge only moderate loading of the items assessed in factor analysis on their matching factors.

Regression Analyses

Regression analyses were conducted to determine whether emotional intelligence level serves as a predictor of adjustment, as reported by both children with cancer and

their parents. The first set of analyses involved parental reports of total adjustment. The regression equation for the parent report of total adjustment (using the total EQ score) was not significant: R^2=.004, R^2_{adj}=-.018, $F(1, 45)$=.203, p>.05. Additionally, emotional intelligence (using the total EQ score) as a predictor of parental report of adjustment was examined beyond total scores of adjustment. The regression equation for the parent report of internalizing behaviors (also using the total EQ score) was not significant: R^2=.000, R^2_{adj}=-.022, $F(1, 45)$=.017, p>.05. Finally, the regression equation for the parent report of externalizing behaviors (again, using the total EQ score) was also not significant: R^2=.006, R^2_{adj}=-.016, $F(1, 45)$=.280, p>.05. Table 5 provides a summary of these analyses.

Individual EQ subscale scores were also considered for parent reports. Regression analyses were conducted to determine whether specific components of emotional intelligence (as indicated by EQ subscale scores) serve as predictors of adjustment (as indicated by parent total adjustment score). None of the regression equations for the parent reports of total adjustment, using EQ subscale scores, were significant. These analyses are summarized in Table 6.

The second set of analyses involved child reports of total adjustment. The regression equation for the child report of total adjustment (using the total EQ score) was significant: R^2=.189, R^2_{adj}=.171, $F(1, 45)$=10.51, p<.05. Additionally, emotional intelligence (using the total EQ score) as a predictor of child report of adjustment was examined beyond total scores of adjustment. The regression equation for the child report of internalizing behaviors (also using the total EQ score) was significant: R^2=.135, R^2_{adj}=-.116, $F(1, 45)$=7.02, p<.05. Finally, the regression equation for the child report of

externalizing behaviors (again, using the total EQ score) was also significant: R^2=.126, R^2_{adj}=107, $F(1, 45)=6.49$, $p<.05$. Table 7 provides a summary of these analyses. In general, these results indicate that as emotional intelligence scores increase and indicate greater emotional competence, child-reported levels of adjustment improve, as do internalizing and externalizing behaviors. Further exploration of these results can be found in the Discussion section.

Individual EQ subscale scores were considered for child reports. Regression analyses were conducted to determine whether specific components of emotional intelligence (as indicated by EQ subscale scores) serve as predictors of adjustment (as indicated by child total adjustment score). The regression equation for the child report of total adjustment, as predicted by the Adaptability subscale score, was significant: R^2=.142, R^2_{adj}=.123, $F(1, 45)=7.42$, $p<.05$. The regression equation for the child report of total adjustment, as predicted by the Stress Management subscale score, was also significant: R^2=.202, R^2_{adj}=.185, $F(1, 45)=11.42$, $p<.05$. Neither of the regression equations for the child reports of total adjustment, using the EQ Interpersonal and Intrapersonal subscale scores, was significant. These analyses are summarized in Table 8.

Additional analyses were conducted to examine possible moderators of relationships between emotional intelligence and child reports of adjustment. Hierarchical multiple regressions were conducted to determine whether age, gender, and stage of illness affected these relationships (Aiken & West, 1991). In each of these analyses, continuous scale predictor and moderator variables were centered in order to

reduce multicollinearity among the variables in each regression equation (Frazier, Tix, & Barron, 2004).

The first of these analyses exploration whether these factors interacted with total emotional intelligence score to predict child reports of adjustment, including total, internalizing, and externalizing scores. Table 9 summarizes the analysis of the relationship between emotional intelligence (total score) and child report of total adjustment, as moderated by gender of child, age of child, and stage of illness. The relationship between emotional intelligence (total score) and child report of internalizing behaviors, as moderated by the same variables, is summarized in Table 10. Finally, the relationship between emotional intelligence (total score) and child report of externalizing behaviors, as also moderated by these variables, is summarized in Table 11. Gender and stage of illness did not serve as significant moderator variables in any of these relationships; however, age served as a significant predictor of adjustment (but not as a moderator with emotional intelligence), as measured by child report of internalizing behaviors. A similar trend was also seen in a predictive relationship between age and adjustment (where, again, age did not serve as a moderator with emotional intelligence), in child reports of both total adjustment (p=.056) and externalizing behaviors (p=.052). These results indicate that child-reported internalizing behaviors may increase with age, and that there may be a trend for child-reported externalizing behaviors and total adjustment problems to also increase with age. The results also indicate that age does not moderate adjustment (total, internalizing, or externalizing behaviors) when combined with total emotional intelligence.

The second of these analyses explored whether age, gender, and stage of illness interacted with emotional intelligence subscales, specifically Adaptability and Stress Management, to predict child reports of total adjustment. In Table 12, the relationship between Adaptability (emotional intelligence subscale) and child report of total adjustment, as moderated by gender of child, age of child, and stage of illness, is summarized. Table 13 summarizes the relationship between Stress Management (emotional intelligence subscale) and child report of total adjustment, as moderated by these same variables. Again, gender and stage of illness did not significantly moderate these relationships; however, age served as a significant predictor of total adjustment (but not as a moderator with the emotional intelligence subscales of Adaptability or Stress Management), as measured by child report of total adjustment. These results again support the previous analyses, which found that child-reported total adjustment problems may increase with age, but that age does not moderate total adjustment when combined with emotional intelligence (as assessed by adaptability or stress management characteristics).

DISCUSSION

This study investigated the relationship between emotional intelligence and psychological adjustment or maladjustment in children with cancer. Little research has focused such relationships in adult populations, and research within pediatric cancer populations has primarily centered only on maladjustment in these children. In fact, the field has only recently begun to address issues of resilience and positive adjustment in both adult and pediatric populations with cancer. The research questions from this study will be discussed by focusing on whether a relationship between emotional intelligence and adjustment exists in children with cancer, additional contributors to that relationship, and how the results fit within the current, albeit limited, research on emotional intelligence in children. The limitations from this study will be discussed while accounting for some of the variables that may have affected the outcome of this study. Implications of this study for psychologists, particularly pediatric psychologists, will be discussed. Finally, recommendations for future research will be offered to further expand the field of emotional intelligence in children, specifically those with chronic illnesses such as cancer.

