

ASSOCIATIONS AMONG COPING STYLES AND HEALTH PROMOTING LIFESTYLE
BEHAVIORS IN A SAMPLE OF CULTURALLY DIVERSE YOUTH

By

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To all who encouraged and supported my academic, professional, and personal pursuits that led me to this achievement

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Abstract of Thesis Presented to the Graduate School
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In the present study Pender's Health Promotion Model and a four-factor theory of coping were used to inform the examination of the associations between coping styles (active coping, distraction coping, avoidance coping, and support seeking coping) and health promoting lifestyle behaviors (engaging in healthy eating and physical activity) among a sample of culturally diverse youth from predominately low-income families. Additionally, whether associations between the investigated coping styles and health promoting lifestyle behaviors differ in association with age group (i.e., children vs. adolescents) and gender was also investigated. Finally, age group and gender differences in coping styles and in health promoting lifestyle behaviors were examined among the participating youth. Specifically, the participants in this study consisted of 74 youth (33 children, 37 adolescents, and 4 who did not report age), all of whom were between the ages of 9 and 17. Participants were administered an assessment battery that consisted of a Demographic Data Questionnaire, the Children's Coping Strategies Checklist – Revision 1, and the Health Promoting Lifestyle Profile. This assessment

battery was part of the baseline data collection for the larger health promotion intervention study of which the present study is a part.

Results provided evidence that among the culturally diverse sample of youth from predominately low-income families who were participants in this study, all four investigated coping styles had significant positive associations with one another, and both investigated health promoting lifestyle behaviors had significant positive associations with one another. The coping styles active coping and support seeking coping were combined into one factor (active-support seeking coping) based on their highly significant correlation. The active-support seeking coping style and distraction coping style each had significant positive associations with both of the health promoting lifestyle variables (engaging in healthy eating and physical activity). The avoidance coping style was not found to be significantly associated with either of the health promoting lifestyle variables. Taken together, these findings provide support for the first hypothesis and fail to provide support for the second hypothesis. The associations between coping styles and health promoting lifestyle behaviors did not significantly differ in association with gender. This finding failed to provide support for the third hypothesis. Additionally, the investigated health promoting lifestyle variables and the coping style variables did not significantly differ by age group or gender. Conclusions, limitations of the study, and implications for research and practice by counseling psychologists are discussed.

CHAPTER 1 INTRODUCTION

Impetus for Focusing on Health Promoting Lifestyle Behaviors: The Obesity Epidemic

The obesity epidemic in the United States has become an important issue because of its economic, medical, sociological, and psychological implications. Furthermore, in 2000, overweight and obesity were identified as two of the country's ten leading health indicators because these health problems have been found to be associated with a number of disease conditions, including cardiovascular disease, diabetes, and cancer (U.S. Department of Health and Human Services, 2000). Among children, being overweight is defined as having a body mass index (BMI) at or above the 85th percentile and below the 95th percentile for children of the same age and gender, and being obese is defined as having a BMI at or above the 95th percentile for children of the same age and gender (Centers for Disease Control and Prevention [CDC], 2009).

It is also noteworthy that more than one third of adults in the U.S. were classified as obese in 2005 – 2006, and the rate of obesity has consistently risen among adults, with an increase from 15% in the years 1976 – 1980 to 35% in the years 2005 – 2006 (National Center for Health Statistics, 2010). This steady rise in the obesity rate and, subsequently, the associated diseases and disorders, indicates that this epidemic is a growing problem.

While problems of overweight and obesity are widespread throughout the entire U.S. population, there is evidence that children, specifically, are becoming increasingly overweight. According to results of the 2007 – 2008 National Health and Nutrition Examination Survey (NHNES; CDC, 2009), an estimated 17% of children and

adolescents between the ages of 2 and 19 in the U.S. are currently obese. Much like the statistics show for adults, the prevalence of overweight children has been increasing over time. In comparing the span of years from 1976 – 1980 to 2005 – 2006, children of three age groups showed the following increases in overweight: preschool-aged children (ages 2 – 5), 5% to 11%; school-aged children (ages 6 – 11), 7% to 15%; and adolescents (ages 12 – 19), 5% to 18% (National Center for Health Statistics, 2010). Given the evidence that children who are overweight or obese tend to also be overweight or obese when they become adults (Worobey, 2008), it is particularly important to include children in research aimed at preventing obesity in order to address the problems of overweight and obesity as early as possible.

The problems of overweight and obesity in children are particularly prevalent in some children coming from low-income families (Balistreri & Van Hook, 2010; Wang, 2001; Wang & Beydoun, 2007), though comparisons across time do suggest that the association between income level and prevalence of overweight or obesity has weakened, particularly from the 1980s to the late 1990s (Wang & Zhang, 2007). Additionally, the relationship between socioeconomic status (SES) and rates of overweight and obesity is varied for different groups in terms of gender, age group, and race/ethnicity. One study found that among young boys, those in the high SES group had significantly lower rates of overweight than their lower SES counterparts, but for younger girls, there were no significant differences among SES groups. For adolescent boys, there were no significant differences in prevalence of overweight or obesity among SES groups, but for adolescent girls, the low SES group had significantly higher rates of overweight than their medium and high SES counterparts. Additionally, the

relationship between SES and rate of obesity was inverse for non-Hispanic Whites, but not for non-Hispanic Blacks or Mexican Americans (Wang & Beydoun).

Even though there is a great deal of evidence suggesting that overweight and obesity are problems in youth across many races/ethnicities, certain racial/ethnic minority groups are disproportionately affected by these health problems (Wang & Beydoun, 2007). Specifically, the National Health and Nutrition Examination Survey (NHANES) for the years 1999 – 2002 showed that among children aged 6 to 19, 13.6% of non-Hispanic Whites were overweight, whereas 20.5% of the non-Hispanic Blacks and 22.2% of the Mexican Americans were overweight. Additionally, 28.2% of the non-Hispanic Whites were either overweight or at risk of becoming overweight, whereas 35.4 % of the non-Hispanic Blacks and 39% of the Mexican Americans were either overweight or at risk of becoming overweight. The prevalence of overweight or risk for becoming overweight for non-Hispanic Blacks has also been found to be significantly less than for Mexican Americans (Hedley et al., 2004). The disparity of the problems of overweight and obesity across race/ethnicity, gender, and age supports the need for research with culturally diverse samples that aims to understand the occurrence of these problems and the engagement in behaviors to prevent their occurrence such as health promoting lifestyle behaviors.

Health Promoting Lifestyle Behaviors

One of the most direct ways to prevent and reverse the obesity epidemic and its related health problems is by engaging in various health promoting lifestyle (HPL) behaviors (de Silva-Sanigorski et al., 2010). HPL behaviors are behaviors that directly or indirectly positively impact one's health (Pender, 1996). These behaviors include engaging in physical activity, healthy eating, stress management, and health

responsibility behaviors. In this paper such behaviors are also called Health-Smart Behaviors (HSBs).

There is much evidence of links between Health-Smart Behaviors (HSBs) and health outcomes among youth. For example, the HSB engaging in healthy eating has specifically been linked to improved health and obesity reduction among youth (Chaloupka & Johnston, 2007; Bowman, Gortmaker, Ebbeling, Pereira, & Ludwig, 2004; Swinburn, Caterson, Seidell, & James, 2004).

There is also evidence that children who live in low-income areas may have exposure to certain negative factors and lack of exposure to certain positive factors that can influence their engagement in HSBs. For example, a significant association has been found between being a low-income neighborhood and density of unhealthy food establishments (Block, Scribner, & DeSalvo, 2004; Neckerman, et al., 2010). Given this finding and the evidenced relationship between close proximity to fast-food restaurants and increased rates of obesity (Inagami, Cohen, Brown, & Asch, 2009), it is reasonable to conclude that access to unhealthy food options is a factor in the increased rates of overweight and obesity in the population of individuals living in low-income neighborhoods.

There is also research indicating that low-income children have less access to healthy food options (Hosler, Rajulu, Ronsani, & Fredrick, 2008; Powell, Chaloupka, & Bao, 2007) and are less likely to consume fruits and vegetables (Dubowitz et al., 2008) than their higher-income counterparts. The established positive relationship between increased fruit and vegetable intake and overall health (U.S. Department of Health and

Human Services, 2005) indicates that having less access to these foods is a potential contributor to the problem of obesity in this population.

Physical activity has been specifically linked to improved health and obesity reduction among youth (Flynn et al., 2006; Berkey, Rockett, Gillman, & Colditz, 2003; Franzini et al., 2009). Interestingly, there is evidence suggesting that children from low-income families have less access to areas in which they can engage in physical activity than their counterparts from higher income families (Estabrooks, Lee, & Gyurcsik, 2003; Powell, Slater, & Chaloupka, 2004). Less access to areas in which one can engage in physical activity is a barrier to exercising (Veugelers, Sithole, Zhang, & Muhajarine, 2008).

In a focus group study of low-income families, participants identified a lack of physical activity as a primary barrier to their prevention of childhood obesity (Correa et al., 2010). Among the reasons given by these participants for their lack of physical activity were lack of safety, lack of awareness of activities that already existed, lack of transportation to physical activities, and lack of resources (e.g., enough physical education teachers at local schools). These findings suggest that it is particularly important to include youth from low-income families in research on factors that influence the engagement of youth in health promoting behaviors.

Given the significant relationship between engagement in Health-Smart Behaviors (HSBs) and obesity reduction among children, there is a need for research to gain a better understanding of the variables under the direct control of youth, such as psychological variables, that influence their engagement in these behaviors. Consequently, the goal of the present study is to use Pender's health promotion model

(1996), as well as well-established theories of coping behaviors in children and adolescents, to examine the relationship between the psychological variable coping styles and engagement in healthy eating and physical activity (i.e., HSBs) among culturally diverse youth (children and adolescents). Whether this relationship, if found, differs in association with age group and gender was also examined. Additionally, this study examined whether there are differences in coping styles and levels of HSBs (i.e., engagement in healthy eating and physical activity) in association with age group and gender.

