COPE: A Pilot Study with Urban Sixth Grade Youth to Improve Physical Activity and Mental Health Outcomes

Dissertation

Presented in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy in the Graduate School of the Ohio State University

By

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The Ohio State University
2015

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Abstract

Problem: The increasing prevalence of overweight/obesity, anxiety, and depressive symptoms and a lack of adaptive coping skills in pre-adolescents, especially in minority underserved youth, call for evidence-based interventions that can place youth on a positive trajectory of healthy lifestyle behaviors and improved health outcomes into adulthood. Poor mental and physical health outcomes impact minority youth from urban neighborhoods at a higher rate than youth overall. Furthermore, not only are obese children at greater risk for these co-morbid conditions, but onset is occurring at earlier ages, especially within minority populations.

Methods: A one group pre- and post-test study design with follow-up immediately after the intervention was used to assess the feasibility, acceptability, and preliminary effects of the COPE (Creating Opportunities for Personal Empowerment) Healthy Lifestyles TEEN (Thinking, Emotions, Exercise, and Nutrition) Program, a cognitive-behavioral skills building intervention that includes nutrition and physical activity, on the healthy lifestyles beliefs, physical activity and mental health of urban, primarily ethnic minority sixth graders. Thirty-one students, following assent/consent by their parent/legal guardian participated in the study.

Findings: Pre-adolescents who received COPE reported significant decreases in anxiety and increases in healthy lifestyle beliefs regarding managing negative emotions and having confidence in making healthier lifestyle choices. Furthermore, students who
participated in the study demonstrated significant increases in physical activity. Of the study participants, there were 6 students at baseline who answered two specific questions on the Beck Youth Depression Inventory indicating an increased risk for suicide. Following the intervention, four of these six students no longer reported increased risk for suicide utilizing the same instrument. A subgroup analysis was completed on participants who reported elevated anxiety (45% of sample), depression (26%), lower than average self-concept (26%), and 6 students (19%) who answered positively to suicidal ideation/hopelessness at baseline, before the intervention was delivered. This subgroup of anxious, depressed, or low self-concept pre-adolescents who received the COPE intervention demonstrated increases in self-concept and decreases in anxiety and depression to scores that were within the normal range. Further, four of the six students who reported suicidal ideation at baseline were not at suicide risk post-intervention.

Conclusions: The COPE program is a promising intervention that can improve healthy lifestyle beliefs, physical activity, and mental health outcomes. Providing COPE to all middle school inner-city youth could improve healthy lifestyle behaviors and mental health outcomes in a high risk population. A full scale randomized controlled trial is now warranted to determine the short- and long-term outcomes of the COPE program on healthy lifestyle behaviors, physical health, mental health, and academic performance.
Dedication

This dissertation is dedicated to my parents and grandparents who understand the power of education combined with high expectations and a positive spirit; and to my four daughters, Alexandria, Ashley, Ann, and Amy, who have made this journey with me, may you embrace gratitude, grace, gutsy, and love.
Acknowledgements

I am grateful for the positive support and guidance of my mentor and committee chair, Dr. Bernadette Mazurek Melnyk, Distinguished Dean and University Chief Wellness Officer, who inspires me with her grace and poise as a leader, integrity, and enthusiasm as a nursing scientist, and boundless energy and passion for life. Thank you, Dr. Melnyk, for the strength, stamina, and overall optimistic approach you bring to absolutely everything. It is indeed an honor to call you my mentor and friend and for instilling in me as a beginning nurse scientist, “In God we Trust, everyone else must bring data.” I would like to extend my gratitude and sincere thank you to Dr. Kimberly Arcoleo, advisor and guide; your professional leadership and balanced approach consistently sustain me through the tough times. Dr. Laureen Smith, thank you for the insight and sense of humor, your guidance has been instrumental as I develop into a nurse scientist. Thank you, Dr. Dawn Anderson-Butcher, for your wisdom and perspective, and your graciousness for inviting me in as a colleague to experience transdisciplinary science. Thank you to the Ohio State University College of Nursing Faculty for being an exemplar of professional nursing. I would also like to acknowledge Caitlin Slevin, your clarity and focus provided motivation and inspiration. To Kathy York and Jackie Hollins, thank you for your professional approach and beautiful demeanor while keeping me on course. Kari Crist and Colleen McGovern, thank you for your assistance, and willingness to jump in.
To my colleagues at CCS, for trusting and collaborating in the future of bright and beautiful pre-adolescents, I am grateful and humbled by your dedication and leadership.

Thank you to my peers and friends of the Ph.D. cohort 2010, for being a support when I needed it and challenging me to exceed my own expectations. A special thank you to Tammy Moore, for beginning and ending this journey with me, the consummate friend, there are no words.
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Chapter 1: Introduction

The increasing prevalence of overweight/obesity and lack of adaptive coping skills in pre-adolescents call for evidence-based interventions to propel youth onto a trajectory of healthy lifestyle behaviors and improved physical and mental health outcomes in adulthood. Physical and mental health are inextricably interconnected, and the increasing prevalence of two major health conditions, overweight/obesity and mental health issues, is the antecedent for an array of adverse health and academic outcomes in pre-adolescents. Currently, 34.2% of adolescents in the United States are overweight or obese and 39.5% of African American adolescents are overweight or obese predisposing them to an array of physical health morbidities and mental health problems, including depressive and anxiety disorders (Institute of Medicine [IOM], 2012; Ogden, Carroll, Kit, & Flegal, 2014). The prevalence of these adverse health outcomes is higher in minority youth from lower socioeconomic status families (Ogden, Carroll, Curtin, Lamb, & Flegal, 2010). According to the National Health and Nutrition Examination Surveys (NHANES) data from 1970 to 2002, Anderson and Butcher (2006) calculated that obesity was higher in minority and low income youth, with the greatest increase noted in African American children compared to children overall. Even with the high prevalence of these problems, few school-based health promotion intervention studies have been conducted to improve outcomes in this pre-adolescent age group.
Additionally, urban school districts operate in heavily populated areas serving significantly more students. Characteristically, urban school districts are identified by higher concentrations of poverty, greater ethnic and racial diversity, and higher rates of student mobility (Kincheloe, 2010). This pilot study tested the feasibility, acceptability, and preliminary efficacy of the COPE (Creating Opportunities for Personal Empowerment) Healthy Lifestyles TEEN (Thinking, Emotions, Exercise, and Nutrition) program on healthy lifestyle beliefs, physical health, and mental health of 31 urban pre-adolescents (i.e., youth between 11 and 13 years of age) in middle school. Findings from previous studies have indicated that the Cope Healthy Lifestyles TEEN program improves outcomes in high school teens and Appalachian adolescents, however, it is unknown if the program is efficacious with urban predominately minority pre-adolescents (Melnyk et al., 2007, Melnyk, Small et al., 2006, Hoying, Melnyk & Arcoleo, 2015). This pilot study aimed to fill this knowledge gap.

**Background and Significance**

**Obesity Impact**

The impact of obesity worldwide since 1980 has doubled for children aged 6-to-11 and tripled for adolescents aged 12-to-19 years (Healthy Youth Key Strategies, 2010) with greater than 40 million children being overweight in 2011 (World Health Organization, [WHO], 2013). Overweight/obesity is ranked as the fifth leading risk for global deaths. Childhood obesity is associated with a 70% increased prevalence of adult obesity, 61% increased risk factors for coronary artery disease in 5-to-10 year olds, and a 26% increased risk of having two or more risk factors of the disease in this age group along with premature death (Baker, Olsen, & Serenson, 2007; Franks et al., 2010;
Healthy Youth Key Strategies, 2010; Raghuveer, 2010; Reilly & Kelly, 2011; WHO, 2013. Obesity is especially elevated in high-income countries in North America and South-Western Europe (Janssen et al., 2005). Among 34 countries providing self-report data for youth 10-to-16 years old, the United States ranked second worst, with 25.1% classified as overweight (Janssen et al., 2005). In a recent study, Mocanu (2013) found similar findings with school-aged youth 6-to-10 years-old in Romania (n = 3,444). Obesity/overweight prevalence was found to be 24.6% among boys and 22.6% among girls. Romania’s obesogenic environment reflects that of the United States, with decreased physical activity (PA), increased sedentary behavior, and increased caloric-dense nutrient-poor diet choices (e.g., French fries and chips). Sugerman and Livingston (2013) compared 16 high-income countries using 2007 data, and identified that the United States ranked 15th out of 16 countries for the shortest life expectancies with the highest rate of obesity. Pervasiveness of overweight/obesity in U.S. pre-adolescents has risen dramatically with estimates of 17% identified as obese (gender and age-specific body mass index [BMI] at or above the 95th percentile) and 15% overweight (gender and age-specific BMI at or above the 85th percentile). This recent national survey data also estimated that 36% of 6-to-11 year-olds, and 34% of 12-to-19 year-olds were overweight (Ogden et al., 2014). Minority children have a disproportionately higher rate of overweight (BMI 85-to-94th percentile for gender and age) and obesity (BMI 95th percentile and above) based on 2011-2012 National Survey on Children’s Health data (Calzada & Anderson-Worts, 2009; Ogden et al., 2006) particularly African Americans (Abraham, Kazman, Zeno, & Deuster, 2013). Additional contributing characteristics for overweight/obese pre-adolescents with increased risk of adverse health outcomes are
Black or Hispanic race/ethnicity, socioeconomic status below the poverty level, and unsafe neighborhood environments (Larson, Russ, Crall, & Halfon, 2008).

In comparison to non-overweight/obese pre-adolescents, obesity in pre-adolescents and adolescents creates elevated ambulatory blood pressure, increased arterial wall thickness with increased left ventricular mass, all known precursors of obesity-related hypertension and atherosclerosis (Balakrishnan, 2014; I’Allemand-Jander, 2010; Stabouli, Kotsis, Papamichael, Constantopoulos, & Zakopoulos, 2005). The trajectory for adverse health outcomes among overweight/obese youth involving short and long-term complications in the pediatric age group include: hypercholesterolaemia, hypertension, type II diabetes mellitus (T2DM), dyslipidemia, increased asthma symptoms, chronic inflammation, increased blood clotting tendency, obstructive sleep apnea syndrome, musculoskeletal complications (such as slipped capital femoral epiphysis and flat feet), nonalcoholic steatohepatitis disease, increased risk of developing gallbladder disease, depression and anxiety, learning difficulties, behavioral problems, and premature death (Franks et al., 2010; I’Allemand-Jander, 2010; Juonala et al., 2011; Lloyd, Langley-Evans, & McMullen, 2010; Ma, Flanders, Ward, & Jemal, 2011). Cardiometabolic consequences (e.g., insulin resistance syndrome, elevated blood lipid levels, increased blood pressure, impaired glucose tolerance) while increased in obese and overweight youth have been diagnosed in African American children as young as five (Ebbeling, Pawlak, & Ludwig, 2002; Young-Hyman, Schlundt, Herman, DeLuca, & Counts, 2001). These metabolic disorders in juxtaposition with mental health symptomatology (e.g., elevated depressive symptoms, anxiety, decreased self-esteem, and quality of life) and poor level of academic achievement are associated with
overweight and obesity in children in increasing proportion (Bell et al., 2011; Janicke, Harman, Kelleher, & Zang, 2008; Ramaswamy, Mirochna, & Perlmutter, 2010; Sanderson, Patton, McKercher, Dwyer, & Venn, 2011; Whitlock, Williams, Gold, Smith, & Shipman, 2005). Furthermore, not only are obese children at greater risk for these co-morbid conditions, but onset is occurring at earlier ages, especially within minority populations’ (Ogden et al., 2010; Ogden, Carroll, Kit, & Flegal, 2012). Specifically, African American prevalence for obesity is disproportionately higher posing the greatest risk for health consequences at earlier ages than their counterparts (Abraham et al., 2013).

Ethnic/Racial Differences and Obesity

In a study of adolescents in NHANES 2007-2008, Wang (2011) found 34% of the sample was overweight (44% Hispanic, 40% African American, and 31% Caucasian). Conversely, in a separate study, Rosenbaum and colleagues, (2013) found higher rates of overweight/obesity (50% African American, 48.9% Hispanic, and 48.3% Caucasian) suggesting the pervasiveness of obesity is increasing or the predominance of obesity and its co-morbidities are higher in urban middle school agers (n = 994 middle school students from New York city when equated to more diverse populations found in NHANES. This is in contrast to Ogden and colleagues (2010) who reported obesity rates plateauing or slowing in ethnic groups in NHANES. Ogden, Carroll, Kit, and Flegal (2014) recently compared the NHANES data across five waves (2003-2004, 2005-2006, 2007-2008, 2009-2010, and 2011-2012) and found obesity rates remain high and no significant change in obesity rates in youth (ages 2-19) or adults have occurred contraindicating earlier findings (Ogden et al., 2010). Several studies have outlined physiological ethnic differences between Caucasian and African American female
adolescents. In a study conducted by Lee and Arslanian (2008), fat oxidation rates of African American girls was significantly different than Caucasian girls, however, the researchers did not find this difference between African American and Caucasian boys. These findings suggest that PA intervention singularly may have less of an impact among African American female adolescents and require a multi-interventional approach (White & Jago, 2012).

**Mental Health Impact**

Mental health issues of depression and anxiety in pre-adolescents interfere with adaptive coping at home and school with obese children having a greater risk of social and psychological problems, such as discrimination and poor self-esteem. One in four adolescents has a reported mental, behavioral, or social disorder and less than 25% of them receive required treatment (Merikangas et al., 2010; Stein, Zitner, & Jensen, 2006). Depression in adolescents between 13 and 18 years of age is estimated to be 5.6%, with a lifetime prevalence of 20% compared to children younger than 13 at 2.8%. Depression is more common in pre-adolescents and adolescents than in younger children, with a mean age onset for major depressive disorder of 14 years old and for persistent depressive disorder, a mean age of 8 years old (S. Williams, O’Connor, Eder, & Whitlock, 2009). There is a higher chance that the first episode of depression will occur in pre-adolescents based on a study of adults that found 38% had initial onset prior to age 18 (Zisook et al., 2007). Increased occurrence of depression exists for females (5.9%) compared to males (4.6%) and minority populations. Less than 25% of depressed youth receive a mental health evaluation and follow-up treatment accounting for approximately 7.5 million untreated teens (IOM, 2011). Depressed youth have a 5-fold increase in suicide attempts
compared to non-depressed adolescents (S. Williams et al., 2009). Utilizing adaptive coping skills in pre-adolescents for depression prevention and initial episode treatment is critical considering there is a 60-70% reoccurrence rate as adults and approximately 8% of adolescent-onset-depression youth become young adult suicide-completers (Kovacs, 1996; Lewinsohn, Rohde, Seeley, Klein, & Gotlib, 2000; Weissman et al., 1999).

There is a significant statistical association between pre-adolescent obesity and depression. Pre-adolescents with higher BMI are predisposed to depression and anxiety as well as lower self-esteem (Bell et al., 2011; Cornette, 2008; Janicke et al., 2008; Merikangas et al., 2010). In a cross-sectional study of 4,338, 13 year-olds, Petracci and Cavrini (2013) found a significant relationship between increased BMI and decreased body self-perception and health related quality of life (HRQOL). Increased body weight in pre-adolescents increases negative scrutiny and stereotyping from peers with obese youth being categorized as the least desired friends (Zametkin, Zoon, Klein, & Munson, 2004). Additionally, obese youth self-reported being less desirable companions (McCullough, Muldoon, & Dempster, 2009). Zeller, Reiter-Purtiil, and Ramey (2008) found obesity to be a leading childhood stigmatized public health issue with one-third of obese youth not having mutual peer relationships because of negative stereotyping and peer rejection. These youth suffer as victims of bias and the weight stigma impedes social, emotional, and academic progress (Puhl & Latner, 2007; Puhl, Peterson, & Luedicke, 2013). Young-Hyman and colleagues (2003) looked at “weight-based victimization” among African American (n = 117) 5-to-10 year olds and found that increased body weight was associated with peer teasing and it was the only psychosocial variable of significance that predicted low self-esteem. Obese children have higher poor
self-perception, lower self-esteem, increased negative body-image, and increased dissatisfaction with physical presence (Cornette, 2008; C. Schwartz et al., 2010). It is not startling then that overweight/obese pre-adolescents have higher prevalence rates of mental health issues, including psychiatric diagnoses of depression, anxiety, eating disorders, social withdrawal, and behavioral problems when compared to populations of children with chronic health issues or general population (C. Schwartz et al., 2010).

Factors Influencing Healthy Behaviors, Overweight/Obesity, and Mental Health in Pre-adolescents

Cumulative bio-psychosocial risk factors further contribute to the risk of adverse health outcomes of pre-adolescents with particular emphasis on obesity/overweight and mental health. Bio-social risk factors that influence increased BMI in youth include: (a) parental overweight, (b) parent lifestyle behaviors, (c) decreased PA, (d) increased sedentary time (e.g., television, video gaming, (e) increased portion sizes, (f) the built environment (physical design, patterns of land use, transport systems within the environment), (g) school policies (e.g., limiting time in physical education), and (h) demographics and environmental disparities (e.g., low socioeconomic neighborhoods where urban residents residing in higher poverty are exposed to more negative physical and social conditions; Collins, Warren, Neve, McCoy, & Stokes, 2007; Harris, Kuramoto, Schulzer, & Retallack, 2009; Jacobson & Melnyk, 2011; D. Steinberg, Sidora-Arcoleo, Serebrisky, & Feldman, 2012). Increasingly, more neighborhoods in the United States are economically segregated with evidence that low income minority disadvantaged neighborhoods contribute to collective effects of asthma, mental health issues, and obesity (Halfon, 2014). Psychosocial risk factors influencing the development of pre-
adolescent depression and other mental health disorders include: (a) parental depression, 
(b) chronic illness, (c) family mental health disorders, (d) family dysfunction, violence, or 
abuse, (e) a major negative life event such as trauma or losses, (f) life stressors, (g) poor 
self-esteem, (h) poor coping skills, (i) lack of social support, (j) substance abuse, (k) other 
psychopathology, and (l) co-morbid mental health issues (e.g., anxiety, as a co-morbid 
mental health risk factor; S. Williams et al., 2009; Yabiku et al., 2007). Youth with 
anxiety have a 10 to 30% increase in a dual diagnosis with depressive disorder (Angold, 
Costello, & Erkanli, 1999; Axelson & Birmaher, 2001). These important psychosocial 
issues often remain unaddressed (Larson et al., 2008).

Adelman and Taylor (2010) estimated that one out of two students from urban 
school districts have important learning, emotional, and/or mental health/behavioral 
problems (e.g., depressive/anxiety symptomatology). Furthermore, African American 
pre-adolescents experience increased health disparities within urban neighborhoods. As 
previously mentioned, African American youth experience higher BMI rates and physical 
health issues at a steeper increase and earlier onset-age than their peers. Given the 
complexity of weight-based victimization, social marginalization, and disadvantaged 
environments (Kumanyika and Grier, 2006; Sjoberg, Nilsson, & Leppert, 2005) the 
development of an evidence-based sustainable healthy lifestyle intervention integrating 
nutrition, PA, and mental health components for pre-adolescents is paramount.
School-Based Interventions

National policymakers have identified schools as promising environments for childhood obesity and health promotion interventions (Centers for Disease Control and Prevention [CDC], 2011; IOM, 2012; Story, Manney, & Schwartz, 2009). Pre-adolescents are in a unique environment influenced via global surroundings, and the circumstances of microenvironments placed upon them through their parents, caregivers, and themselves. Educational settings are essential to pre-adolescents’ everyday lives influencing social and physical environments more independent of parental direction. Schools have direct and indirect influence through role modeling, relationship-building, curricula, instructional methods, and policies regarding pre-adolescents’ health behaviors and obesity (Gauthier & Krajicek, 2013).

Although youth spend substantial time in learning environments, there has been a paucity of rigorously conducted health promotion intervention studies aimed at targeting both of these serious health conditions in middle-school pre-adolescents. Most school-based interventions with pre-adolescents in middle school have major limitations, including few studies with randomized controlled trial designs, lack of objective outcome measures, inadequate attention to intervention fidelity, non-manualized interventions that make reproducibility difficult, lack of theory-based interventions, and inability of the interventions to sustain positive outcomes (Branscum & Sharma, 2012; Brown & Summerbell, 2009; Cardoso da Silveira, De Aguiar Carrazedo Taddei, Guerra, & Cuce Nobre, 2013; Frenn, Malin, & Bansal, 2003; Harris et al., 2009; Johnston et al., 2013; Shaya, Gbarayor, & Wang, 2008).
Melnyk and colleagues (2013) conducted a randomized controlled trial with 779 high school adolescents using the COPE Healthy Lifestyles TEEN program versus an attention control program (Healthy Teens) to test the efficacy of the COPE program on healthy lifestyles behaviors, depression, and BMI immediately post-intervention, 6 and 12 months post-intervention. Secondary outcomes analyzed included academic performance, social skills, and drug and alcohol use. Significant findings post-intervention included increased PA ($p = 0.03$), lower BMI ($p = 0.01$), and higher average scores on all Social Skills Ratings System subscales ($p < 0.05$) in the COPE group compared to the Healthy Teens group. For the teens with extremely elevated depression scores at pre-intervention, the COPE teens had significantly lower depression scores post-intervention than the Healthy Teens group ($p = 0.02$). Alcohol use was lower in the COPE group ($p = 0.04$) compared to the Healthy Teens group, and COPE teens had higher health course grades than the Healthy Teens group. Six months post-intervention findings indicated that COPE teens versus Healthy Teens had a lower BMI and an overall decrease in the proportion of overweight. In addition, at six months post-intervention, there was a trend for COPE teens to report less alcohol use than the Healthy Teens group ($p = 0.06$). COPE teens had a significantly lower BMI at 12 months ($p = .001$) than Healthy Teens. There also was a significant decrease in the proportion of overweight and obese COPE teens from baseline to 12 months ($p = .02$) as compared to Healthy Teens. For teens who began the study with extremely elevated depressive symptoms, COPE teens had significantly lower depression at 12 months compared to Healthy Teens ($78, p = .03$; Melnyk et al., 2013).
Furthermore, the literature suggests inequalities exist between youth from lower socioeconomic environments versus higher socioeconomic environments. Greater inequality in household income is positively associated with overweight prevalence (Knai, Lobstein, Darmon, Rutter, & McKee, 2012). Pre-adolescents living in economically segregated communities and schools face multiple chronic stressors in daily living. The persistent relationship between low socioeconomic status and prevalence of mental and physical health issues can be seen as a source of adversity and a drain on the capacity to cope (Dubay & Lebrun, 2012). Negative mood regulation and maladaptive coping can occur through poor nutritional behavior and/or physical inactivity. Youth from lower socioeconomic environments have been found to be less engaged in PA and to have decreased nutritional quality (i.e., diet balance, adequacy, variety, and moderation) than their peers from higher socioeconomic backgrounds.

Studies reporting on PA findings in youth are inconsistent. In a recent study with 12-to-16 year-olds (n = 380) who were in the seventh through ninth grades, Shearer and colleagues (2012) found similar rates of PA in rural and suburban settings regardless of the neighborhood socioeconomic status (SES). In a review of the literature comparing youths’ built environments and PA levels, Sandercock, Angus, and Barton (2010) found most of the studies showed no difference among urban, rural, and suburban (when suburban was included), and if a difference existed youth from rural and suburban neighborhoods had higher PA levels than their peers from urban environments. Lower socioeconomic areas are less likely to have leisure-time PA venues (i.e., skating parks, recreation centers, trails) and developmentally pre-adolescents do not have the capacity to drive and may not be within walking distance of the venue.
Schools remain an ideal setting to provide evidence-based health promotion interventions to reduce overweight and obesity along with mental health problems in pre-adolescents. The research literature is not clear regarding exactly when the overweight/obesity that occurs in youth results in adult overweight/obesity. However, the CDC (2013) found that overweight/obese preschoolers were five times more likely to be overweight/obese adults as compared to their non-overweight/obese peers. Goldhaber-Fiebert, Rubinfeld, and Bhattacharya (2013) found that pre-adolescent and adolescent obesity is more predictive of adult obesity compared to younger children’s obesity creating urgency for obesity prevention strategies for late childhood and early adolescence. Increased research is needed to evaluate creative interventions that include behavioral theories with diet and/or PA interventions to prevent or reduce the prevalence of overweight and obesity among pre-adolescents (Agency for Healthcare Research and Quality [AHRQ], 2013). In a meta-analysis conducted by the AHRQ (2013) that examined obesity prevention studies, numerous differences (settings, designs, sample sizes, and characteristics) made it difficult to compare specific intervention approaches. Identified evidence gaps for future research strategies included designing interventions utilizing behavioral theories, identifying important subgroups by gender, age, race/ethnicity, and socioeconomic status to determine if the same interventions work across heterogeneous subgroups. In addition, because studies have found obesity in adolescents is more predictive of adulthood obesity than younger children identifying research studies for obesity prevention in pre-adolescents should be a high priority (Goldhaber-Fiebert et al., 2013).
In a recent Cochrane review of childhood obesity prevention research evaluating effectiveness of interventions on change in BMI (outcome), findings from 55 studies with youth 6-to-12 years overall yielded BMI reduction with individual interventions. Inexplicable heterogeneity, small study bias, and a broad range of interventions contributed to an inability in the analysis to determine which components contributed the most beneficial effects (Waters et al., 2013). The authors recommend extending future research via inserting the effective intervention elements within complex systems such as educational systems and focus on long-term sustainability. The interventions to prevent obesity are primarily categorized into diet modification/education, PA, sedentary activity, parental involvement, and cognitive behavior interventions (AHRQ, 2013; Doak, Visscher, Renders, & Seidell, 2006; Hoelscher, Kirk, Ritchie, Cunningham-Sabo, & Academy Positions Committee, 2013; Waters et al., 2013). Results suggest effective treatments within a variety of controlled research settings with limited analysis of subgroups within the sample population for gender, race/ethnicity, and age (AHRQ, 2013).

The integration of cognitive-behavior skills building (CBSB) based on Cognitive Behavior Theory (CBT) into healthy lifestyle programs in combination with nutrition and PA components has shown to be effective in adolescents (Melnyk et al., 2009; Melnyk et al., 2006; Melnyk et al., 2013). Findings from Melnyk and colleagues’ previous work, support the interconnection among the thinking-feeling-behaving triangle that is central to CBT and the COPE program (Kelly et al., 2011). In their recent study with over 400 participants, adolescents with elevated depressive and anxiety symptomatology had less healthy lifestyles beliefs and healthy lifestyle behaviors.
This study will focus on gaps in intervention science with pre-adolescents by testing the preliminary feasibility, acceptability, and short-term efficacy of a theory-based reproducible intervention (i.e., the COPE Healthy Lifestyles TEEN program), delivered in an urban middle school setting on the physical and mental health outcomes of disproportionately disparate sixth graders. Although the COPE Program has been found to improve healthy behaviors and health outcomes in high school teens and Appalachian early adolescents, it is not known whether the intervention is effective for urban minority sixth graders. The high prevalence of overweight/obesity and mental health problems disproportionately affect minority and low socioeconomic youth, calling for more health promotion intervention studies with this high-risk population (Wang & Beydoun, 2007).

**Specific Aims and Research Questions**

The primary purpose of this study was to determine the feasibility, acceptability, and preliminary effects of the COPE Healthy Lifestyles TEEN intervention, a theory-based reproducible program on the healthy lifestyle beliefs, physical activity, and mental health outcomes of 11-to-13 year-old primarily ethnic minority, urban pre-adolescents. The secondary aim was to assess the relationships among the study variables.

The first step in intervention research is a Phase I clinical trial that concentrates on testing the feasibility, acceptability, and safety of a new intervention with a small sample size in a new population (Whittmore & Grey, 2002). This study was a Phase I pilot study testing feasibility and acceptability (with a pre-adolescent population), and preliminary efficacy. Phase II (RCT with attention control group) and Phase III, a full-scale randomized clinical trial (RCT) are overall goals of future testing with this intervention. This study specifically asks the following questions:
Research question 1. What is the feasibility and acceptability of the 15-session COPE Healthy Lifestyles TEEN cognitive-behavioral skills building healthy lifestyles intervention with urban minority pre-adolescents who are in sixth grade?

Research question 2a. What is the preliminary efficacy of the COPE Healthy Lifestyles TEEN Program on healthy lifestyle beliefs, anxiety and depressive symptoms, self-concept, and PA in urban minority pre-adolescents?

Research question 2b. What is the preliminary efficacy of the COPE Healthy Lifestyles TEEN Program on anxiety and depressive symptoms, self-concept, and suicide risk in urban minority pre-adolescents with elevated depressive and anxiety symptoms, below average self-concept, and positive suicide risk at baseline?

Research question 3. What is the relationship among the study variables?

Theoretical Framework

Theoretical underpinnings are crucial to guiding meaningful research and providing logical congruence and integration of the framework, research questions, interpretative findings, and overall direction from a worldview perspective. Theory is “a creative and rigorous structuring of ideas that projects a tentative, purposeful, and systematic view of phenomena” (Chinn & Kramer, 2011, p. 185). Theory functions to organize science-specific knowledge and to extend the logical development of that knowledge. It can further identify the boundaries of a science, provide specialized language to place in context the generated ideas, and provide unification of the ideas regarding the phenomena of interest (Lasiuk & Ferguson, 2005).

Middle range theory guides intervention and testing on a specific health experience and patient population (Melnyk & Morrison-Beedy, 2012) and is evaluated on
internal criticism (adequacy, clarity, consistency, logical development, and level of
theory development) and external criticism (complexity, discrimination, reality
convergence, pragmatic, significance, and utility; Peterson & Bredow, 2013). Cognitive
Behavior Theory describes an intervention cluster that focuses on consistent essential
elements concentrating on the “importance of cognitive processes for emotion regulation”
(Hoffman, Asmundson, & Beck, 2013, p. 206). All CBT approaches contain the same
premise that cognition informs emotion and behavior, with intervention techniques
varying dependent on the intended disorder to be treated.

The theoretical framework guiding the research questions and planned
interventions for this pilot study is CBT (Alford & Beck, 1997; A. Beck, 1963, 1964,
1979) with supportive empirical evidence cited in peer-reviewed literature: (A. Beck,
1993; Klein, Jacobs, & Reinecke, 2007; Lewinsohn, Clarke, Hops, & Andrews, 1990;
McCarty & Weisz, 2007; Melnyk et al., 2009; Watanabe, Hunot, Omori, Churchill, &
Farukawa, 2007; S. Williams et al., 2009). The groundwork for CBT includes formative
works of cognitive and behavior theorists, primarily Aaron T. Beck (1967, 1976), Peter
Lewinsohn (Lewinsohn, Hops, Roberts, Seeley, & Andrews, 1993), Albert Ellis (1962;
1977), Albert Bandura’s Social Learning Theory (1977, 1982, 1986) and Martin
Seligman’s Theory of Learned Helplessness (1975, 1980). The context of CBT
emphasizes the importance of the self, social, and environmental elements that influence
cognition, learning, emotions, and behavior.

The origins of CBT identified by Aaron Beck and his colleagues in the 1960s
focused on depression and psychotherapeutic technique (A. Beck, Rush, Shaw, & Emery,
1979) and the refutation of psychoanalysis and behaviorism previously popular.
Behavior theorists conceptually acknowledge that depression/anxiety is the result of individual lack of achieving positive reinforcement due to an absence of skill in eliciting positive reinforcement and/or in effectively extinguishing negative reinforcement from others. Lewinsohn and Clarke (1990) contended that negative thought patterns are a result of a lack of positive reinforcement from pleasurable activities. Seligman (1975, 1980) suggested that distinct depressogenic and repeated adverse negative responses generalized to future deleterious individual perceptions of self-worth, performance, and overall expectations, known as learned helplessness. Ellis posited that individuals overreact emotionally based on inaccurate beliefs precipitated by antecedent events. Ellis and Dryden (2007) determined logical thinking and cognitive reconstruction could lead individuals to understand their illogical beliefs that precipitated the negative behavior and as such develop more logical cognitions. Cognitive Behavior Theory also has principles of Social Learning Theory (evolved to Social CT) put forth by Bandura (1977) who posits that observational learning (social modeling) of human behavior is determined by individual traits and social factors via self-regulation. Bandura (1986) maintained individuals possess the self-beliefs to enable them to have a sense of control over their thoughts, feelings, and actions. Pre-adolescent deficits in these social skills and recurrent negative life events lead to low rates of positive reinforcement.