The first goal of the study was to examine the relationship between emotional intelligence and overall adjustment in a pediatric cancer population. Adjustment was examined in terms of both parental and child/self-reports. No relationship was noted between parental reports of adjustment and emotional intelligence; however, a

relationship was noted between child reports of adjustment and emotional intelligence. This relationship not only included child reports of total adjustment, but also reports of internalizing and externalizing behaviors. The results suggest that higher emotional intelligence scores may predict better overall adjustment, as well as better functioning in terms of internalizing and externalizing behaviors. In other words, the higher the emotional intelligence score, the better adjusted the child may be. As discussed earlier, there is currently no general consensus on the specific effects of an illness on the well-being of the child, so the results of this study may support previous research which indicates that experience with cancer may impact a child's perceptions of health and functioning (Armstrong & Mulhern, 2000; Combs-Orme et al., 2002; Pless, 1984; Zebrack et al., 2002).

Although Ciarrochi et al. (2002) found that individuals who are more emotionally perceptive may be affected by stress more strongly than those who are less emotionally perceptive, their study did not examine a pediatric population. In fact, the results of this study suggest that those who are more "emotionally perceptive", or have greater levels of emotional intelligence, may actually be less affected by stress and may exhibit better adjustment. This finding may also lend support to newer research, particularly in positive psychology, focusing on the importance of emotional competence in relation to adjustment and satisfaction in life.

The fact that a relationship exists between child reports of adjustment and emotional intelligence, but not between emotional intelligence and parental reports of adjustment, may be attributed to a few explanations. One explanation for this occurrence could be that parents are not accurate raters of their children's adjustment. A second

explanation may involve consistency, in that emotional intelligence was also measured by child self-reports and not by parental reports. Finally, no control group was used in this study, and, therefore, it was not possible to make comparisons between this clinical sample and a community sample.

Additional factors were considered as mediators of the relationship between emotional intelligence and child reports of adjustment. Stage of illness (late in treatment, in remission, cancer-free) and gender were not found to be significant mediators of the relationship. These results do not support the findings of Sawyer et al. (1997), which indicated that length of time since the diagnosis of the illness may account for discrepancies among psychological difficulties in chronically ill, it is important to consider that only children in late treatment, remission, and free of cancer participated in this study. No participants were newly diagnosed. In addition, the sample from this study represents a subset of chronically ill children, and pediatric cancer patients may possess characteristics different from children with other chronic illnesses. Sawyer et al. (1997) did, however, note a relationship between age and adjustment. The results from this study indicate that age serves as a predictor of internalizing behaviors, and that internalizing behaviors increase with age; however, age does not moderate adjustment with emotional intelligence. Results also indicated a trend for age to also serve as a predictor of total adjustment and externalizing behaviors, where problems in these areas may increase with age (although, again, age does not combine with emotional intelligence to moderate adjustment in these areas).

The results indicate a significant relationship between child reports of emotional intelligence (as indicated by a total emotional intelligence score) and not only total

adjustment, but also more specific aspects of adjustment: both internalizing and externalizing behaviors. In summary, higher levels of emotional intelligence may predict better overall adjustment, as well as fewer internalizing and externalizing problems. These results may be a product of the limited amount of subject data, which could produce false-positive results; however, these results may also indicate that chronically ill children who possess greater emotional intelligence are better adjusted, and are specifically better adjusted in terms of fewer internalizing and externalizing behaviors. Although the diagnosis and treatment of a chronic illness such as cancer proposes a variety of pressures and demands, children who are better competent in handling emotion and possess greater emotional, personal, and social abilities to cope with such complications may experience fewer problems adjusting to the illness and, therefore, also exhibit fewer behavioral problems.

The results also indicate that there exists a significant relationship between emotional intelligence and adjustment (based on child reports) beyond a total emotional intelligence score. A relationship also exists between adjustment and individual components of emotional intelligence: specifically, stress management and adaptability. More conclusively, better adjustment may be predicted by greater stress management skills and adaptability in children with chronic illnesses. It stands to reason that if a child is better capable of handling and managing stress (and cancer may certainly be considered a major stressor), he or she may be able to better adjust behaviorally and psychologically. It is also possible that coping with a chronic illness may lead to more effective coping with everyday stressors (Hampel, Rudolph, Stachow, Lab-Lentzsch, & Petermann, 2005) and, as a result, children who experience a chronic illness may be

better adjusted. Additionally, if a child is relatively adaptable and capable of effectively handling transitions and changes, he or she may also adjust better behaviorally and psychologically. Stress management, adaptability, and adjustment may share bi-directional relationships with each other.

Limitations and Future Directions

The findings of this study are presented with the acknowledgement of several limitations. Specific illness-related factors could have contributed to better (or worse) reports of adjustment, based on the level of impairment that a certain illness presents. Although parent reports were used in addition to reports by the child, the use of self-report inventories may result in significant correlations due to shared method variance and not the predicted associations between the variables under study. The cross-sectional nature of this study did not allow for determining the causal direction of relationships between variables. In addition, the procedure for data collection did not allow for examination of potential differences between those children with cancer who participated in the study and those who did not.

One limitation of significant importance is the low response rate. Although the study was designed to protect anonymity of the children and their parents by avoiding any contact between the investigator and subjects, this approach may have contributed to a low response rate, as subjects were required to submit the measures to the investigator via mail. Another limitation includes the relatively small sample size. This small sample may have contributed to moderate power estimates. As a result, relationships between the predictor and outcome variables may not have been appropriately represented. It is, therefore, necessary to use caution when interpreting and generalizing the results of this

study. In future research, subject variability may be increased by a more homogeneous pool of subjects, as represented by a larger number of subjects within a more narrow age range or specific cancer diagnosis.

Although the sample size was small, the correspondence of the factor analysis results for the EQ-i:YV to the four factors proposed be the authors of the measure (Bar-On and Parker, 2000a) lends credibility to this factor analysis. It is important to remember that in this study, the measure was administered to a clinical sample, and a clinical sample is relatively smaller than the general population. Because the initial standardization was based on a community sample, findings from this study may provide information in support of clinical norms, beyond gender- and age-specific norms, which are the only norms for the EQ-i:YV available at this time.

Before conducting research with this population in the future, it is necessary to keep a number of things in mind. Pediatric cancer patients and their families have significant daily stressors and concerns on which to focus. Their immediate priority is typically the well-being and medical care of their children. Even in later stages of an illness or in remission, these children and their families have been overexposed to medically-related interventions and treatment and are not always interested in taking on additional demands. It is important to consider their needs and stressors while conducting research and it is most likely safer to assume that these families may not wish to engage in research or other procedures not directly related to the care of their children, no matter how informational or significant such research may be.