Health Promotion Model

Pender's Health Promotion Model (Pender, 1996) has clear implications for helping and empowering individuals to engage in Health-Smart Behaviors (HSBs). In this model, Pender posits that an individual's engagement in HPL behaviors is influenced by her/his personal, behavioral, and cognitive characteristics. An underlying assumption of this model is that an individual can play an active role in their engagement in a health promoting lifestyle by not only directly influencing the specific HPL behaviors (e.g., engaging in more physical activity or eating more healthy foods), but also by influencing or modifying the personal characteristics and factors (e.g., biological, social, and psychological factors), as well as the cognitive characteristics and factors (e.g., perceived benefits or consequences of actions, perceived barriers to actions, perceived self-efficacy, and influences from others) that have been found to be associated with these behaviors (Wu & Pender, 2002). One example of a personal characteristic described above is an individual's coping ability or style, which is an individual's response to the stress in their environment (Lazarus, 1993).

Stress is a psychological variable that has been found to be significantly associated with engagement in HPL behaviors, including among children and adolescents. For example, in a study of school-aged, culturally diverse children, it was found that children tended to use eating as a strategy for coping with stress. Based on this finding, the researchers who conducted this study concluded that high stress situations may lead to unhealthy eating habits (Jenkins, Rew, & Sternglanz, 2005). Similarly, Nguyen-Rodriguez, Chou, Unger, and Spruijt-Metz (2008) found among a sample of culturally diverse youth that engaging in unhealthy eating is a coping strategy. Additionally, these researchers found that some individuals learn to use eating as a coping strategy so early in their development that it is already established by adolescence.

Stress has also been found to be negatively associated with level of engagement in physical activity among adults (Ensel & Lin, 2004); however, the research investigating this association among children is limited. In a pioneering laboratory study during which children were induced with stress and given the option of being sedentary or being physically active, there was a significant association between stress level and a reduced desire to engage in physical activity (Roemmich, Gurgol, & Epstein, 2003).

Given that stress may negatively influence engaging in a health promoting lifestyle among children, it is possible that certain children's coping styles might be significantly associated with level of engagement in health promoting lifestyle behaviors. The present study examined this association among a culturally diverse sample of youth.

Coping Styles

The majority of the research on coping styles has involved adult participants. The research on the coping styles of children and adolescents has focused on their coping

styles in the presence of traumatic and high-stress events, such as after natural disasters (Zhang et al., 2010), during treatments for cancer or other diseases (Garralda & Rangle, 2004; Trask et al., 2003), and following parental divorce or other significant family trauma (Sandler, Tein, & West, 1994; Sandler, Tein, Mehta, Wolchik, & Ayers, 2000). As a result, there is not much literature focusing on children's coping styles for daily or common stressors.

Several of the coping style theories that have been used in research with children and adolescents have been found to be too broad in their dimensions of coping styles (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001). Lazarus and Folkman (1984) identified problem-focused and emotion-focused coping dimensions to characterize an individual's efforts to either actively do something to reduce a stressor (i.e., problem-focused coping) or to do something to relieve the consequential negative emotions from a stressor (i.e., emotion-focused coping). Similarly, the dimensions of primary control (i.e., an individual's efforts to directly regulate an actual stressful event or the negative emotions associated with a stressful event) and secondary control (i.e., an individual's efforts to adapt to a stressful environment in order to reduce the stress) have been identified as two broad dimensions of coping (Rudolph, Dennig, & Weisz, 1995). A third set of broad coping dimensions used in research with children and adolescents are engagement coping (i.e., an individual's efforts to address the source of their stress or their negative thoughts or emotions associated with their stress) and disengagement coping (i.e., an individual's efforts to move away from the stressor and its related negative thoughts and feelings) (Tobin, Holroyd, Reynolds, & Wigal, 1989).

Ayers, Sandler, West, and Roosa (1996) set forth a theoretical four-factor model of coping among children that has dimensions that are less broad than the above mentioned coping dimensions set forth by other researchers. Ayers et al. proposed the following four coping dimensions: (a) active coping (i.e., using direct problem focused and positive reframing strategies to deal with a stressor), (b) support seeking coping (i.e., seeking problem-focused and emotion-focused support in order to deal with a stressor), (c) distraction coping (i.e., using distracting actions and the physical release of energy to deal with a stressor), and (d) avoidance coping (i.e., using avoidant action, repression, and wishful thinking strategies to deal with a stressor).

Present Study

The present study is part of a larger health promotion research project investigating the effectiveness of a health promotion intervention program called the Family Health Self-Empowerment (FHSE) Program to Modify and Prevent Obesity (called the FHSE Project). The tested intervention program was anchored in Health Self-Empowerment (HSE) Theory which asserts that promoting HSBs requires health motivation, health self-efficacy, self-praise of HSBs, coping skills/strategies, and most recently health responsibility (Tucker, Butler, Loyuk, Desmond, & Surrency, 2009; Tucker, Daly, & Herman, 2010). The present study involved only baseline data from the youth participants in the larger health promotion research project. The purpose of the present study is to examine the associations between coping styles and engagement in specific HPL behaviors (i.e., engaging in healthy eating and physical activity) among the sample of 9-17 year-old youth in the larger health promotion research project – a sample among whom there was an over-representation of racial/ethnic minority youth and youth in families with low household incomes.

The first research hypothesis investigated in this study stated that the use of the following coping styles would have significant positive correlations with both of the health promoting lifestyle (HPL) behaviors (i.e., engaging in healthy eating and physical activity): active coping, distraction coping, and support seeking coping. The second research hypothesis investigated in this study stated that the use of avoidance coping would have significant negative correlations with both of the HPL behaviors (i.e., engaging in healthy eating and physical activity). Finally, the third research hypothesis investigated here stated that the relationship between each coping style and each HPL behavior would differ by gender.

Additionally two research questions were examined in this study. The first research question asked if coping styles would differ in association with age group and gender. The second research question asked if levels of the HPL behaviors would differ in association with age group and gender.

CHAPTER 2 REVIEW OF THE LITERATURE

This chapter will present an overview of the literature on coping styles among children and adolescents and, specifically, on how the identified coping styles are associated with engagement in health promoting lifestyle (HPL) behaviors (also called here Health-Smart Behaviors [HSBs]). Literature on gender and age group differences in these variables will also be presented. First, a review of the literature on coping styles among youth will be presented. Second, the literature on the relationship between these coping styles and the identified HSBs will be presented. Third, the literature on age group and gender differences in coping styles and HSBs will be discussed. Finally, literature on age group and gender differences in associations between coping styles and HSBs will be presented.

Coping Styles

The coping literature has defined coping in many different ways based on varying theoretical models. Broadly defined, coping is the self-regulation process that occurs in response to stress, and can include both involuntary and voluntary behavioral and cognitive efforts to respond to the stressor. The coping strategies that an individual uses may be aimed at directly altering the stressor, the environment, or one's emotional reaction to the stressor (Eisenberg, Fabes, & Guthrie, 1997; Lazarus & Folkman, 1984; Compas et al., 2001). In a review of well-founded coping models, Compas et al. highlight the importance of attending to the developmental course of coping, as well as the dimensions and subtypes of coping. The way in which individuals use certain coping styles during childhood and adolescence can impact an individual's ability to cope with stress throughout their lifetime. Thus, it is important to understand which

coping styles are positive and adaptive so that these coping styles can be taught to and reinforced among children and adolescents.

The research literature investigating children's use of coping is sparse. Ayers et al. (1996) tested two well-founded coping models that have been used with adults (Lazarus & Folkman, 1984; Billings & Moos, 1981), as well as an untested proposed theory of coping, using data collected from fourth- through sixth-grade children. Using confirmatory factor analyses, these researchers established a four-factor model of children's coping style. This model of coping styles includes the following coping styles: active coping, distraction coping, avoidance coping, and support seeking coping.

The active coping style involves the use of both problem-focused coping strategies (e.g., thinking about how to solve the problem, making efforts to improve the problem, and trying to understand the problem) and positive reframing coping strategies (e.g., thinking about the good things that have happened, thinking optimistically about the future, thinking that one can control what happens, and minimizing the problem). The coping literature indicates that children who are judged to be more effective at using active coping strategies or who use these strategies more often have more favorable behavioral and emotional adjustments than children who do not use active coping strategies as effectively or as often (Faith, Leone, Ayers, Heo, & Pietrobelli, 2002; Zimmer-Gembeck & Locke, 2007). Additionally, use of active coping strategies by children has been found to increase their coping efficacy over time (Sandler, Tein, Mehta, Wolchik, & Ayers, 2000).

The distraction coping style involves use of strategies involving the physical release of emotions (e.g., physically working off feelings with exercise) and strategies

involving distracting actions (e.g., avoiding thinking about a problem situation by using a distraction). Research investigating the effectiveness of distraction coping among children and adolescents indicates that this type of coping is adaptive and is associated with a decrease in symptoms of anxiety, depression, and aggressive behavior (Hampel & Petermann, 2005; Langrock, Compas, Keller, Merchant, & Copeland, 2002).

The avoidance coping style involves use of avoidant action strategies (e.g., staying away from a problem), repression strategies (e.g., pushing the problem out of one's mind), and wishful thinking strategies (e.g., imagining that the problem does not exist). The coping literature indicates that the use of avoidance coping strategies in youth (i.e., children and adolescents) is associated with an overall negative psychological adjustment, feelings of helplessness, and an increase in behavioral and emotional problems (Liu, Tein, & Zhao, 2004; Seiffge-Krenke, 2000; deBoo & Spiering, 2010; Compas, Connor-Smith, & Jaser, 2004).

The support seeking coping style involves seeking support for action strategies (e.g., seeking advice or information to solve a problem) and support for feeling focused strategies (e.g., talking about one's feelings with another person). Research indicates that this style of coping is associated with positive health outcomes and increased well-being (Visconti & Troop-Gordon, 2010; Broderick & Korteland, 2002; Kochenderfer-Ladd & Skinner, 2002; Fields & Prinz, 1997; de Boo & Wicherts, 2009). Additionally, support seeking has been found to be an effective coping mechanism when faced with stress or other problems (Seiffge-Krenke, Aunola, & Nurmi, 2009).

Coping and Health Promoting Lifestyle Behaviors

Given that individuals often experience disturbances in their eating and physical activity when they do not cope well with stress and other such emotions (Jenkins et al.,

2005; Birkeland, Torsheim, & Wold, 2009; Eisenberg et al., 1997), an outcome of inadequate coping with these emotions over time can and often does lead to overweight/obesity (Martyn-Nemeth, Penckofer, Gulanick, Velsor-Friedrich, & Bryant, 2009). Thus, having an effective coping style that promotes effective management of stress and other emotions may also be associated with engagement in HPL behaviors. Unfortunately, there is a paucity of research investigating the specific relationships between coping styles and engagement in health promoting lifestyle behaviors among children and adolescents.