The pedestal assumption in CBT is that how a person thinks and perceives a situation or event will interact with his or her feelings surrounding the situation and affect behavior (J. Beck, 2011; A. Beck, 2005). This is referred to as the thinking-feeling-behaving triangle within the conceptual model (see Figure 1; Melnyk et al., 2009; Melnyk, Schapiro, Sharp, & Taylor, 2006).
The CBT approach focuses on the present with interventions proactively reframing dysfunctional patterns of thinking to alleviate emotional distress (A. Beck et al., 1979). For this study, it is posited that a child’s self-concept and subsequent beliefs lead to feelings and behaviors that result in positive or negative behaviors paralleling direction of one’s cognitive thoughts and feelings. The emphasis of this model is on cognitive reappraisal and changing automatic negative thoughts and beliefs to positively affect emotional and behavioral change. Empirically supported intervention programs utilizing CBT have demonstrated efficacy in anxious and depressed adolescents and in overweight children (Lewinsohn et al., 1990; Lewinsohn, Rhode, Klein, & Seeley, 1999; Lusk & Melnyk, 2011; Stein, Zitner, & Jensen, 2006; Weersing & Brent, 2006; Whisman, 2008; S. Williams et al., 2009). By transforming negative thoughts into positive ones when antecedent or trigger events happen, it is possible to improve emotions and behaviors.

The thinking-feeling-behaving triangle establishes the framework for addressing these risk factors and for establishing CBSB constructs for youth (Whisman, 2008). Essential to the model are the incorporated empirical interventions published in a meta-analysis (Lewinsohn, Rohde, Klein, & Seely; 1999; McCarty & Weisz, 2007; Lusk & Melnyk, 2011, 2013). These 12 components include: (a) goal setting, (b) child psycho-education, (c) self-regulation/ monitoring, (d) relationship skills/social interaction, (e) communication training, (f) cognitive restructuring, (g) problem solving, (h) behavior activation, (i) relaxation techniques, (j) emotional regulation, (k) parent-psycho-education, and (l) improving the parent-child relationship (McCarty & Weisz, 2007).
The CBT view focuses on how one thinks about a situation or experience influences how he/she feels and behaves in that situation milieu. Gross’s (1998, 2002) emotion-generative process model has extended emotional regulation techniques. His model highlights evaluating emotional cues as either external (response-focused) or internal (antecedent-focused; Gross & John, 2003; Gross & Levenson, 1997) based on the time structure of when the individual employs emotional regulation. This is an important consideration when evaluating CBSB interventions.

Emotion-regulated strategies employed before a full emotional response has been activated are known as antecedent-focused. These interventions include cognitive reappraisal, attention deployment, and situation modification. Response-focused emotion-regulation strategies occur post emotion-induced response and examples include suppression and/or tolerance of the activated emotional response (Hoffman et al., 2013). Therefore, CBT utilizing CBSB healthy lifestyle interventions, may be key in decreasing depressive and anxiety symptoms, while improving positive mental representation and self-concept (Lusk & Melnyk, 2011). This framework supports the process through which the COPE Healthy Lifestyles TEEN program works through the mediating variable of healthy lifestyle beliefs to impact healthy lifestyle behaviors and mental health outcomes (see Figure 1).

The constructs, concepts, and measurement proposed for this research will be examined in this section. Innovation of nursing science is developed through the theoretical substruction process addressing consistency between theoretical and operational aspects of the study design and creating theory testing research (Bekhet & Zauszniewski, 2008). The substruction work of Gibbs (McQuiston & Campbell, 1997)
was highlighted in sociology and has since been cited numerous times in the field of nursing. This hierarchical model utilizes deductive analysis in examination of concepts and their underpinnings to create congruency in characteristics. Gibbs’ model of substruction paints broad strokes of abstract constructs into succinct tight strokes of concrete individual instrument measures and scores (referentials and referents respectively). The results reveal the fundamental pattern of the study and clarity between the framework and interrelationships found in Figure 2 (Wolf & Heinzer, 1999). Substruction provides a framework for identifying and critiquing the components of the research question regarding how does a CBSB intervention affect mental and physical health of pre-adolescents.

Figure 2. Theoretical substruction.

Cognitive Therapy is the “application of the cognitive model of a particular disorder with the use of a variety of techniques designed to modify the dysfunctional beliefs and faulty information processing characteristic of each disorder” (A. Beck, 1993,
This was the instrumental guidance for the COPE Healthy Lifestyles TEEN Intervention Program (A. Beck et al., 1979) and the fundamental premise for the intervention program that how a person thinks, affects his/her feelings and behaviors (J. Beck, 2011). This is depicted as the “thinking, feeling, behaving triangle” in Figure 1 (Melnyk et al., 2009; Melnyk, Small, et al., 2006). This organizing framework provides empirically-based concepts (Lewinsohn et al., 1990; McCarty & Weisz, 2007) for the COPE Healthy Lifestyles TEEN intervention.

Cognitive Behavior Theory-based interventions promote change by influencing the individual’s maladaptive automatic thinking and existing belief distortions. Not unlike Social CT and Social Learning Theory, CBT identifies compromises in cognitive skills and uses cognitive reappraisal to adjust maladaptive thinking and promote positive behavior change.

**Major Concepts and Constructs from the Model**

The COPE Healthy Lifestyles TEEN Program consists of the previously identified 12 concepts, enumerated in Table 1 and incorporated into 15 CBSB sessions framed as the COPE Healthy Lifestyles TEEN model.

**Summary**

In summary, CBT best informed and guided this research. Melnyk and colleagues (2006) found significant correlation between beliefs about healthy lifestyles, healthy attitudes, the ability to engage in a healthy lifestyle and healthy lifestyle choices in an adolescent sample. The teens’ perceived difficulty in leading a healthy lifestyle was decreased through strengthening their beliefs about leading a healthy lifestyle. Furthermore, Melnyk and colleagues, (2006) found stronger beliefs about the ability to
## Table 1

**Twelve Concepts Identified in COPE Healthy Lifestyles TEEN Model**

<table>
<thead>
<tr>
<th>Concept</th>
<th>Definition</th>
<th>Model assimilation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>Psychoeducation (teach specifically about depression and its treatment to pre-teen and parents, hope for change (expected positive response to treatment) and depression is treatable (the connection of depression to interpersonal events)</td>
<td>CBSB Parent newsletter</td>
</tr>
<tr>
<td>Acquisition and Psychoeducation</td>
<td>CBT (definition and how it works – ABC’s antecedent event, beliefs about the event, consequence of the belief and how you behave) = thinking, feeling, behaving triangle, what is stress, anxiety, nutrition, PA, and healthy lifestyle behaviors.</td>
<td>CBSB</td>
</tr>
<tr>
<td>Cognitive Restructuring</td>
<td>Identifying (catching) negative, distorted thoughts and asking self “What was I just thinking?” Consciously reducing negative thoughts (all or nothing thinking, catastrophizing, labeling, mind reading, should-of statements, ignoring evidence, and jumping to conclusions). Utilizing CBT classification of automatic negative thoughts by practicing positive reappraisal and thought changing techniques (Beck, 2011).</td>
<td>CBSB</td>
</tr>
<tr>
<td>Cue Recognition</td>
<td>Identifying the antecedent event signals and prompts that “trigger” the thinking, creating the feelings and subsequent behavior.</td>
<td>CBSB Self-monitoring logs</td>
</tr>
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<tr>
<th>Concept</th>
<th>Definition</th>
<th>Model assimilation</th>
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</thead>
<tbody>
<tr>
<td>Modeling</td>
<td>Exhibiting and practicing skills; such as staying in the moment, thought-stopping, and communicating with others in positive ways.</td>
<td>CBSB Trainer/parent providing self-disclosure of own experiences in view of assisting pre-teen to see human vulnerability and positive behavior</td>
</tr>
<tr>
<td></td>
<td>Therapeutic alliance between the trained professional delivering the intervention (e.g. teacher) and the pre-teen participant with goals of instilling hope for change, thought management, creating a cognitive connection, and behavioral participation.</td>
<td></td>
</tr>
<tr>
<td>Goal Setting</td>
<td>Pre-teen selected measureable goal achievement with focus on increasing competence in an area of life the pre-teen wants to see improvement.</td>
<td>CBSB Goal setting log (one step at a time)</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>Pre-teen uses CBT triangle to identify problems the pre-teen has selected to address using the 4-step process (what is the problem, what is the cause, possible solutions with consequences, what is the best solution, and evaluate the outcome with potential for second-best solution).</td>
<td>CBSB</td>
</tr>
<tr>
<td>Social Skills</td>
<td>Improving interpersonal behavior and relationships skills (smiling, eye contact, saying positive statements), assertiveness training, and social problem-solving skills.</td>
<td>CBSB</td>
</tr>
<tr>
<td>Communication</td>
<td>Identifying what is effective communication through active listening, body language, tone of voice, facial expression, physical closeness, word choice, and expressing positive/negative feelings using adaptive coping skills.</td>
<td>CBSB Practice “I” statements</td>
</tr>
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<tr>
<th>Concept</th>
<th>Definition</th>
<th>Model assimilation</th>
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<tbody>
<tr>
<td>Self-Monitoring</td>
<td>Repeated measurement of a target activity or mental state by the pre-teen. Pre-teen rates their mood for the week, connects their observations with the events that happened, and over time observe their patterns and the influence it has on the pre-teen’s mood and log-monitored responses.</td>
<td>CBSB Self-monitoring logs: positive self-statements, goals, barriers to reaching goals, how overcoming barriers, emotion for the week, activity log</td>
</tr>
<tr>
<td>Mood-Regulation</td>
<td>Positive way to gain control over stress and emotions, understanding that sadness, anxiety, fear, jealousy, anger are not unhealthy and are normal.</td>
<td>CBSB Guided imagery, positive thinking, positive self-talk, counting to 100, saying ABC’s, go for a walk, find a friend or adult who will listen/support you</td>
</tr>
<tr>
<td>Relaxation</td>
<td>Provides alternatives to stress and maladaptive coping such as physical or mental diversions (abdominal breathing, mental imagery, taking a walk, playing music).</td>
<td>CBSB</td>
</tr>
<tr>
<td>Behavioral Activation (+)</td>
<td>Identifying PA that elevates the pre-teen’s mood and associating the relationship between the activity and the mood. Increasing pleasurable activities with focus on PA that the teen likes and works to increase participation of the chosen activities (lack of positive reinforcement from pleasurable activities leads to negative thought patterns) (Lewinsohn et al., 1990).</td>
<td>Daily mood and activity logs 20 min. class PA</td>
</tr>
</tbody>
</table>
engage in healthy lifestyles were related to healthier lifestyle choices in a sample of overweight adolescents. In addition, a higher level of depressive/anxiety symptoms were related to tentative beliefs about the ability to engage in a healthy lifestyle. Moreover, the adolescents reported improved anxiety/depressive symptomatology and made healthier lifestyle choices when educational and CBSB interventions were combined.

Additionally, CBT serves as the underpinning of the CBSB COPE Healthy Lifestyles TEEN intervention and supports the recommendation for utilizing well-developed behavioral theories in research design (AHRQ, 2013). The theoretically-based cognitive intervention techniques remain central to the efficacy in healthy lifestyle beliefs, depressive/anxiety symptomatology, self-concept, and obesity-related PA improvement for pre-adolescents (Asarnow, Scott, & Mintz, 2002).
Chapter 2: Review of the Literature

Overview

Intervention research for overweight and obese pre-adolescents is important to elucidate efficacious treatment (increasing energy expenditure through increased PA and decreasing caloric intake) given the significant short-and-long-term physical and mental health consequences (Luttikhuis et al., 2009). In a previous systematic review by Summerbell and colleagues (2003) study limitations (small sample sizes, attrition, sampling problems, unreliable, and/or limited outcome measures) and the wide variety of interventions made validity and generalizability of intervention findings difficult.

Current literature reviewed evaluated a combination of lifestyle interventions such as PA, dietary, and behavioral therapy with similar issues as previously noted including wide variation of intervention designs, outcome measurements, and quality of the methodology (Bleisch, Segal, Wu, Wilson, & Wang, 2013; Luttikhuis et al., 2009). Behavioral therapy was not related to CBT but rather intervention to change thinking patterns of dietary intake, sedentary behaviors, PA, family’s food habits, the physical environment, or any combination of the above. A majority of the studies demonstrated a reduction of the adipose measurement from baseline to post-intervention but remaining unanswered are sustainability of the outcomes longitudinally and intervention efficacy for population scaling. A literature gap remains for pre-adolescent obesity prevention and effective intervention strategies. The approach of using multiple intervention
components versus single intervention make it difficult to discern significant independent effects or confounding interactions of the interventions. Limitations of context of the interventions (school-based) and intervention focus (developmental age of the youth) also reduce generalizability (Birch & Ventura, 2009). School-based interventions have been shown to be effective in reducing childhood obesity (Gonzalez-Suarez, Worley, Grimmer-Somers, & Dones, 2009) but the need remains for research to discern the most effective obesity prevention interventions based on theories and behavioral change that begins with feasibility and efficacy pilot research studies (Han, Lawlor, & Kimm, 2010).

The following section explores influences that may support pre-adolescent thinking-feeling-behaving adaptive or maladaptive responses in overweight/obese development, mental health, and disparate minority influence.

**Parental Influence**

Parental influence is an important consideration for pre-adolescents social and physical environment in guiding the child’s access to nutrition and activity or sedentary behaviors. Baumrind’s model depicts four parenting styles that define demandingness (extent of boundaries/limits) and responsiveness (extent of involvement/warmth). Authoritative style emphasizes warmth and involvement, democratic participation, and reasoning/induction (R. Johnson, Welk, Saint-Maurice, & Ihmels, 2012). Authoritarian outlines clear parental authority, unquestioning obedience, and punitive strategies for child alignment. Permissive style generally accepts child’s decisions, ignores misbehavior, and expresses tolerance. Uninvolved style is without warmth and lenient. Previous research that examined these typologies of parent’s influence on their children’s weight status, PA, and dietary behaviors found children (7-to-10 years old) raised in
authoritative homes had lower BMIs, ate healthier, and were more active compared to children raised in authoritarian, permissive/indulgent, or uninvolved/neglectful homes suggesting that general parenting styles has some impact on children’s weight-related outcomes (R. Johnson et al., 2012; Sleddens, Gerards, Thijs, & Kremers, 2011). Adolescents raised in authoritative homes transitioned to adulthood without an increase in their BMI trajectory as compared to adolescents raised with the other parenting styles (Fuemmeler et al., 2012).

**Urban Low-Income Family Influence**

In a study that examined the physical neighborhood, housing conditions, parents’ depressive symptomatology, parental effectiveness, discipline, and warmth, and children’s related internalizing and externalizing behaviors, Jocson and McLoyd (2015) found higher levels of neighborhood and housing chaos associated with higher levels of parental psychological anguish contributing to more harsh, more frequent and unpredictable discipline techniques and lesser parental warmth. The more frequent use of inconsistent harsh discipline was associated with higher levels of youth internalizing and externalizing behaviors three years later. They found these relational patterns were consistent for younger and older youth and not gender specific. Disordered milieus in low-income housing in urban areas has been described as dense and crowded, constant noise and turmoil, with discourtesies such as vacant and deteriorated buildings, graffiti, vandalism, violence, drug use, gangs, unsupervised youth, and higher exposure to environmental toxins and pollutants (Brooks-Gunn, Johnson, & Leventhal, 2010; Caughy et al., 2012).
Unique to the pre-adolescents’ environment is the exposure to circumstances that they minimally control. They have less degree of control over what they do and the environment they are immersed in and spend significant amounts of time at home and school. Generational home environment structure changes over the last 20-30 years have resulted in feeding practices being more random and less methodically structured. Previous structure of the current grandparent generation was more rigidly defined by traditionally prepared food shared together at specific times during the day. Current structure predominately consists of not eating together, eating at varying times and location, and food choices are more flexible with minimal preparation time (fast foods, microwaveable items, sports/energy drinks; Klime, 2009). Family connectedness and eating meals together have been found to positively affect psychological well-being and inversely impact depressive symptoms and unhealthy weight-control behaviors in adolescents (Epstein, Paluch, Beecher, & Roemmich, 2008; Neumark-Sztainer, Larson, Fulkerson, Eisenberg, & Story, 2010). Overall, parents contribute to social and physical context of food modeling in relation to food selection, allocation, and preferences/behaviors (Birch, 1998). Additionally, Birch and Ventura (2009) reported epidemiological research that has identified risk factors for childhood obesity to include demographics, PA behaviors, and eating behaviors. Demographics include; parental overweight status, obesogenic parental eating and activity patterns, high gestational weight gain, rapid infant growth, low income and education levels, and ethnicities of African American, Hispanic and American Indian descent. PA behavior factors comprise high levels of television watching and screen time, low levels of PA/sedentary behavior, and short sleep duration. Eating behaviors affecting childhood obesity involve formula
feeding versus breast feeding, early introduction of solid foods, low intakes of fruits/vegetables, high intakes of energy-dense foods, habitual consumption of “food away from home”, lack of portion control, frequent snacking, and parent’s child-feeding practices (pressure to clean their plate, or restrictive certain food practices). Biro and Wien (2010) underscored childhood obesity and adult morbidities as an engagement of the environment, genes, dietary intake, and PA. They suggest that the rapidly changing environment minimizes opportunity for energy expenditure and maximizes the opportunity for energy intake.

**Obesogenic Environment**

Defined as “instances where a child is placed into a situation, circumstance, or surrounding where there exists the opportunity to choose, engage in, or be influenced by internal (i.e., within the home) or external structures (i.e., outside the home) where the aggregate effects promote (or result in) an abnormal, or elevated, BMI percentile” (Gauthier & Krajicek, 2013, p. 205). Significant features of an obesogenic pediatric environment include a child’s exposure to a situation for possible abnormal weight gain to occur with internal factors (i.e., parental practices of food modeling for food selection, allocation, and/or food preferences, sedentary/non-sedentary activity, and child behaviors) and external factors (i.e., food availability, built environment, activity patterns, caregiver/teacher eating/feeding behaviors, and food practices) with consistent exposure over time (Gauthier & Krajicek, 2013) creating the right climate for weight gain to ensue. Residing in an obesogenic environment is a disproportionately greater risk among socially disadvantaged and/or minority populations (Casagrande, Whitt-Glover, Lancaster, Odomsyoung, & Gary, 2009; Lovasi, Hutson, Guerra, & Neckerman, 2009).
Gender

Cornette (2008) found emotional consequences (such as lower self-esteem, depression, and anxiety) of being overweight more prominent in girls than boys. A review of gender differences found increased stigmatization, teasing, bullying, and social marginalization, occurred more often for overweight girls than overweight boys in romantic and platonic relationships (Tang-Peronard & Heitmann, 2008). The prevalence of depression/anxiety is equivalent in boys and girls (Angold & Rutter, 1992; Costello et al., 2002) until adolescence, with a noted increase of the incidence of anxiety/depression in females to male’s 2:1 (Culbertson, 1997; Lewinsohn et al., 1993; Merikangas et al., 2010). The difference in male and female depression rates becomes apparent from 13-to-15 years of age (Hammen & Rudolph, 2003) with the disparity gap lasting through adulthood (Hankin & Abramson, 2001). Research that addresses the gender discrepancy supports an integrative approach incorporating biological, cognitive, nature, and interpersonal variables (Hankin, Wetter, & Cheely, 2008).

Social and Economic Impact

Socioeconomic factors contribute to pre-adolescent obesity, disability, and premature death in adulthood (WHO, 2013). Detrimental physical and mental health outcomes of pre-adolescents, specifically obesity and depressive and anxiety symptomatology, have significant health implications and related incurred medical costs with life longevity concerns (Au, 2012; Calzada & Anderson-Worts, 2009; Hering, Pritsker, Gonchar, & Pillar, 2009; Hughes, Kreger, Kushner, Pirani, & Surie, 2007; Janicke et al., 2010; Jurgen, Wolfenstetter, & Wenig, 2012; Ogden et al., 2012; Roberts, Freed, & McCarthy, 2010). The escalation pattern of United States prevalence rates for
youth obesity over the past 30 years has doubled in children (6-to-11 years old) from 5% in 1980 to 21% in 2012, and quadrupled in adolescents (12-to-19 years old) from 7% in 1980 to 18% during the same timeframe (Centers for Disease Control and Prevention [CDC], 2015. Continuing the concern over the ongoing epidemic by the medical and public health sectors with regard to noteworthy health repercussions.

Alarmingly, even if the current trend remains status quo presently the lifetime risk for developing T2DM for pre-adolescents born in 2000 is 30% for boys and 40% for girls (Narayan, Boyle, Thompson, Sorenson, & Williamson, 2003). Annual hospital-related costs for treating obese youth more than tripled in twenty years going from 35 million dollars in 1979 to greater than 127 million in 1997-1999 (Lytle, 2012) and in 2004 the direct and indirect health costs linked with obesity totaled $98 billion (Healthy Youth Key Strategies, 2010). The length of time being overweight in youth has been shown to be positively associated with medical cost (Au, 2012). Childhood physical and mental concerns distinctly impact adult health and economic status with mental health problems having a much larger impact on decreasing the domains of education obtained, numbers of weeks worked per year, individual earnings, and family income (Delaney & Smith, 2012).

Contemporaneously with negative health implications of overweight/obesity, poor mental health outcomes, and lack of adaptive coping, mounting health care costs and declining adult health; financial outcomes and life longevity is also implicated. Life expectancy at birth has leveled off and is expected to decline with the increase in prevalence of obesity and the life-shortening complications such as diabetes. The negative effect of obesity on longevity has been estimated to reduce length of life 5-to-20
years (Olshansky et al., 2005), with African Americans experiencing greater negative
effect than Caucasians (Abraham 2013; D. Williams, 2012). In the largest published
study to-date (a pooled analysis of 20 prospective studies that excluded persons who
smoked or had chronic diseases), Kitahara and colleagues (2014) found Class III (BMI ≥
40) obese adults had a 2.5 times higher mortality rate than their healthy-weight peers
accounting for 6.5 to 13.7 years lost.

**CBT and Minorities**

Cognitive Behavior Theory-based intervention offers strengths in applicability to
multicultural populations. Two of the key principles in the 12 empirically based
components of the intervention involve goal setting and problem solving techniques for
pre-adolescents developmentally appropriate while tailoring the process to their life
experience and situation. Additionally, the CBSB focuses the pre-adolescent on making
the type of unique positive change they feel will help them (Hays, 1995). The pre-
adolescent is viewed as the expert regarding their own thoughts, beliefs, and culture. The
cognitive restructuring focuses on here-and-now concrete factors versus abstract concepts
which aid in alleviating language barriers that may exist and omission of important
childhood development and cultural upbringing factors (Hays; 2009). The pre-
adolescent’s individual and cultural differences can be respected and incorporated rather
than invalidated (Hays, 1995).

C. Wilson and Cottone (2013) completed an extensive literature review of
cognitive behavior therapy explicitly with African American youth. The review on CBT
clinical work with African American youth followed the previous literature review by
Hays (1995) on this research topic. The review from 1995 to 2011 found four research
studies with African American children, seven with African American male and female adolescents, and four with African American male adolescents. These studies occurred in primary care settings with small sample sizes and sample biasing towards males. Bryant and Harder (2008) identified that there is a paucity of research utilizing CBT and diverse populations (i.e., African American youth) with little evaluation of the ethnic/cultural factors on CBT implementation (I. Schwartz, Radcliffe, & Barakat, 2007). G. Ginsburg and Drake (2002) found the results of implementing a manual-based CBT intervention in an urban school setting with African American adolescents comparable to similar studies conducted with Caucasian youth. Post-intervention, the adolescents’ \( n = 12 \) anxiety symptoms were reduced so that they no longer met criteria for the primary anxiety disorder. Youth living in a socioeconomic disadvantaged environment of low-income, urban, and violent communities may have increased susceptibility to anxiety development (G. Ginsburg & Drake, 2002) in conjunction with increased risk of obesity.

Interventions that are culturally relevant can improve retention of information and knowledge (C. Wilson & Cottone, 2013). I. Schwartz and colleagues (2007) found recognizing pre-adolescents’ perceived barriers during the recruitment process can aid in enrollment and developing strategies to engage the youth in the intervention can support retention and decrease attrition (i.e., integrating culturally sensitive family structural support such as a case study with a pre-adolescent living in a matriarchal family structure). Overall, I. Schwartz and colleagues (2007) identify 10 culturally relevant elements to consider for intervention research with African Americans. These include “need for family-based intervention, emphasis on empowerment, recognition of stress related to ethnic minority status, identification of stress related to SES, inclusion of
culturally sensitive content, awareness of stigma attached to mental health problems, possible mistrust of research, provision of community or home-based intervention, flexibility in scheduling, and ongoing training in cultural sensitivity with the research team” (I. Schwartz et al., 2007, p. 274). The proposed pilot will incorporate the culturally relevant elements into the intervention and recruitment process. Examples will be used to further reinforce the key concepts of CBT and to be culturally sensitive during the recruitment process.

**Cultural and Environmental Influences**

Cultural consideration is an important aspect in ameliorating an established intervention to be culturally relevant for feasibility and acceptability with multicultural populations. Hays (2009) identified 10 factors for cultural competent interventions/treatments known as the ADDRESSING framework (Age, Developmental disability, Disabilities acquired later in life, Religion and spiritual orientation, Ethnic and racial identity, Socioeconomic status, Sexual orientation, Indigenous heritage, National origin, and Gender). This framework focuses on first establishing commonalities to strengthen the researcher and participant relationship prior to differences in lived experiences.

Within the confines of culture and environment the components to be expanded upon for the purpose of this research proposal are: spiritual orientation, ethnic and racial identity, and socioeconomic status. Sue and Sue (2013) appropriately identified that it is impossible to not inherit predecessors’ biases and stereotypes and the universal general assumption is the dominant social group’s cultural norms are the standard. Ethno-racial identity differences exists with the culture majority holding the power to ascertain what is considered normative behavior (Greene; n.d.). The researcher needs to exert care not to
influence one’s values onto the participants and encourage a partnership-relationship where both parties can learn and grow. United States African Americans experience higher poverty rates, higher unemployment rates, lower socioeconomic status, and more limited access to health care resources than their Caucasian peers (Sue & Sue, 2013). It is imperative to understand the distinguishing viewpoints of Euro-American/Western culture and African American culture with regard to family structure, spirituality, effects of discrimination, communication differences, the importance of one’s role in society, concept of time, and economic disparity. The African American family structure varies from the “typical” nuclear configuration, often matriarchal in design and includes an extended familial network of grandparents, aunts, uncles, and close family friends. The “it takes a village” approach is utilized in children’s upbringing with community and extended family involvement (Rowles & Changming, 2012).

Spirituality is important in African American culture and generally includes active church membership and attendance. Church members enlarge the family’s social network and provide additional support. Rowles and Changming (2012) found African Americans remain resilient in the face of challenges utilizing active coping such as spirituality, ethnic pride, and racial socialization. Sue and Sue (2013) point to empirical evidence suggesting youth of lower socioeconomic status who regularly attend church exhibit fewer problems. As the non-dominant culture, African Americans experiencing racism may internalize subtle or overt acts of racism with presenting emotions such as anger, paranoia, anxiety, helplessness-hopelessness, frustration, resentment, and/or fear (R. Clark, Anderson, Clark, & Williams, 1999).
Perhaps as a result of ongoing racism and discrimination African Americans in general are very adept at interpreting nonverbal behavior. Therefore, in communication with urban pre-adolescents, the ability to be genuine and understand their communication style and preference is important to prevent subconscious misinterpretations such as increased anxiety, leaning away from the youth, or crossing arms in response to a high-key, animated, and more confrontational style of an African American adolescent male (Sue & Sue, 2013). In the same way, mindfulness should be exercised when observing initial African American youth displaying guardedness or distrust nonverbal communication in order to not misunderstand previous racist experiences or difference in communication styles.

In general, communication style differences exist between Caucasians and African Americans. Caucasians tend to speak loud and fast, look at the speaker when listening, utilize non-verbal markers to demonstrate that one is listening, are quick to respond, and uses an objective and task-oriented manner of speaking. Whereas, African Americans tend to speak with emotional impact, looks less at the speaker when listening but more at the person when actively speaking, interrupt, takes turns, quicker to respond than their Caucasian peers, and are more affective, show more emotion, and utilize a more pronounced interpersonal manner of speaking (Sue & Sue, 2013). These differences are important for the researcher to understand African American pre-adolescents’ mannerisms, verbal and non-verbal communication style to avoid misinterpretations, covert discriminatory conclusions, and to effectively seek clarification.
Differences also exist between the two cultures’ societal roles that individual members assume. Caucasians in general support the role of individualism as a positive attribute, whereas African Americans value sociocentrism and define themselves through interdependence with relationships that are core to their sense of self (Randall, 1994). African American pre-adolescents developmentally experiencing growth in social development and engaged in the problem solving/goal setting of the COPE intervention may question how their decisions will affect their family or other relationships. This differing context from Caucasian values might view the interdependence as passive or lacking a sense of self and unable to make independent decisions. In Euro-American tradition, the concept of time has a future orientation and punctuality is valued, however, many cultures including African American traditional culture view time more fluid with a present to past mindset. All events begin in the present and then shift to the past (Randall, 1994). Acculturation to a more Western viewpoint of time and the importance of future planning has generally occurred, however those of lower socioeconomic position view time as an additional resource and may hold different priorities in how time is utilized. Class attendance and homework completion may not have the same priority as family events occurring simultaneously. Maintaining a flexible schedule and allowing for liberty with homework assignments to be completed over a period of time rather than in a prescribed time supports the culture difference of time. For example, the self-reflection logs in the COPE intervention may be best completed over an evening of reflection rather than during classroom time.

Modifications in the COPE CBSB intervention may be necessary for the pre-adolescents’ who live “in the present” to prevent anxiety over a full week of future-
oriented planned homework versus focusing on one task at a time to be completed. Further modifications may include encouraging family togetherness with meal planning, church activities, or discussion of the parent newsletter with the entire family versus one parent, and finding ways to increase ethnic tradition and pride such as traditional ethnic dance during the PA segment of the session (Boyd-Franklin, 2010). Showing emotion and offering pragmatic assistance for immediate needs, and personalizing the approach will solidify relationships and trust with African American pre-adolescents (Sue & Sue, 2013). This approach accentuates the value of interpersonal relationships held by African American youth. Appreciating cultural differences and influences of child upbringing and development provide an understanding of challenges African American youth face, as well as their potential strengths.

The last component to be explored is the socioeconomic impact on urban youth. Researchers have found strong links between socioeconomic disadvantage and obesity (Reidpath, Burns, Garrard, Mahoney, & Townsend, 2002) and obesity-related health issues in ethnic minority middle school age youth are well documented (S. Johnson et al., 2007; McCarthy et al., 2008). Youth of low-income neighborhoods’ have increased obesity rates and understanding the factors that contribute to obesity in minority youth should guide culturally appropriate interventions (Stevens, 2010).