An additional limitation relates to the measures used in the study. The Bar-On Emotional Quotient inventory is considered comprehensive and reliable and the

Achenbach instruments are frequently used in measuring adjustment in a variety of educational and clinical environments; however, generalization of the present findings for practices incorporating other instruments should be made cautiously. Although the Bar-On EQ-i:YV is the only existing published measure of emotional intelligence for children and is considered acceptable, as it has been well-developed and demonstrates psychometrically sound properties (Leong, 2003). Future development of this measure and others should focus on improved loadings on factors or subscales that comprise the measure; even Bar-On and Parker (2000a) noted that some of the measure's items loaded "at least moderately" on their matching factors, and a number of item loadings were as low as .40. There has also been some criticism regarding its concurrent validity and different theorists have suggested other dimensions that underlie the construct of emotional intelligence (Leong, 2003). With further development of emotional intelligence measures should come better reliability and validity information that may drive the field to better acceptance and understanding of this important construct.

Despite the limitations previously described, this is the first study, to the researcher's knowledge, to examine the relationship between physical health, emotional intelligence, and psychological adjustment or maladjustment in a pediatric oncology population. The results of this study add to the research that supports the impact of emotional intelligence, sometimes referred to as "emotional competence", on the general adjustment of children.

There are a number of demographic issues to be considered in future research. Physical and mental health problems are more prevalent among children in lower-income families. Poverty may play a significant role in both types of problems; therefore,

longitudinal studies of large samples of children from birth would clarify such a relationships (Combs-Orme, Heflinger, & Simpkins, 2002). Future research should continue to focus on identifying those factors that will aid in the acknowledgment of children who may need more support (Sawyer et al., 1997). Assessment of emotional intelligence may assist in the early identification of children with emotional intelligence levels of concern; these levels, as defined by Bar-On and Parker (2000a), indicate underdeveloped or atypical emotional and social capacity by EQ scores of 90 and lower.

Early identification may also allow for appropriate interventions before coping and psychological adjustment is affected negatively. As the results of this study indicate, early intervention may be beneficial in order to prevent an increase in adjustment problems with age. The authors of the EQ-I:YV indicate a number of interventions that target improvement for weaker emotional and social skills (Bar-On and Parker, 2000a & 2000b). These include emotional literacy programs to strengthen such skills. The "Self Science" program was developed for elementary and middle school grades as classroom guidelines that reach beyond cognitive and academic skills, including learning words and concepts for emotions and experiencing the self and surroundings (Stone & Dillehunt, 1978). The "Child Development Project" (Solomon, Watson, Delucchi, Schaps, & Battistich, 1988) was developed for the same age group to emphasize supportive teacher-student relationships with opportunities for decision-making, autonomy, and collaborative interaction. The PATHS curriculum ("Promoting Alternative Thinking Strategies") was introduced by Greenberg and Kusche (1998) to develop emotional awareness, interpersonal skills, and anger management. Intervention and prevention programs for older children include the "Resolving Conflict Creatively Program", as

developed by the Collaborative to Advance Social and Emotional Learning (CASEL). Children are taught mediation skills and conflict resolution, while accounting for cultural diversity.

Outside of the classroom, parents may work with their children at improving social and emotional literacy. Elias, Tobias, and Friedlander (1999) have published a parent "handbook" for strengthening such skills. Therapists and psychologists may work individually with children to accurately identify feelings and emotions, encourage appropriate disclosure of thoughts and feelings, and may also aid in interpersonal conflict resolution. In addition, it may be beneficial to educate children with cancer to recognize and identify controllable and uncontrollable situations in related problems. They may be taught relevant coping skills to match appraisals of control. Service providers must recognize individual differences in children and recognize that they may exhibit signs of helplessness after experiencing several situations in which there is a lack of contingency between coping efforts and outcomes (Sorgen & Manne, 2002).

Remedial instruction in emotional literacy skills may not benefit all children, particularly those with severe emotional self-efficacy impairment (Saarni, 1999). Aside from the Total EQ score provided by the EQ-i: YV, interventions may be tailored for specific skill deficits, as indicated by lower scores on other scales of the measure. Low scores on the intrapersonal scale may be addressed by utilizing strategies and tips for parents, as proposed by Elias et al. (1999) and Shapiro (1997). Suggestions include increasing emotional vocabulary to improve emotional literacy by making a dictionary of feelings or identifying pictures/feelings observed in photographs; increasing self-awareness of feelings by playing "feelings charades"; teaching the BEST technique for

assertiveness and communication (where B indicates body posture, E indicates eye contact, S indicates speech, and T indicates tone of voice). Low interpersonal scale scores may be addressed by using the Self-Science curriculum (role-playing scenarios, identifying current feeling states), Child Development Project (using stories as a basis for discussion), and PATHS curriculum, as described earlier. Social responsibility through community service and developing conversational skills are ideas proposed by Shapiro (1997). Low adaptability scale scores may be addressed by implementing strategies for problem-solving. Elias et al (1999) proposed an acronym system to aid in remembering related skills and Shapiro (1997) also suggested the use of "modeling" stories to improve realistic thinking. A number of techniques historically used to alleviate stress and anxiety may also be used for low stress management scale scores, such as guided imagery (Shapiro, 1997) and deep breathing exercises (Elias et al., 1999).

As pediatric psychology and other medical disciplines, such as oncology or endocrinology, continue to build stronger relationships and work together to provide the most effective support services for their patients, it will be important to determine which services and interventions are necessary. Pediatric psychology is often involved with these oncologic populations at all stages of service, from initial diagnosis through long-term follow-up. By working with each patient on an individual basis and utilizing the proper assessment tools, pediatric psychologists can tailor their services on a case-by-case basis, providing more intervention for those patients who exhibit a greater need and higher risk factors, and at the same time scale down the services provided to those with fewer needs. This will allow pediatric psychologists to become more cost-effective and time-efficient with their services. Such greater efficiency may increase the number of

pediatric psychologist positions within medical settings, which are necessary but not common or always determined to be cost-effective at this time.