In a study involving children with asthma, Mitchell and Murdock (2002) found that higher levels of both active coping and avoidance coping strategies among these youth were significantly related to their increased participation in developmentally appropriate activities (i.e., developmentally appropriate physical, social, and family-household activities) and to their increased engagement in asthma management behaviors (i.e., treatment compliance and medical management). Researchers investigating the relationship between weight criticism during physical activity and engagement in and enjoyment of physical activity among middle school students also looked at the use of active and avoidance coping styles as moderators of this relationship (Faith et al., 2002). Results indicated that not only was the use of problem-focused coping (i.e., a dimension of active coping) an effective moderator of this relationship, but that the use of avoidance coping was a moderator for the relationship between weight criticism during physical activity and enjoyment of physical activity. The latter finding regarding avoidance coping is surprising given the aforementioned literature indicating that avoidance coping is associated with increased emotional and behavioral problems

among children. The findings regarding active coping, however, have been supported by research indicating that active coping can have positive health benefits (i.e., increased engagement in healthy eating and physical activity) among children who are coping with stressful events (Manne, Bakeman, Jacobson, & Reed, 1993).

Research investigating the relationship between coping styles and unhealthy eating patterns among children and adolescents has also been reported. In one such study of individuals aged 6 to 17, researchers investigated the relationship between various psychosocial characteristics and level of risk for engaging in disturbed eating patterns (Steinhausen, Gavez, & Metzke, 2005). Results indicated that there was a significant negative association between active coping style and being at high risk for disturbed eating. It has also been found in a study involving Spanish adolescents that there is a positive relationship between binge eating and avoidance coping (Baigrie & Giraldez, 2008). The association between avoidance coping and unhealthy eating habits was also found in a study of children with Type 1 diabetes (Grylli, Wagner, Hafferl-Gattermayer, Schober, & Karwautz, 2005).

Overall, there is some evidence that a relationship exists between coping styles and both HPL behaviors and overall health. It seems clear that the active coping style is related to improved HPL behaviors. Alternatively, the research is inconclusive regarding the relationship between avoidance coping and HPL behaviors. There does seem to be a relationship between both support seeking coping and distraction coping and engagement in positive adjustment behaviors; however it is unclear as to whether these coping styles are associated with HPL behaviors. Thus, there is a need for more research investigating this association among children and adolescents.

Impact of Gender

The research investigating the relationship between gender and engagement in HPL behaviors indicates that females engage in significantly less physical activity than males (Robbins, Sikorskii, Hamel, Wu, & Wilbur, 2009; Page et al. 2009; Taylor et al., 1999); yet, there is mixed evidence about the existence of gender differences in healthy eating and nutrition (Sabbe, De Bordeaudhuij, Legiest, & Maes, 2008; Gould, Russell, & Barker, 2006; Sweeting & West, 2005).

Within the coping literature, there is evidence that there are gender differences in coping styles among youth (i.e., children and adolescents). Researchers investigating gender differences in the use of active coping styles among children have generally specifically focused on problem-focused coping and positive reframing coping. Research addressing gender differences in the use of problem-focused coping strategies has had inconsistent findings. These findings include that girls use more problem-focused coping strategies than boys (Eschenbeck, Kohlmann, & Lohaus, 2007; Hampel & Petermann, 2006; Li, DiGiuseppe, & Froh, 2006), that boys use more problem-focused coping strategies than girls (Stone & Neale, 1984), and that there are no gender differences in the use of problem-focused coping strategies among children (Mullis & Chapman, 2000; Williams & McGillicuddy-De Lisi, 1999). Positive reframing coping strategies have been shown to be used more frequently by girls than boys (Li et al.; Donaldson, Prinstein, Danofsky, & Spirito, 2000; Lengua & Stormshak, 2000).

The relationship between the use of active coping strategies and gender has also been found to vary based on other variables, including setting and age group. Eschenbeck et al. (2007) found that gender differences in problem-focused coping strategies were more significant in a social setting than in an academic setting, for

example. Further, Hampel and Petermann (2005) found that as girls got older, they showed a decrease in their use of active coping strategies.

There is also some research evidence that use of avoidance coping styles also varies by gender. Specifically, it has been reported that girls use more avoidance coping strategies than boys (de Boo & Wicherts, 2009; Hampel & Petermann, 2005; Lengua & Stormshak, 2000). In a study of coping with bullying, researchers found that among males, avoidance coping was positively correlated with peer victimization, but this was not the case among females (Kochenderfer-Ladd & Skinner, 2002). However, in a study investigating children's coping strategies following the divorce of their parents, Armistead et al. (1990) found that the avoidance coping style was associated with increased internalizing, externalizing, and physical problems for girls, but had no significant association with overall functioning for boys. Similarly, Seiffge-Krenke and Stemmler (2002) found that avoidance coping was associated with depressive symptoms in adolescent girls, but not in boys. In sum, it is apparent that the use of avoidance coping is more frequently used by girls than boys and that while it is unclear whether it is consistently harmful for boys or girls, all of the available evidence suggests that avoidance coping is not significantly beneficial to children of either gender.

Research on the association between gender and use of both the support seeking and distraction coping styles among children have also garnered mixed results. In a study of children aged 8- to 12-years-old, de Boo and Spiering (2010) found no gender differences in the use of support seeking coping. However, in studies of older adolescents, the female adolescents have been found to use significantly more support seeking coping than the male adolescents (Lengua & Stormshak, 2000; Hampel, 2007).

Li et al. (2006) found that distraction coping strategies were associated with masculinity in adolescents, and de Boo and Wicherts (2009) found that girls were more likely to use the coping strategies associated with the distraction coping style. It is important to understand gender differences in the use of coping styles and in the effectiveness of coping styles among youth as this information may be helpful in designing interventions intended to help youth improve their health outcomes.

There is a lack of research investigating gender differences in the relationship between coping styles and engagement in health promoting behaviors. Nicolotti, El-Sheikh, and Whitson (2003) studied the association between children's coping and their physical health when coping with the stress of their parents' marital conflict. Results indicated that, for boys and girls, the combined use of active coping and support seeking coping, as well as distraction coping was significantly associated with being protective against the negative physical health consequences that often occur when there are marital problems in the home. Additionally, for boys, higher levels of avoidance coping were associated with higher levels of physical health.

Impact of Age Group

An additional demographic variable that has been found to be associated with differences in the use of coping styles among youth is age group (i.e., children vs. adolescents). Research aimed at investigating the coping styles used by youth has generally found that with increased development during adolescence there is an increase in the diversity of coping styles used and the flexibility with which coping styles are used (Kavsek & Seiffge-Krenke, 1996; Skinner & Zimmer-Gembeck, 2007; Williams & McGillicuddy-De Lisi, 1999). This suggests that as younger adolescents become older adolescents, they are able to cope more effectively. A similar trend has been

found when comparing preschool-aged children with adolescents; that is effectiveness of coping styles is higher in older as compared to younger age groups (Fields & Prinz, 1997).

There is little published research examining whether there are age differences in the use of the active coping style, and this limited research has primarily focused on emotion-focused and problem-focused coping strategies separately. Some research indicates that the use of emotion-focused coping strategies and problem-focused coping strategies both increase with age (Frydenberg & Lewis, 1993; Eschenbeck et al., 2007; Sieffge-Krenke, 1993). However, other researchers have found that there are no significant age differences in either of these dimensions of active coping (i.e., problem-focused coping or emotion-focused coping) (Mullis & Chapman, 2000; Stern & Zevon, 1990).

Researchers investigating age group differences in the use of the distraction coping style have also found mixed results. Some studies have demonstrated that the use of the distraction coping style tends to increase with age (Rossman, 1992; Ryan, 1989) such that older children and adolescents are more likely to use these coping strategies than younger children. Other research has indicated that the use of the distraction coping style decreases with age such that children are more likely than adolescents to use this coping style (Hampel & Petermann, 2005; Donaldson, Prinstein, Danovsky, & Spirito, 2000).

Changes in the use of support seeking coping strategies have not been found to be associated with age group (Hampel & Petermann, 2005; Eschenbeck et al., 2007). However, Eschenbeck et al. found that older girls used the support seeking coping style

significantly more than older boys. No gender by age group interactions effects were found for the use of the other coping styles.

Age group differences (i.e., children vs. adolescents) in engagement in physical activity have also been found among youth. For example, it has been found that age is inversely related to engagement in moderate to intense physical activity. Specifically, it has been found that as children get older during childhood and adolescence they are less likely to engage in physical activity (Trost et al., 2002; Troiano, 2008; Nader, Bradley, Houts, McRitchie, & O'Brien, 2008). No known study has investigated age differences in levels of engagement in healthy eating among youth.

Age group classification (i.e., children vs. adolescents) is evidently associated with an individual's use of coping styles and engagement in at least one of the HPL behaviors. Thus, in the present study, age group differences in the investigated coping styles and HPL behaviors will be investigated.

Impact of Race/Ethnicity

There is a paucity of literature investigating the relationship between race/ethnicity and coping styles (i.e., active coping, distraction coping, avoidance coping, support seeking coping) among children and adolescents. In a study investigating cultural differences in adolescent coping in seven countries in Europe, Gelhaar et al. (2007) found no significant cultural differences in coping with stressors related to self- and future-related problems. Similarly, in a study comparing Israeli and Arab adolescents, Braun-Lewensohn, Sagy, and Roth (2010) found that these two different cultural groups used similar levels of active coping strategies. This research suggests that among children and adolescents there may be minimal cultural differences with regard to coping styles.

Research investigating race/ethnicity differences in engagement in HPL behaviors among children is mixed. Some research suggests that there are no race/ethnicity differences in children's engagement in physical activity (Dowda, Saunders, Hastings, Gay, & Evans, 2009) while other research indicates that there are race/ethnicity differences (Andersen, Crespo, Bartlett, Cheskin, & Pratt, 1998). Examination of race/ethnic differences in healthy eating among children and adolescents has also garnered mixed results (Mackey & La Greca, 2007; Striegel-Moore et al., 2006; Lowry, Wechsler, Galuska, Fulton, & Kann, 2002). The inconsistency in findings related to race/ethnic differences in healthy eating patterns is reflected in a review of the literature on fruit and vegetable intake among children and adolescents, where researchers found that of 13 articles reviewed 11 had inconsistent findings (Rasmussen et al., 2006).