Contributing factors include consumption of micronutrient-poor diets (high-fat, high-sugar high-salt, energy-dense) due to limited availability of fruits and vegetables locally, variety stores controlling higher pricing for limited healthy foods, and poorer-neighborhoods contain 2.5 times the fast-food chains (Reidpath et al., 2002). Coupled with limited PA (lack of safe play areas and limited access to participate in organized
PA) predispose youth to obesogenic environments. In addition urban-based schools may lack resources to provide health education, nutritious meals, and suitable exercise (Kumanyika & Grier, 2006).

International studies have found healthy body weights are not supported socially or physically in poorer neighborhood environments as compared to more affluent neighborhoods (C. Schwartz et al., 2010). Singh, Kogan, Van Dyck, and Siahpush (2008) examined independent and joint relationships among several socioeconomic, behavioral, and demographic characteristics and obesity prevalence with children aged 10-to-17 ($n = 47,000$) in the United States. Independent associations with higher obesity prevalence was found with ethnic minority status, non-metropolitan residence, lower socioeconomic status and social capital, higher television viewing, and higher physical inactivity. They found African American children had a 2.3 times higher odds of being obese than non-Hispanic White children and for those children below the poverty threshold a 2.8 times higher odds of being obese than their wealthy counterparts. Singh and colleagues (2008) further established obesity prevalence was significantly higher among children from single-parent and non-English speaking homes.

Children who watched greater than three hours of television a day compared to their peers who watched less than one hour also exhibited a higher obesity prevalence. Among the youth who watched greater than three hours a day, African American youth exhibited the highest odds (2.5 times more likely) of obesity prevalence compared to youth who watched less than one hour a day. Children below the poverty line with sedentary lifestyles had a 3.7 times higher odds of obesity than their affluent active peers. Youth who exercised five or more times a week compared to children who did not
exercise at all had a 62% higher odds of obesity and those who did not participate in sports had a 28% higher odds of obesity than children who did participate. Increased obesity prevalence was noted for African American and Hispanic children with socioeconomic disadvantage.

**Physical Activity**

In recent national data, it was reported that approximately only one in four 12-to-15 year olds in the United States participate in moderate-to-vigorous physical activity (MVPA) for at least 60 minutes every day (current federal PA guidelines) and 64% of high school students do not meet this requirement (Healthy Youth Key Strategies, 2010). In 2013, the Centers for Disease Control reported that only 27% of high school students met the requirement of 60 minutes of PA every day. Further findings suggest that as weight status increases the percentage of adolescents physically active for at least 60 minutes daily decreases (significant difference for males with a similar pattern observed for females however not statistically significant). MVPA includes the summary of all PA that increased the teens’ heart rate and made them breathe hard some of the time excluding school-based activity such as physical education (PE). The association between PA/inactivity and obesity is complex with conflicting research on causality. Some studies suggest that physical inactivity occurs as a result of obesity (Metcalf et al., 2011). Other studies cite physical inactivity as an important factor in the rising prevalence of obesity (Abraham et al., 2013; Ekelund et al., 2012; Wareham, Van Sluijs, & Ekelund, 2005). Studies have suggested that sedentary time, particularly television viewing, is associated with adiposity and adverse cardiometabolic risk profiles in pre-adolescents (Sardinha, Anderson, & Anderson, 2008; Steele, Van Sluijs, Cassidy,
Griffith, & Ekelund, 2009). Lower energy expending PA (e.g., video games and television viewing) has replaced higher energy expending PA (e.g., swimming, running, and brisk walking). In a recent study, Fakhouri, Brody, Kit, and Ogden (2013) found less than 40% of school-aged children simultaneously met current federal guidelines for MVPA of at least 60 minutes daily and screen-time recommendations of less than two hours daily (Expert Panel on Integrated Pediatric Guideline for Cardiovascular Health and Risk Reduction, 2012; Strasburger, 2011). Recent estimates suggest that 50-92% of youth overall do not meet the national guidelines for regular PA and PA deteriorates by 50% from elementary to middle school years (Nader, Bradley, Houts, McRitchie, & O’Brian, 2008; Troiano et al., 2008; U.S. Department of Health and Human Services, 2008).

International and national experts agree that pre-adolescents should accumulate at least 60 minutes of aerobic MVPA daily with vigorous-intensity (running, swimming) occurring at least three times a week compared to moderate-intensity (brisk walking, bicycling; (Australian Government Department of Health and Ageing, 2011a, 2011b; Canadian Society for Exercise Physiology, 2011; CDC, 2011; Department of Health, 2011; U.S. Department of Health and Human Services, 2008; WHO, 2013). Lack of PA is a major contributor to the rapid rise in obesity among the African American population (Abraham et al., 2013). In addition, a decrease in PA is noted during adolescence in females, with African American females exhibiting a greater decline than Caucasian female. Kimm and colleagues (2002) prospectively studied 9-10 year old girls ($n = 1,213$ African American pre-adolescents and $n = 1,166$ Caucasian pre-adolescents) over a three year period. Notably the median activity scores declined from 27.3 for African American
girls to zero (100% decline) and from 30.8 to 11.0 for Caucasian girls (64% decline) at age 18-to-19 years old. Statistically significant results for both races with higher BMIs associated with greater decline of PA among both groups ($p < 0.5$). African American girls demonstrated the greatest decline. Additional studies have found puberty is significantly associated with lower PA intent and as body fat accumulates PA declines, most notably in girls (Cumming et al., 2011; Lown & Braunshweig, 2008). This is a potential influential factor in development as African American females attain puberty prior to their Caucasian peers.

Health beliefs regarding the outcome of PA (i.e., to stay in shape), self-efficacy about PA (i.e., self-confidence about the pre-adolescents’ ability to participate in PA) and social support (i.e., parents and peers) for PA was associated with higher PA intent among low-income, overweight African American girls ($n = 72$) in grades three through eight. A prior study with fifth-grade boys and girls reported similar findings of positive correlation with social support, health beliefs, and self-efficacy for PA and greater intention for PA (Saunders, Pate, & Felton, 1999). Similarly, O’Haver, Jacobson, Kelly, and Melnyk (2014) found in a descriptive study with ethnically diverse, low income urban fifth and sixth graders, that children with higher BMIs reported difficulty living a healthy lifestyle and did not believe they could engage in healthy lifestyle behaviors which included PA. The previous study findings suggest improving self-efficacy for PA may improve the overall level and consistency of PA especially for African American pre-adolescents.
Exercise and Minorities

Previously cited research studies suggest that being overweight, eating not healthfully, or being physically inactive increases risk for cardiovascular disease and cancers, specifically breast and colon. Minorities suffer disproportionately from overweight/obesity compared to White Americans, with 70% of African American adults overweight (American Obesity Association, 2005; Dallal et al., 2007). African Americans are less likely to engage in healthy levels of PA and more likely to experience a higher incidence of some cancers and higher related mortality rates in adults. African American children and adolescents experience lower incidence of cancer rates than their Caucasian peers, however; they have higher mortality rates compared to Hispanic and Caucasian youth (Jemal, Siegel, Xu, & Ward, 2010; Ward, DeSantis, Robbins, Kohler, & Jermal, 2014).

Limited availability to access of safe PA options and reduced family support generates higher levels of obesity in minority and low-income youth (D. Wilson et al., 2011). Van Duyn et al. (2007) conducted focus groups with ethnic minorities including low-income African American men and women, with feedback on the benefits of engaging in PA, proposed evidence-based strategies for increasing the community PA level, and benefits/barriers following a proposed intervention of increasing PA. The African Americans interviewed considered PA part of the community culture and a “way of life” but the convenience of cars, less manual jobs, and concern over neighborhood safety made sustaining PA at healthful levels difficult. The most popular strategies supported improving social support and increasing access to PA venues. The individuals preferred group activity over individual activity, culturally relevant, purposeful, and
hands on (e.g., walking children to school, the market or church), and an activity that was doable by persons regardless of fitness level. Further, the study cited essential engagement and involvement from family and friends dually important. Identified barriers were not culturally relevant but rather common to all underserved people such as lack of time and transportation, access to the PA venue, neighborhood safety, and/or economic resources.

**Sedentary Behavior and Minorities**

Previous studies have reported that PA decreases from childhood to adolescence, specifically in African American females (Lown & Braunschweig, 2008; Sallis, Alcaraz, McKenzie, & Hovell, 1999). Kimm and colleagues (2002) found this same PA decreasing pattern especially salient among African American girls who experienced two times greater PA decline than their Caucasian peers. Longitudinally, over 8 years Kimm and colleagues reported that by age 16 or 17, 56% of the African American female sample had no routine daily activity. Underlying reasons for the decline in PA vary with some studies linking physical, emotional, and behavioral changes during sexual maturation (puberty) as a factor (Brodersen, Steptoe, Phil, Williamson, & Wardle, 2005). Other studies support psychosocial influences such as social support for PA, health beliefs in regards to the health outcome, and self-efficacy for PA as potential influences on the intention for and level of PA (Melnyk et al., 2013; Melnyk et al., 2009; Sallis, Prochaska, & Taylor, 2000). For the purpose of this study and instruments chosen for measurement the predominant focus will be on health beliefs in regards to outcome and self-efficacy.
Pre-adolescent Cognitive Development

Pre-adolescence is characterized by pubertal development with physical, hormonal, emotional, and behavioral change and rapid growth. Rapid development in problem solving, deductive reasoning, logic and awareness and acceptance of others’ perspective occurs during the years of 7-to-12. The concrete operational stage of cognitive development occurs at approximately 7-to-11 years of age according to Piaget (1972) and follows preoperational stage with an emphasis on logic development about objects and events, with increasing classification skills of objects by number, mass, and weight.

Pre-adolescence is characterized by an ability to distinguish between thoughts of self and others. Further delineation occurs with the child’s recognition that their thoughts and perceptions may be different than those of others (H. Ginsburg & Opper, 1976). School-age dimensions of cognitive development expansions include language, memory, reasoning, and learning. Internal and external environments’ of the child impede or promote the child’s evolving cognition (Piaget, 1973).

More recently, Piagetian stage theory has been challenged on several fronts, suggesting that development does not occur linear and sequentially-clean in stage development and that the “domain general” idea of Piaget theory (cognitive maturation occurs simultaneously across the various domains of knowledge such as mathematics, logic, and language) does not occur concurrently across domains but rather specific tasks and content within each domain (“domain specificity”) such as arithmetic, social interactions, and music. Studies have shown that children appear to advance and plateau with unevenness across skills. Further studies demonstrate when given appropriate...
context children may be able to learn concepts with comparative effortlessness that were previously assumed to be learned at more advanced stages (Case, 1985; Fischer, 1980; Wood, Smith, & Grossniklaus, 2001).

Revolutionary neo-Piagetian theorists Demetriou, Case, Halford, Fischer, and Pascual-Leone proposed incorporating the strength of Piaget’s theory minus domain-general assumptions in combination with cognitive and differential theories of cognitive organization and development into an amalgamated whole (Demetriou, Shayer, & Efklides, 1992) Skill Theory (ST). The aim of this integration was to explain the underlying premise of the evolving cognitive factors as abstract depictions of the skill structures accompanied by a set of transformation rules correlating the structures to each other. Increased working memory capacity and improved mental processing efficiency as the child develops is the basis for advancement along Piaget’s stages of development (Demetriou, 1988). These theorists advanced the thinking of Piaget’s domain-general to emphasizing a domain-specific cognitive development of skill complexity, that progresses sequentially from one level of complexity to the next and occurs sequentially as the child learns skill development of sensory-motor, representational and abstract skills. The mental cognition produced by these transformations creates continuous behavioral changes derived from hierarchical thought (representation and abstract). Succinctly stated, between thought and action there is no delineation (Fischer, 1980).

Skill Theory is distinctly different from Piaget as skill development occurs through levels not stages, is continuous and occurs via gradual versus sudden leaps in development, and finally that skill development is never at the same level for all skills. ST explains and predicts cognitive development from birth to early adulthood (Fischer,
1980) and at each level skill building depends on the individual working on the environment. The ST’s framework in learning and problem solving with behavioral changes is an evaluation of the developmental integration of cognitive, language, and perceptual-motor skills. According to Demetriou, Spanoudis, & Moiyi, (2011) the pre-adolescent obtains a major milestone with the ability to construct conditional representations, i.e., to view different points of view from another’s perspective. Previous use of logical necessity was used to evaluate internal consistency within one concept but now it can be expanded to evaluate the relationships across varying concepts.

The pre-adolescent is able to consider representations that appear to not be empirically congruent or counterintuitive to logical associations already held. Pre-adolescent thinking transitions from structural and descriptive to hypothetical and perceptive (Demetriou et al., 2011) which posits the pre-adolescent’s cognitive status is proficient to perform necessary cognitive reappraisal and reformatting negative thoughts. This is inherently important in consideration of the CBSB intervention. Essential to this mental expansion is the refined thinking processes of self-regulation, self-monitoring, and self-recording required and the process of multiple independent domains of thought (Demetriou & Bakracevic, 2009; Demetriou, Mouyi, & Spanoudis, 2010. The emotional regulation system according to Gross (2002) is utilized by adolescents and adults in the form of two strategies identified as cognitive reappraisal and suppression. In the process of emotional regulation development cognitive reappraisal occurs when the pre-adolescent attends to a situation that produces (triggers) an emotion, which is then processed cognitively and meaning is assigned to the experience.
In the COPE CBSB program this is identified as the ABC’s. An antecedent event triggers the emotion, the Belief that follows has been processed cognitively with the resulting behavior the Consequence (or meaning assigned) to the belief. Gross (2002) contended that pre-adolescents are capable of cognitively reappraising how they think about a situation and consciously regulate the emotional impact contending the COPE Healthy Lifestyles TEEN intervention is suitable for pre-adolescents. Physiological, experiential, and behavioral responses occur because of the personal meaning assigned to the experience or situation. Suppression is used as a strategy in the situation when the person deems the emotional expression is not acceptable in the given context.

The pre-adolescent, 8-to-12 years old, signifies a period of substantial social growth recognized psychologically in terms of identity, self-consciousness, and relationships with others. Pre-adolescents versus younger children are more sociable, develop more complex and hierarchical peer relationships, and have increasing sensitivity to peer acceptance and rejection (L. Steinberg & Morris, 2001). Pre-adolescence is prime time for accelerated brain growth in social cognition and self-awareness due to the interaction of influences in the social environment, puberty hormone changes, documented brain development changes in functional and structural components and social cognition enhancement (Blakemore, 2012). Based on recent research findings that pre-adolescents and adolescents brain expansion and growth is occurring in specifically identified areas Blakemore (2012) suggested educational efforts focus on youth abilities in internal control, self-awareness, and cognitive skills (among others).
Developmental Considerations

The Piagetian view distinguishes between preoperational youth (two-to-seven years old), concrete operational youth (7-to-12), and formal operational youth (12 or more years) contingent on the quality of thinking about various concepts and offers structure upon which the developmental appropriateness of the cognitive interventions can be assessed (Grave & Blissett, 2004). Previous research suggests that younger children are less developed in reasoning ability, causal reasoning, perspective taking, metacognition, attention span, and working memory capacity necessary for cognitive intervention engagement (Grave & Blissett, 2004; Southam-Gerow & Kendall, 2000; Stallard, 2002). There is evidence to suggest that the level of cognitive development is significant in the efficacy of CBT, and effectiveness in younger children can be established in the operational and preoperational stages of cognitive development if the intervention is developmentally appropriate (Grave & Blissett, 2004). Methods for adapting the CBSB for youth aged 11-to-12 include the use of simpler, less verbally based cognitive restructuring techniques, concrete examples (e.g., visual displays), frequent summaries and reviews (e.g., at the beginning and end of each session), metaphors, experiential learning, and frequent practice such as homework assignments (Grave & Blissett, 2004; Weersing & Brent, 2006). In a study with 9-to-13 year old pre-adolescent females, Stark (2008) used the developmentally appropriate recommendations and established intervention-adaptation to more accurately tailor the treatment (Stark et al., 2006). Specifically, Stark (2008) identified adapting cognitive restructuring techniques to be developmentally appropriate. The study identified that specifically children and adolescents do not identify existing cognitions as subjective and generally
view the cognition as an established fact (Stark, 2008). Strategies to delineate this common thought pattern in youth involve eliciting feedback from the students as if they were giving a best friend advice in the same situation and the use of familiar metaphors. The goal of conceptualizing the cognition as a subjective one, and assisting the youth in gaining perspective is realized while highlighting awareness of the distorted thinking.

**Cognition Significance on Negative Thought Patterns**

As previously mentioned, metacognition (thoughts about thinking) development in pre-adolescents continues to emerge and is essential as youth develop a sense of self. This process begins in early childhood with initial recognition of one’s physical attributes and advances to being socially delineated by others in middle and late childhood. The four areas of meta-cognition in pre-adolescent development include: (a) recognition of ostensible, evident, and logical connections between beliefs that evolve into a general schema, (b) appraisal and classification of thoughts as essentially positive or negative, (c) defining controllability of one’s own mental state with evidence suggesting this is attainable by the age of 7 (Flavell, Green, & Flavell, 2000) with ongoing, increasing development through pre-adolescence/adolescence, and (c) attributing reasons for action and affect which involve cognitive states responsible for regulating self-behavior and understanding another’s behavior, known as “theory of mind” (Graham, 2005). These four areas of cognitive development are crucial to CBT and CBSB interventions and outcomes in associating the original behavior with the adaptive or maladaptive thoughts. The ability to understand the mental representations and causal connections associated with the thoughts, feelings, and behavior are instrumental in cognitive reappraisal and restructuring. Equally important is understanding pre-adolescent’s development of
negative schema (maladaptive thinking) may be due to negative thoughts about self, particularly prone is the overweight youth.

**Overweight Pre-adolescents and Negative Thinking**

Alongside the physical consequences of growing-up overweight are the psychological concerns including emotional distress and discrimination which may lead to negative schema development. An inverse relationship between self-esteem and obesity appears weakest in childhood and increases in the pre-adolescent and adult years, with strongest correlation in females versus males (Hill, 2010). In a study by Phillips and Hill (1998) 9 and 10 year-old obese girls scored significantly lower than their normal weight peers on physical appearance and athletic competence. In a study eight years later, 11 year-old obese girls supplemented social rejection to the negative attributes of physical unattractiveness and athletic incompetence when compared to their normal-weight peers (Franklin, Denyer, Steinbeck, Caterson, & Hill, 2006). Social stigmatization of overweight and obese pre-adolescents is of particular concern due to the formation of social relationships as a developmental milestone. Alongside the physical impairments weight bears on health, there are psychological concerns of social, emotional, and academic outcomes. Based on a review of the literature it is still not clear whether low self-esteem and weight bias is of a casual or progressive relationship (Puhl & Latner, 2007) in determining which variable comes first, but research suggests that susceptibility to negative effect such as depression and low self-esteem exists among obese youth who have been teased about their weight. A research study with 70 overweight 10-to-14 year olds and 86 normal weight peers found significant positive correlations between weight-related teasing, loneliness, and a partiality for isolating
activities and negative correlations of weight-related teasing with self-perceived competence and partiality for social activities involving others (Hayden-Wade et al., 2005). Puhl and Luedicke (2012) examined students ($n = 394$) who experienced weight-based victimization and reported 40-50% of the group expressed feelings of sadness and depression, increased feelings of worse about themselves, decreased body-image, and increased feelings of anger and fear. Boys and girls both experienced negative emotion however gender differences were reported in emotional expression. Maladaptive coping strategies expressed by these students included avoidance behavior in skipping gym class and school absenteeism, increased food consumption, and binge eating. Overall decreased academic performance was noted. Weight-based victimization has similar negative outcomes among children of various ethnicities (Van den Berg, Neumark-Sztainer, Eisenberg, & Haines, 2008). In a recent study that examined weight-based teasing effects among racially diverse sixth graders no significant effects were found between ethnic groups (McCormack et al., 2011) however weight-based teasing was higher among the overweight versus normal weight pre-adolescents. Zeller and colleagues (2008) found similar results with diverse overweight children and adolescents who experienced less peer acceptance and more negative descriptors than their normal weight peers.

Weight criticism by peers has been shown to decrease PA and the pleasure of participating in these activities by pre-adolescents (Hayden-Wade et al., 2005) who may intentionally avoid these activities to diminish ongoing weight-based teasing. These negative peer interactions through recurrent physical, verbal (teasing/bullying), and/or relational (rumors) peer mistreatment (peer victimization), are positively correlated to
lower levels of PA in overweight pre-adolescents (Gray, Janicke, Ingerski, & Silverstein, 2008). Storch et al. (2007) also found that the negative internalizing consequence of peer victimization leads to decreased level of PA, stronger association for isolating sedentary activities (video games) and lower inclination for social activities involving peers (team sports) in addition to depression, anxiety, and loneliness. Gray and colleagues (2008) found overweight youth who report extra barriers (social exclusion, teasing, body-related self-consciousness, and level of fitness) to PA have less involvement in PA. In a recent review of empirical literature on the influence of peers on youth’s eating and PA behavior, Salvy, De la Haye, Bowker, and Hermans (2012) found the behaviors for initiating and maintaining obesogenic environments and teen overweight/obese classification were influenced by social norms. For adolescents whose social network included overweight parents and peers, typical behavior within this context included inaccurate awareness of healthy weight status, individual underestimation of own weight, and social network influenced pre-adolescent’s eating and activity behavior (overweight youth affiliate with overweight peers, consume higher levels of energy-dense foods in the presence of overweight peers versus in the presence of healthy weight peers; Brug, 2008; De la Haye, Robins, Mohr, & Wilson, 2011; Valente, Fujimoto, Chou, & Spruijt-Metz, 2009). The studies provide support that peers can influence the eating and PA of pre-adolescents, an important consideration when evaluating interventions in school environments on physical and mental health outcomes. Further studies have identified the importance of positive (support) or negative (peer victimization) peer relationships on PA and eating behavior (Davison & Jago, 2009; Finnerty, Reeves, Dabinett, Jeans, & Vogele, 2010). Youth who avoid peer-activity interaction, may decrease their
opportunity for supportive relationships and social formation practice while experiencing social isolation and increased ostracization. The attempt to avoid weight criticism, and further victimization from peers creates sedentary behavior, decreasing PA, and negative schema development. Adaptation to the stress of the experience requires cognitive and behavioral processing of the negative situation resulting in negative schema development. Consequences include denial, avoidance, negative emotions of anxiety and depression, social isolation and rejection, and poor body image (Puhl & Latner, 2007; Puhl & Luedicke, 2012; Sandstrom & Cramer, 2003) and obese youth describe more mental health concerns (e.g., anxiety, depression weight-related distress, and body image concerns) than their normal weight counterparts. Weight-based victimization is an important consideration in adapting interventions for vulnerable youth in school-settings to increase physical and mental health (Zeller et al., 2008; Young-Hyman et al., 2006).

**Depression and Obesity**

Previously considered adult health issues, obesity, and depression have been treated separately as physical and emotional affects. The literature currently identifies obesity and depression as unique youth health concerns with distinct symptomatology and sharing symptoms of sedentary behavior, sleep problems, and unbalanced dietary consumption (Reeves, Postolache, & Snitker, 2008). Melnyk and colleagues (2006) found that obese adolescents had higher incidence of depression, anxiety, and lower self-esteem than their non-obese counterparts. In addition, adolescents reported improved anxiety and depressive symptomatology and stronger healthy lifestyle choices when educational and CBSB interventions were combined. Cognitive Behavior Theory-based intervention utilizing CBSB may be instrumental in reducing depressive and anxiety
symptoms, while improving positive schema integration and self-concept supporting healthy lifestyle beliefs and behaviors (Lusk & Melnyk, 2011). Conversely, in a systematic review of 64 randomized controlled trials (54 were without pharmacological interventions), evaluating obesity treatment in children. Luttikhuis and colleagues (2009) found that lifestyle interventions combined with a behavioral component focused on thinking patterns, PA, and nutrition demonstrated significant decreases in children and adolescents’ overweight status at 6 and 12 months when compared to standard care or self-help groups. These findings were recognized despite methodological limitations, small sample sizes (sample size less than 30 in 70% of the studies), and short-term follow-up. In a systematic review of the current literature, Korczak, Lipman, Morrison, and Szatmari (2013) found adult depressive symptomatology was more likely to develop in females who were obese as adolescents compared to normal weight female counterparts and males overall, while depressed adolescents were more likely to develop into overweight adults than non-depressed adolescents. This was consistent for females and less for males. The literature findings suggest evaluating the interactive relationship between depression and obesity longitudinally with future research needed for evaluation of concurrent effective interventions (Korczak et al., 2013). Moreover, among pre-adolescents’ risk factor for obesity is parental depression and adult depression is strongly related to weight status (Brogan et al., 2012). Comorbid conditions of obesity and depression occurring in the pre-adolescent population suggest intervention for successful prevention target both variables regardless of the linear relationship between the two (Reeves et al., 2008). The general trend in adolescent depression proposes higher rates in minority adolescents designating these youth at higher-risk for poorer mental health
outcomes (Eaton et al., 2008; U.S. Department of Health and Human Services, 2001). Research studies indicate acts of anger, frustration, and violence among minority adolescents, predominantly males, (commonly mistaken for behavior problems) are linked with depression (Fitzpatrick, Dulin, and Piko, 2010; Joe, Woolley, Brown, Ghahramanlou-Holloway, & Beck, 2008; Rosenbloom & Way, 2004). This context, in combination with school experiences of overt or covert discrimination and prejudice, may increase depressive symptomatology among minority students increasing mental vulnerability, academic performance issues, and/or high-risk behaviors (Repress, Morris, Gary, Lewin, & Francis, 2013).

**Anxiety**

Anxiety disorders are the most common mental health disorders experienced in youth (James, James, Cowdrey, Soler, & Choke, 2013) affecting 5-to-19% of youth with a prevalence rate of 2:1 girls to boys. Differences in anxiety were also noted ethnically, with African American children rating higher on trait anxiety versus Caucasian youth for weight-related distress involving body-image discontent and weight-related peer victimization (Young-Hyman et al., 2006). Pre-adolescents and adolescents worry about social competence, health issues, and school performance. Anxiety and depression are mental health concerns that can stem from internalizing problems which increase during adolescence in response to cognitive development and emotional regulation development. Cognitive reappraisal and suppression are two strategies that the pre-adolescent incorporates and develops to adapt with environmental stress. Overuse of suppression can lead to poorer emotional adjustment and anxiety/depressive symptomatology (Hsieh & Stright, 2012). The co-morbid condition between anxiety and depression has been
established in the literature, however, few studies have utilized multidimensional measurement to include both variables in evaluating racial differences in adolescents (Latzman et al., 2011). Latzman and colleagues (2011) examined elementary, middle, and high school Caucasian and African American students \( (n = 3,146) \) from low socioeconomic school environments. The findings indicated gender and racial differences for increased anxiety among elementary and middle school African American girls compared to their White counterparts. There were no differences noted in depression among the three age groups of students. In general, few studies with consistent findings have been published with racial/ethnic differences in adolescents related to anxiety symptomatology. Previous studies focused on anxiety symptomatology in children. Most notable are the gender differences with female pre-adolescents/adolescents predisposed to higher rates of anxiety regardless of ethnicity (McLaughlin, Hilt, & Nolen-Hoekseman, 2007).

**Self-Concept/Self-Esteem**

An indispensable element of mental health is the positive regard one has for self (Kling, Hyde, Showers, & Bushwell, 1999). Self-esteem described by Rosenberg (1965) is an individual’s collection of thoughts and feelings about their own worth and importance. The strong correlation between self-esteem and operationalization in multiple psychological domains is empirically supported via research (Harter, 1998). Pre-adolescence remains a focal time for the fluctuating and dynamic self-esteem vulnerable to internal and external influence. Developmentally, adolescents’ become increasingly self-conscious and have heightened awareness of how they are perceived by others (Vartanian, 2000). How individuals feel, think, and behave is associated with their
self-esteem (Kling et al., 1999). Research studies support higher self-esteem is correlated with higher positive adaptation and resilience and lower self-esteem is associated with symptoms of depression (Boden, Fergusson, & Horwood, 2008; Bos, Huijding, Muris, Vogel, & Biesheuvel, 2010; Moksnes & Espnes, 2012; Orth, Robins, & Meier, 2009). This seems especially pertinent among girls. Moksnes and Espnes (2012) studied adolescents aged 13-to-18 years old ($n = 1,209$) and described higher reported scores on state anxiety and depression for girls versus boys with overall higher self-esteem consistently reported by boys in all age groups. State depression and state anxiety was strongly and inversely associated with self-esteem. Similarly, in a study with children ages 8-to-13 years old, Gibson et al. (2008) found an inverse relationship between self-esteem and BMI z scores. Decreasing global self-worth was significantly stronger in older children (11-to-13 years) than younger children (8-to-10 years). The research findings from the above studies provide support for the importance of pre-adolescents’ mental health and the association with the positive role of self-esteem.

**Mental Health and Pre-adolescent Minorities**

In a recent study that evaluated suicide rates in children ages 5-to-11, Bridge and colleagues (2015) found for the first time suicide rates had risen and were significantly higher for Black pre-adolescents (1.36 to 2.54 per one million) compared to a significant decrease in their White peers (1.14 to 0.76 per one million). Data began trending up in the mid-1980s for Black youth which narrowed the gap between Black and White pre-adolescents, followed by a significant increase among Black boys and a non-statistical increase for Black girls. The rate of suicide by hanging/suffocation increased significantly for Black boys. The researchers identified potential risk factors that Black
pre-adolescents may have such as unique increased exposure to experiences with violence and associated traumatic stress, and aggressive school discipline. Previous studies found between 50% and 90% of urban youth experience some form of community violence such as hearing a gunshot, seeing a shooting, witnessing an assault or being a victim of an assault (Fitzpatrick & Boldizar, 1993). Zimmerman and Messner’s (2013) study found that the odds of being exposed to violence were 112% and 74% higher respectively for Blacks and Hispanics, than for Whites. Previous research has identified residential instability, low SES, and nontraditional family structure related to increased violence (e.g., the high prevalence of low-income, single-parent households within Black communities; Fitzpatrick & Boldizar, 1993; Margolin & Gordis, 2000). Furthermore, in a study on aggressive school discipline, such as being suspended or expelled, nationally Black students were found to receive this type of punishment two-to-five times more often compared to White and Asian American students during the years 1991-2005 (Wallace, Goodkind, Wallace, & Bachman, 2008). The earlier onset of puberty in Black youth (Herman-Giddens et al., 2012; Lown & Braunschweig, 2008) predisposes them to greater risk of depression and impulse aggression compounding the afore mentioned concerns. Youth with anxiety and depression symptoms experience impairment in academic, social, familial, and personal health areas, accompanied by increased risk for adult anxiety and depressive disorders, and substance abuse issues (Carter, 2015). Additionally, Black youth are even less likely than youth overall to seek assistance for depression, suicidal ideation, and suicide attempts. In a study with adolescents 12-to-17 years old, Freedenthal (2007) found Black and Hispanic adolescents were 65% and 55% respectively as likely as White adolescents to access mental health services after
controlling for the need for care and ability to secure services variables. These rates remained the same even as suicide risk increased. Bridge and colleagues (2015) suggest that Black teens remain at-risk for mental health concerns and have noted differential changes in social support and lessened religious affiliations than previous generations.

**Prior School-Based Health Promotion Intervention Studies for Middle School Pre-adolescents**

Two landmark studies that re-directed theoretical frameworks used in health promotion research was The Child and Adolescent Trial for Cardiovascular Health (CATCH; Perry et al., 1997; Perry et al., 1990) and the cardiovascular health in children (CHIC) study (Harrell et al., 1996). These studies exchanged then-current medical and educational models (focused on knowledge procurement), for behavioral models, guided by social psychology emphasizing social influences, skill-building, and behavioral competencies associated with health. In both studies the researchers trained teachers to deliver the intervention, evaluated fidelity of the instrument (teachers) and assessed dose response. These two classic RCTs informed future health promotion school-based intervention studies with regard to design, theoretical framework, and a more comprehensive transdisciplinary approach shifting evidence-based intervention. The studies had limitations and the interventions were not adopted throughout the United States.