The role of a pediatric psychologist involves more than just therapy and support services to children and their families during and after treatment. Most pediatric psychologists also provide various types of assessment services, which involve cognitive, behavioral, developmental, and adaptive assessment. Testing may provide baseline information before a patient undergoes treatment, throughout the treatment process to assess for changes, and following treatment to monitor long-term effects. Long-term effects are not simply limited to possible cognitive changes as a result of chemotherapy, radiation, or complications from a bone marrow transplant, for example, but also adaptive and behavioral changes that occur as a result of changes in the structure of daily life, missed school, changes in interpersonal relationships, and so on. The most effective assessment should ideally address all possible areas of impact. Certainly emotional competence should be assessed, not only as a construct all its own, but as a contributor to adjustment and other areas of functioning. Assessment of emotional intelligence may aid in identifying individual strengths and weaknesses at varying stages of treatment, particularly at the beginning, and may help to determine and guide the most appropriate interventions.

According to Patenaude and Kupst (2005), some findings on existing measures of adjustment generally indicate that survivors' overall adjustment is quite similar to that of their peers who have not experienced cancer. It is, therefore, necessary to work to develop new measures that account for these limitations, and to consider not only the presence of negative symptoms, but also positive aspects of good adjustment or

resilience. In conjunction with assessment of good adjustment, it will be beneficial to account for other related characteristics or constructs that contribute to a more positive outlook during and after treatment for cancer. Emotional intelligence may be considered such a construct.

TABLE 1. Reliability data for ASEBA CBCL (parent-report) scores

	Coefficient alpha	*T* score mean	Standard deviation	Range of *T* scores	
				Minimum	Maximum
Anxious/depressed	.89	56.43	9.52	50*	89
Withdrawn/depressed	.83	59.23	10.25	50*	93
Somatic complaints	.92	57.00	10.68	50*	93
Social problems	.87	56.40	8.52	50*	87
Thought problems	.81	57.89	9.90	50*	82
Attention problems	.86	60.13	11.01	50*	90
Rule-breaking behaviors	.82	56.77	8.52	50*	79
Aggressive behaviors	.92	56.85	10.22	50*	86
Internalizing	.95	54.85	13.22	32	92
Externalizing	.93	53.70	11.94	30	77
Total adjustment	.97	55.10	12.69	33	85

*On ASEBA scales, *T* scores below 50 are indicated only as <50.

TABLE 2. Reliability data for ASEBA YSR (child-report) scores

	Coefficient alpha	*T* score mean	Standard deviation	Range of *T* scores	
				Minimum	Maximum
Anxious/depressed	.76	54.21	5.69	50*	72
Withdrawn/depressed	.70	54.85	6.13	50*	73
Somatic complaints	.81	54.98	7.40	50*	80
Social problems	.76	55.85	7.31	50*	70
Thought problems	.82	54.49	6.32	50*	75
Attention problems	.81	55.89	7.43	50*	77
Rule-breaking behaviors	.48	52.57	2.95	50*	60
Aggressive behaviors	.85	54.30	5.76	50*	70
Internalizing	.88	49.68	11.42	26	73
Externalizing	.85	47.51	10.82	25	66
Total adjustment	.96	48.96	12.30	24	70

*On ASEBA scales, *T* scores below 50 are indicated only as <50.

TABLE 3. Reliability data for EQ-i:YV scores

	Coefficient alpha	Standard score mean	Standard deviation	Range of *T* scores Minimum	Maximum
Interpersonal	.86	99.80	16.27	65*	125
Intrapersonal	.75	104.36	12.89	79	130**
Adaptability	.89	102.89	14.79	69	130**
Stress management	.76	100.96	15.94	69	128
Total emotional intelligence	.92	104.36	16.87	65*	130**

*On EQ-i:YV scales, standard scores below 65 are indicated only as <65.
**On EQ-i:YV scales, standard scores above 130 are indicated only as >130.

TABLE 4. Varimax rotated component matrix for the EQ-i:YV

Item	Factor 1	Factor 2	Factor 3	Factor 4
Having friends is important	.89	.00	.04	.04
I try not to hurt other people's feelings	.83	.18	.07	.25
I am able to respect others	.79	.12	.13	.23
I am good at understanding the way other people feel	.70	.27	.14	.06
I care what happens to other people	.67	-.06	-.07	.22
I usually know how other people are feeling	.49	.57*	.11	.15
I like doing things for others	.26	.56*	.08	.59
I feel bad when other people have their feelings hurt	.26	.37*	.11	.73
I can easily describe my feelings	-.00	.82	.03	.15
It is easy for me to tell people what I feel	.04	.81	.18	.24
I can talk easily about my feelings	.32	.79	.11	.19
It is easy to tell people how I feel	.27	.66	.14	.04
I get angry easily	.06	.16	.86	.15
When I get angry, I act without thinking	-.05	.25	.81	.06
I have a temper	.37	.07	.70	-.03
I get upset easily	.18	-.07	.68	.05
I can stay calm when I am upset	.64*	.27	.39	.06
When I am mad at someone, I stay mad for a long time	-.05	-.04	.33	-.24
It is hard for me to wait my turn	-.25	.11	.29	.20
I know how to keep calm	.67*	.41*	.28	-.21
I fight with people	.36*	-.02	.27	.36*
I can easily use different ways of solving problems	.20	.21	.12	.77
I can come up with many ways of answering hard questions	.33	.26	.14	.59
When answering hard questions, I try to think of many solutions	.30	.01	-.14	.52
I am good at solving problems	.04	.28	.14	.42
It is easy for me to understand new things	.18	.11	.10	.28
Eigenvalue	*12.52*	*4.42*	*3.82*	*2.60*
% of Variance	*31.30*	*11.05*	*9.54*	*6.49*

**Item loaded more highly on this factor, but had at least low to moderate loading on the underlined/indicated factor*

Table 5. Relationship between emotional intelligence (total score) and parent report of adjustment, including subscales of adjustment

	β	R^2	Δ R^2	Δ F	*p*
Parent report (CBCL) of total adjustment	.07	.004	-.018	.20	.655
Parent report (CBCL) of internalizing behaviors	-.02	.000	-.022	.02	.896
Parent report (CBCL) of externalizing behaviors	.08	.006	-.016	.28	.599

Table 6. Relationship between emotional intelligence subscale scores and parent report of total adjustment

	β	R^2	Δ R^2	Δ F	*p*
EQ Interpersonal	.19	.036	.014	1.67	.203
EQ Intrapersonal	.15	.021	-.001	.96	.331
EQ Adaptability	.03	.001	-.021	.04	.844
EQ Stress Management	-.12	.015	-.007	.69	.410

Table 7. Relationship between emotional intelligence (total score) and child report of adjustment, including subscales of adjustment.