In sum, there is a lack of evidence of racial/ethnic differences in coping styles among youth and some lack of consistency in findings related to racial/ethnic differences in health promoting lifestyle behaviors among youth. As such, the present study focuses on the coping styles and health promoting lifestyle behaviors among a culturally diverse sample of children and adolescents without examining race/ethnicity differences in these variables or in the relationships among these variables.

CHAPTER 3 METHODS

Participants

The youth (i.e., child and adolescent) participants in the earlier mentioned Family Health Self-Empowerment (FHSE) Program, of which this study is a part, were the participants in this study. Initially, 121 children and adolescents were recruited for the larger study (and thus for the present study) and completed the initial assessments (i.e., Assent Form and Demographic Data Questionnaire), however only 74 (61.2%) participants completed the full assessment battery for the present study.

The 74 participants in this study ranged in age from 9 to 17 years old ($M = 12.5$ years). There were 33 children (ages 9 to 12) and 37 adolescents (ages 13 to 17). Four participants did not report their age. Demographic information for the total sample is presented in Table 3-1.

Among the participants who were children (ages 9 to 12), 16 (48.5%) identified as African American/Black, 9 (27.3%) identified as White/Caucasian/European American, 3 (9.1%) identified as Hispanic/Latino, and 5 (15.2%) identified as “other.” Those who self-identified as “other” included American Indian or Alaska Native, Asian American, Native Hawaiian or other Pacific Islander, West Indian, Bahamian, and multiracial participants and are therefore considered a group of racial/ethnic minorities. Twenty-two (66.7%) of the participants who were children were male and 11 (33.3%) were female.

Among the participants who were adolescents (ages 13 to 17), 10 (27.0%) identified as African American/Black, 7 (18.9%) identified as White/Caucasian/European American, 9 (24.3%) identified as Hispanic/Latino, and 11 (29.7%) identified as “other.”

Twenty-two (59.5%) of the participants who were adolescents were male and 15 (40.5%) were female.

Participants were initially asked whether they were on a special diet because of a health condition such as diabetes or hypertension. Seventy-four (100%) indicated that they were not on a special diet. Additionally, participants were asked whether they were currently trying to lose weight. Forty-seven (63.5%) participants responded that they were not trying to lose weight and 27 (36.5%) participants responded that they were trying to lose weight. Of the adolescent participants (ages 13 to 17), 12 (32.4%) reported that they were trying to lose weight, which is a lower percent than the percent of adolescents reported in other studies as trying to lose weight (Lowry, Galuska, Fulton, Wechsler, & Kann, 2002; Nystrom, Schmitz, Perry, Lytle, & Neumark-Sztainer, 2005). Of the children participants (ages 9 to 12), 15 (45.5%) reported that they were trying to lose weight, which is consistent with the percent of children in other studies who reported wishing they could weigh less, but higher than the percent of children in other studies who reported actively trying to lose weight (Schur, Sanders, & Steiner, 2000; Sands & Wardle, 2005).

Self-reported household income levels of the parents/guardians with whom the participating youth lived were used as the household income levels of the respective youth participants. Using this parent/guardian-participant youth household link, the household incomes of the participating youth as reported by their guardian larger study participants are reported in Table 3-1 along with the other demographic characteristics of the total sample.

Measures

All participants in this study completed an Assessment Battery (AB) that included the following instruments: (1) a Demographic Data Questionnaire (DDQ), (2) the Children's Coping Strategies Checklist-Revision 1 (CCSC-R1), and (3) the Health Promoting Lifestyles Profile (HPLP). Detailed descriptions of these instruments are provided below and each instrument may be found in the appendices. The Demographic Data Questionnaire (DDQ; see Appendix C) was constructed by the researchers. It was used to collect demographic information including age, race, and gender.

Children's Coping Strategies Checklist-Revision 1

The Children's Coping Strategies Checklist-Revision 1 (CCSC-R1; Ayers et al., 1996; see Appendix D) was used to assess levels of four coping styles (i.e., active coping, distraction coping, avoidance coping, and support seeking coping). The CCSC-R1 is a 54-item Likert-type self-report measure of children's coping styles and consists of four subscales – one to measure each of the coping styles that it measures. Instructions on the CCSC-R1 to any respondent are to answer the listed questions about her/his usual behavior during the last month and to indicate how often she/he does each behavior for the purpose of making oneself feel better. A 4-point behavior frequency rating scale ranging from 1 (*never*) to 4 (*most of the time*) is provided. Subscale scores are calculated for the CCSC-R1 by obtaining the mean of responses within each coping subscale. Cronbach alpha reliability coefficients for the subscale scores except for scores on the distraction coping subscale have been reported to be as follows: active coping, 0.88; avoidance coping, 0.65; and support-seeking coping, 0.86 (Program for Prevention Research, 2001). Cronbach alpha reliability coefficients for the

distraction coping subscale scores were not earlier reported by Program for Prevention Research (2001) along with the other such coefficients for the CCSC-R1, however other researchers found scores on the distraction subscale to have a reliability coefficient of 0.72 (Smith et al., 2006).

Active coping.

The active coping subscale consists of 24 items and is made up of the following two dimensions: problem-focused coping (12 items) and positive-reframing coping (12 items). The problem-focused coping dimension includes items categorized as cognitive decision making (i.e., thinking about ways to solve the problem), direct problem solving (i.e., making efforts to solve the problem), and seeking understanding (i.e., making efforts to better understand the problem). The positive-reframing coping dimension includes items categorized as positive thinking (i.e., trying to think about the good things that are happening), optimistic thinking (i.e., thinking about the future in a positive way), and control (i.e., thinking that one is able to deal with whatever happens). An example of an active coping scale item is, "You thought about which things are best to do to solve the problem."

Distraction coping.

The distraction coping subscale consists of 9 items and includes items categorized as physical release of emotions (i.e., efforts to physically work off feelings with physical exercise) and distracting actions (i.e., efforts to avoid thinking about the problem situation by using distracting stimuli). An example of a distraction coping subscale item is, "You went bicycle riding."

Avoidance coping.

The avoidance coping subscale consists of 12 items and includes items categorized as avoidant actions (i.e., efforts to avoid the problem by staying away from it), repression (i.e., avoidance of thoughts about the problems), and wishful thinking (i.e., using wishful thinking in relation to the problem or imagining the problem was better). An example of an avoidance coping subscale item is, “You daydreamed that everything was okay.”

Support seeking coping.

The support seeking coping subscale consists of 9 items and includes items categorized as support for actions (i.e., the use of other people as resources in seeking solutions to a problem) and support for feelings (i.e., the involvement of other people in listening to feelings). An example of a support seeking coping subscale item is, “You told people how you felt about the problem.”

Health Promoting Lifestyles Profile

The Health Promoting Lifestyle Profile (HPLP; Walker, Sechrist, & Pender, 1987; see Appendix E for subscales used in this study) was used to assess health promoting lifestyle (HPL) behaviors (i.e., physical activity and healthy eating behaviors). This instrument is a 52-item Likert-type self-report inventory that measures the level at which individuals engage in an overall HPL and their level of engagement in each of six specific HPL behaviors. There are six HPLP subscales consisting of questions that assess levels of the following specific HPL behaviors: exercising consistently (8 items), eating a healthy diet (9 items), engaging in stress management practices (8 items), displaying health responsibility (9 items), seeking to reach one’s fullest potential (9 items), and displaying the ability to form close interpersonal relationships (9 items). For

the purpose of this study, only the first two scales (i.e., exercising consistently and eating a healthy diet) were used to measure levels of engagement in physical activity and healthy eating. Instructions on the HPLP are to rate how often one engages in each activity asked about using a 4-point scale ranging from 1 (*never*) to 4 (*routinely/very often*).

A sample question on the exercising consistently subscale is, “Do you exercise vigorously for 20 or more minutes at least three times a week (such as brisk walking, bicycling, aerobic dancing, using a stair climber)?” A sample item on the eating a healthy diet subscale is, “Do you eat 6-11 servings of bread, cereal, rice, and pasta each day?” Based on data from a normative sample, Cronbach alpha reliability coefficients for the subscale scores of exercising consistently and eating a healthy diet are 0.81 and 0.76, respectively (N = 95; Walker et al., 1987). Subscale scores on the HPLP are calculated by obtaining the mean of responses within each subscale.

Procedure

Following approval of the larger study (of which the present study is a part) from the University of Florida (UF) Institutional Review Board (IRB), culturally diverse families (children, adolescents, and their adult parents/guardians) in Alachua County, Florida were recruited to be participants in the larger study. The children in the recruited participating families who met the participation inclusion criteria for the present study were identified as participants in the present study. In other words the part of the baseline data collected on the children participating with their families in the larger study was used to test the hypotheses and address research questions set forth in the present study. The participation criteria for the youth selected for the present study are as follows: (a) being between the ages of 9 and 17, (b) having at least one parent/adult

guardian who gave written consent to be a participant in the larger study and who gave written consent for their child or adolescent (who lived in the same household with the guardian) to be a research participant in the larger study, and (c) giving verbal assent to participate in the larger study. Research exclusion criteria are that either the youth participant or their adult guardian participant does the following: (a) self-reports or engages in behaviors that suggest the presence of a psychological disorder, (b) self-reports having an eating disorder, or (c) self-reports adhering to a special diet due to diabetes or other reasons.

All parents/guardians of the youth participants in the larger study and thus the present study completed a Parental Consent Form (PCF; see Appendix A) that outlines the following: (a) the purpose of the study, (b) what the child's participation would involve, (c) the required time commitment for completing the baseline assessment battery as well as the intervention aspect of the larger the study, (d) any possible risks and benefits to being a participant in the study, (e) the monetary participation incentive, and (f) procedures to protect the confidentiality of all provided information. The PCF also stated that participation is voluntary and that participants have the right to withdraw at any point during the study, without penalty.

Additionally, all youth participants provided their verbal agreement to participate by listening to an assent script and agreeing to participate. The assent script (see Appendix B) outlined the following: (a) the purpose of the study, (b) a description of participation tasks, and (c) information on how the participants' confidentiality will be protected.

The present study involved two procedural phases: (a) the participant recruitment phase and (b) the research enrollment and baseline data collection phase. Both of these procedural phases were implemented by trained undergraduate research assistants and community member research assistants who were members of or recruited by the Principal Investigator for the larger health promotion study of which this study is a part.