Several previous studies have established the short-term benefits of healthy nutrition and PA interventions on the consumption of fruit and vegetables, musculoskeletal health, BMI, and self-concept in children and adolescents (Barr-Anderson, Young, & Sallis, 2007; Berkey et al., 2000; Linden, Ahlborg, Besjakov,
Gardsell, & Karlsson, 2006; MacKelvie, Petit, Khan, Beck, & McKay, 2004; Marcus et al., 2006 Rowlands, Eston, & Ingleedew, 1999; Sallis & Glanz, 2009; Sallis et al., 2000).

However, there is a paucity of rigorously conducted health promotion intervention studies within schools integrating the prevention of both obesity and co-occurring mental health conditions in pre-adolescents. A comprehensive literature search was conducted in Medline, PubMed, CINAHL, Cochrane, and Web of Knowledge specifying key words of obesity, sixth grade, middle school, school-based intervention, and healthy behaviors. This search yielded 11 studies (three meta-analyses, four randomized controlled studies, and four systematic reviews) that evaluated the effects of nutritional education, PA, or a combination of the two interventions (Branscum & Sharma, 2012; Brown & Summerbell, 2009; Cardoso da Silveira et al., 2013; Frenn et al., 2003; Gortmaker et al., 1999; Harris et al., 2009; Johnston et al., 2013; Kater, Rohwer, & Londre, 2002; Shaya et al., 2008). Youth ranged in age from 5-to-18 years, (the majority were 9-to-12 years old), and study interventions ranged from four weeks-to-24 months (Branscum & Sharma, 2012; Frenn et al., 2003; Gortmaker et al., 1999; Harris et al., 2009; Johnston et al., 2013). Ten studies included youth with no parent involvement in the receipt of the intervention. The results revealed that nutrition alone is the least effective strategy. PA alone is slightly more effective than nutrition intervention, but that a combination of nutrition and PA yields the greatest benefits (Branscum & Sharma, 2012; Brown & Summerbell, 2009; Frenn et al., 2003; Friedrich, Schuch, & Wagner, 2012; Gortmaker et al., 1999; Harris et al., 2009; Johnston et al., 2013; Kater et al., 2002; Perry et al., 1997; Shaya et al., 2008). One published systematic review evaluating parental involvement in school-based obesity prevention interventions was found. Of the 8,259 papers matching the search criteria,
five studies met the inclusion criteria of English language, behaviors related to obesity risk, healthy children ages 6-to-18 years, and at least one nutrition, PA, or anthropometric outcome variable(s). The parent modules consisting of education materials, interactive-meetings, and interactive-computer found strategies focused on home-related factors tended to be most effective, but the evidence was inconsistent with too few studies (Van Lippevelde, Verloigne, De Bourdeaudhuij, Lien, & Maes, 2012). Few RCT studies were found for this population and setting that also included intervention content targeting mental health, an important construct in trying to influence behavior change related to healthy lifestyles (Branscum & Sharma, 2012; Brown & Summerbell, 2009; Friedrich et al., 2012; Gortmaker et al., 1999; Johnston et al., 2013; Perry et al., 1990; Shaya et al., 2008). Two additional meta-analyses that analyzed the variables of PA and nutrition were conducted by Gonzalez-Suarez et al. (2009) and Katz et al. (2007). These meta-analyses evaluated RCTs and controlled trials for school-based interventions and strategies aimed at childhood obesity (19 studies and 9 studies respectively). Both found combination interventions (increasing PA and nutrition classroom curriculum) were effective in achieving weight reduction in school settings. Outcome analysis of the two interventions separately was not feasible. Gonzalez-Suarez and colleagues (2009) found interventions of longer duration (12 months or greater) significantly reduced BMI, whereas the interventions of shorter duration (6 months or less) did not result in BMI reduction, but were effective in decreasing the incidence of obesity and overweight. Katz and colleagues (2007) found PA and nutrition interventions did significantly reduce BMI in treatment versus control groups of 9 pooled studies. However, Katz and colleagues’
analysis did not consider the frequency of overweight and obesity as an outcome measure.

In summary, there are limited published intervention studies for pre-adolescents in an urban school setting and none with interventions simultaneously targeting improvement of physical health, overweight/obesity, and mental health. Key findings from this review revealed positive outcomes observed in some of the studies, methodological flaws, and short-term follow-up that limit generalizability. Additional limitations were heterogeneity of instruments and interventions, limited RCTs, lack of objective measures and inconsistent use, inattention to intervention fidelity, measurement error, non-sustained effects, and lack of manualized intervention protocols. Small sample sizes and general focus on a single global outcome measure were also limiting factors. A summary of the relevant school-based intervention studies for middle school pre-adolescents are found in Appendix A.

There are multiple factors that place pre-adolescents at risk for adverse outcomes, including obesity, unhealthy behaviors, lack of adaptive coping, and mental health disorders. Findings from a recent descriptive study (O’Haver et al., 2014) with an ethnically diverse, low income urban sample of fifth and sixth graders, findings indicated that children with higher BMIs reported difficulty living a healthy lifestyle and did not believe they could engage in healthy lifestyle behaviors. Utilizing the Beck Youth Inventory–II, 40% of the sample \((n = 45)\) had elevated depressive symptoms, 56% reported increased anxiety symptoms, and 24% had lower or much lower than average self-concept compared to peers. Perceived beliefs about living a healthy lifestyle were positively correlated to healthy behaviors (O’Haver et al., 2014). Higher levels of
Depressive and anxiety symptoms have been found to relate to less healthy lifestyle beliefs and behaviors in teens (Melnyk, Small, et al., 2006). Therefore, CBSB healthy lifestyle interventions may be key in not only decreasing depressive and anxiety symptoms in middle school pre-adolescents, but also enhancing their beliefs that they can engage in healthy lifestyle behaviors (O’Haver et al., 2014).

**Development of COPE**

The Creating Opportunities for Personal Empowerment (COPE) Healthy Lifestyles (Thinking, Emotions, Exercise, and Nutrition) intervention program was first developed by Dr. Bernadette Mazurek Melnyk utilizing CBT as the guiding conceptual framework. In a study with overweight/obese adolescents, findings supported CBT principles in that adolescents with stronger beliefs about leading a healthy lifestyle made healthier lifestyle choices and the adolescents who perceived more difficulty in making healthy lifestyle choices had less healthy behaviors and choices (Melnyk et al., 2006). A Phase I study utilizing a one-group design (n=11), followed by a Phase II pilot study (n=12) employing the 15-session CBSB program was conducted in after-school programs with weight change and BMI as the central outcomes (Melnyk et al., 2007). Prior to implementing these studies, the COPE program was manualized and interventionist training was developed and completed. The purpose of these two studies were to determine feasibility of implementing the COPE Healthy Lifestyles TEEN program with adolescents (15-to-18 years) from two high schools (urban and suburban), examine preliminary efficacy, and obtain feedback to enhance and adapt the program for a planned Phase III study (Melnyk et al, 2013). The result of these two studies established that the
COPE teens demonstrated a significantly greater reduction in weight and BMI than did teens in the control group. The teen in the control group gained weight over time.

In a second randomized controlled Phase II pilot study conducted in a school setting (n=19) with two schools, one receiving COPE and the other an attention control program, findings supported that adolescents who received COPE had an increase in healthy lifestyle choices, a decrease in anxiety and depressive symptoms, and a decrease in triglycerides along with an increase in high-density lipoproteins. These findings were used to frame and refine the intervention method and instructional materials (Melnyk et al., 2009). A Phase III RCT was conducted with 779 high school adolescents for the purpose of testing the efficacy of the COPE Healthy Lifestyles TEEN program versus an attention control program on the healthy lifestyle behaviors, BMI, mental health, social skills, and academic performance immediately post-intervention as well as at six and 12 months post-intervention. Findings indicated that post-intervention the COPE teens had lower BMI, a higher number of steps, higher health course grades, less alcohol use, and higher social skills than the attention control group. COPE teens with elevated anxiety/depressive symptoms at baseline had less depressive symptoms than the attention control group immediately post-intervention. At six months post-intervention, the COPE teens had a lower average BMI and reported less alcohol use than the control group. Furthermore, the proportion of overweight teens decreased in the COPE group compared to an increase in overweight in teens in the control group (Melnyk et al., 2013).

Additionally, a recent study (Hoying, Melnyk, & Arcoleo, 2015) with Appalachian early adolescents in the eighth grade (n= 24) reported similar findings utilizing the 15-session COPE Healthy Lifestyles program. The COPE eighth grade students had increases in
self-concept, lower anxiety symptoms, and a greater reduction in anger symptoms and disruptive behavior post-intervention when compared to baseline. Compared to the overall group, the subgroup of adolescents who were obese/overweight at baseline demonstrated increases in self-concept and decreases in anxiety, depression, and anger. These previous studies have demonstrated the efficacy and refinement of the COPE Healthy Lifestyles TEEN program by combining CBSB with exercise and healthy eating behavior components in an evidence-based 15-week COPE intervention. This research is the first study with an urban underserved population of sixth graders to determine whether the COPE intervention could demonstrate similar positive effects. The literature review indicated a need for this research because of a gap in published intervention studies that simultaneously target improvement of healthy lifestyle behaviors, mental and physical health in an urban disparate population of 11-to-13 year old pre-adolescents.

**Extending the Science with This Pilot Study**

Synthesizing the literature on healthy lifestyle intervention research with pre-adolescent populations suggests that longitudinal studies should focus on: improving nutrition, reducing caloric-dense intake, increasing PA, in combination with cognitive behavioral interventions (Han et al., 2010; Luttikhuis et al., 2009; Nemiary, Shim, Mattox, & Holden, 2012). The COPE Healthy Lifestyles TEEN program had not been tested with low income minority pre-adolescents. Therefore, this pilot study built upon the research of Dr. Melnyk by testing the COPE Program with a group of urban pre-adolescents in a middle school setting (Jacobson & Melnyk, 2011; Melnyk et al., 2009; Melnyk. Small, et al., 2006; Melnyk et al., 2007; O’Haver et al., 2014). The COPE Healthy Lifestyles TEEN Program 15-session, was originally developed by Dr.
Bernadette Melnyk with refinement over several years through seeking participant response and revising the content to be developmentally suitable.

The concepts and behavioral skills guided by CBT have demonstrated efficacy with adolescents and college freshman on physical health (increased PA), mental health (decreased depressive and anxiety symptoms, increased self-esteem), healthy lifestyle beliefs, healthy lifestyle behaviors, and academic outcomes (such as improved retention rates; Melnyk et al., 2009; Melnyk, Kelly, Jacobson, Arcoleo, & Shaibi; 2014; Melnyk et al., 2007). Melnyk and colleagues (2009) recent NIH/NINR full-scale RCT with 779 high school adolescents indicated that COPE was effective in preventing increases in BMI 12 month’s post-intervention and enhancing mental health and social skills. Other intervention studies testing COPE with adolescents revealed that those who received COPE had less depressive and anxiety symptoms and improved healthy lifestyle beliefs and behaviors compared to attention control adolescents (Melnyk et al., 2009; Melnyk et al., 2007). Dr. Melnyk adapted the 15-session COPE Program for adolescents into a semester course for college freshman and found that it was effective in promoting healthy lifestyle beliefs and behaviors as well as decreasing anxiety and depression in students with elevated symptomatology (Melnyk et al., 2014).

The pilot of the COPE Healthy Lifestyles TEEN Program in an urban middle school setting extends the science via exploring a disproportionately disparate population on the feasibility and acceptability of the 15-session program, and testing preliminary efficacy on anxiety and depressive symptoms, self-concept, and PA with urban 11-to-13 year old pre-adolescents. Additionally, knowledge expansion exists with the use of CBT as the guiding framework. The thinking-feeling-behaving triangle is instrumental in
COPE and is the theoretical framework in CBT that informs the study design and intervention, choice of measures, and analytical approach. Consistent application of the intervention and valid, reliable, comprehensive measures will extend the science in demonstrating efficacy and potential causal relationships for further testing to understand potentiation of risk and protective factors in this vulnerable distinct inner-city environment.

The pre-adolescent urban school-age population has not been extensively studied. Developmentally, the middle-school pre-adolescent shifts cognitive development via external construct of self-identity through environmental influence. After the age of eight, the pre-adolescent’s development focuses on behavior competence and peer judgments with regard to their identity. Recent research has demonstrated that children as young as five or six are able to describe metacognitive regulation (advanced emotion regulation strategies to cope with sadness, anger, and fear, such as changing thoughts or changing goals) however, their awareness did not translate into behavior at this age. Their ability to focus on a peer’s thoughts and judgments was not tested (Davis, Levine, Lench, & Quas, 2010). Youth are developmentally competent by middle school at differentiating their own or other’s cognition (theory of mind) regarding thoughts, feelings, and behaviors occurring after the age of eight (Flavell et al., 2000). Therefore, targeting the COPE intervention with the younger pre-adolescents may establish these youth on a positive health trajectory earlier in life, with an ability to practice metacognition regulation utilizing CBSB skills with implications for cognitive, behavioral, and physical positive health outcomes.
Chapter 3: Methodology

Study Aims

The primary purpose of this study was to determine the feasibility, acceptability, and preliminary effects of the COPE Healthy Lifestyles TEEN intervention, a 15-session theory-based reproducible program, on the healthy lifestyle beliefs, PA, and mental health outcomes of 11-to-13 year-old urban minority pre-adolescents in the sixth grade. The specific aims were as follows.

Specific Aim 1. To assess the feasibility and acceptability of the 15-session cognitive behavioral skills building healthy lifestyles intervention (COPE Healthy Lifestyles TEEN program) with sixth grade urban minority pre-adolescents.

Specific Aim 2a. To evaluate the preliminary short-term effects of the COPE Healthy Lifestyles TEEN Program on perceived healthy lifestyle beliefs, anxiety and depressive symptoms, self-concept, and PA in sixth grade urban minority pre-adolescents.

Specific Aim 2b. To evaluate preliminary effects of anxiety and depressive symptoms, self-concept, and suicide risk in urban minority pre-adolescents with elevated depressive and anxiety symptoms, below average self-concept, and positive suicide risk at baseline.

Specific Aim 3. To determine the relationships among study variables.
This pilot feasibility study was the first step in developing a program of research designed to improve the health outcomes of underserved pre-adolescents in school settings. Few school-based interventions focus on simultaneously improving physical health and mental health in under-served or youth of color in this age group.

**Study Design**

Utilizing Campbell, Stanley, and Gage’s (1963) nomenclature the proposed research design is depicted in Figure 3. CCS = Columbus City School, O = Measurement Times, X1 = COPE Healthy Lifestyles Program.

<table>
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<th>Baseline</th>
<th>Intervention</th>
<th>Post-Intervention</th>
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<tbody>
<tr>
<td>CCS1</td>
<td>O1</td>
<td>X1</td>
<td>O2</td>
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*Figure 3. Proposed research design.*

This study used a pre-experimental one group design with follow-up immediately following the completion of the 15-session COPE Healthy Lifestyles TEEN Program on pre-adolescents’ healthy lifestyle beliefs, anxiety and depressive symptoms, self-concept, and PA assessed at baseline and at the end of the 15-week intervention. This research design permitted all sixth graders in science class at the participating middle school to receive the intervention. The school administrator who agreed to collaborate in this research desired to have all sixth grade students receive the intervention. Participants targeted for enrollment were in a sixth grade science class and were asked to take part in surveys and assessments at T0 and T1. All sixth grade students in the four science classes received the manualized 15-session CSBS COPE Healthy Lifestyles Program by the PI but only those whose parents/guardians provided informed consent participated in
the surveys and assessments. This site was chosen because it was an urban middle school with ethnicities representative of CCS along with the expressed interest and support of the principal to have the COPE program administered. Following IRB approval, the principal investigator (PI) met with the principal, the four sixth grade teachers, school counselor, and education curriculum specialist for educational training on the COPE intervention and proposed timeline. The teachers decided Tuesdays would work best for the COPE intervention to be given to successive class periods one, two, three, and four.

The PI for this study was the interventionist for the study. Graduate research assistants collected the pre- and post-intervention data to eliminate conflict of interest and potential bias. The COPE program is manualized for teacher implementation for future program integration.

**Setting**

One urban school in the Franklin County Columbus City School District system participated. Franklin County has a population of 1,163,414 with 16.8% of the population between the ages of 5-to-17 years old. The median household income ($49,041) is slightly lower than the national average ($51,425) with a higher percentage of families living below the poverty level (11.4%). Consistent with the nation, prevalence of overweight/obese children (greater than the 85th percentile) in Franklin County is 31.2%. Columbus City School (CCS) District is the largest school district in Ohio with 118 schools and an enrollment of 51,000 (2015-2016 official count Ohio Department of Education) total students with 51% male and 49% female. The district is predominately African American with an ethnic breakdown of 59% African American, 27% Caucasian, 8% Hispanic, 5% Multi-racial, 2% Asian, and 0.22% American
Indian/Native Alaskan students. Nearly 82% of the students currently enrolled qualify for free/reduced meals. There is a 23% student mobility rate, and the overall attendance rate is 93.38% (Columbus City Schools, 2014). Columbus City Schools currently provide free breakfast and lunch to all students enrolled in the school system. These are important considerations for program delivery consistency, and impact on the outcomes of the pilot due to concerns with socioeconomic hardships, attrition, mobility factors, and financial disadvantage. The school district employs 3,974 teachers, 64.1% have a master’s degree or higher and 30.62% are male and 69.38% are female. Teachers are 38.6% African American, 59.3% Caucasian, 0.95% Hispanic, and 0.72% Asian, and 0.15% American Indian/Native Alaskan. The staff ethnicity varies from the student body with the majority being Caucasian (Columbus City Schools, 2014). The science teacher for sixth grade was invited to participate and observed 12 of the 15 sessions. All data collection occurred on school grounds during school hours in a room assigned by school personnel. The opportunity to partner with the CCS administration and staff in engaging and supporting the sixth grade middle school students is recognized and inherently valuable.

**Sample**

The sample for this pilot study consisted of 31 pre-adolescents, enrolled in the sixth grade in the Columbus City School District. The average class size in Columbus is 30. Based upon student participation enrollment rates from Dr. Melnyk’s previous studies, it was expected that at least 50% of the students registered for science class (15 from each of the four classes) would enroll in the study, although all students in the classes received COPE. The students’ parents/legal guardians were asked to provide
demographic data following parent consent/student assent completion. The IRB of Ohio State University and the Research Proposal Review Committee for Columbus City School District approved this study.

The designated middle school received COPE for their entire sixth graders enrolled in four science classes \((n = 101)\). The convenience sample was recruited and enrolled from these classes beginning with the start of the semester. Recruitment was originally scheduled for 1/8/2015 but due to inclement weather, it was rescheduled to 1/9/2015. Student absenteeism was high (48%) on 1/9/15, so recruitment was extended for 10 days and was completed on 1/23/2015.

Inclusion criteria for this study were: (a) the pre-adolescent had to be enrolled in the sixth grade, (b) currently taking a required science class, (c) speak and comprehend English (primary language in CCS), and (d) have one custodial parent or legal guardian who speaks and comprehends English (COPE parent newsletters and questionnaires are in English). Pre-adolescents of any gender, race/ethnicity, or socioeconomic status were eligible to participate. Pre-adolescents who had a medical condition that would not allow them to participate in the PA component of the program were excluded from the study.

**Recruitment**

The PI held a meeting with the science teacher, the three other sixth grade teachers, health curriculum advisor, school counselor, and the principal to introduce the study and answer questions on December 9, 2014. The principal provided written consent agreeing to have the science teacher participate through observation of the COPE Healthy Lifestyle Intervention Program and for the PI to deliver the COPE Healthy Lifestyles intervention. The PI recruited student participants during the science course in
the sixth grade classrooms using a recruitment script. All students who met the eligibility criteria were asked to participate and their parents/guardians (for parental questionnaire completion). Although both parents were encouraged to engage with their child in the COPE Healthy Lifestyles program, one parent was asked to self-identify for the parental questionnaire completion pre/post-intervention. Written and verbal information about the study and time commitment was provided to the sixth grade students and parents.

**Informed Consent and Enrollment**

Two copies of parent consents and pre-adolescent assents were given to eligible students: one copy was returned (in a sealable envelope) to the PI at the next science class and one copy remained with the parent for their records. The PI’s phone number was listed in the consent form for parents/guardian to call if any questions arose about the study. The pre-adolescents and parents were informed that participation was voluntary and there was no penalty for non-participation or withdrawal at any point in the study. All students in the participating science classes received the COPE Healthy Lifestyles Program. Consent/assent to participate was only for questionnaire completion and activity/emotion log completion. Students whose parents did not provide consent to participate received the COPE Healthy Lifestyles program in the designated science classes but did not complete any study measures. Students who participated in the study were placed in a designated room during data collection and all students met criteria to participate in the PA activity portion of the intervention. Each participant was assigned a unique identification number to ensure confidentiality. Appendix B outlines the assent/consent forms.
Procedure

Appendices C and D outline the research protocol approved by the Ohio State University Institutional Review Board and the Research Proposal Review Committee for Columbus City School Board and the respective approval letters.

After review and approval from both boards, the study began. The 15-week intervention was delivered via a manualized protocol and the interventionist (trained by the COPE author Dr. Melnyk) strictly adhered to the COPE Healthy Lifestyles TEEN intervention. Manualization of the intervention provided specific detail for consistent presentation and future verification and replication (Lis et al., 2001). The length of the COPE intervention is consistent with the literature for interventions delivering CBSB for positive effects of behavioral treatments focused on internalizing behavior (e.g., depression and anxiety), externalizing behaviors (disruptive behavior such as anger and hyperactivity), and other concerns (such as obesity; Weisz, McCarty, & Valeri, 2006).

Table 2 outlines the timeframe, weekly session content, and components of the data collection procedures. Data collection was standardized and consistent between T0 and T1. Data were collected by graduate research assistants (GRAs) trained in the study and data collection protocol. The time period for data collection was extended for one week at T0 due to inclement weather, school closings, and absenteeism. The post-intervention data collection also was extended for 1 week due to student absences. The timeframe extension allowed for 100% instrument completion of the BECK BDY-II and the Healthy Lifestyle Beliefs Scale by the COPE study participants.

Each participant was given a specific identification number to ensure confidentiality. A master list linking the identification number and names was stored.
separately from the data and locked in a secure office. All completed instruments were kept in a locked cabinet. Data were directly entered into SPSS (version 21.0; SPSS, Inc., Chicago) by the same GRA and verified by the PI post-intervention. A problem log was kept identifying any data error type, the tool and question number, and follow-up resolution. Frequencies with score ranges and cross tabs were computed to determine data entry errors and outliers. Discrepancies were reevaluated by the PI and the original instrument examined for resolution.

Table 2

COPE Healthy Lifestyles Program Weekly Topics

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<tr>
<th>Session</th>
<th>Content</th>
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Protocol

Following completion of the baseline measures during the previous week, the COPE Healthy Lifestyles TEEN Sessions 1 and 2 were delivered on Tuesdays of successive weeks. At the first session, the students were given a copy of the COPE Healthy Lifestyles TEEN manual and instructed on weekly homework assignments. The pedometers were distributed with explanations on how to use them and complete the activity logs. The sessions were scheduled to be delivered one week apart on Tuesdays. The day of the week varied slightly due to school closures and standardized testing. Sessions 3, 4, and 5 were moved to Wednesdays of the respective weeks due to standardized testing occurring on the previously scheduled Tuesdays. Sessions 6, 7, 8, 9, and 10 were moved back to Tuesdays. Sessions 11 and 12, and 13 and 14, were moved to Mondays and Fridays respectively with two sessions (11 and 12, 13 and 14) taught within the same weeks to accommodate standardized testing, missed days of school, and spring break. The students stated they did not like their schedule changing. To accommodate student concerns regarding schedule changes, announcements were made prior to any change and the dates were listed on the smartboard along with the homework for the week. Outcome data were obtained at baseline and 15 week post-intervention during scheduled class time. Upon completion, the GRA performed an initial quality check to ensure that data were complete. The PI and mentors met bi-weekly via face-to-face or email to discuss study progress, including protocol deviations (such as schedule changes and delivering interventions 11 and 12, and 13 and 14 within the same week), data collection (extending the timeframe to collect the data for one week), data entry, and management issues.
Parent data: Parent demographic data were collected at T0 and the COPE program evaluation at T1.

Youth data: Baseline surveys were self-administered at T0 and the COPE program evaluation with post-intervention surveys at T1. The same GRAs delivered the instruments and collected the information, and reviewed all surveys for answer completion prior to the student leaving the room. The student was given the opportunity to complete the missing information if they desired. The BDY-II depression subscale for the trigger questions, 44 for suicide (“I wish I were dead”) and 60 for hopelessness (“I think my life will be bad”) were immediately scored following completion. Any student who answered “sometime” or higher on question 44 and/or “always” on question 60 was immediately referred per the school protocol to the school counselor and school nurse, along with the referral letter sent home to their parent. Any student who had a T score of greater than or equal to 70 on the BDI subscale had a referral letter sent home to their parent indicating risk for depression with referral sources provided (Appendix E).

The COPE Healthy Lifestyles TEEN intervention was delivered by the PI and delivered once a week for 15 weeks. Each COPE Healthy Lifestyles session contained 30 minutes of didactic information and 20 minutes of planned classroom PA, equivalent to regular class time of 50 minutes. Planned PA (e.g., marching in place, dancing, stretching exercises) was designed to increase physical movement and build beliefs in regular PA participation.

**Intervention**

The COPE Healthy Lifestyles Program 15-week session outlined in Table 2 by weekly course content was developed from the essential elements of Table 1. The
manualized educational and CBSB program guided by CT with PA incorporated into each session was delivered to the pre-adolescents who were in the sixth grade at the designated urban middle school. Concept measurement included youth activity and emotion logs, manipulation checks (activity/nutrition knowledge questionnaires), and 25% of the sessions were randomly recorded and reviewed for adherence of the 15-week CBSB intervention. A review of the previous session and homework, and current session objectives were discussed at the start of every session. Each week the students increased their homework step goal by 10% and were assisted with this goal at the end of each class period as needed by the interventionist.

**Session 1 of the COPE Healthy Lifestyles TEEN Program**

Session 1 focused on an overview of Healthy Lifestyle choices and the thinking, feeling, behaving triangle connection. The trigger event concept was discussed with examples of how negative thinking can start and then case examples of how to turn the thoughts around to make them more positive. The concept of mindfulness was also discussed and activities to practice staying in the present moment were completed (i.e., clapping pattern, bouncing a ball and counting the number of bounces). Pedometer use, activity log, emotion log, and self-analysis homework (i.e., what do you like about yourself, what would you like to change, what do you want to keep the same, identify one person you can talk to, how often do you exercise, how often would you like to exercise, and what prevents you from exercising, mark on a continuous line how healthy are you from not healthy to very healthy) assignment was described, and the first COPE parent newsletter was sent home.
Session 2 of the COPE Healthy Lifestyles TEEN Program

Session 2 discussed the concepts of self-esteem, positive thinking and positive self-talk, including definitions, signs of poor and healthy self-esteem, unhealthy coping methods, and ways to increase self-esteem. Concepts were reinforced through the use of case examples and identifying steps to create a change. The sixth graders were required to write two positive self-statements on index cards during class time, and as part of the assigned homework to say the positive statements every morning and every night 10 times. Additional homework activities included activity, and emotion logs.

Session 3 of the COPE Healthy Lifestyles TEEN Program

Session 3 focused on setting goals and developing plans to meet those goals. The students wrote down what they wanted to be when they got older and what they needed to accomplish in the next two years to help them achieve their dream. Finally they wrote down what weekly goals support their dream. Barriers to supporting that dream were also discussed. Students had difficulty with understanding barriers or obstacles. This was presented as anything that got in their way of achieving their dream. The focus on solving problems using the four-step problem solving method was introduced (i.e., identify the problem, identify causes of the problem, identify the best solutions to the problem with pros and cons, and what is the best solution and second best solution). Case studies reinforced this problem-solving method. The homework assignment had students write goals for positive thinking, nutrition, and exercise and identify barriers to achieving their goals using the four-step problem solving method, writing down a positive self-statement, and three things the students liked about themselves. They completed an emotion and activity log.
Session 4 of the COPE Healthy Lifestyles TEEN Program

Session 4 focused on stress and coping with emphasis on identifying signs of stress, anxiety, and depression that were physical and emotional in origin. Related behavior that was unhealthy and healthy was explained. Healthy coping was emphasized and specific techniques taught and practiced in class included abdominal breathing and progressive relaxation. Homework assignments included practicing the four-step problem solving method for stress the individual students had, adding and practicing positive self-statements, practicing relaxation techniques taught, new goals for positive thinking, nutrition, and PA, emotional, and activity logs.

Session 5 of the COPE Healthy Lifestyles TEEN Program

Session 5 discussed dealing with emotions in healthy ways, definition of emotional regulation, self-control strategies, and positive outcomes of adopting the strategies. Overeating and triggers which influence less healthy choices, utilizing positive self-talk and additional healthy coping strategies were discussed. Mental imagery was a specific technique described and demonstrated in class (i.e., mental imagery example of the beach and park were practiced). Students drew or wrote about their own “happy place.” The pre-adolescents were encouraged to practice mental imagery (i.e., choosing their relaxing, peaceful place) prior to bedtime every night. Integrated ongoing practice of the new techniques were encouraged (i.e., practicing anger or anxiety triggers for individual student situations and choosing healthy options for managing the related feelings), setting new goals for positive thinking, nutrition, and PA, emotion, and activity logs. COPE parent newsletter two was sent home with the students.
Session 6 of the COPE Healthy Lifestyles TEEN Program

Session 6 discussed personality and effective communication (i.e. importance of personality styles and components of communication such as active listening, body language, tone of voice, facial expression, physical closeness, and word choice). Other important components included effectively asking for and getting help, expressing feelings with “I” statements, handling conflict, how to say “no” to peer pressure, how to handle being teased/bullied, and how to accept being told “no.” Case studies were used to outline and practice these strategies. Homework included asking pre-adolescents to think about and plan ahead for individual responses to situations presented in the homework, adding a positive self-statement to their index card and saying out loud every morning and night 10 times, and completing activity, and emotion logs.

Session 7 of the COPE Healthy Lifestyles TEEN Program

Session 7 emphasized the benefits of being active, ways for the students to increase their activity, and positive physical and emotional effects on increased activity. 20 minutes of in class activity was added to Sessions 7-15. Homework encouraged the students to pick two MVPA to try in the following week, say their positive statements, rank on a scale 1-10 how they are meeting their goals, identify barriers encountered and positive strengths that support their goal achievement, and completing activity and emotion logs.

Session 8 of the COPE Healthy Lifestyles TEEN Program

Session 8 emphasized heart rate and the importance of knowing maximum and resting heart rates. Finding a pulse and counting heart rates was described and demonstrated. Students took time to find their own pulse and learn how to count their
heart rates. Methods to increase and decrease heart rates to achieve and maintain maximum heart rate for their age were discussed. Benefits of stretching pre- and post-exercise were discussed. Examples of stretching were demonstrated and return demonstrated by the students. Assigned homework focused on increasing PA and keeping track of their heart rate for the following week, practicing learned four step-problem solving method in barriers to increasing exercise, setting goals for the next month for positive thinking, activity, and nutrition, saying positive self-statements, activity, and emotion logs, and a 24-hour food diary (everything that was consumed and the portion sizes for each) for 1 day through the week and 1 day on the weekend.