	β	R^2	Δ R^2	Δ F	*p*
Child report (YSR) of total adjustment	-.44	.189	.171	10.51	0.002*
Child report (YSR) of internalizing behaviors	-.37	.135	.116	7.02	0.011*
Child report (YSR) of externalizing behaviors	-.36	.126	.107	6.49	0.014*

**p*<.05

Table 8. Relationship between emotional intelligence subscale scores and child report of total adjustment

	β	R^2	Δ R^2	Δ F	*p*
EQ Interpersonal	-.26	.068	.047	3.28	.077
EQ Intrapersonal	-.24	.056	.035	2.67	.109
EQ Adaptability	-.38	.142	.123	7.42	.009*
EQ Stress Management	-.45	.202	.185	11.41	.002*

*p<.05

Table 9. Relationship between emotional intelligence (total score) and child report of total adjustment, as moderated by gender of child, age of child, and stage of illness

Step and Variables	β	R^2	Δ R^2	Δ F	*p*
GENDER					
Step 1:					
Emotional Intelligence (E.I.)	-.42	.189	.171	10.51	.006
Step 2:					
Gender	-.01	.189	.153	.00	.971
Step 3:					
E.I. X Gender	.05	.192	.136	.13	.717
AGE					
Step 1:					
Emotional Intelligence (E.I.)	.36	.189	.171	10.51	.807
Step 2:					
Age	-.26	.256	.222	3.96	.056
Step 3:					
E.I. X Age	-.74	.261	.209	.25	.619
STAGE OF ILLNESS					
Step 1:					
Emotional Intelligence (E.I.)	-.42	.142	.123	7.42	.026
Step 2:					
Stage of Illness	-.23	.195	.159	2.95	.133
Step 3:					
E.I. X Stage of Illness	.05	.197	.141	.09	.768

Table 10. Relationship between emotional intelligence (total score) and child report of internalizing behaviors, as moderated by gender of child, age of child, and stage of illness

Step and Variables	β	R^2	Δ R^2	Δ F	*p*
GENDER					
Step 1:					
Emotional Intelligence (E.I.)	-.37	.135	.116	7.02	.018
Step 2:					
Gender	-.03	.136	.097	.07	.818
Step 3:					
E.I. X Gender	-.05	.138	.078	.10	.752
AGE					
Step 1:					
Emotional Intelligence (E.I.)	.38	.135	.116	7.02	.802
Step 2:					
Age	-.31	.225	.190	5.10	.031
Step 3:					
E.I. X Age	-.69	.228	.175	.20	.654
STAGE OF ILLNESS					
Step 1:					
Emotional Intelligence (E.I.)	-.57	.135	.116	7.02	.005
Step 2:					
Stage of Illness	-.14	.147	.108	.60	.330
Step 3:					
E.I. X Stage of Illness	-.27	.185	.128	2.00	.164

Table 11. Relationship between emotional intelligence (total score) and child report of externalizing behaviors, as moderated by gender of child, age of child, and stage of illness

Step and Variables	β	R^2	Δ R^2	Δ F	*p*
GENDER					
Step 1:					
Emotional Intelligence (E.I.)	-.31	.126	.107	6.49	.046
Step 2:					
Gender	-.08	.132	.092	.28	.567
Step 3:					
E.I. X Gender	.09	.139	.079	.39	.536
AGE					
Step 1:					
Emotional Intelligence (E.I.)	.86	.126	.107	6.49	.577
Step 2:					
Age	-.28	.200	.164	4.08	.052
Step 3:					
E.I. X Age	-1.16	.211	.156	.57	.454
STAGE OF ILLNESS					
Step 1:					
Emotional Intelligence (E.I.)	-.42	.126	.107	6.49	.041
Step 2:					
Stage of Illness	-.09	.132	.093	.32	.544
Step 3:					
E.I. X Stage of Illness	-.08	.136	.076	.18	.677

Table 12. Relationship between Adaptability (E. I. Subscale) and child report of total adjustment, as moderated by gender of child, age of child, and stage of illness

Step and Variables	β	R^2	Δ R^2	Δ F	*p*
GENDER					
Step 1:					
Adaptability	-.40	.142	.123	7.42	.011
Step 2:					
Gender	-.02	.142	.103	.04	.889
Step 3:					
Adaptability X Gender	-.09	.150	.091	.39	.533
AGE					
Step 1:					
Adaptability	-.29	.142	.123	7.42	.833
Step 2:					
Age	-.29	.223	.188	4.64	.039
Step 3:					
Adaptability X Age	-.04	.223	.169	.00	.979
STAGE OF ILLNESS					
Step 1:					
Adaptability	-.43	.142	.123	7.42	.024
Step 2:					
Stage of Illness	-.23	.195	.159	2.95	.167
Step 3:					
Adaptability X Stage of Illness	.05	.197	.141	.08	.784

Table 13. Relationship between Stress Management (E. I. Subscale) and child report of total adjustment, as moderated by gender of child, age of child, and stage of illness

	Step and Variables	β	R^2	Δ R^2	Δ F	*p*
GENDER						
Step 1:						
	Stress Management	-.45	.202	.185	11.41	.003
Step 2:						
	Gender	-.05	.205	.169	.15	.711
Step 3:						
	Stress Management X Gender	-.02	.205	.150	.03	.876
AGE						
Step 1:						
	Stress Management	.04	.202	.185	11.41	.972
Step 2:						
	Age	-.28	.277	.244	.46	.041
Step 3:						
	Stress Management X Age	-.45	.280	.229	.13	.719
STAGE OF ILLNESS						
Step 1:						
	Stress Management	-.37	.202	.185	11.41	.040
Step 2:						
	Stage of Illness	-.05	.203	.167	.06	.704
Step 3:						
	Stress Management X Stage of Illness	.12	.212	.157	.49	.486

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APPENDICES

APPENDIX A

INFORMATIONAL LETTERS

INFORMATIONAL LETTER FOR
THE RELATIONSHIP BETWEEN EMOTIONAL INTELLIGENCE AND PSYCHOLOGICAL ADJUSTMENT IN CHILDREN WITH CANCER

Dear Parent,

You and your child are invited to participate in a research study studying the relationship between emotional intelligence and psychological adjustment in children with cancer. This study is being conducted by Kerry Haffey, a Ph.D. candidate in Counseling Psychology under the supervision of Dr. Joseph Buckhalt, Assistant Professor. I hope to learn how levels of emotional intelligence (considered by some as independent of traditional measures of intelligence) affect the ability for children who have experienced a major life event (in this case, cancer) to adjust. You were selected as a possible participant because your child has experienced cancer, and is between the ages of 13 and 18.