The participant recruitment strategies that these research assistants used include: (a) reading announcements about the study on local radio stations; (b) publishing advertisements in local newspapers; (c) posting flyers about the study at local businesses (e.g., grocery stores, specialty ethnic food stores, and shopping centers), recreation centers (e.g., cultural centers and recreational facilities), apartment complexes, elementary and middle schools, health care facilities (e.g., hospitals), and a selection of churches that together were religiously and ethnically diverse; and (d) tabling at the aforementioned sites. Tabling involved setting up a table where there were (a) banners advertising the name of the project, and (b) flyers specifying what participation in the study would involve, the participation compensation amount, participation criteria, the procedures for enrolling in the study, and a telephone number to call to get more information about the study. The research assistants stood near these tables, gave out the flyers to individuals who passed by the table, and asked these individuals to sign up to participate in the study and to receive a reminder call about the study enrollment and data collection sessions at a nearby community center. Individuals who were given flyers but did not enroll in the study were told to consider

calling later to learn more about the study and hopefully enroll later by telephone. Participant recruitment lasted three months.

The enrollment and data collection phase involved having participants attend a local community center to enroll in the study if they had not done so earlier and to provide baseline assessment data. These participants would have been told by telephone or at the tabling event the several dates, times and places of the enrollment/data collection sessions and asked to choose a session that they preferred. Upon arrival at this community center, participants in the present study engaged in the following enrollment and data collection activities: (a) listened to and assented to an assent script read by researchers after their parent/guardian read and signed an informed consent form indicating agreement to participate in the larger project, and thus the present study, and (b) completed a pre-coded DDQ and the assessment battery without placing a name on these documents so as to ensure confidentiality of the provided data.

The research assistants gave the participants the Assessment Battery (AB) to complete immediately. A large team of research assistants (N = approximately 15) were on-sight at each enrollment/data collection session to answer questions and give instructions.

Data collection took place on several days over a one-month period. Compensation for youth who participated in the study being proposed was \$10, which was included in the \$25 that was paid to their family for completing the baseline ABs for the larger health promotion study of which the study being proposed is a part. The \$25 compensation was paid to the participating families when all family member participants

submitted a completed AB to a research assistant. It took approximately 30 minutes for the youth participants (i.e., the participants in the study being proposed) to complete the entire AB.

Table 3-1. Demographic characteristics of participants

Demographic variables	N	%
Gender		
Male	45	60.8
Female	29	39.2
Age group		
Children (9 – 12)	33	43.6
Adolescents (13 – 17)	37	51.0
Unreported	4	5.4
Race/ethnicity		
African American/Black	28	37.8
White/Caucasian/European American	17	23.0
Hispanic/Latino	13	17.6
Other	16	21.6
Trying to lose weight		
No	47	63.5
Yes	27	35.5
Household income (parent/guardian reported)		
Less than \$10,000	6	6.9
\$10,000 - \$19,999	14	16.1
\$20,000 - \$29,999	21	24.1
\$30,000 - \$39,999	17	19.5
\$40,000 and over	3	3.4
Unreported	26	29.9

CHAPTER 4 RESULTS

This chapter presents the results of the analyses conducted to address the hypotheses and research questions for the present study. First, the descriptive data for the major variables in this study are reported. Second, reliability (i.e., Cronbach's alpha reliability coefficients) of the scores on the instruments are presented. Third, the results of the preliminary Pearson's correlation analysis that was conducted to address the first two hypotheses are presented and discussed. Fourth, the results of the two separate moderated regression analyses that were conducted to address the third hypothesis are presented and discussed. Finally, the results of both multivariate analyses of variance (MANOVAs) that were conducted to address both research questions are presented and discussed.

Descriptive Data for all Major Variables

Initially, tests of normality were run on each of the dependent variables (i.e., active coping, distraction coping, avoidance coping, support seeking coping, engagement in healthy eating, and engagement in physical activity) to verify that they were normally distributed and appropriate for parametric tests. Means and standard deviations for these variables are presented in Table 4-1.

Reliability of Instruments

As discussed further in this chapter, for the purposes of this study, the active coping style subscale and the support seeking coping style subscale of the Children's Coping Strategies Checklist-Revision 1 (CCSC-R1) were combined to create the active-support seeking coping subscale. Using the data from the present study, Cronbach alpha reliability coefficients were calculated for this combined subscale and for the other

two individual subscales of the CCSC-R1 (i.e., the avoidance coping subscale and the distraction coping subscale). Results indicated that for the subscales of the CCSC-R1, the Cronbach alpha reliability coefficients are as follows: active-support seeking coping subscale, $\alpha = .94$; avoidance coping scale, $\alpha = .80$; and distraction coping scale, $\alpha = .80$. These results provide support for the use of these subscales of the CCSC-R1 in assessing the coping styles used by the culturally diverse sample of youth (i.e., children and adolescents) in the present study.

Using data obtained in the present study, Cronbach alpha reliability coefficients were also calculated for scores on both scales of the Health Promoting Lifestyle Profile (HPLP) that were used in this study. Results indicated that for the HPLP subscale healthy eating the Cronbach alpha reliability was 0.73. For the HPLP subscale engagement in physical activity the Cronbach alpha reliability was 0.66. These results provide support for the use of these subscales of the HPLP in assessing the health promoting lifestyle behaviors of the culturally diverse sample of youth in this study.

Results of the Preliminary Pearson Correlation Analysis

An initial Pearson's correlation analysis was run in order to investigate the associations between coping styles (i.e., active coping, distraction coping, avoidance coping, and support seeking coping) and HPL behaviors (i.e., engaging in healthy eating and physical activity). Additionally, this correlation analysis was used to examine the relationships among each of the coping styles to ascertain whether or not all four variables should be studied independently. This correlation analysis is presented in Table 4-2.

Coping Style Variable Associations

The initial analysis showed that active coping and support seeking coping were highly correlated with one another ($r = .63, p < .001$). Given the high correlation as well as previous literature supporting the collapse of the two named coping style variables (Nicolotti et al., 2003), a combined coping style (active-support seeking coping) was created by calculating the mean of these two coping style variables. As such, the first hypothesis, stating that three coping styles (i.e., active coping, distraction coping, and support seeking coping) would have significant positive correlations with both HPL behavior variables (i.e., engaging in healthy eating and physical activity), was amended to include only two coping styles: active-support seeking coping and distraction coping.

Active coping had significant positive correlations with distraction coping ($r = 0.51, p < .001$), avoidance coping ($r = 0.59, p < .001$), and support seeking coping ($r = 0.63, p < .001$). Distraction coping had significant positive correlations with avoidance coping ($r = 0.53, p < .001$) and support seeking coping ($r = 0.39, p < .01$). Avoidance coping had a significant positive correlation with support seeking coping ($r = 0.35, p < .01$).

Health Promoting Lifestyle Behavior Variable Associations

The preliminary Pearson's correlation analysis indicated that engaging in healthy eating and physical activity (i.e., the health promoting lifestyle [HPL] behavior variables of interest in this study) had a significant positive correlation with one another ($r = 0.63, p < .001$). Additionally, healthy eating had significant positive correlations with active coping ($r = 0.47, p < .001$), distraction coping ($r = 0.32, p < .01$), and support seeking coping ($r = 0.45, p < .001$). Engaging in physical activity also had significant positive correlations with active coping ($r = 0.43, p < .001$), distraction coping ($r = 0.41, p < .001$), and support seeking coping ($r = 0.39, p < .01$). Neither of the included HPL

behavior variables had significant positive correlations with avoidance coping. As a result, avoidance coping was removed from further analyses of the relationship between coping styles and HPL behaviors.

Results of the Analyses to Test Hypotheses One and Two

Associations between the Active-Support Seeking and Distraction Coping Style Variables and Health Promoting Lifestyle Behavior Variables

In order to address the amended first hypothesis, which states that the two coping styles (i.e., active-support seeking coping and distraction coping) will have significant positive correlations with both of the HPL behavior variables (i.e., engaging in healthy eating and physical activity), another Pearson's correlation analysis was performed using just the variables investigated in this hypothesis. The results of this analysis are presented in Table 4-3. Results of this analysis indicate that engaging in physical activity is significantly associated with both active-support seeking coping ($p < .001$) and distraction coping ($p < .001$). Additionally, results indicate that engaging in healthy eating is significantly associated with active-support seeking coping ($p < .001$) and distraction coping ($p < .01$). These findings support hypothesis one that the named coping styles (i.e., active-support seeking coping and distraction coping) will have significant positive correlations with both of the HPL behavior variables.

Associations between the Avoidance Coping Style Variable and Health Promoting Lifestyle Behavior Variables

In order to address the second hypothesis, which states that the use of avoidance coping will have a significant negative correlation with the HPL behavior variables engaging in healthy eating and physical activity, the above mentioned Pearson's correlation analysis was examined. The coping style avoidance coping was not significantly correlated with either of the HPL behaviors, in either direction. These

results fail to support hypothesis two that avoidance coping would have a significant negative correlation with both of the HPL behavior variables.

Results of the Analyses to Address Hypothesis Three

Given the combining of the active coping and support seeking coping style variables to form the active-support seeking coping style variable, as well as the omission of avoidance coping from this analysis based on a non-significant relationship between avoidance coping and the HPL behavior variables, the third hypothesis was modified to state that the relationship between each coping style variable (i.e., active-support seeking coping and distraction coping) and each HPL behavior (i.e., engaging in healthy eating and physical activity) will differ by gender. In order to test this hypothesis two moderated regression analyses were run with each having one of the HPL behavior variables as the criterion variable. The predictor variables in both moderated regressions were the coping styles (i.e., active-support seeking coping and distraction coping) and the interaction of each of these coping styles with gender.

Results from Assessing Gender Differences in the Associations between Coping Styles and Engagement in Healthy Eating

A moderated regression analysis was performed with engaging in healthy eating as the criterion variable and the following variables as predictor variables: active-support seeking coping, distraction coping, gender, gender x active-support seeking coping, and gender x distraction coping. This analysis allowed for (a) examination of the influence of coping styles and gender on the healthy eating variable, and (b) examination of gender differences in any found relationships between each coping style and healthy eating. Prior to entering the predictor variables into the regression, each coping style and gender was centered to reduce multicollinearity among the predictor

variables. Table 4-4 presents regression weights for each of the predictors in this model. The overall regression model was significant ($F = 5.52, p < .001$), accounting for 28.9% of the total variance in engagement in healthy eating. Active-support seeking coping was the only significant independent predictor ($\beta = 0.5, p < .001$), accounting for 18.1% of the variance in healthy eating. Although distraction coping was significantly correlated with the healthy eating variable in the Pearson's correlation analysis, it did not reach significance in the regression model. These findings failed to support hypothesis three stating that the relationship between each coping style variable (i.e., active-support seeking coping and distraction coping) and engaging in healthy eating would differ by gender.