**Session 9 of the COPE Healthy Lifestyles TEEN Program**

Session 9 described nutrition basics and the benefits of consuming fruits and vegetables, protein sources, and the differences between fat sources. The stoplight meal plan was discussed and students were taught what foods went into the green, yellow, and red categories. Assigned homework encouraged students to identify when negative thinking over the past few days occurred and the effect it had on their feelings and behavior. Verbal reinforcement was given for goal attainment, and completion of saying positive self-statements, activity, and emotion logs. COPE parent newsletter three was sent home and students were encouraged to discuss it with their parent/caregiver.

**Session 10 of the COPE Healthy Lifestyles TEEN Program**

Session 10 introduced reading nutrition labels and discussion of nutrients, what they are and why they are important. Discussion included the media’s influence on serving size and fast food choices. Food models were used to identify favorite foods of the student and we discussed the nutritional value. Label reading was practiced in class.
Homework assignments included asking the students to bring in the label of their favorite snack or cereal and a healthy food label for the following week, 24-hour food diary for a day through the week and a day on the weekend, and emotion and activity logs.

**Session 11 of the COPE Healthy Lifestyles TEEN Program**

Session 11 focused on portion sizes, the 30 minute delay from stomach to brain signaling fullness, and strategies to control portion sizes. Homework assignments included having the students work on a pasta dinner with their parents and discussing measuring portions, setting goals for positive thinking, activity, and nutrition, positive self-statements, activity, and emotion logs, and 24-hour food diaries.

**Session 12 of the COPE Healthy Lifestyles TEEN Program**

Session 12 focused on eating for life, social eating, and eating at parties. Strategies for eating in social gatherings and to promote good health were discussed. Homework encouraged the student to take a favorite recipe and work with a parent to make it healthier and plan a party to offer healthier choices. Continued reinforcement for positive self-statements, exercise, practice relaxation strategies, emotion, and activity logs was provided.

**Session 13 of the COPE Healthy Lifestyles TEEN Program**

Session 13 emphasized healthy snacking and how to avoid mindless snacking. Setting goals to continue healthy nutrition was also discussed. Homework encouraged students to write down healthier choices from a favorite fast food restaurant and making new snack choices for various situations. Ongoing goal setting, activity, and emotion logs were also assigned.
Session 14 of the COPE Healthy Lifestyles TEEN Program

Session 14 included the thinking, feeling, behaving triangle as it relates to eating, and choosing water to drink over sugary beverages. Homework asked the students to set healthy eating goals around eating out and snack choices, if the student was angry or anxious during the week what self-control strategies did they employ, and completing the emotion and activity logs. COPE newsletter four was sent home with the students to share with their parents.

Session 15 of the COPE Healthy Lifestyles TEEN Program

Session 15 provided an overview of the past 14 sessions and connected making healthy choices and how thinking, affects how the student feels and behaves. Students received a COPE Completion certificate.

Appendix F contains the instruments utilized in the study including parent demographics, student demographics, pre-adolescent healthy lifestyle beliefs, Beck BDY-II, parent evaluation, and student evaluation. The four COPE newsletters (after Sessions 1, 5, 9, and 14) sent home with the students to review and discuss with their parents are found in Appendix G.

Intervention Feasibility Measures

Attendance log. Attendance rosters were completed for every COPE participant in order to record the dose of the COPE Healthy Lifestyles TEEN intervention individually. An 80% threshold was set for overall attendance to support feasibility.

Homework log. Each week of the intervention, the pre-adolescents were asked to complete homework. The homework utilized CBSB and reinforced what was taught in the intervention session. A review of the homework assignment occurred at the
beginning of the next week’s session. Frequency and quality of the participants’ homework was examined. The homework log tracked the number of homework assignments completed by each participant. An 80% threshold was set for acceptable overall homework completion. Adherence to the intervention was documented by the PI for each participant’s attendance at each of the sessions and homework completion.

Attrition log. A log for attrition of students was also kept to provide the PI with information about what was acceptable or unacceptable about the intervention. Important characteristics about the participants can come from analyzing drop-out rates (Melnyk & Morrison-Beedy, 2012).

The manipulation check of activity and nutrition knowledge questionnaires following Session 9 and 13 respectively, were given to the pre-adolescents to establish the degree of incorporation of the COPE CBSB program. COPE participants were asked to complete workbook activities each week of the intervention. These included goal achievement and problem solving logs, activity logs, and emotion logs. Each week they were discussed at the beginning of the session. These homework activities, located at the end of each session were designed to reinforce the content of the sessions.

**Intervention Acceptability Measures**

The acceptability of the COPE Healthy Lifestyles TEEN intervention was ascertained through pre-adolescent and parent program evaluations. The degree of participant adherence to the intervention depends on their acceptance level. The questions contained in the evaluation are found in Appendix F.
**Intervention Fidelity**

The PI used a manualized notebook with a detailed training plan and power point to indemnify fidelity. The manualization of the intervention provides confidence that the sessions were standardized and that the delivery occurred in the same order for all 15 sessions in the four classrooms (Melnyk, 2012).

Intervention log. Monitoring of the intervention fidelity is important to establish the intervention delivery adheres to the established protocol (Whitmer, Seeney, Slivijak, summer, & Barsevick, 2005). This occurred through completion of an intervention log by the PI after each session. The log criteria included: number/content of session, task time, methods for intervention delivery, tasks accomplished, and impressions of the flow, content, and acceptance of the session. Twenty-five percent of the sessions were videotaped and a research assistant completed four classroom observations, each with a fidelity checklist. A fidelity of 93% was achieved with the videotaped/observed sessions. The first seven sessions lacked adherence to the intervention program because these sessions did not include 20 minutes of PA. The manualized intervention was delivered in 15 sessions, the first 10 sessions were weekly (frequency) with Session 11-14 offered bi-weekly to complete the intervention within the school semester timeframe. This demonstrated the number of sessions offered (dose), length of time for each session (duration) and weekly occurrence (frequency of the dose).

**Manipulation Check for the Pre-adolescents**

The pre-adolescents activity and nutrition knowledge was assessed using the Activity and Nutrition Knowledge Questionnaires. These tools provide manipulation checks to establish the degree of CBSB program content processed by the pre-
adolescents. After Session 9, students were given the Activity Knowledge Questionnaire (AKQ), a 12-item questionnaire (e.g., “Dancing is exercise”) and after Session 13, students were given the Nutrition Knowledge Questionnaire (NKQ), a 20-item questionnaire (e.g. “Whole milk is healthier than skim milk”). Both tools covered concepts discussed in previous CBSB sessions (Melnyk et al., 2009). The pre-adolescents answered yes, no, or I don’t know for each question. Correct answers were summed with a score of 80% or higher indicating high fidelity. Cronbach’s alpha of .80 for the AKQ and .84 for the NKQ has been reported (Melnyk et al., 2009; Melnyk, Small, et al., 2006; O’Haver et al., 2014). Validity (face, content, and construct) was previously established in published studies (Kelly, Melnyk, Jacobson, & O’Haver, 2011) and the AKQ and NKQ have been adapted for school-aged populations. Manipulation checks and intervention fidelity, in combination with activity and mood logs assigned as homework, are the empirical indicators of CBSB for this study design. The CBSB intervention of 15 weeks, with a weekly 50 minute session for pre-adolescents is supported in the literature or potential positive behavior outcomes (Melnyk et al., 2013 Sauter, Heyne, & Westenberg, 2009).

Measures

Outlined in Table 3 are the instrument descriptions with reliability and validity reported from prior samples. Actual tools are listed in Appendix F. Instrument selection for this study is based on theoretical fit, evidence for validity, and high reliability established with previous similar studies (Melnyk et al., 2009; O’Haver et al., 2014; Thastum, Ravn, Sommer, & Trillingsgaard, 2009).
Table 3

*Instrument Validity and Reliability*

<table>
<thead>
<tr>
<th>Aim</th>
<th>Construct</th>
<th>Instrument</th>
<th>Validity</th>
<th>Reliability</th>
<th>Data Collection</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Demographics pre-teen, parent</td>
<td>Demographics Questionnaire</td>
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<td>T0</td>
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<tr>
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<td>COPE Program Evaluation</td>
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<td>2,3</td>
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<td>Healthy Lifestyle Beliefs Scale</td>
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<td>.80</td>
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<td>Knowledge pre-teen</td>
<td>Nutrition Knowledge Questionnaire (NKQ)</td>
<td>Content, Construct</td>
<td>.84</td>
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<td>2,3</td>
<td>Knowledge pre-teen</td>
<td>PA Knowledge Questionnaire (AKQ)</td>
<td>Content, Construct</td>
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<td>BYI-Anxiety</td>
<td>Content, Construct</td>
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<td>Self-Concept pre-teen</td>
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<td>Pedometer</td>
<td>Content, Construct</td>
<td>.81</td>
<td>T0, T1</td>
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</table>

**Demographic Variables**

Parent and pre-adolescent demographic variables included age, sex, race/ethnicity, marital status, family structure (e.g., one versus two-parent household), highest level of education, perceived social support, stressful life events, mental health diagnoses and treatment, chronic illnesses, and whether the child has ever been diagnosed with a mental health disorder or has a history of chronic or debilitating illness.
Healthy Lifestyle Beliefs, the conceptualized potential mediator, was measured using the Healthy Lifestyle Beliefs Scale (HLBS; Melnyk & Small, 2003). This 16-item instrument assesses the pre-adolescent’s beliefs and confidence about maintaining a healthy lifestyle (e.g., “I believe that I can be more active” and “I will do what is best to lead a healthy life”). Items are scored on a 5-point Likert-type scale ranging from 1 strongly disagree to 5 strongly agree and summed, with a range from 16 to 80. Higher values indicate greater belief and confidence in the pre-adolescent’s ability to lead a healthy lifestyle. Face validity was established with 10 teens and 10 parents; content validity was established with eight experts and construct validity was established through factor analysis (Morrison-Beedy, Nelson, & Volpe, 2005). Cronbach alphas have been consistently over .80 in prior studies (Melnyk et al., 2009; Melnyk et al., 2006). This instrument was adapted for use with a high school-aged population.

PA. The pre-adolescent’s PA was directly measured at T0 and T1 with a voluntarily worn OMRON\textsuperscript{TM} (Model HJ-320) pedometer. This brand of pedometers has a built-in default for stride length and was pre-set by the PI for accurate time and to record steps versus miles. The use of the pedometer was demonstrated and explained by the interventionist. A pedometer is recognized as a valid measure for assessing PA in children, with reliability of .90 (Puyau, Adolph, Vohra, & Butte, 2002) and provides a reliable method to measure habitual PA in pre-adolescents (Tudor-Locke, Williams, Reis, & Pluto, 2004). Activity (step counts) was recorded for 7 days from the time the pre-adolescent arose in the morning until going to bed at night each day for 7 days, for baseline (T0) and following the intervention at week 15 (T1). Recorded daily steps on the pedometer logs were totaled for each week (T0, T1) and averaged for that week and
the total was entered into the SPSS database. The recommended pedometer-based guidelines for youth is 12,000-15,000 steps per day (Tudor-Locke & Bassett, 2004) with a recommendation for obese/overweight youth achieving incremental improvement from individual baselines. The COPE Healthy Lifestyles intervention is designed to encourage step counts with an incremental increase by 10% each week from the pre-adolescent’s level the previous week. These goals were set during the classroom sessions. The pedometer serves as a visual reminder for the pre-adolescent to encourage and reinforce PA throughout the intervention, not just for weeks T0 and T15.

**Depressive and Anxiety Symptoms and Self-Concept**

The Beck Youth Inventory (2nd edition; BYI–II; 2005) is a 100-item instrument for youth ages 7-18 years (J. Beck, Beck, Jolly, & Steer, 2005). The BYI–II is used extensively in research and clinical settings, with well-established validity, reliability, age, sex, and diagnostic-adjusted normative data (Steer & Ball, 2005). The BYI–II is a commercial product that measures five variables (depressive symptoms, anxiety, anger, disruptive behavior, and self-concept) via 20 statements each about thoughts, feelings, and behaviors related to social and emotional impairment over the past two weeks. Three subscales were utilized in this study, including the Self-Concept Inventory, Depression Inventory, and Anxiety Inventory. Items are scored on a 4-point Likert-type scale (never, sometimes, often, always) with raw scores (0 to 60 total score per subscale) converted to T scores for age and gender based on population norms (J. Beck et al., 2005). T scores less than 55 are average, 55-59 are considered mildly elevated, 60-69 are moderately elevated, and 70+ are extremely elevated for the Depression and Anxiety Inventories. Pre-adolescents with a response of greater than or equal to 70, or positive responses to
items 4 and/or 20 on the Depression subscale indicating risk for suicide were referred per school protocol. The self-concept scale measures perceptions of competency, potency, and self-worth with a positive inflection and as a result, is reverse scored. Total raw scores range from 0 to 60 with conversion to T scores for age and gender. T scores greater than 55 are above average, 45-55 average, 40-44 lower than average, and less than 40 much lower than average. Content, criterion-related, and construct validity are well established with high correlation of the five subscales scores (.70 or higher). Internal consistency has been calculated by gender with overall Cronbach alphas ranging from 0.87 to 0.92. The BYI-II is a low response burden instrument, easy to administer, with strong validity and reliability for use in the intended adolescent and pre-adolescent population ages 7-17 (Lusk & Melnyk, 2011; Melnyk et al., 2009; Osman, Kopper, Barrios, Gutierrez, & Bagge, 2004; Smith, Schwartz, George, & Panke, 2004; Stapleton, Sander, & Stark, 2007; Steer, Beck, & Riskind, 1986; Thastum et al., 2009; Williams, Burnside, & Hammond-Rowley, 2010).

**Program Evaluation for the Pre-adolescents**

At T1, following completion of the intervention, the pre-adolescents were asked the following questions: Was the format of the program acceptable to you?, Was the program helpful?, How was/was not it helpful?, How could your participation have been made easier?, and Would you recommend the program to another student?

**Parent Demographic and Program Evaluation Questionnaire**

Demographic data included age, sex, race/ethnicity, marital status, family structure (e.g., one versus two-parent household), highest level of education, perceived social support, stressful life events, mental health diagnoses and treatment, chronic
illnesses, and whether their child has ever been diagnosed with a mental health disorder or has a history of chronic or debilitating illness. Income and employment questions were asked. Participating parents were asked to complete a program evaluation.

Mediating variables represent the variables that may intervene on the independent variables’ ability to exclusively influence the dependent variable(s); Baron & Kenny, 1986). The Conceptual Model (Figure 1) recognizes a priori that the outcomes of the intervention may be influenced by cognitive beliefs regarding healthy lifestyle based on CT and previous study results. Prior studies implementing COPE with several hundred adolescents have shown significant relationships with this variable (Kelly et al., 2011; Melnyk et al., 2009; Melnyk, Small, et al., 2006; Melnyk et al., 2007;). Previous COPE TEEN pilot intervention studies demonstrated an increase in teens’ willingness to engage in healthy lifestyle behaviors and a decrease in weight (Melnyk et al., 2009; Ritchie, 2011) and a decrease in depressive symptoms (Melnyk, Small, et al., 2006).

Analysis

Preliminary data analysis began with a review of the data and descriptive statistics for all demographic variables (e.g., skewness, distribution, frequencies, percentages, means, and standard deviations (SDs) (Munro, 2005). The multi-item questionnaires that were used to measure theoretical fit, empirical evidence, potential mediators, and outcome variables on individual items were summary-scored for analysis (composite score). SPSS (version 21) was used to calculate the composite score. The authors’ written guidelines for the instruments were followed and guided interpretation of the results. Cronbach alphas, were computed for internal consistency reliability on all instruments. Participant responses to the HLBS were summarized and the composite
score for each COPE participant entered into the SPSS data file. Participant responses to the Beck Youth Inventory subscales (Self-Concept, Anxiety, and Depression) (20 items each) were scored with each item receiving a zero, one, two, or three points. The total scores were then compared to reference tables provided by the author and the T score for each participant based on gender and age was entered into the SPSS data file. Attrition rate was calculated at T1. A comparison of post-test to baseline measures using paired sample t-tests was performed on all COPE participants who completed the intervention to determine preliminary efficacy. Pearson’s correlations among the variables of interest were analyzed at T0. To reduce the probability of Type 2 errors with the small sample size, statistical significance was set at .10 instead of the usual .05.

Analysis for Aim 1: Feasibility and acceptability of the COPE Healthy Lifestyles TEEN program were evaluated by adherence to the program components (i.e., skills building assignment completion and in-class attendance) assessed through retention and attrition rates, class attendance, and homework completion. This intervention was considered feasible if 12 out of 15 sessions were attended by 80% of the participants and acceptable if the participating pre-adolescents completed 80% of homework (qualitatively) and if 80% of the participating pre-adolescents responded positively to the questions “Did you find the COPE Healthy Lifestyles TEEN program helpful?” and “Would you recommend it to a student?” in the program evaluation (quantitatively).

Program evaluations were compiled and assessed for themes. The total number of weeks required to complete the COPE Healthy Lifestyles program was 15 and this was evaluated in order to provide information concerning feasibility with this population and in this setting. The interventionist’s log and field notes were also examined to provide
contextual information about each session (e.g., number of sessions rescheduled and why, student participation and reaction to each session).

Analysis for Aim 2a: Data were assessed for normal distribution prior to analysis. Paired \( t \)-tests examined the preliminary effects of the COPE intervention on the participants’ HLBS, anxiety, depression, self-concept, and PA. Paired \( t \)-tests were conducted to determine change from baseline to post-test. Effect sizes were calculated by subtracting the pretest mean from the posttest mean and dividing the difference by the pooled standard deviation (Cohen, 1988) (Statistics Calculators Index, 2015). Calculating effect size on this difference (Cohen’s \( d \)) quantifies the size of the intervention effect which can then be used in future larger studies to obtain an estimation of sample size.

Analysis of aim 2b: Data were assessed for normal distribution prior to analysis. Paired \( t \)-tests examined the preliminary effects of the COPE intervention on the pre-adolescents’ with elevated depressive and anxiety symptoms, below average self-concept, and positive suicide risk at baseline on the self-concept, anxiety, depression, and suicide risk. Paired \( t \)-tests were conducted to determine change from baseline to post-test. Effect sizes were calculated by subtracting the pretest mean from the posttest mean and dividing the difference by the pooled standard deviation (Cohen, 1988) (Statistics Calculators Index, 2015).

Analysis of Aim 3: Pearson’s \( r \) correlations were used to examine the association between the continuous variables to quantify the magnitude and direction of the relationships. Correlations were used to understand the relationships among the COPE Healthy Lifestyle TEEN program and the pre-adolescent’s healthy lifestyle beliefs,
anxiety, depression, self-concept, and PA. The first step in testing for mediation is establishing if relationships exists between the intervention and the proposed mediator, and the proposed mediator and the study outcomes. Intervention research that evaluates mediation can result in better understanding of the effects of the intervention (how does the intervention work?), and in larger full-scale RCTs, in testing the theory upon which the intervention was based (next steps in this research plan; MacKinnon, 2011).

Limitations of this pilot study included lack of randomization, potential for heterogeneity, and lack of an attention control group, changing the intervention delivery timeline due to testing and inclement weather, and additional wording used in some of the intervention material to improve understanding of the participants. The pilot study was the first step in a research program to improve outcomes for underserved pre-adolescents.

Strengths of this study included the assessment of intervention fidelity and understanding the COPE Healthy Lifestyles TEEN Program preliminary intervention efficacy. The ability to discern intervention-as-implemented versus intervention-as-designed (Nelson, Cordray, Hulleman, Darrow, & Sommer, 2012) is at the core of intervention fidelity, outcome measurement, and large scale implementation. The process of substruction links the constructs with the intervention components and the outcomes similarly to the change models delineated by Nelson et al. (2012). Fidelity assessment is the first step in developing fidelity rigor and increasing effect size between high implementation and positive outcomes. The manualized intervention maintained fidelity delivered by the PI and provided integrity and consistent implementation for
future adoption with oversight and trained personnel such as teachers, social workers, guidance counselors, and school nurses.
Chapter 4: Results

The primary purpose of this pilot study was to test the feasibility, acceptability, and preliminary efficacy of a CBSB intervention (COPE Healthy Lifestyles TEEN) for sixth grade pre-adolescents in an urban middle school. The variables of interest included depression, anxiety, self-concept, healthy lifestyle beliefs, and PA. Correlations among the variables also were examined. A total of 101 students were approached and 31 were recruited and enrolled into the study. Table 4 summarizes the recruitment, enrollment, and attrition rates of the students.

Table 4

Recruitment and Retention of Students

<table>
<thead>
<tr>
<th>Students in recruitment process</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students approached</td>
<td>101</td>
<td></td>
</tr>
<tr>
<td>Students declined to enroll</td>
<td>70</td>
<td>69%</td>
</tr>
<tr>
<td>Students enrolled</td>
<td>31</td>
<td>31%</td>
</tr>
<tr>
<td>Students withdrew</td>
<td>2*</td>
<td>6%</td>
</tr>
<tr>
<td>Students completed (T0,T1)</td>
<td>29</td>
<td>94%</td>
</tr>
</tbody>
</table>

*one student transferred to another school district, one student opted out

Students who met the inclusion criteria for the COPE program were identified and recruited from January 9-23, 2015 at one middle school. A total of 31 participants were recruited into the study from the 101 sixth grade students. Two participants were lost to attrition (N = 2, 6%) but were included in the baseline analysis and sample characteristics
One student transferred to another school within the district after the sixth intervention session and the second student withdrew following baseline data collection prior to initiating the intervention. This second withdrawal was made by the student’s mother, who received a demographic questionnaire to complete and sent it back not filled out with the comment, “Uhm no! You can withdraw (name) from the program. Thank you.” The student wanted to continue participation; however, his parent did not. No further study measures were given to the participant.

**Internal Consistency Reliabilities of the Study Measures**

The consistency to which an instrument measures what it is intended to measure is the trademark of a quality study (Dunbar-Jacob, 2012). The instruments over the study time period should demonstrate internal consistency reliability with generally acceptable levels falling in the range of .70-.90 (Dunbar-Jacob, 2012). The internal consistency reliability of measures as examined in this study and the Cronbach alphas are highlighted in Table 5. Low reliabilities were noted in the pre- and post-alphas for the nutrition knowledge questionnaire (.42 and .42 respectively) and in the post alpha for the activity knowledge questionnaire (.85 pre and .31 post).

Table 5

<table>
<thead>
<tr>
<th>Scale</th>
<th>Number of items</th>
<th>Baseline Cronbach alphas</th>
<th>Post intervention Cronbach alphas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy Lifestyle</td>
<td>16</td>
<td>.94</td>
<td>.90</td>
</tr>
<tr>
<td>Beliefs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beck Self-Concept</td>
<td>20</td>
<td>.80</td>
<td>.83</td>
</tr>
<tr>
<td>Beck Anxiety</td>
<td>20</td>
<td>.81</td>
<td>.90</td>
</tr>
<tr>
<td>Beck Depression</td>
<td>20</td>
<td>.90</td>
<td>.92</td>
</tr>
</tbody>
</table>
Tables 6 and 7 summarize the participant characteristics of the pre-adolescent participants ($N = 31$) and parent respondents ($N = 11$) to the demographic questionnaire that was sent home.

Table 6

*Sample Characteristics of Pre-adolescents ($N = 31$)*

<table>
<thead>
<tr>
<th>Sample Characteristics</th>
<th>Pre-adolescent participants ($N = 31$)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean ($SD$)</td>
<td>Range</td>
<td>Frequency (N)</td>
</tr>
<tr>
<td>Age (years)</td>
<td>11.54 (.62)</td>
<td>11 to 13</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td>Gender</td>
</tr>
<tr>
<td>Male</td>
<td>11</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>20</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td>African American</td>
</tr>
<tr>
<td>Hispanic</td>
<td>9</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>4</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Public assistance</td>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>I don’t know</td>
</tr>
<tr>
<td>Number of hrs. sleep a night</td>
<td>7.83 (2.22)</td>
<td>2 to 12</td>
<td></td>
</tr>
<tr>
<td>Number of days a week active for 60 minutes a day</td>
<td>3.00 (2.28)</td>
<td>0 to 7</td>
<td></td>
</tr>
<tr>
<td>Number of days a week exercise at least 30 minutes a day</td>
<td>2.57 (2.20)</td>
<td>0 to 7</td>
<td></td>
</tr>
</tbody>
</table>
Table 7

Sample Characteristics of Parents (N = 11)

<table>
<thead>
<tr>
<th>Sample Characteristics</th>
<th>Pre-adolescent participants (N = 31)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (SD)</td>
<td>Range</td>
<td></td>
</tr>
<tr>
<td>Age (years)</td>
<td>38.82 (9.52)</td>
<td>28 to 56</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frequency</td>
<td>% (Valid)</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>5</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>6</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>4</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>4</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>2</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Native Hawaiian/Pacific Islander</td>
<td>1</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married first time</td>
<td>3</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Never married</td>
<td>4</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Separated</td>
<td>2</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>1</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Public assistance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>5</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>5</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Household income per year</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than $7,000</td>
<td>1</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>$7,000-10,000 per year</td>
<td>3</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>$10,001-15,000 per year</td>
<td>2</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>$15,001-20,000 per year</td>
<td>1</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>$20,001-30,000</td>
<td>1</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Greater than $40,000 per year</td>
<td>2</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Highest level of education</td>
<td>12.55 (1.75)</td>
<td>9 to 16</td>
<td></td>
</tr>
</tbody>
</table>

Description of Participants

Pre-adolescent Characteristics

The participants ranged in age from 11-to-13 years, with a mean age of 11.54 (SD = .62) years. Sixty-five percent of the participating students were female (n = 20). A majority of the pre-adolescents were African American (n = 18; 58%) with Hispanic (n =
9; 29%) pre-adolescents comprising the next largest percentage. Fifteen (75%) of the students stated they received public assistance. The mean average of hours of sleep per night was 7.83 (SD = 2.2). The pre-adolescent participants reported a mean of 3 (SD = 2.28) days a week that they were active for at least 60 minutes and a mean of 2.6 (SD = 2.2) days a week that they exercised for at least 30 minutes. Student BMI at baseline was 20.33 (SD = 4.10), with a range of 14.40 to 32.30. There were 3 students (9.6%) who were overweight and 1 student (3.2%) who was obese.

**Parent Characteristics**

Participating parents (n = 11) had a mean age of 38.8 (SD = 9.52) years, with an age range of 28 to 56 years. Four (37%) were African American and four (37%) were Hispanic ethnicity. Seventy percent (n = 7) were not currently married with the highest level of education mean 12.55 (SD = 1.75) years. Approximately 50% (n = 5) receive public assistance and 70% (n = 7) are below $20,000 annually.

A summary of the research findings is presented in Tables 8-15.

**Research Question 1 Results**

What is the feasibility and acceptability of the 15-session cognitive-behavioral skills building healthy lifestyles intervention (COPE Healthy Lifestyles TEEN program) with sixth grade urban minority pre-adolescents?

Tables 8 and 9 are open-ended qualitative and quantitative responses categorically themed and frequencies completed on the pre-adolescents (n = 29) when asked to evaluate the 15-session COPE Healthy Lifestyles TEEN program upon their completion of the program. Tables 10 and 11 provide parent program evaluation feedback (n = 4).
Table 8

Pre-adolescent Open-Ended Qualitative Evaluation Responses

<table>
<thead>
<tr>
<th>Category theme</th>
<th>Frequency</th>
<th>Valid %</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive thoughts</td>
<td>11</td>
<td>33.3</td>
<td>33.3</td>
</tr>
<tr>
<td>Nutrition</td>
<td>11</td>
<td>33.3</td>
<td>66.6</td>
</tr>
<tr>
<td>Stress management</td>
<td>6</td>
<td>18.2</td>
<td>84.8</td>
</tr>
<tr>
<td>Physical activity</td>
<td>5</td>
<td>15.2</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The participants’ responses were themed into four categories including positive thoughts, nutrition, stress management, and PA. Regarding CBSB processing and assimilation, one pre-adolescent stated, “What I find helpful is the steps of thinking and feeling and behaving and calm yourself down.” Another pre-adolescent commented on the positive thinking practice, “I found that making positive statements was most helpful.” Another student commented that the COPE program “helped me with my thinking and my negative behavior and thoughts and to have positive thoughts and behavior.” In response to the nutrition category, one pre-adolescent said, “That you should keep your body healthy by eating green fruits the most” (referring to the stoplight meal plan). With regard to stress, one pre-adolescent said, “I find my stress level down and I’m starting not to be stressed all the time.”

<table>
<thead>
<tr>
<th>Category theme</th>
<th>Frequency</th>
<th>Valid %</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive thoughts</td>
<td>22</td>
<td>29.3</td>
<td>29.3</td>
</tr>
<tr>
<td>Nutrition</td>
<td>19</td>
<td>25.3</td>
<td>54.6</td>
</tr>
<tr>
<td>Physical activity</td>
<td>13</td>
<td>17.3</td>
<td>21.9</td>
</tr>
<tr>
<td>Stress management</td>
<td>12</td>
<td>16.0</td>
<td>87.9</td>
</tr>
<tr>
<td>Attitude</td>
<td>4</td>
<td>5.3</td>
<td>93.2</td>
</tr>
<tr>
<td>Anger</td>
<td>3</td>
<td>4.3</td>
<td>98.0</td>
</tr>
<tr>
<td>Goal setting</td>
<td>1</td>
<td>1.0</td>
<td>99.0</td>
</tr>
<tr>
<td>Sleep</td>
<td>1</td>
<td>1.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category theme</th>
<th>Frequency</th>
<th>Valid %</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude</td>
<td>13</td>
<td>56.5</td>
<td>56.5</td>
</tr>
<tr>
<td>Anger</td>
<td>4</td>
<td>17.4</td>
<td>73.9</td>
</tr>
<tr>
<td>Nutrition</td>
<td>2</td>
<td>8.7</td>
<td>82.6</td>
</tr>
<tr>
<td>Academics</td>
<td>2</td>
<td>8.7</td>
<td>91.3</td>
</tr>
<tr>
<td>Stress</td>
<td>2</td>
<td>8.7</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Question: If you changed behaviors as a result of COPE program what behaviors did you change?

<table>
<thead>
<tr>
<th>Category theme</th>
<th>Frequency</th>
<th>Valid %</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude</td>
<td>13</td>
<td>56.5</td>
<td>56.5</td>
</tr>
<tr>
<td>Anger</td>
<td>4</td>
<td>17.4</td>
<td>73.9</td>
</tr>
<tr>
<td>Nutrition</td>
<td>2</td>
<td>8.7</td>
<td>82.6</td>
</tr>
<tr>
<td>Academics</td>
<td>2</td>
<td>8.7</td>
<td>91.3</td>
</tr>
<tr>
<td>Stress</td>
<td>2</td>
<td>8.7</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Continued
Table 8 Continued

Question: Why would you recommend the COPE program to other students?

<table>
<thead>
<tr>
<th>Category theme</th>
<th>Frequency</th>
<th>Valid %</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coping skills</td>
<td>11</td>
<td>39.3</td>
<td>39.3</td>
</tr>
<tr>
<td>Stress management</td>
<td>5</td>
<td>17.86</td>
<td>57.16</td>
</tr>
<tr>
<td>Attitude</td>
<td>4</td>
<td>14.29</td>
<td>71.45</td>
</tr>
<tr>
<td>Improve health</td>
<td>4</td>
<td>14.29</td>
<td>85.74</td>
</tr>
<tr>
<td>Nutrition</td>
<td>2</td>
<td>7.12</td>
<td>92.86</td>
</tr>
<tr>
<td>Anger management</td>
<td>1</td>
<td>3.57</td>
<td>96.43</td>
</tr>
<tr>
<td>Exercise</td>
<td>1</td>
<td>3.57</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Question: What would you change about the COPE program?