If you and your child decide to participate, you will be given a packet of materials by Terri Jones, director of B.A.S.E. Camp. You may take this packet home, and you and your child may complete the enclosed questionnaires. It should take no more than 30 minutes to complete these questionnaires. When you are finished, you may mail the materials to me in the enclosed, postage-provided envelope. You and your child's participation will involve only the completion and mailing of these materials.

There are minimal risks involved with this study. Breach of confidentiality may be a concern; however, all information will be anonymous and upon receipt of your materials, the consent/assent form will be separated from the questionnaires so that your names and the information you provide will never be linked to each other. All materials will be identified only be a randomly assigned number. Also, because the questionnaires request information regarding psychological adjustment, some participants may feel uncomfortable answering questions that pertain to their ability to function on a variety of levels, given that their illness may prevent them from functioning comparatively "normally". Neither you nor your child is required to answer any questions that you are uncomfortable with on the surveys.

Both parent and child participants may gain greater insight into levels of adjustment. They may find their participation in a study that could provide greater knowledge of possible early interventions to aid adjustment in children with chronic illnesses an added benefit. It is possible that understanding the role of emotional intelligence in the role of chronically ill children may aid in the identification of a significant factor affecting adjustment. Examination of levels of emotional intelligence may contribute to a greater understanding of a subgroup that may, indeed, be more at-risk. Emotional intelligence may be an important factor in the psychological adjustment and coping ability of children who experience negative life event such as cancer.

This relationship may also prove quite significant in understanding implications for early interventions in affected children. In the future, it may be possible for preventative health screening to include emotional intelligence assessment, if research findings indicate that it may, indeed, play a significant role in the well being of chronically ill children. If the results of this study provide information concerning a possible relationship between emotional intelligence and adjustment in children with chronic illnesses, we may find evidence to support a need to identify chronically ill children who are at greater or lesser risk, based on emotional intelligence as a risk factor. I cannot promise you that you will receive any or all of the benefits described.

Any information obtained in connection with this study and that can be identified with you or your child will remain confidential. The materials you complete will never request any identifying information, aside from the enclosed consent forms. When I receive your materials, I will separate the consent/assent forms from the questionnaires so that your names and the information you provide will never be linked to each other. All materials will be identified only by a randomly assigned number. Information collected through your participation may be used to fulfill my educational requirement to receive my Ph.D. If so, none of your identifiable information will be included.

Your decision whether or not to participate will not jeopardize your future relations with Auburn University or the department of Counseling Psychology, nor Ms. Jones, B.A.S.E. Camp, or the Candlelighters organization.

If you have any questions, I invite you to ask them now. If you have questions later, myself or my advisor will be happy to answer them. I may be reached by phone at 334-444-8651 or e-mail at haffeke@auburn.edu. My advisor, Dr. Buckhalt, may be reached by phone at 334-844-5160 or by e-mail at buckhja@auburn.edu. For more information regarding your rights as a research participant you may contact the Office of Human Subjects Research or the Institutional Review Board by phone at (334) 844-5966 or e-mail at hsubjec@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE WHETHER TO PARTICIPATE IN THIS RESEARCH STUDY. IF YOU DECIDE TO PARTICIPATE, THE DATA YOU PROVIDE WILL SERVE AS YOUR AGREEMENT TO DO SO. THIS LETTER IS YOURS TO KEEP.

_____

Kerry Haffey, Principal Investigator

INFORMATIONAL LETTER FOR
THE RELATIONSHIP BETWEEN EMOTIONAL INTELLIGENCE AND PSYCHOLOGICAL ADJUSTMENT IN CHILDREN WITH CANCER

Dear Parent,

You and your child are invited to participate in a research study studying the relationship between emotional intelligence and psychological adjustment in children with cancer. This study is being conducted by Kerry Haffey, a Ph.D. candidate in Counseling Psychology under the supervision of Dr. Joseph Buckhalt, Assistant Professor. I hope to learn how levels of emotional intelligence (considered by some as independent of traditional measures of intelligence) affect the ability for children who have experienced a major life event (in this case, cancer) to adjust. You were selected as a possible participant because your child has experienced cancer, and is between the ages of 13 and 18.

If you and your child decide to participate, you will be given a packet of materials by Lynn Thompson, director of Camp Smile-A-Mile. You may take this packet home, and you and your child may complete the enclosed questionnaires. It should take no more than 30 minutes to complete these questionnaires. When you are finished, you may mail the materials to me in the enclosed, postage-provided envelope. You and your child's participation will involve only the completion and mailing of these materials.

There are minimal risks involved with this study. Breach of confidentiality may be a concern; however, all information will be anonymous and upon receipt of your materials, the consent/assent form will be separated from the questionnaires so that your names and the information you provide will never be linked to each other. All materials will be identified only be a randomly assigned number. Also, because the questionnaires request information regarding psychological adjustment, some participants may feel uncomfortable answering questions that pertain to their ability to function on a variety of levels, given that their illness may prevent them from functioning comparatively "normally". Neither you nor your child is required to answer any questions that you are uncomfortable with on the surveys.

Both parent and child participants may gain greater insight into levels of adjustment. They may find their participation in a study that could provide greater knowledge of possible early interventions to aid adjustment in children with chronic illnesses an added benefit. It is possible that understanding the role of emotional intelligence in the role of chronically ill children may aid in the identification of a significant factor affecting adjustment. Examination of levels of emotional intelligence may contribute to a greater understanding of a subgroup that may, indeed, be more at-risk. Emotional intelligence may be an important factor in the psychological adjustment and coping ability of children who experience negative life event such as cancer.

This relationship may also prove quite significant in understanding implications for early interventions in affected children. In the future, it may be possible for preventative health screening to include emotional intelligence assessment, if research findings indicate that it may, indeed, play a significant role in the well being of chronically ill children. If the results of this study provide information concerning a possible relationship between emotional intelligence and adjustment in children with chronic illnesses, we may find evidence to support a need to identify chronically ill children who are at greater or lesser risk, based on emotional intelligence as a risk factor. I cannot promise you that you will receive any or all of the benefits described.