Results from Assessing Gender Differences in the Associations between Coping Styles and Engagement in Physical Activity

A moderated regression analyses was performed with engaging in physical activity as the criterion variable and the following variables as predictor variables: active-support seeking coping, distraction coping, gender, gender x active-support seeking coping, and gender x distraction coping. This analysis allowed for (a) examination of the influence of coping styles and gender on the physical activity variable, and (b) examination of gender differences in any found relationships between each coping style and physical activity. Prior to entering the predictor variables into the regression, each coping style and gender was centered to reduce multicollinearity among the predictor variables. Table 4-5 presents regression weights for each of the predictors in this model. The overall regression model was significant ($F = 4.66, p = .001$), accounting for 25.6% of the total variance in engagement in physical activity. Active-support seeking coping was a significant independent predictor of engagement in physical activity ($\beta =$

0.32, $p = .01$), accounting for 7.5% of the variance in this variable. Additionally, distraction coping was a significant independent predictor of engagement in physical activity ($\beta = 0.25$, $p < .05$), accounting for 4.5% of the variance in this variable. Despite the found significant independent predictors, these findings failed to support the hypothesis three that the relationship between each coping style variable (i.e., active-support seeking coping and distraction coping) and engaging in physical activity would differ by gender.

Results of the Analyses to Address Research Questions One and Two

To address the first research question, which asks whether coping styles differ in association with age group and gender, a multivariate analysis of variance (MANOVA) was performed. In this MANOVA the three coping styles (i.e., active-support seeking coping, distraction coping, and avoidance coping) were the dependent variables and age group, gender, and the interaction term age group x gender were the independent variables. In order to test the assumption of homogeneity, Box's test of the assumption of equality of covariance and Levene's test of equality of error variances were conducted. Box's test was significant ($F = 2.00$, $p < .01$), indicating that the homogeneity assumption was violated. Levene's test was non-significant for all three coping style variables ($p > .05$), indicating homogeneity of variance. In order to reduce harm of the violation of the assumption of equality of covariance, a conservative F score was used (Pillai's trace).

No significant interaction effect of age group x gender was found (Pillai's trace = 0.08, $F[6,134] = 0.93$, $p = .48$), and there were no significant effects of age group ($p = .43$) or gender ($p = .08$) on the coping style variables. Tests of between subjects effects

showed no significant main effects for age group or gender on any of the coping style variables.

To address the second research question, which asks whether HPL behavior variables differ in association with age group and gender, a second MANOVA was performed. In this MANOVA the HPL behaviors were the dependent variables and age group, gender, and the interaction age group x gender were the independent variables. In order to test the assumption of homogeneity, Box's M test of the assumption of equality of covariance and Levene's test of equality of error variances were conducted. Both tests were non-significant ($p > .05$).

No interaction effects for the age group x gender term were found (Wilk's $\Lambda = 0.97$, $F[4,134] = 0.46$, $p = 0.77$), and there were no significant main effects found for age group or gender ($p = 0.79$; $p = 0.36$) on the HPL behaviors. Test of between subjects effects showed no significant main effects for age group or gender on the HPL behaviors engaging in healthy eating and physical activity.

Table 4-1. Means and standard deviations for the variables investigated in the present study for the total sample and by gender and age group

Variable	N	Norm sample mean ^a	Mean	Range	SD
Total sample					
Active coping	74	2.63 ^b	2.49	(1.29 – 4.00)	0.60
Distraction coping	74	2.36 ^b	2.28	(1.10 – 4.00)	0.61
Avoidance coping	74	2.61 ^b	2.43	(1.08 – 3.83)	0.51
Support seeking coping	74	2.44 ^b	2.22	(1.00 – 4.00)	0.65
Healthy eating	74		2.28	(1.00 – 3.63)	0.52
Physical activity	74		2.13	(1.00 – 3.75)	0.59
Males					
Active coping	45		2.48	(1.33 – 4.00)	0.63
Distraction coping	45		2.23	(1.10 – 4.00)	0.61
Avoidance coping	45		2.42	(1.08 – 3.83)	0.56
Support seeking coping	45		2.33	(1.10 – 4.00)	0.65
Healthy eating	45		2.24	(1.00 – 3.63)	0.51
Physical activity	45		2.15	(1.13 – 3.75)	0.63
Females					
Active coping	29		2.50	(1.29 – 3.75)	0.55
Distraction coping	29		2.35	(1.20 – 3.75)	0.61
Avoidance coping	29		2.45	(1.58 – 3.33)	0.43
Support seeking coping	29		2.04	(1.00 – 4.00)	0.61
Healthy eating	29		2.35	(1.38 – 3.50)	0.54
Physical activity	29		2.12	(1.00 – 3.25)	0.55
Children (ages 9 to 12)					
Active coping	33		2.49	(1.29 – 4.00)	0.67
Distraction coping	33		2.41	(1.10 – 4.00)	0.67
Avoidance coping	33		2.40	(1.58 – 3.83)	0.53
Support seeking coping	33		2.32	(1.30 – 4.00)	0.66
Healthy eating	33		2.30	(1.00 – 3.50)	0.57
Physical activity	33		2.10	(1.00 – 3.75)	0.67
Adolescents (ages 13 to 17)					
Active coping	37		2.49	(1.38 – 4.00)	0.54
Distraction coping	37		2.19	(1.10 – 3.25)	0.54
Avoidance coping	37		2.44	(1.08 – 3.33)	0.51
Support seeking coping	37		2.16	(1.10 – 4.00)	0.61
Healthy eating	37		2.27	(1.38 – 3.63)	0.50
Physical activity	37		2.15	(1.25 – 3.63)	0.54

^aThe norm sample mean is adapted from “Children’s Coping Strategies and Coping Efficacy: Relations to Parent Socialization, Child Adjustment, and Familial Alcoholism” by C. L. Smith et al., 2006, *Development and Psychopathology*, 18, p. 452. ^b*n* = 96. ^c*n* = 110.

Table 4-2. Pearson's correlation analysis among the variables of interest in the present study for the total sample

	Coping styles				Health promoting lifestyle behaviors	
	Active	Distraction	Avoidance	Support seeking	Healthy Eating	Physical activity
Coping styles						
Active	-----	0.51***	0.59***	0.63***	0.47***	0.43***
Distraction	0.51***	-----	0.53***	0.39**	0.31**	0.41***
Avoidance	0.59***	0.53***	-----	0.35**	0.22	0.21
Support seeking	0.63***	0.39**	0.35**	-----	0.45***	0.39**
Health promoting lifestyle behaviors						
Healthy eating	0.47***	0.31**	0.22	0.45***	-----	0.63***
Physical activity	0.43***	0.41***	0.21	0.39**	0.63***	-----

** $p < .01$. *** $p < .001$.

Table 4-3. Pearson's correlation analysis among the variables of interest for hypothesis one and hypothesis two

	Coping styles			Health promoting lifestyle behaviors	
	Active-support seeking	Avoidance	Distraction	Healthy eating	Physical activity
Coping styles					
Active-support seeking	-----	0.52***	0.49***	0.51***	0.45***
Avoidance	0.52***	-----	0.53***	0.22	0.21
Distraction	0.49***	0.53***	-----	0.32**	0.41***
Health promoting lifestyle behaviors					
Healthy eating	0.51***	0.22	0.32**	-----	0.63***
Physical activity	0.45***	0.21	0.41***	0.63**	-----

** $p < .01$. *** $p < .001$.

Table 4-4. Unstandardized beta weights (B), standard error coefficients of beta weights, and standardized regression weights (β s) for predicting engagement in healthy eating from all investigated predictor variables

Predictor variables	B	SE B	β
Gender	0.17	0.11	.16
Active-support seeking coping	0.47	0.11	.50**
Distraction coping	0.05	0.10	.06
Active-support seeking coping x gender	0.18	0.23	.09
Distraction coping x gender	-0.08	0.21	-.04

Note: $R^2 = .29$.

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

Table 4-5. Unstandardized beta weights (B), standard error coefficients of beta weights, and standardized regression weights (β s) for predicting engagement in physical activity from all investigated predictor variables

Predictor Variables	B	SE B	β
Gender	-0.02	0.13	-0.01
Active-support seeking coping	0.34	0.13	0.32**
Distraction coping	0.24	0.12	0.25*
Active-support seeking coping x gender	-0.13	0.27	-0.06
Distraction coping x gender	0.02	0.24	0.01

Note: $R^2 = .26$.

* $p = .05$. ** $p < .01$.

CHAPTER 5 DISCUSSION

This chapter includes a summary of and interpretations of the results of this study. Additionally, in this chapter is a discussion of the limitations and strengths of this study. Finally, this chapter includes directions for future research and a discussion of the implications of this study for counseling psychologists.

Summary of the Results

Hypotheses One and Two

The purpose of the present study was to investigate the relationship between coping styles (i.e., active coping, distraction coping, avoidance coping, and support seeking coping) and health promoting lifestyle (HPL) behaviors (i.e., engaging in healthy eating and physical activity) among culturally diverse youth (children and adolescents) from low-income families. Additionally, whether any found associations between the investigated coping styles and HPL behaviors differed in association with age group and/or gender was examined. Finally, whether the investigated coping styles and the HPL behaviors differed by age group and/or gender was examined.

The preliminary Pearson's correlation analysis revealed that all four coping styles (i.e., active coping, distraction coping, avoidance coping, and support seeking coping) had significant positive associations with one another. Given these significant correlations and previous relevant research literature (Nicolotti et al., 2003), the coping styles active coping and support seeking coping were combined into one coping style variable (i.e., active-support seeking coping). Specifically, Nicolotti et al. found that both active coping styles and support seeking coping styles were significantly associated with improved emotional and behavioral adjustment among children and adolescents.

Thus, the significant correlation between these two coping styles likely suggests that there is an overlap in the construct that they are measuring.

The significant positive association found between avoidance coping and active coping was surprising given that most of the literature on coping suggests that active coping is clearly positively associated with improved emotional and behavioral characteristics and the research literature for avoidance coping indicates that it is primarily associated with negative emotional adjustment and behavior. Any literature supporting the positive relationship between avoidance coping and well-being seems to suggest that the benefits of avoidance coping are gender specific and the sample in the present study is reasonably equally represented by males and females, indicating that a gender bias in the results does not explain the significant positive relationship between avoidance coping and active coping.