<table>
<thead>
<tr>
<th>Category theme</th>
<th>Frequency</th>
<th>Valid %</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nothing</td>
<td>14</td>
<td>56.0</td>
<td>56.0</td>
</tr>
<tr>
<td>More Group work</td>
<td>2</td>
<td>8.0</td>
<td>64.0</td>
</tr>
<tr>
<td>More Physical activity</td>
<td>1</td>
<td>4.0</td>
<td>68.0</td>
</tr>
<tr>
<td>Everyone get pedometers</td>
<td>1</td>
<td>4.0</td>
<td>72.0</td>
</tr>
<tr>
<td>Change day COPE offered</td>
<td>1</td>
<td>4.0</td>
<td>76.0</td>
</tr>
<tr>
<td>Offer COPE everyday</td>
<td>1</td>
<td>4.0</td>
<td>80.0</td>
</tr>
<tr>
<td>Less COPE pages</td>
<td>1</td>
<td>4.0</td>
<td>84.0</td>
</tr>
<tr>
<td>1:1 time with COPE teacher</td>
<td>1</td>
<td>4.0</td>
<td>88.0</td>
</tr>
<tr>
<td>COPE book like a notebook</td>
<td>1</td>
<td>4.0</td>
<td>92.0</td>
</tr>
<tr>
<td>Have more fun</td>
<td>1</td>
<td>4.0</td>
<td>96.0</td>
</tr>
<tr>
<td>Bring treats daily</td>
<td>1</td>
<td>4.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Question: If you did not do the homework, why not?

Because it was too long
Cope homework is a bit too hard
Forgot
I did not do all the homework because I would forget all about it
I didn’t do it because I lost it
I kinda didn’t do the first three homeworks because I was either absent or feeling sick or I just didn’t feel like it! (being lazy)
I never got to bring it home

Question: Did your family change anything as a result of the COPE program?

Health habits
How much food we eat
My mom changed her attitude and my sister exercised more
Our eating choices
The way they act and physical activity
They do not use anger a lot
They gave me more green food
To be having me do better things
To let me eat healthy
We only use food to cook and eat junk food 1 a week
Table 9

**Pre-adolescent Quantitative Evaluation Responses**

<table>
<thead>
<tr>
<th>Pre-adolescent question</th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EvalQ1 Did you find information from the COPE Healthy Lifestyles Program helpful?</td>
<td>28 (97%)</td>
<td>1 (3%)</td>
</tr>
<tr>
<td>EvalQ3 Have you changed any of your behaviors as a result of the COPE program</td>
<td>23 (79%)</td>
<td>6 (21%)</td>
</tr>
<tr>
<td>EvalQ4 Would you recommend the COPE program to other students?</td>
<td>23 (82%)*</td>
<td>5 (18%)</td>
</tr>
<tr>
<td>EvalQ6 Did you do the homework for most of the COPE program sessions?</td>
<td>23 (82%)</td>
<td>5 (18%)</td>
</tr>
<tr>
<td>EvalQ7 Did you discuss the COPE program with your parent/guardian when you brought the newsletter home?</td>
<td>21 (75%)</td>
<td>7 (25%)</td>
</tr>
<tr>
<td>EvalQ8 Did you discuss the COPE program information with your classmates or friends?</td>
<td>15 (58%)</td>
<td>11 (42%)</td>
</tr>
<tr>
<td>EvalQ13 Did the pedometer help increase your physical activity?</td>
<td>21 (81%)</td>
<td>5 (19%)</td>
</tr>
<tr>
<td>EvalQ14 Did your family change anything as a result of the COPE program?</td>
<td>11 (40%)</td>
<td>16 (60%)</td>
</tr>
</tbody>
</table>

*Answer to EVALQ1 and EVALQ4 > 80% criteria for acceptability

Table 10

**Parent Open-Ended Qualitative Evaluation Responses (n = 4)**

<table>
<thead>
<tr>
<th>Question: How was the program helpful or not?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helpful – from info on communication and coping skills</td>
</tr>
<tr>
<td>It made him think about his feelings – something he dislikes to do</td>
</tr>
<tr>
<td>Made him more aware of junk food</td>
</tr>
<tr>
<td>Program helpful but she (parent referring to participant) didn’t participate with her full potential</td>
</tr>
<tr>
<td>Made me aware that he (participant) thought about what we eat</td>
</tr>
<tr>
<td>On our communication between each other</td>
</tr>
<tr>
<td>We are a very strong family with boundaries for our children. We try to live a smart, healthy lifestyle already</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question: Have you seen any changes in your child’s behavior as a result of COPE participation?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eating more fruit and veggies</td>
</tr>
<tr>
<td>He has become even more mindful of what he eats</td>
</tr>
<tr>
<td>She is more open and receptive to suggestions about her attitude</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question: Have you changed any of your behaviors as a result of the program?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talking to my daughter more about things that upset her or make her uncomfortable</td>
</tr>
<tr>
<td>Trying to lose weight and eat more healthy</td>
</tr>
</tbody>
</table>
Table 11

*Parent Quantitative Evaluation Responses (n = 4)*

<table>
<thead>
<tr>
<th>Parent question</th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EvalQ1 Was the program helpful for your child?</td>
<td>3 (75%)</td>
<td>1 (25%)</td>
</tr>
<tr>
<td>EvalQ2 Did your child share any of the information from the program with you?</td>
<td>3 (75%)</td>
<td>1 (25%)</td>
</tr>
<tr>
<td>EvalQ3 Was the program information helpful that your child shared with you?</td>
<td>2 (67%)</td>
<td>1 (33%)</td>
</tr>
<tr>
<td>EvalQ4 Would you recommend participation in a health program similar to this one to a family member or friend?</td>
<td>3 (75%)</td>
<td>1 (25%)</td>
</tr>
<tr>
<td>EvalQ7 Was the parent newsletter helpful to you?</td>
<td>3 (75%)</td>
<td>1 (25%)</td>
</tr>
<tr>
<td>EvalQ8 Have you seen changes in your child’s behavior as a result of participating in the program?</td>
<td>3 (75%)</td>
<td>1 (25%)</td>
</tr>
<tr>
<td>EvalQ9 Have you changed any of your behaviors as a result of the program?</td>
<td>2 (50%)</td>
<td>2 (50%)</td>
</tr>
</tbody>
</table>

Overall, the pre-adolescents found the COPE program highly acceptable. Three of the four parents who responded to the evaluation found the program acceptable and would recommend the program to family members or friends. The responses to the open-ended statements demonstrate that the students found the content and delivery method beneficial (e.g.”how to limit the bad things I eat, how to make positive self-statements, how to handle/channel my anger”). The participants highly recommended this program to other students. Recommendation statements were insightful and vibrant, reflective of the content that was taught identifying specific sessions as most helpful. Of the participants (n = 25) who responded to the question “What would YOU change about the COPE program?” over half (56%) would not change anything about the program. Suggested improvements included: (a) make the COPE book like a notebook (the book was tape-bound and students voiced a preference for a spiral-bound approach), (b)
involving all students in the study and giving them a pedometer (study participants received a pedometer and activity sheet, students not in the study used an activity sheet only), and (c) offer 1:1 private time with the participants. Students articulated that the length and offering of sessions was adequate with one student expressing a desire to have COPE offered every day.

Feasibility measures of the COPE Healthy Lifestyles TEEN program considered feasibility of the intervention and feasibility with delivery to the students. Measurement of feasibility included retention rate, attrition/attendance rate, and homework completion percentage for the 15-session CBSB. Manualization of the intervention permitted all of the content to be delivered of the original intervention with the first seven sessions providing the cognitive content foundation. The challenge in delivery was that the intervention was at the appropriate sixth grade level but the expected level of comprehension for this sample of sixth graders was not at this level (e.g., students on evaluation stated “Cope homework is a bit too hard,” “homework is too long,” and observing students difficulty with spelling multiple words in a sentence when attempting to write in their COPE books (e.g., “How do you spell friend?”). The COPE TEEN version of the program incorporated “real-world” situations and was appropriate. Refining the TEEN version in some areas would apply. Accommodations that were made (and would apply) included reading out-loud the homework assignment page by page so that students understood how to complete the assignments and students were given opportunities to read aloud the case scenarios during class to improve comprehension of the cases and build rapport. Reading level did not affect the comprehension of any homework assignment. Substituting a different word to help
explain or provide a definition for another word was also practiced. For example, the word “barrier” is used in the COPE book and students asked what that meant so the question was reworded as follows: Session 3, “What barriers might prevent you from achieving that dream?” was re-explained using the words “What blocks” or “What difficulties” keep you from achieving that dream?” The session did not proceed until students voiced understanding either verbally or non-verbally. For the first seven weeks, the 20 minute designated activity time was devoted to covering the session more slowly and thoroughly to improve the reading and comprehension of those particular sessions. The content was not changed but the time devoted to the didactic portion was increased for the first seven sessions of the program, which provided scheduling challenges in timing of the modules for delivery to include the 20 minutes of PA. Fifteen weeks duration for the COPE program to be delivered is feasible. Challenges encountered with this included geographic issues involving weather (e.g., school closing, school delays, school recesses) and standardized testing days which were re-calculated based on the days of school missed due to the weather. Delays in bus arrival times impacted the start of the first class period and delayed attendance for the very beginning of the session. Extended review of the previous week and homework due was covered extensively. The manualized program was re-scheduled on different days (e.g., from Tuesday to Monday) and Sessions 11, 12, 13, and 14 were offered on two consecutive Monday and Fridays to accommodate the shortened calendar year due to weather cancellations. The challenges of real-world intervention delivery were met and all content of the program was delivered. The attendance rate and homework completion rate demonstrated feasibility of the intervention.
**Intervention Delivery**

A fidelity monitoring log was used by the interventionist to confirm that the intervention was being delivered according to protocol. The deviations from protocol described above, included 50 minute didactic Sessions for 1-7, returning to 30 minute didactic with 20 minute activity for Sessions 8-15. All classes were taught consistently with the intervention manual. Twenty-six percent of the sessions were videotaped and four observations were completed using a fidelity checklist to validate the intervention was delivered per protocol. Based on the fidelity achieved in the observed sessions and the confirmation by Dr. Melnyk after viewing the videotaped session’s fidelity was established.

**Receipt of the Intervention**

Manipulation checks were performed after Session 9 and 13 to assess how the adolescents processed the information they received. The AKQ was given to the participants after Session 9, approximately 66% \( (n = 18) \) of the pre-adolescents answered 80% of the questions correctly. The NKQ was given to the participants after Session 13, approximately 52% \( (n = 15) \) of the pre-adolescents answered 80% of the questions correctly. Eighty percent or higher indicated that the intervention was adequately received and processed. The mean score on the AKQ was 9.03 \( (SD = 2.04) \) and on the NKQ mean score was 14.07 \( (SD = 4.11) \). On the AKQ 11 participants and 14 participants on the NKQ scored less than 80% indicating they did not fully process all the information, therefore not engaging in the benefit of the intervention. The questions may have been too difficult for the students to read and comprehend. Approximately half to 2/3rds of the sixth graders processed the information adequately. Adjustments should be
considered such as reading aloud the questions during administration of the surveys.

Both questionnaires were reviewed with all the participants in the following respective session to ensure correct answers were provided.

Of the original 31 participants, 29 pre-adolescents (94% retention rate) completed the study and all measurements. Two of the original 31 did not complete the study, one student withdrew after baseline measurement, and one student transferred to another school after Session 6 (6% attrition rate). Overall, the average completion rate of the homework was 84.4% (criteria met at greater than 80%). The pre-adolescents were asked to complete missed homework and it was checked the following week. At the beginning of each session, the previous week’s homework assignment was reviewed for completion, reinforcement, encouragement provided, and any questions answered prior to starting the next session. Completion of homework assignments ranged from 22% \((n = 1)\) to 100%, with 38% \((n = 11)\) of the students completing all homework assignments.

Overall attendance was 89.4% with 11(38%) participants having 100% attendance. Twenty-four students were at 85% attendance or higher, with 17% \((n = 5)\) falling below 77% attendance. Table 12 provides average attendance percent by classroom for the COPE study participants and total attendance.

Table 12

*Overall Average Attendance by Classroom and for COPE Study Participants for 15-week Program*

<table>
<thead>
<tr>
<th>Classroom period</th>
<th>COPE participants</th>
<th>Classroom overall attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st period</td>
<td>8/9 = 88%</td>
<td>21/25 = 84%</td>
</tr>
<tr>
<td>2nd period</td>
<td>2.4/3 =80%</td>
<td>20/24 =83%</td>
</tr>
<tr>
<td>3rd period</td>
<td>14/15 =94%</td>
<td>24/26 = 91%</td>
</tr>
<tr>
<td>4th period</td>
<td>2.8/4 = 70%</td>
<td>12.5/26 = 48%</td>
</tr>
</tbody>
</table>
Research Question 2a Results

What is the preliminary efficacy of the COPE Healthy Lifestyles TEEN Program on healthy lifestyle beliefs, anxiety and depressive symptoms, self-concept, and PA in urban minority pre-adolescents?

The preliminary effects of the 15-week COPE Healthy Lifestyles TEEN program on sixth grade urban pre-adolescents was examined by evaluating the pre-adolescents’ beliefs, anxiety, depression, self-concept, and activity at baseline and following completion of the program. The pre-adolescents self-reported these outcome measures. Table 13 outlines the preliminary findings of the descriptive and inferential statistics from pre-intervention (T0) to post-intervention (T1) of study variables. Pre-adolescents reported significant decreases in anxiety on the BYI and increases in healthy lifestyle beliefs about managing negative emotions and having confidence in making healthier lifestyle choices. Furthermore, students who participated in the study demonstrated significant increases in PA.

Research Question 2b Results

What is the preliminary efficacy of self-concept, anxiety and depressive symptoms, and suicide risk on the subgroup of pre-adolescents with elevated depressive and anxiety symptoms, below average self-concept, and positive suicide risk at baseline?

A subgroup analysis was completed on participants who demonstrated elevated anxiety (45% of sample), depression (26% of sample), and lower than average self-concept (26% of sample), and six students (19% of sample) who answered positively to questions 44 (suicidal ideation) and/or 60 (hopelessness) on the Beck Depression subscale (Table 14).
Table 13

**Preliminary effects of the COPE Healthy Lifestyles TEEN Program**

<table>
<thead>
<tr>
<th>Measure</th>
<th>N</th>
<th>Time Point T0 Mean (SD)</th>
<th>Time Point T1 Mean (SD)</th>
<th>t value</th>
<th>p value</th>
<th>Effect size <em>(Cohen's d)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Beck Self-Concept</td>
<td>29</td>
<td>43.93 (7.27)</td>
<td>43.28 (7.83)</td>
<td>.546</td>
<td>.590</td>
<td>0.09</td>
</tr>
<tr>
<td>Beck Anxiety</td>
<td>29</td>
<td>17.69 (10.80)</td>
<td>13.38 (9.44)</td>
<td>3.230</td>
<td>.003**</td>
<td>0.42++</td>
</tr>
<tr>
<td>Beck Depression</td>
<td>29</td>
<td>10.6 (8.99)</td>
<td>9.21 (8.88)</td>
<td>.961</td>
<td>.345</td>
<td>0.16</td>
</tr>
<tr>
<td>Healthy Lifestyle Beliefs</td>
<td>29</td>
<td>63.38 (12.36)</td>
<td>67.03 (9.35)</td>
<td>-1.580</td>
<td>.125</td>
<td>0.33+</td>
</tr>
<tr>
<td>Steps</td>
<td>13</td>
<td>6268.00 (2442.56)</td>
<td>9726.23 (3380.34)</td>
<td>-3.530</td>
<td>.004**</td>
<td>1.17+++</td>
</tr>
</tbody>
</table>

+ small effect size, ++ medium effect size, +++ large effect size; ** p < .01

Table 14

**Preliminary Effects of the COPE Healthy Lifestyles TEEN program on the subgroup with below average self-concept, elevated anxiety, elevated depression, and positive suicide risk**

<table>
<thead>
<tr>
<th>Measure</th>
<th>N</th>
<th>Time Point T0 Mean (SD)</th>
<th>Time Point T1 Mean (SD)</th>
<th>t value</th>
<th>p value</th>
<th>Effect size <em>(Cohen's d)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Beck Self-Concept (score &lt; 45)</td>
<td>8</td>
<td>41.57 (1.90)</td>
<td>44.00 (4.90)</td>
<td>-1.91</td>
<td>.104*</td>
<td>0.65++</td>
</tr>
<tr>
<td>Beck Anxiety (score 55 or &gt;)</td>
<td>14</td>
<td>62.50 (7.26)</td>
<td>55.35 (9.67)</td>
<td>2.71</td>
<td>.018*</td>
<td>0.84+++</td>
</tr>
<tr>
<td>Beck Depression (score 55 or &gt;)</td>
<td>8</td>
<td>62.71 (8.40)</td>
<td>54.71 (6.65)</td>
<td>2.15</td>
<td>.076*</td>
<td>1.06+++</td>
</tr>
<tr>
<td>Suicide Risk</td>
<td>6</td>
<td>20.11 (10.80)</td>
<td>14.50 (8.24)</td>
<td>1.51</td>
<td>.245</td>
<td>0.58++</td>
</tr>
</tbody>
</table>

+ small effect size, ++ medium effect size, +++ large effect size; * p < .05
Compared with the overall group, this subgroup of anxious, depressed, or low self-concept pre-adolescents who received the COPE intervention demonstrated significant increases in self-concept (average is greater than 44), and significant decreases in anxiety and depression scores (returned to baseline, less than 55). Six students at baseline who answered two specific questions on the BYI - Depression scale indicated an increased risk for suicide. These students were immediately referred to the school counselor/school nurse per protocol. A referral letter also was sent to the parent. Following the intervention, the students who were positive for suicidal ideation or hopelessness decreased their Beck depression score and four of those students no longer scored positively for suicidal ideation. It is unknown if the students had further follow-up (e.g., counselor) as a result of the referral. The six students had a baseline depression mean score of 20.11 (10.80) and post-intervention mean score of 14.50 (8.24) with an effect size of 0.58 (Table 14).

**Research Question 3 Results**

What is the relationship among the study variables?

Correlations were examined of the entire sample at baseline (Table 15) to better understand relationships among the study variables. Positive significant correlations existed between the participants’ self-concept and beliefs, indicating that as the pre-adolescent’s self-concept increases, so do their healthy lifestyle beliefs. Significant and negative correlations exist between the participants’ self-concept and anxiety and depressive symptoms. This suggests that as the pre-adolescents’ self-concept increases, their anxiety and depressive symptoms decrease. Depression and anxiety also were strongly positively correlated. This indicates that as anxiety symptoms increase, so does
the pre-adolescent’s depressive symptomatology. A small association exists between the activity log and self-concept indicating that as self-concept increases, so does activity.

Table 15

*Pre-Intervention Correlations*

<table>
<thead>
<tr>
<th></th>
<th>Healthy Lifestyles Beliefs Scale</th>
<th>Beck Anxiety</th>
<th>Beck Depression</th>
<th>Beck Self Concept</th>
<th>Physical Activity Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy Lifestyles Beliefs Scale</td>
<td>1</td>
<td>-.005</td>
<td>-.157</td>
<td>.456**</td>
<td>.071</td>
</tr>
<tr>
<td>Beck Anxiety</td>
<td>-.005</td>
<td>1</td>
<td>.688**</td>
<td>-.471**</td>
<td>-.161</td>
</tr>
<tr>
<td>Beck Depression</td>
<td>-.157</td>
<td>.688**</td>
<td>1</td>
<td>-.791**</td>
<td>-.274</td>
</tr>
<tr>
<td>Beck Self-Concept</td>
<td>.456**</td>
<td>-.471**</td>
<td>-.791**</td>
<td>1</td>
<td>.434*</td>
</tr>
<tr>
<td>Physical Activity/Steps</td>
<td>.071</td>
<td>-.161</td>
<td>-.274</td>
<td>.434*</td>
<td>1</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (1-tailed).**

*Correlation is significant at the 0.05 level (1-tailed).
Chapter 5: Discussion

Summary of Findings

The primary aim of this study was to test a theory-based manualized cognitive-behavioral skills building program on the healthy lifestyle beliefs, PA, and mental health outcomes of sixth grade urban minority pre-adolescents in order to determine the feasibility, acceptability, and preliminary effects of the COPE Healthy Lifestyles TEEN intervention and to examine the relationships among study variables. Additionally, interpretations of the findings are discussed, and the study’s strengths and limitations, theoretical implications, and implications for research and clinical practice are presented in this chapter.

Acceptability and Feasibility

The evaluation questionnaire responses, homework completion records, attendance and retention records, fidelity monitoring logs, and interventionist field note documentation of the 15-week theory-based CBSB intervention demonstrated that pre-adolescents found the program to be helpful and achievable. The positive reception of the intervention content and format was evidenced in the pre-adolescents open-ended responses and quantitative evaluations to the program evaluation.

In analyzing the responses, specific attention centered on the responses addressing the empirically-based components of the intervention (e.g., cue recognition, cognitive restructuring, goal setting, problem solving techniques) and CBSB content (e.g.,
relaxation techniques, increasing communication, positive thinking, food choices, self-regulation monitoring). The pre-adolescents’ responses reflected understanding and insight of the cognitive framework foundation (e.g., “What I find helpful is the steps of thinking and feeling and behaving and calm yourself down”) with an overall 97% positive response to intervention satisfaction. Additionally, three out of four parent evaluation responses indicated satisfaction with the intervention. One parent noted specific behavior change in their child, “She is more open and receptive to suggestions about her attitude.” Both comments highlight the understanding of the cognitive restructuring and cue recognition. Eighty-two percent of the COPE participants would recommend the program and 79% identified changed behaviors as a result of the COPE program. Two participants respectively responded the COPE homework was “too long” and “too hard.” Reflecting on field notes, feedback from participants iterated the theme “didn’t like keeping up with the homework.” An important component of CBSB is practicing and reinforcing the skills building as new neuronal tracks are built. COPE skill practicing (homework) is a prime opportunity to establish new healthy neuronal connections in the young brain (Frewen, Dozois, & Lanius, 2008) and assist in positive behavior change. Additionally, pre-adolescents commented on wearing the pedometer (e.g., “I lost it,” “I couldn’t find it,” “Mama washed it”) and self-monitoring activity log sheets were challenging to have students turn them in ($n = 17$ (58%) at T0 and $n = 16$ (55%) at T1). Approximately, 10 new pedometers were issued to participants over the 15-week intervention. Furthermore, parent response rates were low for the parent demographic questionnaire ($n = 11$, 38%), and parent program evaluation ($n = 4$, 14%).
The cognitive change process is important to achieve the desired outcomes from the CBSB intervention and requires supplemental activities of the participants. An important consideration is balancing the issue of participant burden when evaluating adherence to the intervention’s self-monitoring and self-reflection components. Questions arising from this dilemma include: what is the percentage of adherence needed to receive the most benefit from the intervention, can the intervention be refined to increase adherence, and how to increase parental involvement (especially program evaluation response) to adapt the intervention for scalability. Previous studies have cited difficulty in procuring full participation in planned CBSB activities (Stevens, 2010; Melnyk et al., 2007). Noteworthy, is that this CBSB intervention delivered to a small sample size, established favorable effects despite participants not completing all written facets of the program. Increasing adherence and promoting parental response may be encouraged in future studies through the use of incentives for milestone markers (e.g., data collection points, self-monitoring logs, or parental involvement through the newsletter signed and returned, or parental program evaluation). Positive reinforcement for homework completion was awarded through the use of verbal praise by the interventionist and a smiley sticker placed on completed homework assignments and a COPE completion certificate at Session 15.

Participant attendance for all four classrooms was 89.4% overall, which met the 80% established feasibility percentage and slightly below the 93.4% attendance rate for the school district. The attrition rate was 6%, well below the reported rate of 23% for this school district. Although 38% (n = 11) of the students had 100% attendance, 18 students missed one to three sessions. The consistent session structure for the 15 sessions
provided an opportunity for students to follow-up on missed sessions. Each session began with a review of the previous session’s homework and a review of content previously discussed, an overview of the new lesson, new content presented, and review of the homework (CBSB skills) due the following session. In reviewing field notes, the interventionist noted that students who had missed a session used the review of content from the previous week or following the review of homework assigned to ask questions or receive clarification on material they had missed. The students who had missed a session voiced frustration over the doubling up of homework assignments. To accommodate this missed session, the student was given an extension on the missed assignment of an additional week. An additional incentive for 100% participation (e.g., a prize drawing for students with 100% attendance) could improve attendance.

Additionally, two students voiced frustration over the COPE manuals which were tape bound. The books did not lie flat or pages turn easily, and manuals came apart requiring re-taping, as described in interventionist field notes and student responses on program evaluation noting student suggestions to use a “spiral-bound” manual for increased satisfaction and ease of use.

Future large scale trials should explore technology driven intervention delivery (i.e., computerizing data collection with the participants for questionnaire responses and an online COPE manual). The students often did not have a pencil to complete the survey, had difficulty bringing the parent demographics back to school, or remembering to complete the homework. Consideration could be given to utilizing technology (e.g., text messaging) for reminders regarding the completion of homework, wearing their pedometer, and CBSB reinforcement (i.e., reminder to do relaxation techniques or to say
positive self-statements) which may lessen participant burden. In a systematic review of 10 studies that met inclusion criteria utilizing six different software packages, all studies found some degree of decrease in symptoms and moderate-to-high participant satisfaction with the software-based interventions (Richardson, Stallard, & Velleman, 2010). However, the high levels of non-completion and drop-out rates were also noted. The six different multimedia computerized Cognitive Behavior Therapy (cCBT) software packages included: Stressbusters,” “Master your mood online,” “Cool Teens,” “MoodGYM,” ‘CATCH-IT,” and “BRAVE.” Relatively few packages are available containing evidence-based interventions; however, highly interactive multimedia may engage pre-adolescents in a unique way. The cCBT modality has been shown to be effective delivered in a group format (O’Kearney, Gibson, Christensen, & Griffiths, 2006; O’Kearney, Kang, Christensen, & Griffiths, 2009). While limited face-to-face intervention programs demonstrate parental involvement effectiveness, limited online research studies have not identified parental involvement effectiveness with the online approach. This consideration may be cost prohibitive for a large scale study. Additionally, research is limited on booster sessions to maintain the short-term effects achieved with the online interventions (Spence, Holmes, March, & Lipp, 2006).

**Fidelity of Intervention Delivery**

An intervention log was completed by the interventionist for each session to maintain fidelity along with field notes for each session. Randomly assigned videotaping of 4 (26%) sessions by a research assistant (RA) was completed. Additionally, four sessions were observed with fidelity check lists to further support fidelity of the intervention. The intervention content was delivered consistently to the first four periods
of the sixth grade science classes; however the first seven sessions did not include the 20 minutes of PA. This did not support intervention fidelity for these seven sessions. Additional time was spent on classroom milieu at the beginning of class (i.e., students talking, disruptive behavior resulting in school security responding, angry outburst from student with removal from class, students leaving room to get COPE book from locker), reading and discussing homework assignment, frequently spelling words for students as they wrote in their COPE manual, and re-defining words (e.g. “limitations, self-talk, mindfulness, and barriers”). Students did not write in complete sentences but often one or two words, or would draw their assignments. The interventionist was frequently asked to re-read sentences. Students frequently did not have a pencil to write with and required a pencil from the interventionist or classroom teacher.

Given the interventionist’s lack of experience with urban classroom environments and the novice in-classroom teacher with classroom management, Sessions 1 through 7 lacked fidelity adherence. One could not expect the same outcomes in this study if the same intervention was not delivered (i.e., BMI) as had previously been delivered in prior studies. The fidelity checklists averaged 93% for the observed intervention sessions. Few studies implement interventions with 100% fidelity. In a recent study, Kelly, Oswalt, Melnyk, and Jacobson (2015), found approximately 50% of the teachers delivering the intervention fully adhered to the intervention. However, even without full adherence, there were positive outcomes, demonstrating positive effects can still be achieved. It is possible that the interventionist’s unfamiliarity with the classroom milieu and the unexpected reading comprehension of this sixth grade sample there was less fidelity. It is important in future studies to assess classroom management and skill
development of the interventionists prior to the beginning of the intervention study. This would enhance statistical control and lessen variability among a multi-site study. Increased fidelity of observations and constructive corrective feedback during the course of implementation would further improve fidelity to ensure the PA segment is incorporated into each of the 15 sessions as intended. Sessions 8-15 included 20 minutes of activity such as dancing and stretching.

Classroom management was a challenge and teaching style (teacher-student interaction) was an additional dynamic with variation among teachers and different classes. The teacher was new to CCS and this school since November, replacing a long-term substitute whom the students spoke about fondly. On the days that Sessions 2, 8, 10, and 13 were delivered the science teacher was absent and a substitute teacher was present during these COPE sessions. The substitute teacher was not new to the students and had previously served as a long-term substitute teacher with this group of students. Students behaved and interacted in a different manner when they were clear on the rules and expectations of the classroom environment with consistent application as I observed with this substitute teacher. Interruptions occurred frequently such as overhead announcements, and intercom interruptions in class asking for a student to be called out of class to go to the office, or make-up testing, and persons entering the room (i.e., security, administration, individual student mentors/coaches). When students were disruptive in hallways or running the teachers were equipped with whistles and would blow them loudly calling for order in loud voices.

The interventionist observed several outbursts with the teacher speaking loudly, instructing students to get out of his space, and in one instance calling for the principal to
come to the classroom when two male students began arguing loudly with each other. The PI encouraged everyone to deep-breathe. Following removal of students from the room for behavior-related occurrences, the interventionist would re-center the class with deep-breathing and a few minutes of guided mental imagery to re-focus. Following the end of Session 6 and effective communication with discussion on using a soft tone of voice to increase the listeners attention and focus on the communicator, the teacher was observed speaking in a soft voice explaining the outline for the rest of the day, (startlingly contrast) and notably the students quieted and were attentive. Another example was upon arriving to the school the interventionist would take the stairs to the 3rd floor classroom, and the students asked “Why don’t you take the elevators like the other teachers do?” Modeling (e.g., exhibiting and practicing skills; such as staying in the moment, thought-stopping, and communicating with others in positive ways) is one of the 12 empirical components of cognitive therapy.

In Sessions 1-3, students were not willing to share examples with each other in class and kept their manuals to themselves. Session 4 and 5 participants would ask me to look at what they had written in their books and share 1:1. Session 6 -15 students would raise their hand and participate in class with their own examples, stay after class or come in early to discuss specific CBSB techniques they had practiced. Strong encouragement and praise was offered for ongoing practice outside of the classroom. Previous studies utilizing the COPE program worked with 14-to-16 year olds and the population for this study was 11-to-13 year olds. Lessons learned included using methods that were simpler, less verbally-based, and more opportunity for drawing versus writing. The thinking-feeling-behaving triangle was placed on a brightly colored poster board and located at the
front of the classroom as a visual cue. One student made a duplicate thinking-feeling-behaving triangle poster that she had made and kept in her bedroom as a reminder to how her thinking and feeling impacted her behavior. Another student wrote two poems (“on being well” and “what makes a good day”) reflecting COPE content. The poems outlined positive promises she made to herself such as, “I promise I will be a leader, I promise I will be me.” Understanding that at this age of cognitive development pre-adolescents view their cognition as established fact, students were asked to respond in role-playing as if they were giving their best friend advice. This CBSB adaptation supports the pre-adolescent in viewing their cognition in third person not first person. They can more clearly see the thinking as maladaptive and changeable, instead of a fact that cannot be changed. Additionally, four students were observed sucking their thumbs (three girls and one boy) during class Sessions 1-11, yet no thumb sucking behavior was observed during Sessions 12-15. Case studies were made relevant to their culture and environment such as, taking a car trip to Mexico, cleaning their room, relocating to a different school, and family celebrations with matriarch prominence. During the nutrition portion of the COPE program, foods were discussed that included their favorites such as, chards, grits, tacos, enchiladas, and Taco Bell restaurant as their favorite fast food choice. Activity log sheets were made on orange paper to reflect their school colors and be visually attractive.