Any information obtained in connection with this study and that can be identified with you or your child will remain confidential. The materials you complete will never request any identifying information, aside from the enclosed consent forms. When I receive your materials, I will separate the consent/assent forms from the questionnaires so that your names and the information you provide will never be linked to each other. All materials will be identified only by a randomly assigned number. Information collected through your participation may be used to fulfill my educational requirement to receive my Ph.D. If so, none of your identifiable information will be included.

Your decision whether or not to participate will not jeopardize your future relations with Auburn University or the department of Counseling Psychology, nor Ms. Thompson or Camp Smile-A-Mile.

If you have any questions, I invite you to ask them now. If you have questions later, myself or my advisor will be happy to answer them. I may be reached by phone at 334-444-8651 or e-mail at haffeke@auburn.edu. My advisor, Dr. Buckhalt, may be reached by phone at 334-844-5160 or by e-mail at buckhja@auburn.edu. For more information regarding your rights as a research participant you may contact the Office of Human Subjects Research or the Institutional Review Board by phone at (334) 844-5966 or e-mail at hsubjec@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE WHETHER TO PARTICIPATE IN THIS RESEARCH STUDY. IF YOU DECIDE TO PARTICIPATE, THE DATA YOU PROVIDE WILL SERVE AS YOUR AGREEMENT TO DO SO. THIS LETTER IS YOURS TO KEEP.

_____

Kerry Haffey, Principal Investigator

APPENDIX B

CONSENT/ASSENT FORMS

INFORMED PARENTAL CONSENT AND MINOR ASSENT FOR THE RELATIONSHIP BETWEEN EMOTIONAL INTELLIGENCE AND PSYCHOLOGICAL ADJUSTMENT IN CHILDREN WITH CANCER

You and your child are invited to participate in a research study studying the relationship between emotional intelligence and psychological adjustment in children with cancer. This study is being conducted by Kerry Haffey, a Ph.D. candidate in Counseling Psychology under the supervision of Dr. Joseph Buckhalt, Assistant Professor. I hope to learn how levels of emotional intelligence (considered by some as independent of traditional measures of intelligence) affect the ability for children who have experienced a major life event (in this case, cancer) to adjust. You were selected as a possible participant because your child has experienced cancer, and is between the ages of 13 and 18.

If you and your child decide to participate, you will be given a packet of materials by Terri Jones, director of B.A.S.E. Camp. You may take this packet home, and you and your child may complete the enclosed questionnaires. It should take no more than 30 minutes to complete these questionnaires. When you are finished, you may mail the materials to me in the enclosed, postage-provided envelope. You and your child's participation will involve only the completion and mailing of these materials.

There are minimal risks involved with this study. Breach of confidentiality may be a concern; however, all information will be anonymous and upon receipt of your materials, the consent/assent form will be separated from the questionnaires so that your names and the information you provide will never be linked to each other. All materials will be identified only be a randomly assigned number. Also, because the questionnaires request information regarding psychological adjustment, some participants may feel uncomfortable answering questions that pertain to their ability to function on a variety of levels, given that their illness may prevent them from functioning comparatively "normally". Neither you nor your child is required to answer any questions that you are uncomfortable with on the surveys.

Both parent and child participants may gain greater insight into levels of adjustment. They may find their participation in a study that could provide greater knowledge of possible early interventions to aid adjustment in children with chronic illnesses an added benefit. It is possible that understanding the role of emotional intelligence in the role of chronically ill children may aid in the identification of a significant factor affecting adjustment. Examination of levels of emotional intelligence may contribute to a greater understanding of a subgroup that may, indeed, be more at-risk. Emotional intelligence may be an important factor in the psychological adjustment and coping ability of children who experience negative life event such as cancer.

Parent's initials_____

Child's/Minor's initials_____

This relationship may also prove quite significant in understanding implications for early interventions in affected children. In the future, it may be possible for preventative health screening to include emotional intelligence assessment, if research findings indicate that it may, indeed, play a significant role in the well being of chronically ill children. If the results of this study provide information concerning a possible relationship between emotional intelligence and adjustment in children with chronic illnesses, we may find evidence to support a need to identify chronically ill children who are at greater or lesser risk, based on emotional intelligence as a risk factor. I cannot promise you that you will receive any or all of the benefits described.

Any information obtained in connection with this study and that can be identified with you or your child will remain confidential. The materials you complete will never request any identifying information, aside from the enclosed consent forms. When I receive your materials, I will separate the consent/assent forms from the questionnaires so that your names and the information you provide will never be linked to each other. All materials will be identified only by a randomly assigned number. Information collected through your participation may be used to fulfill my educational requirement to receive my Ph.D. If so, none of your identifiable information will be included.

Your decision whether or not to participate will not jeopardize your future relations with Auburn University or the department of Counseling Psychology, nor Ms. Jones, B.A.S.E. Camp, or the Candlelighters organization.

If you have any questions, I invite you to ask them now. If you have questions later, myself or my advisor will be happy to answer them. I may be reached by phone at 334-444-8651 or e-mail at haffeke@auburn.edu. My advisor, Dr. Buckhalt, may be reached by phone at 334-844-5160 or by e-mail at buckhja@auburn.edu. For more information regarding your rights as a research participant you may contact the Office of Human Subjects Research or the Institutional Review Board by phone at (334) 844-5966 or e-mail at hsubjec@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE WHETHER TO PARTICIPATE IN THIS RESEARCH STUDY. YOUR SIGNATURE AND YOUR CHILD'S SIGNATURE INDICATES EACH PERSON'S WILLINGNESS TO PARTICIPATE IN THE STUDY. THE PARENT'S SIGNATURE ALSO INDICATES THE PARENT'S WILLINGNESS FOR THEIR CHILD TO PARTICIPATE.

_____ _____

Parent's signature Date Child's signature Date

_____

Kerry Haffey, Principal Investigator Date

INFORMED PARENTAL CONSENT AND MINOR ASSENT FOR THE RELATIONSHIP BETWEEN EMOTIONAL INTELLIGENCE AND PSYCHOLOGICAL ADJUSTMENT IN CHILDREN WITH CANCER

You and your child are invited to participate in a research study studying the relationship between emotional intelligence and psychological adjustment in children with cancer. This study is being conducted by Kerry Haffey, a Ph.D. candidate in Counseling Psychology under the supervision of Dr. Joseph Buckhalt, Assistant Professor. I hope to learn how levels of emotional intelligence (considered by some as independent of traditional measures of intelligence) affect the ability for children who have experienced a major life event (in this case, cancer) to adjust. You were selected as a possible participant because your child has experienced cancer, and is between the ages of 13 and 18.