The first research hypothesis in this study stated that the use of the active coping, support seeking coping, and distraction coping styles would have significant positive correlations with engaging in healthy eating and physical activity (i.e., the two investigated HPL behaviors). Because the active coping style and support seeking coping style were combined to form the active-support seeking coping style, this hypothesis was modified to read as follows: the two coping styles (i.e., active-support seeking coping and distraction coping) will have significant positive correlations with both of the HPL behaviors (i.e., engaging in healthy eating and physical activity).

A Pearson's correlation analysis revealed that both of the investigated coping styles (i.e., active-support seeking coping and distraction coping) were significantly correlated with both of the HPL behaviors. Specifically, active-support seeking coping

was more highly associated with engaging in healthy eating ($p < .001$), followed by distraction coping ($p < .01$). Additionally, distraction coping and active-support seeking coping were both highly associated with engaging in physical activity ($p < .001$).

The second research hypothesis in this study posited that the use of avoidance coping will have a significant negative correlation with level of engagement in HPL behaviors (i.e., engaging in healthy eating and physical activity). Contrary to this hypothesis, results indicated that the correlations between avoidance coping and both engagement in healthy eating and engagement in physical activity were non-significant. This non-significant finding is surprising given the literature indicating the detrimental emotional and behavioral effects of avoidance coping (Liu et al., 2004; Seiffge-Krenke, 2000; deBoo & Spiering, 2010; Compas et al., 2004). However, these findings may be explained by the research literature indicating that avoidance coping can be significantly beneficial to individuals in certain situations (e.g., children and adolescents who are being criticized for their weight; Faith et al., 2002), which we did not fully account for in this study. Because of the non-significant relationship between avoidance coping and the HPL behaviors, the avoidance coping variable was eliminated from the analyses that examined the relationship between coping styles and HPL behaviors. In sum, hypothesis one was supported by the present study, while hypothesis two was not.

Hypothesis Three

The third research hypothesis in the present study stated that the relationship between each coping style (i.e., active-support seeking coping and distraction coping) and each HPL behavior (i.e., engaging in healthy eating and physical activity) would differ by gender. In order to examine whether any associations between coping styles and engagement in healthy eating would differ by gender, a moderated regression

analysis was performed using healthy eating as a criterion variable and the following variables as predictor variables: active-support seeking coping, distraction coping, gender, gender x active-support seeking coping, and gender x distraction coping. Results of this analysis indicated that the model was significant and accounted for 28.9% of the variance in healthy eating. There were no significant interaction effects and the only significant independent predictor was active-support seeking coping, which accounted for 18.1% of the variance in healthy eating.

In order to examine whether any associations between coping styles and engagement in physical activity would differ by gender, a moderated regression analysis was performed using engagement in physical activity as a criterion variable and the following variables as predictor variables: active-support seeking coping, distraction coping, gender, gender x active-support seeking coping, and gender x distraction coping. Results of this analysis indicated that the regression model was significant and accounted for 25.6% of the total variance. There were no significant interaction effects, but there were two significant independent predictors. Specifically, active-support seeking coping accounted for 7.4% of the variance in engagement in physical activity and distraction coping accounted for 4.5% of the variance in engagement in physical activity.

A possible explanation for the non-significant interaction effects in the analyses to test the third hypothesis may be that the sample size was inadequate to have enough power to investigate gender by each coping style interaction effects in these analyses. It is also possible that there are no gender differences in relationships between the investigated coping styles and engaging in healthy eating or engaging in physical

activity. This finding is consistent with that of Nicoletti et al. (2003) who found that among children who were coping with parents' marital stress, the relationship between coping style (i.e., active coping, distraction coping, and support seeking coping) and physical health did not differ by gender. Regardless of the explanations for the findings from the analyses to test the third hypothesis, these findings clearly fail to support the third hypothesis.

Research Question One

The first research question addressed in the present study asked if coping styles would differ by age group and gender. In order to investigate this research question, a multivariate analysis of variance (MANOVA) was performed, using the coping styles (i.e., active-support seeking coping, distraction coping, and avoidance coping) as the dependent variables and age group, gender, and the interaction term age group x gender as the independent variables. Results revealed no significant age group x gender interaction effect ($p > .05$) in the multivariate test and none of the separate ANOVAs revealed a significant interaction effect. Additionally, there were no significant main effects of age group or gender on any of the coping styles (i.e., active-support seeking coping, distraction coping, and avoidant coping).

The research findings from investigating the first research question suggest that among a culturally diverse sample of youth, there are no significant age group (i.e., children vs. adolescents) differences or gender differences in the use of the named coping styles. The non-significant findings with regard to the age group x gender interaction are surprising given some research suggesting that girls coping styles can change significantly as they go from childhood to adolescence (Hampel & Petermann, 2005). Additionally, research indicates that as children become adolescents, their

coping styles become more effective and broad. As such, a significant difference in coping styles between children and adolescents should be expected. One explanation for these surprising findings is that there may be other confounding variables, such as race/ethnicity, situation/setting, education level, or family income level. These variables may have a more significant impact on an individual's coping styles than age group.

The non-significance of the association between gender and the active-support seeking coping, distraction coping, and avoidance seeking coping styles in the present study is not surprising given the inconsistent findings on this topic in the research literature. Active coping has two dimensions (i.e., problem-focused and positive reframing), and each of these dimensions has garnered mixed results with regard to gender differences among youth. The research literature indicates that the relationship between all three of these coping styles and gender tends to vary based on other variables, including situation and setting. The current study suggests that coping styles among a culturally diverse sample of youth from low-income families may be influenced by variables other than gender or age group. Regardless of the explanation for the results from testing the first research question, support is provided by these results for future research with larger samples to investigate age group and gender differences in the use of different coping styles among culturally diverse youth, particularly those from low-income households such as most of the participants in the present study.

Research Question Two

The second research question addressed in the present study asked if HPL behaviors would differ by age group and gender. In order to investigate this research question, a multivariate analysis of variance (MANOVA) was run, using the HPL behavior variables (i.e., engaging in healthy eating and physical activity) as the

dependent variables and age group, gender, and the interaction term age group x gender as the independent variables. Results indicated that the interaction effect of age group x gender was non-significant. There were no significant main effects of age group or gender on either of the HPL behaviors (i.e., engaging in healthy eating and physical activity).

The finding of no significant differences in engaging in physical activity in association with age group is surprising given the research literature indicating that younger children engage in significantly more physical activity than do older children. Similarly, the finding of no significant differences in engaging in physical activity in association with gender is surprising given the research literature indicating that boys engage in significantly more physical activity than girls. The inconsistency between these findings and previous literature may be due to the fact that participants tended to be from low-income households and thus may not have access to physical activity resources regardless of age group and/or gender. Specifically, younger children in families with low incomes may be even less likely than their older counterparts to have access to physical activity resources because of safety and transportation issues.

The finding of no significant age group and/or gender differences in engaging in healthy eating is not surprising given the inconsistency in research findings among published research studies that have studied the association between both age group and gender, and engaging in healthy eating. It may be that healthy eating is very much controlled by household income and the related food purchases of the adults in the homes of youth, thus rendering the age group and gender irrelevant to a large degree when it comes to the level of engagement in healthy eating by youth living in

households with low incomes. Future similar research with larger samples and representation of youth across the socioeconomic spectrum is needed to further understand the role of both age group and gender in the engagement of youth in HPL behaviors. Indeed, income and/or some other demographic variables may moderate relationships between both named demographic variables (i.e., age group and gender) and levels of engaging in HPL behaviors.

Limitations, Strengths, and Future Directions from the Present Study

Though this study is important and contributed much to the research literature on coping styles and engaging in health promoting lifestyle behaviors among youth, it also had some noteworthy limitations. One limitation is the small sample for this study. The sample size in the present study is in part the result of the well documented difficulty involved with recruiting research participants in families with low household incomes and/or who are racial/ethnic minorities such as those in the present study. It is also the case that the small sample size was the product of participants being removed from the present study because of much incomplete data. The length of the assessment battery deterred many participants from completing all of it, thus resulting in data sets of participants that were not useable, which in turn resulted in removal of the participants with incomplete data sets from the study.

Another limitation of the present study is having numbers of participants in each of the major race/ethnic groups that were too small to conduct analyses to examine racial/ethnic group differences in the variables and relationships among them of interest. Yet, there is inconclusive evidence in the existing research literature regarding race/ethnicity differences in coping styles, engaging in physical activity, and engaging in healthy eating among youth. Given our lack of significant results with regard to age

group and gender differences in the investigated variables, it would be important to further investigate other demographic variables that may be significantly associated with coping styles and HPL behaviors. Future studies similar to the present study need to include large numbers of children and adolescents in each of the major racial/ethnic groups in the U.S. Such studies would then enable re-examination of race/ethnicity (and other demographic variables) as potential influences on coping styles and HPL behaviors of children and adolescents, including those in low-income families.

The fact that the participants in the present study were volunteers who were recruited using various recruitment strategies is also a limitation given that the resulting sample is not representative of the target low-income community. Though the recruitment strategies used in the present study are commonly used to recruit low-income and racial/ethnic minority participants for research studies, it is not known if the findings are generalizable to the target community. Future similar studies should attempt to recruit participants using stratified random sampling procedures, and household income should be based on the number of family members in addition to the self-reported household income.

Despite the aforementioned limitations this study is important because it addresses the following important and not well-published research topics: (a) the coping styles of children and adolescents; (b) the relationship between coping styles and health promoting lifestyle behaviors among children and adolescents; and (c) the relationships between coping styles and health promoting lifestyle behaviors among culturally diverse youth from low-income families.

Implications for Counseling Psychologists

A major charge of counseling psychologists is to engage in and address social justice issues through both research and practice. Additionally, a core aspect of counseling psychology is conducting culturally sensitive research and implementing and evaluating interventions that are culturally sensitive. The present study relates to both of these integral aspects of counseling psychology.