Following Sessions 9 and 13, the AKQ and NKQ were administered to the participants with low reliabilities reported (.66 and .52 respectively). The low reliabilities were also due to small sample size thus yielding very unstable estimates. In previous studies, these two instruments have shown high reliability; however, given the comprehensive challenges the interventionist encountered with student difficulties with
the program curriculum (frequently needing to spell words such as “friend,” students writing in COPE manuals using one or two words or phrases, drawing instead of writing, reading out loud in class haltingly or mispronunciations) on numerous observations during the intervention it is possible that the participants’ reading and writing comprehension is not what was expected of sixth graders. During next session following the tool administration (Sessions 10 and 14) each question was read aloud (to provide the correct answers) and the participants were able to appropriately respond. Ongoing persistence of low student performance measured by large number of students performing poorly on achievement tests and not performing at grade level is exacerbated in urban schools (Ahram, Stembridge, Fergus, & Noguera, 2011). Racial isolation and the concentration of poverty substantially influences school processes that greatly impact student achievement trends. In other words, urban education cannot be detached from its sociodemographic context (Rumberger & Palardy, 2005). Urban schools frequently miss the mark in creating a milieu of high academic expectations (Noguera, 2003). The urban district teachers can feel overwhelmed with what they consider to be high needs of their students, and consequently, consciously, or not, lower their own expectations for student performance (Ahram et al., 2011). Given the sociodemographic backgrounds of the urban students, with, unique stressors that challenge the students’ ability to perform at high levels, there remains a wide variation academically and within grade level performance (Theoharis, 2009). Reading out loud the AKQ and NKQ instruments may have improved the participants’ comprehension and their ability to respond to the tools.
Preliminary Effects of the COPE Intervention on the Pre-adolescent

The preliminary effects of the 15-week COPE intervention on urban 11-to-13 year old pre-adolescents were examined by evaluating the participant’s anxiety, depression, self-concept, PA, and healthy lifestyle beliefs from T0 to T1 using two-tailed paired sample t-tests. After completion of the COPE program, the pre-adolescents demonstrated decreases in their anxiety score, increases in healthy lifestyle beliefs, and increases in PA. These increases were statistically significant. The effect sizes seen in this study (Table 13) suggest that the intervention was specifically successful in changing these target outcomes. No significant change was seen in the Beck self-concept scale or the Beck depression scale when evaluating the entire group of participants. However, a subgroup analysis of the participants with elevated depression and/or anxiety scores (Table 14) demonstrated significant decreases on the Beck anxiety scale and the Beck Depression scale and significant increases on the Beck self-concept scale. The participants who scored positively on question 44 (suicidal ideation) and/or item 60 (hopelessness; Table 14) demonstrated significant decreases on the Beck depression scale.

These findings are consistent with previous studies that found positive outcomes in overweight diverse youth utilizing CBSB techniques, nutrition education, and brief periods of PA (Compton et al., 2004; Lusk & Melnyk, 2011; Melnyk et al, 2009; Melnyk et al., 2007). Integrating CBSB intervention skills has been shown to have a positive impact on depression and anxiety in adolescents. Additionally, Melnyk and colleagues (2006) found that adolescent cognitive beliefs also were related to their own healthy lifestyle choices and their anxiety and depressive symptoms. Drawing on CBT, previous research studies have shown youth with less healthy lifestyle beliefs also have lower self-
concept and higher levels of anxiety and depression. This CBT framework supports the effects for the subgroup of pre-adolescents who had elevated depression and anxiety and lower self-concept prior to the intervention. Therefore, incorporating CBSB with pre-adolescents may be a crucial approach for improving mental health, PA, and healthier lifestyle choices by supporting cognitive reappraisal and cognitive change to strengthen their healthy lifestyle beliefs in order to influence healthier behaviors and improved mental health (Melnyk et al., 2009; Melnyk, Small, et al., 2006).

Supported by CBT, the COPE program posits that the intervention strengthens the pre-adolescents confidence and beliefs about their ability to lead a healthy lifestyle and increases PA. Fundamentally, the impact of beliefs on being able to perform an activity mediates increasing PA (Sharma, Wagner, & Wilkerson, 2005-2006). A large positive effect size of 1.17 on PA was established with the pre-adolescents. The difficulty was getting the students to return the completed activity log sheets at baseline and post-intervention and, thus, the return number was smaller than the overall number of COPE participants. A paired t-test was performed on the matching pairs and a comparison was also done on the pre-intervention group (n = 17) and post-intervention group (n = 16). The findings on paired data (Table 13) were similar to the group data for the activity logs. It should be noted there were differences between T0 and T1 and environmental concerns of urban neighborhoods (previously noted) which may have impacted results. T0 occurred in January when the participants set goals for increasing weekly activity and comments reflected concern of meeting the goals due to safety and weather (e.g., “I am not allowed outside after dark,” “It’s dangerous outside,” “It’s too cold”). The concern for outside activity was heightened following Session 3 when the school experienced a
lock-down due to a reported shooting one block from the school. Discussion occurred regarding how to meet the activity goals inside their homes (e.g., using stairs, walking around a room, and push-ups during TV commercials, dancing in their bedrooms). T1 occurred in May when daylight hours are longer and students reported MVPA activities they were participating in (e.g., soccer, baseball, and bike riding). An additional measure could be added in future trials, such as the healthy lifestyle behaviors scale to measure the impact of beliefs on the pre-adolescents healthy lifestyle behaviors. This would provide an additional measure to look at healthy lifestyle choices including PA.

Overall, the pre-adolescents mean self-concept score from T0 to T1 did not change significantly. However, the subgroup of pre-adolescents with elevated depression and anxiety scores did show significant change with an increase in the mean self-concept score from T0 (41.57) to T1 (44.00) and a medium effect size (Tables 13 and 14). The medium effect size suggests that the intervention was successful in increasing self-concept in this population. This is an important finding because positive self-concept can serve as a protective factor to support positive behavioral outcomes when utilizing CBSB (Prince-Embry, 2014). As self-concept increases, anxiety and depression symptoms decrease consistent with the findings in the subgroup of pre-adolescents with elevated depressive and anxiety symptoms.

The preliminary effect of the COPE intervention on anxiety was examined by evaluating the pre-adolescents level of anxiety from T0 to T1 and demonstrated a decrease in anxiety mean scores over time. The decrease was statistically significant with a medium effect size (Table 13). The medium effect proposes that the intervention was successful in reducing anxiety in this pre-adolescent population. Sixty-five percent of the
sample was female which may have influenced the results due to anxiety occurring 2:1 proportionately higher in females versus males. Furthermore, the subgroup analysis of pre-adolescents ($n = 14$) with elevated depression scores of 55 and greater, had a large effect size indicating a greater decrease in anxiety. The elevated anxiety subgroups post-intervention mean score returned to near baseline. This finding is important because it demonstrates a promising and effective treatment for anxiety in urban pre-adolescents with elevated anxiety symptoms. Research has shown that anxiety exhibited in the school setting predicts poor academic achievement (Duchesne, Vitaro, Larose, & Tremblay, 2008) and anxious youth struggle to learn independence from their family contributing to household chaos (Connolly & Bernstein, 2007). Anxiety has been found to decrease self-concept and PA and based on this study’s finding, effective treatment would potentially increase self-concept and activity. Pre-adolescents who adaptively cope with stressors, can maintain a healthier life and healthy activity levels.

The preliminary effect that the COPE intervention had on pre-adolescent depressive symptoms was evaluated from T0 to T1. The decrease in depressive symptoms from baseline to post-intervention was not statistically significant for the entire sample. However, the subgroup with elevated depression at baseline demonstrated a large positive effect for COPE on their depressive symptoms at follow-up. These significant findings indicate that pre-adolescents who have elevated depressive symptomatology scores at pre-intervention may benefit more from the intervention. This finding is consistent with previous research findings in an RCT with high school adolescents (Melnyk et al., 2013; Melnyk et al., 2009). Additionally, participants who scored positive for suicidal ideation (question 44) and/or hopelessness (question 60) were
analyzed separately; there was a positive medium effect for COPE with this sub-group of pre-adolescents. The medium positive effect supports that the intervention was successful in reducing depression in both subgroups of this pre-adolescent population. This finding is important because it demonstrates a promising and effective treatment for anxiety in urban pre-adolescents with elevated anxiety symptoms. An unintended effect of reducing suicidal ideation as a result of this CBSB intervention was observed. A substantial finding was four of the six participants who scored positive for suicidal ideation at pre-intervention did not at post-intervention. This COPE Healthy Lifestyles program if routinely delivered in schools could not only help to decrease depressive and anxiety symptoms in those affected, but could also potentially decrease suicide risk.

The goal of this pilot was to determine whether the COPE intervention could improve PA, healthy lifestyle beliefs, and mental health of pre-adolescents in an urban school setting. These findings support CBT and add to the accumulating data that thinking affects emotions and behaviors. Determining the extent to which this comprehensive intervention can address the preventive physical and mental health of urban pre-adolescents and provide for long-term sustainable positive effects will require a larger scale randomized controlled trial, including whether COPE can prevent increases in weight and BMI as was found with high school teens one year after the completion of the intervention. Further research is needed to analyze potential moderators of the effects of COPE on various outcomes.
Relationship among Study Variables

Pearson’s $r$ correlations were used to quantify the magnitude and direction of the relationship of self-concept, anxiety, depression, beliefs, and PA (Table 15) at pre-intervention (T0) for the entire sample ($n = 31$). Strong positive correlations were found between self-concept and healthy lifestyle beliefs. The higher the self-concept score, the stronger the beliefs that the pre-adolescent could live a healthy lifestyle. From a CBT perspective, positive feelings and emotions lead to positive behavior. Additionally, depression and anxiety were significantly correlated. The activity variable did not show a significant relationship with the other variables; however, there was a small clinically significant association between the activity log and self-concept, indicating as self-concept increases, so does activity.

Study Limitations

In a one-group pretest-posttest intervention study, there are potential threats to internal validity including: (a) history (previously mentioned, e.g., media coverage of police violence of African American and the violence involved with the protests; students spent time passionately talking about this before classes); (b) maturation (ongoing cognitive development and onset of puberty); (c) instrumentation (change in the instrument or assessor during the interim pretest to posttest); (d) initial testing (posttest performance influenced by pretest); (e) regression to the mean (pretest scores high posttest will drift down or pretest scores low posttest will drift up); (f) selection bias; (g) mortality/attrition (not seen in this study); and (h) the Hawthorne effect (selection to participate affects pretest and/or posttest. Students participating in the study received pedometers to track their activity. Several students not in the study voiced their desire to
have a pedometer and this was noted on the program evaluation including the comment “I would give all the kids in the class a pedometer.” Experimenter expectancy could have been a threat in this study because the PI was the interventionist and therefore could have influenced outcomes. The interventionist field notes contain student observations and comments; for example, one student asked if the interventionist would eat lunch with her, the student then pulled up a stool and sat at the interventionist’s desk for the remainder of the session. Another student asked “Will you come back next year and be our teacher?” The time, attention, and empathy from the interventionist may have provided some treatment effect. A future RCT that controls for the interventionist’s time and attention would diminish this influence.

Because this study used a one group pretest posttest design, the findings should be interpreted in the context of several methodological limitations that may have contributed to the results. The design introduces threats to internal validity (ability to determine that it was the intervention itself that caused the outcome change) as it did not include an attention-control group. The small convenient sample size also does not allow for the study results to be generalized to other pre-adolescent populations. A full-scale RCT testing COPE group versus an attention control group is indicated for future research to increase larger subgroups within the overall sample to permit more in-depth analysis and greater power to detect statistically significant difference at $p$ value $\leq .05$. Additional short and long-term outcome measures (such as school attendance and academic achievement) should be assessed in future studies. An additional limitation is the PI delivered the intervention potentially introducing investigator bias. Additionally, approximately 31% of the students were recruited from the 101 potential participants.
making the recruitment rate less than the expected recruitment rate (50%). Possibly offering an incentive at the beginning of the study (i.e., drawing for a prize) would increase participant interest and offering gift cards for completion of T0 and T1 study measures, activity logs, and homework. Providing incentives would increase the cost of the study, but increasing the sample size provides overall increase in study power and dissemination of results. Parental involvement is an additional concern from two aspects. First, the parent demographic and program evaluation returns were low and there was not an opportunity to build any rapport with the parent community. Second, parent involvement with their pre-adolescent is an important influential component and the parent newsletter is a method to involve the parent with the pre-adolescent in providing parent psychoeducation. The students spoke of sharing the newsletter with their parents. Future studies should consider how to further involve the parents.

The low reliabilities found in the AKQ and NKQ measures were a limitation to determine whether students actually processed the content of the intervention. The small sample size violated the rule of 10 observation/item and was not large enough to reliably compute them. Previous studies found high reliability; however, this population’s reading and comprehension may not have been what is expected of other sixth grade populations. In spite of the limitation, positive outcomes were achieved.

Finally, the interventionist delivered the intervention with an inexperienced teacher (less than 1 year) in the classroom whose teaching style at times was inconsistent with COPE CBSB. This may have caused participant confusion. Training the teacher prior to study implementation on COPE and CBSB may have increased his consistent modeling while he remained in the classroom. A future RCT should involve
incorporating COPE for teachers to incorporate CBSB techniques (modeling, cue restructuring, cue recognition, and communication) that reinforce the healthy lifestyle behaviors for students. It would be beneficial to train the teachers to deliver this intervention so that the intervention could be easily scaled if found to be efficacious.

**Implications for Clinical Practice**

Best evidence-based practice indicates that urban pre-adolescents, who are at risk for mental (i.e., depression, anxiety, suicide) and physical (i.e., overweight/obesity, decrease in PA, increase sedentary time) health concerns, have access to a manualized intervention that includes CBSB (CBT theoretical underpinnings) with extensive coverage for substantial problems/disorders encountered in this population (Weisz & Kazdin, 2010). The literature indicates that enhancing the CBSB portion with nutrition and PA components provides for an inclusive intervention with outcomes of interest for PA, obesity/overweight, and mental health (Luttikhuis et al., 2009; Whitlock, O'Connor, Williams, Beil, & Lutz, 2010). This study adds to the growing body of research that supports COPE as an efficacious intervention for youth in real-world school settings and has the promising potential to improve mental health outcomes (e.g., anxiety, depression, and suicidal ideation), PA, and healthy lifestyle beliefs.

Recommendations for evolving this intervention into clinical practice/school environments include:

Disseminating findings from this pilot study through the *Journal of School Health* or another related journal as school personnel must become aware that the intervention is available.

Disseminate findings at Sigma Theta Tau International’s international conference.
Disseminate findings from this pilot to CCS administration and stakeholders to generate support, build relationships, and establish future collaborative research projects.

Apply for a RO1 grant for a funded project to scale the COPE Healthy Lifestyles TEEN Program in multisite schools for a two group RCT efficacy study that includes the variables measured in this study along with BMI, school attendance, and academic performance over a longer period of follow-up through one to two years after completion of the intervention.

Complete a cost effectiveness analysis to demonstrate the cost-to-benefit ratio and demonstrate the long-term mental and physical health benefits for support from government entities and third party payers.

**Implications for Future Research**

The results of this pilot study will inform the design of a future multisite RCT with a two group comparison (i.e., COPE versus an attention control group). Offering incentives to participants at key data collection times (i.e., T0, T1) will be important to obtain as much completed data as possible. Methods to increase parental involvement should also be evaluated.

The selection of outcome measures is crucial to the process of understanding mediators and moderators involved in behavior and outcome measures following intervention delivery. An additional measure to consider would be evaluating healthy lifestyle beliefs in a bigger study as the mediator of the effects of COPE on outcomes, as well as assessing moderators that impact the relations of COPE on outcomes. Furthermore, consideration should be given to BMI as a measure (considered the consistent standard for intervention studies involving overweight/obesity) in future
Integration of academic outcomes in future studies (e.g., grade point average, standardized test scores, absentee rates) is important to demonstrate improvement in academic achievement and cost effectiveness. Measuring how COPE impacts academic performance, and missed school days are important to schools and for large scale impact. Adding a tool to measure the teaching style and school culture also would allow for control of environmental variation among schools in a multisite study.

Another consideration is who should deliver the intervention? The COPE CBSB manualized intervention is designed for a variety of professionals who can deliver the sessions (e.g., licensed mental health counselors, teachers, guidance counselors, school nurses). There have been some effectiveness studies (Boyle, Lynch, Lyon, & Williams, 2011; Calear & Christensen, 2010; Weisz et al., 2006) completed on CBT interventions, but additional effectiveness studies designed around this intervention are needed to answer this question and provide evidence on sustainability.

Extending the study to incorporate follow up beyond immediate post-intervention is important to determine if the intervention effects are maintained (Luttikhuis et al., 2009). Sustainability of outcomes achieved and longitudinal follow-up (e.g., 6, 12, and 24 months) should be considered in future studies to evaluate if the preliminary effects demonstrated in this pilot can be maintained past immediate intervention. Cognitive-Behavioral Skills Building interventions have emphasis on thinking, feeling, and behavioral components involving healthy/unhealthy lifestyle choices. Evaluation of current research in developing future studies is needed to determine if intervention booster episodes should be offered (Summerbell et al., 2003).
Additional concern should be given to the suicidal ideation that was expressed by six of the participants in light of the recent research of Bridge and colleagues (2015) highlighting increasing suicide rates in African American children ages 6-to-11 years of age. The COPE intervention established this pre-adolescent population was responsive to the intervention in decreasing depression, anxiety, suicide ideation, along with increasing activity (assist maintaining ideal body weight) and increasing self-concept. This finding is promising because of the underlying CBT premise that changing pre-adolescents negative schema, utilizing cognitive reappraisal, and restructuring maladaptive thoughts into positive ones result in positive emotions and consequentially positive behavior.

**Conclusion**

This study demonstrated that a theory-based CBSB COPE intervention is acceptable and feasible to pre-adolescents in an urban school setting. Findings indicate some modification is needed to the intervention (e.g., focusing on the cognitive-based first seven sessions to ensure understanding, reading out loud study measures to support comprehension of material, providing a consistent modeling of CBSB, controlling for environmental variables, limited parental involvement). The intervention focuses on cognitive restructuring and cue recognition, incorporating goal-setting and problem solving skill development, while focusing on the pre-adolescent’s activity and nutrition. This intervention provides the pre-adolescent with positive cognitive-behavior skills to improve self-esteem and beliefs, and decrease anxiety and depressive symptomatology, and improve beliefs and healthy lifestyle choices. In a future RCT, it would be beneficial to train the teachers to deliver this intervention so that the intervention could be easily scaled if found to be efficacious. Statistically significant findings for decreasing anxiety
and increasing activity for the entire sample demonstrated preliminary efficacy. Importantly, significance was found with the subgroup of pre-adolescents who are the most vulnerable and had elevated symptoms of depression, anxiety, low self-concept, and a group of students who expressed suicidal ideation/hopelessness. The pre-adolescents with elevated depression, anxiety, and lowered self-concept scores demonstrated significant changes and had medium to large effect sizes in mean score change. The suicidal ideation group showed a medium effect size change in their depression score and more importantly four of the six students no longer scored positive for suicide ideation or hopelessness. Recognizing there were limitations in design and a small sample size, this pilot has promising results that support CBT to guide future interventions and calls for a larger two group RCT with longer-term follow-up on a variety of measures including PA, BMI, and academic outcomes.
References


doi:10.1037/0033-295X.87.6.477


Appendix A: Review of the Literature
Prior school-based intervention studies for middle school pre-adolescents on healthy lifestyle behaviors, mental health outcomes and overweight/obesity

<table>
<thead>
<tr>
<th>Author/Location/Design/ Theory</th>
<th>Purpose/Sample/Setting</th>
<th>Intervention/Outcomes/ Follow-Up</th>
<th>Significant Findings</th>
<th>Strengths/ Limitations</th>
</tr>
</thead>
</table>
| Frenn, M., Malin, S., Bansal, N 2003 Wisconsin Two group RCT (classroom unit of randomization) Health Promotion Model/Transtheoretical Model (HPM/TM) | **Purpose**: Create, implement and test a HPM/TM intervention to control fat in diet and increase PA for urban middle school students  
**Sample**: Four classrooms  
N = 117 6th, 7th, 8th grade  
Mean Age (13.82 years)  
52% female 47% male 1% not identified  
50% African American 20% Caucasian 14% Hispanic 15% other  
**Setting**: urban middle school, Four classrooms, four different teachers | **Intervention**: Four classroom sessions for 45 min (1X per week for four weeks) delivered by graduate nursing students  
Content & Related Activity: low fat diet food, food pyramid, food diary, restaurant choices, snack choices, exercise for healthy life  
**Control**: regular class content  
**Outcome Measures**: Food Habits Questionnaire measure percent of fat in diet, child/adolescent activity log (CAAL) Temptation (self-efficacy) | Percent of fat in diet significant decrease for intervention group  
Higher stage of change had diet lower in fat  
Higher temptation score higher fat diet  
No difference on study variables based on demographics | **Strengths**:  
No significant differences at baseline between groups  
Theoretical framework  
Randomized to group  
Pre/Post testing control group  
**Limitations**:  
No physiological measures  
Not manualized program making replication difficult |
# Evaluation of an Upper Elementary School Program to Prevent Body Image, Eating, and Weight Concerns

<table>
<thead>
<tr>
<th>Author/Location/Design/Theory</th>
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<th>Significant Findings</th>
<th>Strengths/Limitations</th>
</tr>
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</table>
| Kater, K., Rohwer, J., Londre, K. 2002 Minnesota Four public, one private urban/rural schools | **Purpose**: Evaluate a primary prevention program to increase knowledge, critical thinking skills, and realistic attitudes about body image, eating, and healthy weight  
**Sample**: Four classrooms  
N = 415 (44% 4th, 19% 5th, and 37% 6th graders)  
357 intervention group (183 girls, 174 boys)  
58 control (23 girls, 35 boys)  
Age 9 – 13  
95% Caucasian  
0.7% African American  
0.5% Hispanic  
2.5% Asian American  
1.2% Native American  
**Setting**: classrooms in five different school buildings | **Intervention**: primary prevention 11 lesson curriculum (10 weeks) delivered by school staff  
Content: Healthy Body Image (HBI) content (appearance changes during puberty, genetic diversity, internal weight regulation, hunger deprivation, wholesome foods, limited sedentary entertainment and increasing PA)  
**Control**: regular class content  
**Outcome Measures**: Scores on Scales: body image, body size prejudice, healthy body image, knowledge, lifestyle behaviors, self image, media  
Significant scale score differences by gender and grade at baseline | Girls receiving HBI intervention had significant positive increase in all scales except body image  
Girls in control group also showed significant increase in knowledge - (small sample)  
Boys in control group showed decrease in media scale – (small sample)  
Boys in intervention group had significant positive changes in all scales except body image (was not sig) self-image was significantly lower | **Strengths**: HBI positive effects for short term  
Randomized to group  
Pre/Post testing  
Control Group  
**Limitations**: Not ethnically diverse  
Small control sample  
Not manualized program making replication difficult |
### Reducing Obesity via a School-Based Interdisciplinary Intervention among School Youth: Planet Health

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<thead>
<tr>
<th>Author/Location/Design/ Theory</th>
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<th>Intervention/Outcomes/ Follow-Up</th>
<th>Significant Findings</th>
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</tr>
</thead>
</table>
| Gortmaker, S., Peterson, K., Wiecha, J., Sobol, A., Dixit, S., Fox, M.J., Laird, N. 1999 | **Purpose:** Evaluate school-based health intervention (Planet Health) on obesity among 6 to 8th graders  
**Sample:**  
10 schools four communities  
N = 1560 (baseline demographics = for BMI, TSF, obesity prevalence)  
Ethnic differences for African American girls (17% vs. 10%) & Hispanic boys (18% vs. 12%) in control schools  
Mean age (11.6 years)  
48%female 52%male  
69% Caucasian  
11% African American  
11% Hispanic  
9% Asian/Pacific Islander  
2% American Indian  
5% Other  
**Setting:** classrooms | **Intervention:** Interdisciplinary (math, lang. arts, social studies, and science) curriculum with Physical education 16 core lessons of 1 or 2-45 minute periods per year (total 32),  
Content & Related Activity: four behavioral changes: reduce TV viewing to two hours per day, increase moderate/vigorous PA, decrease high-fat, increase fruit/veg to 5 x day  
**Control:** regular class content  
**Outcome Measures:** Ht, wt,(BMI), triceps skin-fold thickness (TSF), self-report measures for television and video viewing, food and activity | Decreased obesity prevalence among female students over two-year period  
No findings for boys (obesity)  
Reducing Television viewing time for boys and girls  
Fruit & veg consumption increased in girl intervention group | **Strengths:** Theoretical framework  
Randomized  
Teacher training  
Reduction in television viewing predicted obesity reduction for girls  
**Limitations:** Potential measuring error for TSF  
five of the measures for TSF not balanced  
Unable to adjust for maturation of boys over the two yrs.  
Teacher reported implementation  
Missing fidelity check |
## School-based Obesity Interventions: A literature review

<table>
<thead>
<tr>
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<th>Intervention/Outcomes/Follow-Up</th>
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| Shaya, F., Flores, D., Gbarayor, C., Wang, J. 2008 | **Purpose:** Determine the effectiveness of obesity school-based interventions  
**Sample:** Age 7 - 19  
**Setting:** schools | **Intervention:** Four weeks to greater than 20 months  
15 exclusive PA  
16 education/behavior modification  
20 utilized both of above  
**Content:** Physical Activity  
Behavior modification with dietary, fitness, nutritional knowledge  
**Control:** not specified | 40 of 51 studies had statistically significant results  
13/15 PA studies  
12/16 education/behavior modification studies  
15/20 that combined the above two categories | **Strengths:**  
Majority of studies had significant findings  
**Limitations:**  
Wide variation among studies that utilized same intervention e.g. PA  
Wide variation in length of study and limited evidence of long term results and sustainability |
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</tr>
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</table>
| Johnston, C., Moreno, J., El-Mubasher, A., Gallagher, M., Tyler, C., Woehler, D. 2013 Houston, Texas **RCT** Seven schools for two years randomized by school to intervention/control Based on CATCH protocol with 3rd graders but added MI training for teachers **Purpose**: Evaluated a school-based obesity intervention (integration of healthy messages into school curriculum) and provided teachers with ongoing support and Motivational Interviewing (MI) training **Sample**: N = 835 - 2nd graders Professional-Facilitated intervention group (PFI) = four schools, n=509 Self-Help (SH) = three schools, n=326 Age 7 – 9 years %female %male 28.3% Caucasian 23.3% African American 23.1% Hispanic 25.3% Asian **Setting**: schools **Intervention**: 50 lessons per year, one of seven healthy messages in English, math, science and social studies curriculum with activities to reinforce lesson with reach out ideas for parents that the school could opt to do Content & Related Activity: based on CATCH protocol health and nutrition education (eat more fruits/veg, drink more water, less sugary beverages, opt for healthy snacks, increase active play, decrease screen time, three servings dairy, healthy breakfast, appropriate portion size) **Control**: received healthy education material but did not receive ongoing teacher support as the PFI group did **Outcome Measures**: Anthropometric at baseline Obese overweight group: Significant zBMI reduction of overweight/obese in PFI group vs. SI Overall grades decreased in both groups with PFI less decrease NL weight: 10% nl wt groups in PFI and SI became overweight Grades decreased overall No ethnic diff **Strengths**: Based on CATCH added MI Teacher training (extensive 40+ hours) With ongoing clinical psychologist support for MI component and weight management techniques Baseline demographics same **Limitations** Lack of measure for PA and diet improvements
| and 24 months  ht., wt., BMI transformed to z-score |
| Grades (GPA of math, reading, and science grades) |
| Slow rate of weight |
**Systematic Review** of school-based interventions that focus on changing dietary intake and physical activity levels to prevent childhood obesity: An update to the obesity guidance produced by the National Institute for Health and Clinical Excellence

<table>
<thead>
<tr>
<th>Author/Location/Design/Theory</th>
<th>Purpose/Sample/Setting</th>
<th>Intervention/Outcomes/Follow-Up</th>
<th>Significant Findings</th>
<th>Strengths/Limitations</th>
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</thead>
<tbody>
<tr>
<td>Brown, T. &amp; Summerbell, C. 2008 Systematic Review</td>
<td><strong>Purpose</strong>: Determine the effectiveness of interventions focused on improving diet and/or PA behaviors in school age children&lt;br&gt;<strong>Secondary aim</strong>: Identify study characteristics that may affect outcomes such as gender, age, socioeconomic status, setting, process indicators, contextual factors&lt;br&gt;<strong>Sample</strong>: 5 – 18 years old&lt;br&gt;<strong>Setting</strong>: schools</td>
<td><strong>Intervention</strong>: 12+ weeks (diet, diet and PA, or PA) intervention, usual care vs. intervention group&lt;br&gt;<strong>Content &amp; Related Activity</strong>: Low fat diet food, food pyramid, food diary, restaurant choices, snack choices, exercise for healthy life&lt;br&gt;<strong>Control</strong>: regular class content&lt;br&gt;<strong>Outcome Measures</strong>: Weight recorded as change or absolute: BMI, BMI z-score, percent of body fat, skin fold thickness, percentage of overweight</td>
<td>Insufficient evidence for effectiveness in dietary or dietary vs. PA&lt;br&gt;**School-based PA may help maintain healthy weight in short term&lt;br&gt;**PA activity most beneficial in girls and younger children short-term overweight prevention&lt;br&gt;<strong>Combined PA and diet school-based</strong></td>
<td><strong>Strengths</strong>: Age specific BMI most common measure for weight&lt;br&gt;<strong>Evidence of effectiveness for synchronized and sequential behavior change interventions but lacks manualized intervention</strong>&lt;br&gt;<strong>Limitations</strong>: Assessment measures weak&lt;br&gt;Some studies lacked power to discern findings</td>
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<tr>
<td>Author/Location/Design/Theory</td>
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<td>Van Lippevelde, W., Verliogne, M., De Bourdeaudhuij, I., Brug, J., Bjelland, Lien, N., Maes, L. (2012)</td>
<td><strong>Purpose</strong>: Evaluate the impact of parental involvement of school-based obesity prevention interventions in children and adolescents</td>
<td><strong>Intervention</strong>: Parent related modules</td>
<td>Some positive effects found but there were too few studies regarding the added value of parental involvement with inconsistent evidence</td>
<td><strong>Strengths</strong>: Lack of evidence to support the claim that parental involvement is important Strategies that focused on the home-related factors for parental involvement tended to be most effective</td>
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<td><strong>Systematic review</strong> (5 electronic databases: Cochrane, Cinahl, ERIC, Medline, Web of Science) obesity prevention studies from 1990 – 2010 comparison of school-based intervention studies with and without a parental component, and only studies reporting health-related behavior outcomes – CATCH study included</td>
<td><strong>Sample</strong>: Age 6-18 8259 studies five met criteria</td>
<td><strong>Interventions</strong>: short duration (2) 1.5 – 3 months med-long (1)– 1 yr intervention long (2) – 2/3 years  Three studies included take home packets to parents (computer-tailored education, educational materials, interactive meeting) One study organized school events Two studies discussed does of parental participation Four studies focused on changing parent knowledge, role modeling, interaction with child</td>
<td><strong>Limitations</strong>: Few studies Inconsistent evidence</td>
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<tr>
<td>Author/Location/Design/ Theory</td>
<td>Purpose/Sample/Setting</td>
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<tr>
<td>Friedrich, R.R., Schuch, I, Bernades, M., 2012</td>
<td><strong>Purpose</strong>: Evaluate the effectiveness of school-based intervention programs using nutritional education, PA, or both on reducing BMI</td>
<td><strong>Intervention</strong>: (diet, diet and PA, or PA) intervention Content &amp; Related Specific interventions associated with positive results: lifestyle changes that reduced television, videogame and computer screen time, increased focus on consumption of fruits and vegetables; and reduced consumption of foods rich in fat</td>
<td>PA alone no significant BMI reduction Nutritional education alone no significant BMI reduction PA and nutrition combined significant BMI reduction (0.37)</td>
<td><strong>Strengths</strong>: Meta-analysis <strong>Limitations</strong>: Studies didn’t account for stage of sexual maturation Majority of studies performed with small sample</td>
</tr>
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<td><strong>Meta-Analysis</strong> (1998 – 2010) PubMed, Lilacs, Embase, Scopus, Web of Science and Cochrane Library 23/995 RCT studies after completing 3 meta-analyses (PA alone, Nutrition alone, and combined)</td>
<td><strong>Sample</strong>: N= 4172 participants PA N=3524 participants nutrition N=9997 participants combined intervention <strong>Setting</strong>: schools</td>
<td><strong>Outcome Measures</strong>: BMI reduction</td>
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### Effect of school-based physical activity interventions on body mass index in children: a meta-analysis