If you and your child decide to participate, you will be given a packet of materials by Lynn Thompson, director of Camp Smile-A-Mile. You may take this packet home, and you and your child may complete the enclosed questionnaires. It should take no more than 30 minutes to complete these questionnaires. When you are finished, you may mail the materials to me in the enclosed, postage-provided envelope. You and your child's participation will involve only the completion and mailing of these materials.

There are minimal risks involved with this study. Breach of confidentiality may be a concern; however, all information will be anonymous and upon receipt of your materials, the consent/assent form will be separated from the questionnaires so that your names and the information you provide will never be linked to each other. All materials will be identified only be a randomly assigned number. Also, because the questionnaires request information regarding psychological adjustment, some participants may feel uncomfortable answering questions that pertain to their ability to function on a variety of levels, given that their illness may prevent them from functioning comparatively "normally". Neither you nor your child is required to answer any questions that you are uncomfortable with on the surveys.

Both parent and child participants may gain greater insight into levels of adjustment. They may find their participation in a study that could provide greater knowledge of possible early interventions to aid adjustment in children with chronic illnesses an added benefit. It is possible that understanding the role of emotional intelligence in the role of chronically ill children may aid in the identification of a significant factor affecting adjustment. Examination of levels of emotional intelligence may contribute to a greater understanding of a subgroup that may, indeed, be more at-risk. Emotional intelligence may be an important factor in the psychological adjustment and coping ability of children who experience negative life event such as cancer.

Parent's initials_____

Child's/Minor's initials_____

This relationship may also prove quite significant in understanding implications for early interventions in affected children. In the future, it may be possible for preventative health screening to include emotional intelligence assessment, if research findings indicate that it may, indeed, play a significant role in the well being of chronically ill children. If the results of this study provide information concerning a possible relationship between emotional intelligence and adjustment in children with chronic illnesses, we may find evidence to support a need to identify chronically ill children who are at greater or lesser risk, based on emotional intelligence as a risk factor. I cannot promise you that you will receive any or all of the benefits described.

Any information obtained in connection with this study and that can be identified with you or your child will remain confidential. The materials you complete will never request any identifying information, aside from the enclosed consent forms. When I receive your materials, I will separate the consent/assent forms from the questionnaires so that your names and the information you provide will never be linked to each other. All materials will be identified only by a randomly assigned number. Information collected through your participation may be used to fulfill my educational requirement to receive my Ph.D. If so, none of your identifiable information will be included.

Your decision whether or not to participate will not jeopardize your future relations with Auburn University or the department of Counseling Psychology, nor Ms. Thompson or Camp Smile-A-Mile.

If you have any questions, I invite you to ask them now. If you have questions later, myself or my advisor will be happy to answer them. I may be reached by phone at 334-444-8651 or e-mail at haffeke@auburn.edu. My advisor, Dr. Buckhalt, may be reached by phone at 334-844-5160 or by e-mail at buckhja@auburn.edu. For more information regarding your rights as a research participant you may contact the Office of Human Subjects Research or the Institutional Review Board by phone at (334) 844-5966 or e-mail at hsubjec@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE WHETHER TO PARTICIPATE IN THIS RESEARCH STUDY. YOUR SIGNATURE AND YOUR CHILD'S SIGNATURE INDICATES EACH PERSON'S WILLINGNESS TO PARTICIPATE IN THE STUDY. THE PARENT'S SIGNATURE ALSO INDICATES THE PARENT'S WILLINGNESS FOR THEIR CHILD TO PARTICIPATE.

_____ _____

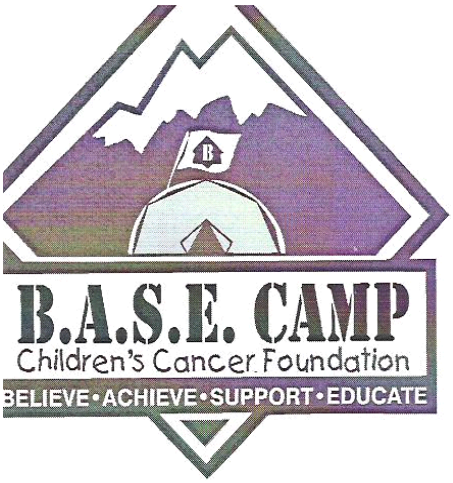
Parent's signature Date Child's signature Date

_____

Kerry Haffey, Principal Investigator Date

APPENDIX C

LETTERS OF PARTICIPATION



because kids can't fight cancer alone!

Believe – Achieve – Support - Educate

Providing a year-round base of support for children, parents and families facing the challenge of living with cancer and other life-threatening hematology diseases.

Kerry Haffey
PhD Candidate, Auburn University
Psychology/Psychiatry Fellow
Nemours Children's Clinic
807 Children's Way
Jacksonville, FL 32207

(904) 390-3785
haffeke@auburn.edu

December 12, 2005

Dear Ms. Haffey:

Please accept this letter as confirmation of the participation of BASE Camp Children's Cancer Foundation in your study. BASE Camp is excited to be a part of information gathering by providing subjects for your dissertation.

As the President of B.A.S.E. Camp Children's Cancer Foundation, I agree to assist Kerry Haffey with data collection for her dissertation by identifying and recruiting appropriate patients and families through our organization.

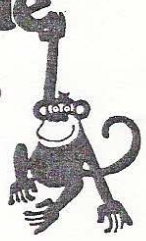
Please feel free to contact me if you have any questions or need additional information.

Sincerely,

Terri Jones, President

Camp Smile-A-Mile

P.O. Box 550155 • Birmingham, AL 35255
205-323-8427 • FAX 205-323-6220
1-888-500-7920
E-mail – campsam@mindspring.com
Website - www.campsam.org



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Linn Moore (1950-2001)

July 14, 2004

Ms. Kerry Haffey
168 Crawford Street
Auburn, AL 36830

TO WHOM IT MAY CONCERN:

I have agreed to provide information to Kerry Haffey for her dissertation from children who have or have had cancer.

We look forward to working with her in the near future.

Sincerely

Lynn Thompson
Executive Director
323-8427

. . . bringing smiles and adventures to Alabama's kids with cancer!