Because low-income and racial/ethnic minority youth are particularly vulnerable to the conditions of overweight and obesity that come with not engaging in health promoting lifestyle behaviors and given that these youth are often powerless when it comes to having the needed resources to engage in these behaviors, the empowerment and social justice orientations of counseling psychologists render them to be well-suited for conducting research and interventions to promote these behaviors. Furthermore, increasing health promoting behaviors among vulnerable populations is consistent with the focus of counseling psychology on health promotion and illness prevention rather than on mental illness. Thus, it is appropriate and necessary for counseling psychologists to assume leadership in promoting behaviors to facilitate health and eliminate health disparities that plague our nation, particularly those disparities related to overweight and obesity that have a disproportionately negative impact on youth and adults who are racial/ethnic minorities or are members of families who have low household incomes.

Given that obesity and overweight in childhood tends to be developmental in that it tends to continue into adulthood, the focus of counseling psychologists on development across the lifespan also renders them to be well-suited for studying health promoting lifestyle behaviors among youth as well as among adults. Furthermore, the

training that counseling psychologists have in conducting multicultural assessments and research makes them ideal for conducting research with culturally diverse samples similar to what is done in the present study.

Conclusions

In conclusion, the present study examined the relationships between coping styles (i.e., active-support seeking coping, distraction coping, and avoidance coping) and HPL behaviors (i.e., engagement in healthy eating and physical activity), and age group and gender differences in these relationships and in each coping style and HPL behavior among culturally diverse children and adolescents from low-income families. Results of this study suggest that there are significant relationships between active-support seeking coping and both measured HPL behaviors, as well as between distraction coping and both measured HPL behaviors. It is recommended that future research investigates the relationships examined in this study in a larger representative sample of culturally diverse children and adolescents from low-income families. If the findings in the present study are validated in future similar research with larger representative samples, support will be provided for testing the effects of interventions to promote active-support seeking coping styles and distraction coping styles on the HPL behaviors of culturally diverse youth living in low-income households.

APPENDIX A
PARENTAL INFORMED CONSENT FORM

Family Health Self-Empowerment Project

Parental Consent

Please read this consent document carefully before you decide to give permission for your child to participate in this study.

Purpose of the research study:

The purpose of this study is to create a questionnaire to measure what helps or stops adults, children, and adolescents from doing things to benefit their health.

What your child will be asked to do in the study:

Your child will be asked to complete questionnaires about themselves and what makes it easier or makes it difficult for them to do things to benefit their health.

Time required:

30-45 minutes

Risks and Benefits:

We do not expect any risk to your child of participating in this study. However, your child may experience minor discomfort answering some of the questions on the questionnaires. We do not anticipate that your child will benefit directly by participating in this project.

Compensation:

Your child will be paid \$10 compensation for participating in this research.

Confidentiality:

Your child's identity will be kept confidential to the extent provided by law. The information we obtain will be assigned a code number. The list connecting your child's name to this code number will be kept in a locked file. Your child's name will not be used in any report about this research.

Voluntary participation:

Allowing your child to participate in this study is completely voluntary. There is no penalty for not allowing your child to participate.

Right to withdraw from the study:

You have the right to withdraw your child from the study at any time without consequence.

Whom to contact if you have questions about the study:

Carolyn Tucker, PhD,
Department of Psychology
University of Florida
(352)392-0601, ext. 260

Whom to contact about your rights as a research participant in the study:

UFIRB Office
Box 112250
University of Florida
Gainesville, FL 32611-22250
(352)392-0433

Agreement:

I have read the procedure described above. I voluntarily give consent for my child _____, to participate in the study titled, "Family Health Empowerment Project". I have received a copy of this description.

Primary Parent/
Guardian: _____

Date: _____

APPENDIX B
CHILD ASSENT SCRIPT

Assent Script

We are researchers from the University of Florida working on a study to determine how well a workshop is at helping families increase healthy behaviors such as exercising. We are inviting you to participate in this study by filling out some questionnaires and participating in a workshop with you parent/caregiver. You may complete your questionnaires in a separate room during the workshop and return them to the researchers or you may return your questionnaires in a separate envelope so that other family members will not view your responses. You can stop participating at any time. Do you agree to participate in this study?

APPENDIX C
DEMOGRAPHIC DATA QUESTIONNAIRE

**Family Health Self-Empowerment Project
Youth Information Questionnaire**

Directions: Please fill in the blanks and answer the questions in this questionnaire. For questions that have bubbles (○), completely fill in the bubble beside the response that you choose. Filled-in bubbles should look like this: ●

Please PRINT your name: _____ -

Please PRINT your address: _____

Home telephone: _____

Other telephone: _____

Do you consider yourself to be Hispanic/Latino?

- Yes
- No

What is your race? (Bubble-in all that apply)

(Note: Even if you consider yourself to be Hispanic/Latino, you may also consider yourself to be one or more of the following races.)

- American Indian or Alaska Native
- Asian American
- African American/Black
- Caucasian/White/European American
- Native Hawaiian or other Pacific Islander
- Other _____

Please write in your race if it is not listed

What is your sex?

- Female
- Male

What is your height? _____ feet and _____ inches

What is your weight? _____ pounds

What is your age? _____

When we mail you letters and other documents, what language would you like them to be written in?

- English
- Spanish

Are you on a special diet because of a health condition such as diabetes or high blood pressure?

- Yes
- No

Are you on a diet or trying to lose weight?

- Yes
- No

Thank you for helping us with this research!

APPENDIX D
CHILDREN'S COPING STRATEGIES CHECKLIST-R1

CCSC-R1

Directions: Sometimes people have problems or feel upset about things. When this happens, they may do different things to solve the problem or make themselves feel better. For each item below, choose the answer that BEST describes how often you usually did this to solve your problems or make yourself feel better during the past month. There are no right or wrong answers, just indicate how often YOU USUALLY did each thing in order to solve your problems or make yourself feel better during the past month.

	Never	Sometimes	Often	Most of the time
1. You thought about what you could do before you did something.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. You tried to notice or think about only the good things in your life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. You tried to ignore it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. You told people how you felt about the problem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. You tried to stay away from the problem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. You did something to make things better.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. You talked to someone who could help you figure out what to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. You told yourself that things would get better.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. You listened to music.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. You reminded yourself that you are better off than a lot of other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. You daydreamed that everything was okay.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. You went bicycle riding.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. You talked about your feelings to someone who really understood.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Never	Sometimes	Often	Most of the time
14. You told other people what you wanted them to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. You tried to put it out of your mind.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. You thought about what would happen before you decided what to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. You told yourself that it would be OK.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. You told other people what made you feel the way you did.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. You told yourself that you could handle this problem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. You went for a walk.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. You tried to stay away from things that made you feel upset.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. You told others how you would like to solve the problem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. You tried to make things better by changing what you did.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. You told yourself you have taken care of things like this before.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. You played sports.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. You thought about why it happened.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. You didn't think about it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. You let other people know how you felt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. You told yourself you could handle whatever happens.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. You told other people what you would like to happen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Never	Sometimes	Often	Most of the time
31. You told yourself that in the long run, things would work out for the best.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. You read a book or magazine.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. You imagined how you'd like things to be.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. You reminded yourself that you knew what to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. You thought about which things are best to do to handle the problem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36. You just forgot about it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. You told yourself that it would work itself out.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. You talked to someone who could help you solve the problem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. You went skateboard riding or roller skating.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40. You avoided the people who made you feel bad.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
41. You reminded yourself that overall things are pretty good for you.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42. You did something like video games or a hobby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43. You did something to solve the problem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44. You tried to understand it better by thinking more about it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45. You reminded yourself about all of the things you have going for you.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46. You wished that bad things wouldn't happen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
47. You thought about what you needed to know so you could solve the problem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Never	Sometimes	Often	Most of the Time
48. You avoided it by going to your room.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
49. You did something in order to get the most you could out of the situation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
50. You thought about what you could learn from the problem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
51. You wished that things were better.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
52. You watched TV.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
53. You did some exercise.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
54. You tried to figure out why things like this happen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

APPENDIX E
HEALTH PROMOTING LIFESTYLE PROFILE: EXERCISING CONSISTENTLY
SUBSCALE AND EATING A HEALTHY DIET SUBSCALE

Health Promoting Lifestyles Profile

This questionnaire contains statements about your present way of life or personal habits. Please respond to each item as accurately as possible and try not to skip any item. Indicate the frequency with which you engage in each behavior by filling in the appropriate circle.

		N	S	O	R
1.	Choose a diet low in fat, saturated fat, and cholesterol.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	Follow a planned exercise program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Limit use of sugars and food containing sugar (sweets).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	Exercise vigorously for 20 or more minutes at least three times a week (such as brisk walking, bicycling, aerobic dancing, using a stair climber)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	Eat 6-11 servings of bread, cereal, rice, and pasta each day.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	Take part in light to moderate physical activity (such as sustained walking 30-40 minutes five or more times a week).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	Eat 2-4 servings of fruit a day.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	Take part in leisure-time (recreational) physical activities (such as swimming, dancing, bicycling).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	Eat 3-5 servings of vegetable each day.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	Do stretching exercises at least 3 times per week.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.	Eat 2-3 servings of milk, yogurt, or cheese each day.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.	Get exercise during usual daily activities (such as walking during lunch, using stairs instead of elevators, parking car away from destination and walking).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	N	S	O	R
13. Eat only 2-3 servings from the meat, poultry, fish, dried beans, eggs, and nuts group each day.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Check my pulse rate when exercising.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Read labels to identify nutrients, fats, and sodium content in packaged food.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Reach my target heart rate when exercising.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Eat breakfast.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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BIOGRAPHICAL SKETCH

Sarah Nolan was born in New York, New York and grew up in the New York suburb of Maplewood, New Jersey. In 2001, Sarah graduated from Columbia High School and moved to North Carolina to pursue a Bachelor of Science in Psychology at Davidson College. While at Davidson, Sarah independently studied the cross-cultural interactions of racially diverse children.

In 2005, after graduating from Davidson, Sarah went on to Lynchburg College, in Virginia, to pursue a Master of Education in Community Counseling. While at Lynchburg, Sarah interned as a counselor at The Alliance for Families and Children, a United Way funded organization aimed at serving low-income families and children. Additionally, Sarah worked with a team of researchers in the counseling department on an intervention project aimed at helping young adults lose weight and maintain weight loss.

After graduating from Lynchburg in 2008, Sarah moved to Florida to pursue her Doctor of Philosophy in counseling psychology at the University of Florida. She is in her third year of the program and her research interests include health disparities among low-income minorities and other marginalized and oppressed groups. Sarah currently serves as a Director of Research on Dr. Carolyn Tucker's Health Psychology Research Team.