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<tr>
<th>Author/Location/Design/Theory</th>
<th>Purpose/Sample/Setting</th>
<th>Intervention/Outcomes/Follow-Up</th>
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</tr>
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<tr>
<td>Harris, K., Kuramoto, L., Schulzer, M., Retallack, J. 2009</td>
<td><strong>Purpose:</strong> Evaluate the effectiveness of school-based intervention programs using nutritional education, PA, or both on reducing BMI&lt;br&gt;&lt;br&gt;<strong>Sample:</strong>&lt;br&gt;Majority 3rd - 6th grade&lt;br&gt;Age 5-18 overall&lt;br&gt;&lt;br&gt;<strong>Setting:</strong> schools</td>
<td><strong>Intervention:</strong> 6 months – 3 years in duration&lt;br&gt;9 studies: moderate to vigorous PA increase&lt;br&gt;5 studies: increasing the time of PA activity&lt;br&gt;2 studies: added weight bearing exercise&lt;br&gt;1 study focused on large muscle group&lt;br&gt;1 study personalized PE for each student</td>
<td>BMI reduction did not improve with PA intervention, no consistent change in other measures of body composition either</td>
<td><strong>Strengths:</strong>&lt;br&gt;RCT and controlled studies&lt;br&gt;&lt;br&gt;<strong>Limitations</strong>&lt;br&gt;Lack of adherence to study protocol not measured&lt;br&gt;Lack of objective assessment of dose of PA</td>
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<tr>
<td>Author/Location/Design/ Theory</td>
<td>Purpose/Sample/Setting</td>
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| Branscum, P., Sharma, M. (2012) | **Purpose:** Review primary prevention interventions targeting obesity after-school environment  
**Sample:** Majority 4th – 5th grade  
K – 6th overall  
Age – 9-10  
**Setting:** schools | **Intervention:** Three weeks – three years in duration  
**Duration criteria:** programs ranging from 0 to 12 weeks were considered short, 13 to 27 weeks as low-moderate, 28 to 32 weeks as moderate, and those lasting more than 32 weeks long) it was found that a majority (10 interventions) could be considered short, five were low-moderate, and five were long  
20 different interventions included:  
Cardiovascular exercise, resistive exercise, PA, dietary, combination, behavioral skills training  
12 studies targeted both dietary/PA interventions three studies used some behavioral therapy | One study involved parents for PA recall of their child  
Three studies relied on parents for diet recall | Strengths: RCT and controlled studies  
Limitations:  
Follow up was rare, mostly short term  
Dose variation  
Unknown extent of delivery of intervention/studies lacked fidelity measures |
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<th></th>
<th>Objective assessment body composition, weight status, aerobic fitness</th>
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| The effect of participation in a school-based nutrition education interventions on body mass index: a meta-analysis of randomized controlled community trials |
|---|---|---|---|
| **Author/Location/Design/Theory** | **Purpose/Sample/Setting** | **Intervention/Outcomes/Follow-Up** | **Significant Findings** |
| Cardoso da Silveria, J, de Aguiar Carrazedo Taddei, J., Guerra, P., Nobre, M. 2013 | Purpose: Evaluate effectiveness of school-based nutrition education interventions in reducing/preventing overweight/obesity in children/adolescents | Intervention: Classroom intervention administered by health care professionals or school teachers | Average treatment effect across the studies significant reduction in children’s BMI Individually this was Two studies showed significant reduction from intervention to control (Two studies: more than one year, classroom intervention with parental involvement) |
| **Meta-Analysis** | Sample: Age 5-18 overall N= 8722 participants | **Outcome Measures:** BMI | **Strengths/Limitations** |
| 14 databases PubMed/Medline, EMBASE, ISI Web of Knowledge, CENTRAL–Cochrane, ERIC, CINAHL, LILACS, PsycInfo, SPORTDiscuss, ASSIA, Physical Education Index, Social Care Online, Social Services Abstracts, and Sociological Abstracts) until May 2010 and second search on PubMed from 2010 to 2012 | Setting: schools | **Strengths:** RCTs | Limited number of RCTs |
| RCTs in schools 8/4888 | Theory of Planned Behavior – used in one study | | |
Appendix B: Assent/Consent Forms
Introduction
This form provides information that may affect decisions about your child’s participation in a research study. Your participation is voluntary. It will also record parental consent (permission) that parents/guardian are willing to have their child participate in a study conducted by researchers from The Ohio State University. This study is being conducted because we want to learn more about the healthy lifestyle beliefs and behaviors of middle school students and how these behaviors affect the health of the students. The Ohio State University IRB has approved this study.

Researchers
Dr. Bernadette Melnyk, Dean and Professor, College of Nursing; Dr. Kimberly Arcoleo, Director of the Center for Women, Children and Youth; Caroline Graham, Mental Health Counselor, College of Nursing; Jacqueline Hoying, PhD candidate, College of Nursing and Caitlin Slevin, research coordinator, College of Nursing; The Ohio State University.

Description of Research Study
1) We are asking for permission for your middle school child to participate
2) We are asking for permission for you to participate
If you allow your child to participate in this study, they will participate during a regularly scheduled class hour in their class. Your child will be asked to fill out questionnaires at the beginning of the study, and 15 weeks after the study starts. If it is determined, any time during the study that your child is at risk for depression or a related injury, a counselor will be notified. A letter will be sent to you. Your child will asked to complete a homework assignment each week, which will include: keeping a food diary, wearing a pedometer, writing down their steps/movements and monitoring their thoughts and behaviors.
If you decide to be part of the study, you will be asked to fill out a survey at the beginning of the study and a program evaluation at the end of the study (in 15 weeks)
The survey will take about 30 minutes of your time. Newsletters about how to lead a healthy lifestyle will be sent home to you and your child will asked to review the newsletters with you.
In order for your child to participate, they must be enrolled in the 6th grade at Columbus City School, attend health class and give assent (permission).

Risks
Some questions on the surveys may be sensitive to you and your child, which may bring up uncomfortable feelings. If you or your child do not wish to answer any of the questions, you may leave them blank.

Benefits
You and your child may find that participating in the study activities are helpful.

Confidentiality
We will do everything we can to keep your child’s and your participation in the study confidential. The results of the research study may be published, but your child’s name or identifying information will not be revealed. You and your child’s name will not appear on any surveys and your information will be identified using a random code number only.
The research team approved by OSU IRB will be the only people will access to this private information.

**Withdrawal Privilege**
If you choose not to have your child to participate or withdraw your child at any time, there will be no penalty. It will not affect your child’s class grade or standings in the classroom. If your child chooses not to participate, there will be no penalty. If you choose to withdrawal yourself at any time, there will be no penalty in doing so.

**Costs and Payments**
There are no costs to you for participating in this study.

**Voluntary Consent**
By signing this form, you are saying that you have read this form and that you are satisfied with and understand the form, the research study and its risk and benefits. The researchers will be happy to answer and any questions you have about the research. For questions about your rights as a research participant, or to talk to someone who is not a member of the research team, please contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-6251.

If you have any questions, or feel you have been harmed by taking part in the research, please feel free to contact Dr. Bernadette Melnyks’s office at 614-292-4844 and reference Middle School COPE project.
Assent Form

We are asking you to take part in a research study, conducted by The Ohio State University. We would like to learn more about choices that middle school students make and how these choices affect their health.

If you agree to participate in the study you will be asked to fill out two surveys (a set of questions) that may be sensitive to you. These forms may bring up uncomfortable feelings and you may choose to not answer questions if you feel too uncomfortable.

You do not have to be part of this study. If you decide not to participate it will not affect your grade or how your teacher feels about you. Even if you start the study you can decide to stop if you want to. You may ask questions about the study at any time.

If you decide to be in the study we will not tell anyone you are in the study or how you answered the questions from the survey or additional forms. We will not share this information with your parents, friends or teachers---even if they ask. However, if it appears you are at risk for depression or harm we may tell your school counselor and send a letter home to your parent.

For questions about your rights as a research participate, or to talk to someone who is not a member of the research team, please contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-5251.

If you have any questions, or feel you have been harmed by taking part in the research, please feel free to contact Dr. Bernadette Melnyk’s office at 614-292-4844 and reference the Middle School COPE project.

If you sign this form, it means you have read the form and are willing to be part of this study. If you have any questions about this study you may ask someone from the research team, or your health teacher or the principals.

If you do not wish to participate do NOT sign the form.

Print name (first and last) __________________________________________
Date __________________________________________
Phone Number __________________________________________
Address __________________________________________
Class period __________________________________________

Researcher Signature _____________________________
Researcher Print Name (first, last) _____________________________
Date _____________________________
Appendix C: Research Protocol
Research Protocol: COPE: A Pilot Study for Urban Youth

Aims:
Specific aim 1. Evaluate the feasibility and acceptability of integrating the COPE/Healthy Lifestyles TEEN Program in the health curriculum for pre-adolescents in 6th grade.
Specific aim 2. Determine the preliminary effects of the COPE/Healthy Lifestyles TEEN Program on pre-adolescents’ healthy lifestyle beliefs, anxiety and depressive symptoms, self-concept, and physical activity.
Specific aim 3. Determine the relationships among the study variables.

Research Question: What is the Effect of the COPE Healthy Lifestyles TEEN program on Pre-adolescent: healthy lifestyle beliefs, mental health outcomes (i.e. increased self-concept, decreased depressive and anxiety symptoms, anger, and destructive behaviors.

Overview of the design. This is a pre-and post-test pre-experimental design study that will test the feasibility, acceptability and preliminary effects of the COPE (Creating Opportunities for Personal Empowerment) Healthy Lifestyles TEEN (Thinking, Emotions, Exercise, Nutrition) Program on the healthy lifestyle beliefs, anxiety, depression, self-concept, and physical activity of pre-adolescents in middle school. Participants will be recruited from Columbus City Schools, Columbus Ohio who are enrolled in a health class. The students in the health education course will receive: 15 session multi-component educational and Cognitive Behavior Skills Building (CBSB) program with physical activity (i.e., COPE). The PI will deliver the intervention with support from the research team. In addition to baseline assessments, outcomes will be measured immediately following the intervention post-intervention in order to assess preliminary effects of the program. Students in the 6th grade at Columbus City will receive the COPE program in the Fall 2014. All of the data collection will remain the same as the previous COPE groups less the Perceived Difficulty Scale, Healthy Behaviors Scale, and anthropometric measurements.

Sampling. Columbus City students attending required health education classes will be eligible for study participation. We estimate, based on prevalence data nationally, that 30% to 38% of the teens in these schools will be overweight or obese (depending on sex and race/ethnicity). Based on recruitment of teens in the currently funded NIH COPE study with high school students, we conservatively anticipate that at least 50% of the students in these health classes will give assent and their parents will consent to participate in the study. We expect that the health education teacher(s) will agree to participate in the study as there is enthusiasm about participating in the project.

Setting. Early teens will be recruited from Columbus City School in Franklin county which is located in Central Ohio (letter of support in Appendix B). This school system was chosen because it lies in an urban region of Ohio which is the area of focus for this
pilot study. This will enable us to gather additional evidence on how the program impacts key outcomes in students of various ages and locations.

**Inclusion and Exclusion Criteria:**
Although all pre-adolescents will be enrolled in a health class and receive the COPE intervention curricula, participation in the research study (e.g., completing questionnaires, program evaluations) will be subject to the following criteria:

**Inclusion criteria.**
- Students and parents of any gender, ethnicity/race, or socioeconomic status.
- Students in the 6th grade at Columbus City School, Columbus, Ohio.
- Students who assent to participation.
- Students with a custodial parent who consents for themselves and their pre-adolescent’s participation in the study.

**Exclusion criteria**
Students who are younger than the 6th grade level will be excluded because they are unlikely to have sufficient cognitive development to benefit from the proposed intervention.
Students who are older than the 6th grade level will be excluded as they are no longer part of the developmental age group.

**Recruitment.** Research team members will introduce the study during the first class of the health education course. Written and verbal information about the study will be provided to the students. Student assent and parent consent forms will be distributed to interested students along with written information about the study for them to share with their parents. The pre-adolescents and parents will be informed that participation in the study is completely voluntary and there will not be any penalty if they decide not to participate or if they decide to withdraw at any point in the study. Students who meet eligibility criteria, have given assent and submitted written parental consent will be able to participate in the study. Students who do not participate in the study will remain in their health class and receive the content being delivered, but will not be involved in the research portions of the study.

**Measures**

**Rationale for the Study Instruments.** Instruments provided to the students have construct validity and excellent internal consistency reliabilities. They will measure their healthy lifestyle beliefs, mental health, and physical activity.

**Demographic questionnaire and measures: Pre-adolescents.**

**Demographic data** will be collected with a questionnaire at baseline. Examples of the items for the pre-adolescents will include: (a) age, (b) gender, (c) race/ethnicity,
(d) perceived social support, and (e) perceived environmental barriers to activity. These variables will serve as potential covariates in the analyses.

The Beck Youth Inventory (2nd edition; BYI-II) (primary outcome) is a 100-item instrument for youth 7 to 18 years of age is the most recent version of the BYI. It is a commercial product (Pearson Assessment) widely used in research and clinical settings that has well-established reliability, validity, age, gender, and diagnostic-adjusted norms. It measures five constructs: (a) depressive symptoms (b) anxiety symptoms, (c) anger, (d) disruptive behavior, and (e) self-concept. The five sub-scales of the BYI-II each contain statements about thoughts, feelings and behaviors related to emotional and social impairment. The depression subscale of the BYI-II assesses depression using DSM-IV criteria. This instrument will be administered pre intervention and post-intervention.

The Healthy Lifestyle Beliefs Scale (Melnyk, 2003) (HLBS) (mediator) is a 16-item instrument that was adapted from other Beliefs scales used by the PI in multiple prior studies. This scale taps beliefs about various facets of maintaining a healthy lifestyle (e.g., “I believe that I can be more active” and “I am sure that I will do what is best to lead a healthy life”). Participants respond to each item on a Likert scale that ranges from 1 strongly disagree to 5 strongly agree. Pre-adolescents will complete this measure pre intervention and immediate post intervention.

Parent Demographic Questionnaire. Demographic data will be collected via a self-administered questionnaire. Examples include: (a) age, (b) gender, (c) race/ethnicity, (d) marital status; (e) family structure (e.g., one versus two-parent household), (f) highest level of educational achievement, (g) stressful life events, (h) mental health diagnoses and treatment, and (i) chronic illnesses. Parents’ income and employment status will be assessed by the Hollingshead’s system. Parents will also complete a program evaluation questionnaire at the end of the 15 sessions. Questions will include: was the program helpful for your child, did your child share information from the program with you? Was this information helpful to you? etc

Procedure. The PI was trained on the COPE Intervention and will be delivering the intervention. The training for the COPE Program included: (a) background on the theoretical framework and CBSB, (b) review of each of the COPE sessions with accompanying homework activities, (c) role plays for skill building with the teens, and (d) review of documentation to complete in the intervention diary after each classroom session.

First Study Contact (Week 0). Students taking required health education classes at Columbus City School will be informed of the study during their first class session of their health course. The study will be explained verbally and with written materials by
one of the members of the research team. The students who are interested in participating in the study will be given pre-adolescent assent and parent consent forms for the study to share with their parents. Information to the parents include contact information for the study team so that the parents can call and ask questions about the study and receive more information as needed. Students will be asked to bring back the signed assent and parent consent forms to their scheduled health class by the end of the week. All of the students will be receiving the COPE curriculum but only those students who provide assent and receive parental consent will complete questionnaires and participate in the study.

**Week 0-1. Time 0 Data Collection.** For those students who provide assent and whose parents provide consent, baseline demographic and study questionnaires will be gathered at the beginning of the next class session. Students that complete the baseline questionnaires will have the BYI-II (BDI) checked immediately for their answers to the “trigger” questions, 44 and 60 on the depression subscale. Any student who answers “sometimes” or higher on question 4 and/or “Always” on question 20 will be immediately referred to the counselor. Any student who scores a T-score of 70 or higher on the BDI will have a letter sent home to their parent indicating that they may be at risk for depression related injury, and referral sources are provided. In addition, for those parents who give their consent, the demographic study questionnaires will be given to the student in a sealable envelope to bring home for the parent to complete within one week.

**Weeks 1 through 15.** COPE will be delivered in the classroom setting by the PI trained in the intervention Content of the 15 session intervention program will be over a 15 week period of time. Each COPE session contains 30 minutes of didactic information and 20 minutes of a planned classroom physical activity.

**Post-intervention Assessment.** In the days following the 15th session intervention, a research team member will administer the post-intervention follow-up study questionnaires. Follow-up program evaluations will be collected from the parents.

**Analysis plan.**

Descriptive statistics for all demographic variables will be completed. Feasibility and acceptability will be assessed by in-class attendance, % of completed homework by the students, and evaluation feedback from the students, teacher, and parents.

Effect sizes will be calculated to determine the magnitude of effect for COPE on the outcome variables. A paired t-test will be conducted to determine change over time from baseline to post-test for depression, anxiety, self-concept, anger, and disruptive behavior. Pearson’s r correlations will be calculated to analyze relationships among all study variables.
Appendix D: IRB Approval and CCS Approval Letters
October 13, 2014

Protocol Number: 2013B0129
Protocol Title: COPE-A PILOT STUDY FOR APPALACHIAN YOUTH, Bernadette Melnyk, Jacqueline Hoying, Kimely Arcoleo, Kari Sims, Nursing

Request to amend the research dated July 1, 2014—Add Colleen McGovern as key personnel; add assent form (CCS Middle Schools), add parental permission/consent form (CCS Middle Schools), revise research protocol to reflect changes, add debriefing/referral letter for parents; add recruitment letter to parents (CCS Middle Schools)

Type of Review: Amendment #06—Expedited
Approval Date: September 16, 2014
IRB Staff Contact: Michael Donovan  Phone: 614-292-6950  Email: donovan.6@osu.edu

Dear Dr. Melnyk,

The Behavioral and Social Sciences IRB APPROVED the above referenced research.

Note that if applicable, informed consent (and HIPAA research authorization) must be obtained from subjects or their legally authorized representatives and documented prior to research involvement. The IRB-approved consent form and process must be used. Changes in the research (e.g., recruitment procedures, advertisements, enrollment numbers, etc.) or informed consent process must be approved by the IRB before they are implemented (except where necessary to eliminate apparent immediate hazards to subjects).

It is the responsibility of all investigators and research staff to promptly report to the IRB any serious, unexpected and related adverse events and potential unanticipated problems involving risks to subjects or others.

This approval is issued under The Ohio State University’s OHRP Federalwide Assurance #00006378. All forms and procedures can be found on the ORRP website – www.orrp.osu.edu. Please feel free to contact the IRB staff contact listed above with any questions or concerns.

Michael Edwards, PhD, Chair, Behavioral and Social Sciences Institutional Review Board
Monday, October 27, 2014
Dr. Kimberly Lightle
The Ohio State University
College of Education
185 Arps Hall
1945 North High Street
Columbus, OH 43210-1172

Dear Dr. Lightle:

The Research Proposal Review Committee of Columbus City Schools has reviewed and approved the research proposal, COPE: A Pilot Study for Urban Youth, submitted by Jacqueline Hoying.

I am enclosing a letter of introduction. The letter of introduction should be given to administrators when soliciting participation/subjects for the study. The researcher must get the permission of the building principal or designee, get their signed consent (see letter of introduction), and fax it to the Department of Evaluation Services, Columbus City Schools at 365-5100, before contacting any potential subjects in that building. If the researcher plans to conduct research in more than one building, the letter may be reproduced in order to get signed consent from all building administrators involved.

If you have any questions or concerns, please contact my office.

Sincerely,

Michael Barnes
Research and Evaluation Specialist
Office of Performance and Strategic Initiatives
Columbus City Schools

The Columbus City School District does not discriminate because of race, color, national origin, religion, sex or handicap with regard to admission, access, treatment or employment. This policy is applicable to all district programs and activities.
Monday, October 27, 2014

Dear Administrator:

This letter serves as an introduction to Jacqueline Haying of The Ohio State University. The proposed research activity: COPE: A Pilot Study for Urban Youth has been reviewed and approved by the Research Proposal Review Committee.

This letter does not obligate you to participate in the study. Rather, it is an introduction and official notification that the researcher has followed established procedures and has been granted permission to solicit subjects to participate in the study.

If you agree to allow the researcher to conduct research in your building, please sign below. The researcher must then fax this letter to the Department of Evaluation Services at 365-5180. This must be completed before the researcher contacts any potential subjects in your building. If you have any questions or concerns, please call my office.

Sincerely,

Michael Barnes
Research and Evaluation Specialist
Office of Accountability
Division of Testing and Program Evaluation
Columbus City Schools

Stephanie A. Bland 11-3-14
Principal’s Signature
Date

Stephanie A. Bland 11-3-14
Principal’s Name
School

The Columbus City School District does not discriminate because of race, color, national origin, religion, sex or handicap with regard to admission, activities, treatment or employment. This policy is applicable to all district programs and activities.
Appendix E: Parent Referral Letter
Dear Parents/Guardians,

Recently you permitted your child to complete a questionnaire as part of a study with The Ohio State University. A part of this questionnaire included questions to assess distress in children/adolescents, including depression. Based on your child’s score on these questions, we recommend that you contact your primary care provider for further assessment of your child. If you do not have a primary care provider, please contact your child’s guidance counselor. You may also contact Jackie Hoying, MS, RN to discuss referral options at 614-359-2515.

Thank you for your time.

With Warm Regards,

Bernadette Melnyk, PhD, RN, CPNP, PMHNP, FAAN, College of Nursing
Appendix F: Instruments
Parent Baseline Questionnaire

Section: Instruments, Parent Instruments

Purpose: The Parent Baseline Questionnaire is completed by participating parents at the beginning of the semester. The questionnaire captures all outcome measures for parent participants.

Instructions

This survey asks questions about you and how you live. Please answer every question carefully and be as honest as you can. There are no right or wrong answers and it is ok to leave an answer blank. We just want to know what is true for you. If there is something you don’t understand or if you have a question, please ask one of the research team members.

Your answers will not be shared with your teenager or his/her teacher or school. Your answers will only be identified by a code number.

If you have any questions, please call our office at 614-688-1641.

Thank you for your time!
Parent Demographic Form

Please fill in the blank or fill in the bubble that is the best answer for you.

Today’s date

1. Are you a man or a woman?
[1] Man

2. How old are you today? ________________

3. What is your race?
[1] American Indian or Alaska Native
[2] Asian
[3] Black or African American
[4] Native Hawaiian or Other Pacific Islander
[888] Other. Please write it here

4. What is the highest level of education you have completed?
[8] Less than 9th grade
[9] 9th grade
[10] 10th grade
[12] 12th grade or GED
[13] 1 year of college
[14] 2 years of college
[15] 3 years of college
[16] Bachelor’s Degree
[17] Master’s Degree
[18] PhD

5. What is your occupation? ________________________________

6. Number of hours you work outside the home?
[0] Unemployed
[1] Employed < 20 hours/week
[3] Employed 40 hours/week
[4] Employed > 40 hours/week

7. What is your marital status?
[1] Married (first time)
[2] Never Married
[3] Separated
[4] Divorced
[7] Married (third time)

8. Do you receive Public Assistance?

9. Household Income for the home in which the child lives?
   [1] Less than $7,000
   [2] $7,000 – 10,000 per year
   [3] $10,001 – 15,000 per year
   [4] $15,001 – 20,000 per year
   [5] $20,001 – 30,000 per year
   [6] $30,001 – 40,000 per year
   [7] Greater than $40,000 per year

10. Including your child in the study, how many children do you have? ____________

11. Including your child in the study, how many children (20 years and younger) are in your household? ____________

12. Besides you, how many other adults (21 years and older) are living in the home? ____________

13. Check if any of the following events have happened to you in the last 12 months

<table>
<thead>
<tr>
<th>#</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Marital separation</td>
</tr>
<tr>
<td>B</td>
<td>Divorce</td>
</tr>
<tr>
<td>C</td>
<td>Change in relationship with live in partner (e.g., move out)</td>
</tr>
<tr>
<td>D</td>
<td>Birth of child (your baby or your partner’s baby)</td>
</tr>
<tr>
<td>E</td>
<td>You began working outside home</td>
</tr>
<tr>
<td>F</td>
<td>Change in your work hours (+/- 10 hours/week)</td>
</tr>
<tr>
<td>G</td>
<td>Other adult household member began working outside the home</td>
</tr>
<tr>
<td>H</td>
<td>Change in other adult household member’s work hours</td>
</tr>
<tr>
<td>I</td>
<td>Death of a family member</td>
</tr>
<tr>
<td>J</td>
<td>Death of a family pet</td>
</tr>
<tr>
<td>K</td>
<td>Hospitalization or newly diagnosed significant illness of a family member</td>
</tr>
<tr>
<td>L</td>
<td>Moved to a new location</td>
</tr>
<tr>
<td>M</td>
<td>Had a family member in jail or prison</td>
</tr>
</tbody>
</table>

14. How much do you weight in pounds? ____________________
15. How much would you like to weigh in pounds? _____________

16. How tall are you? _______________

17. Do you have any health problems?

18. If yes, what physical problems do you have (e.g., high blood pressure, diabetes, cardiac disease?)

19. Have you ever been treated for mental health problems?

20. Has your child ever been treated for a mental health disorder?

21. If yes what disorders? ______________________________

22. Does your child see a consistent health care provider?

23. Do you smoke?

24. If yes, how many cigarettes per day? _____________

25. Do you drink alcoholic beverages?

26. Were there any days last month that you did not have enough money to buy food or did not have enough food to eat?

27. In your life, are there any things that you can think have that prevent YOU from having a healthy lifestyle?

28. If yes please describe the things that prevent YOU from leading a healthy lifestyle ______________________________

________________________________________________________________________

________________________________________________________________________
Form: Parent Post (T1) Questionnaire  
Section: Instruments, Parent Instruments

Purpose: The Parent Post Questionnaire is completed by participating parents at the end of the semester. The questionnaire captures all outcome measures for parent participants as well as program evaluation and feedback.

Instructions
This survey asks questions about you and how you live. Please answer every question carefully and be as honest as you can. There are no right or wrong answers and it is ok to leave an answer blank. We just want to know what is true for you. If there is something you don’t understand or if you have a question, please ask one of the research team members.

Your answers will not be shared with your teenager or his/her teacher or school. Your answers will only be identified by a code number.

If you have any questions, please call our office at 614-688-1641.

Thank you for your time!
Health for Pre-Teens: A School-Based Program
Parent Program Evaluation Survey

In order to develop the best health program for pre-teens, it is important to have your opinion concerning the program that your pre-teen participated in. Please answer the following questions.

1. Was the program helpful for your child?
   [1] Yes
   [0] No

   Please describe how the program was or was not helpful for your child.
   __________________________________________________________________________
   __________________________________________________________________________
   __________________________________________________________________________

2. Did your child share any of the information from the program with you?
   [1] Yes
   [0] No

   What did your child share with you?
   __________________________________________________________________________
   __________________________________________________________________________
   __________________________________________________________________________

3. Was the program information helpful to you that your child shared with you?
   [1] Yes
   [0] No

   Please describe how the information in the program did or did not help you.
   __________________________________________________________________________
   __________________________________________________________________________
   __________________________________________________________________________

4. Would you recommend participation in a health program similar to this one to a family member or a friend?
   [1] Yes
   [0] No

   Please describe why you would or would not recommend a similar program.
   __________________________________________________________________________
   __________________________________________________________________________
   __________________________________________________________________________

5. How could participation have been made easier for you?
   __________________________________________________________________________
   __________________________________________________________________________
6. Would you be interested in participating in future studies like this one?
   [1] Yes
   [0] No

7. Was the parent newsletter that you received helpful to you?
   [1] Yes
   [0] No

   If yes, please describe how it was helpful.
   _______________________________________________________________________
   _______________________________________________________________________

8. Have you seen any changes in your child’s behavior as a result of participating in the program?
   [1] Yes
   [0] No

   If yes, what behavior changes have you seen?
   _______________________________________________________________________
   _______________________________________________________________________

9. Have you changed any of your behaviors as a result of the program?
   [1] Yes
   [0] No

   If yes, what behaviors have you changed?
   _______________________________________________________________________
   _______________________________________________________________________

10. What other information would you like to have included in the program?
    _______________________________________________________________________
    _______________________________________________________________________

Thank you for your participation in the COPE program!
Form: Pre-Teen Baseline, and Post-Intervention Questionnaire

Section: Instruments, Pre-Teen Instruments

Purpose: The Pre-Teen Baseline Questionnaire is completed by participating pre-teens at the beginning of the semester. The questionnaire collects information for study outcomes along with demographic information and measurements.

Instructions
This survey asks questions about you and how you live. Please answer every question carefully and be as honest as you can. There is no right or wrong answers and it is ok to leave an answer blank. We just want to know what is true for you. If there is something you don’t understand or if you have a question, please ask one of the research team members.

Your answers will not be shared with your parents, teachers, or classmates. Your answers will only be identified by a code number.

Thank you for helping us.
Please fill in the blank or circle the number next to the answer that is best for you.

Today’s date

1. Are you a boy or a girl?
   [1] Boy

2. How old are you today?

3. What is your date of birth? (Month/day/year)

4. What is your race?
   [1] American Indian or Alaska Native
   [2] Asian
   [3] Black or African American
   [4] Native Hawaiian or Other Pacific Islander
   [6] Hispanic
   Other. Please write it here __________________________

5. Does your family receive public assistance? (e.g., welfare, food stamps, school lunch program, AHCCCS or other assistance)
   [1] Yes
   [2] No
   [3] I don’t know

6. Do you work for pay?
   [1] Yes
   [2] No

7. If you do work for pay, how many hours per week do you work?

8. Were there any days last month that your family did not have enough money to buy food or Didn’t have enough food to eat?
   [1] Yes
   [2] No
   [3] I don’t know
The next set of questions asks about the people who live in your household.

9. How many adults (19 or older) are living in your household?

10. Including yourself, how many children (18 and younger) are living in your household?

11. Does your mother have a job working for money?
   [1] Yes
   [2] No

12. What kind of work does your mother do?

13. Does your father have a job working for money?
   [1] Yes
   [2] No

14. What kind of work does your father do?

15. How much school did your mother (step-mother or female guardian) complete? Circle the highest level.
   [1] Did not finish high school
   [2] Finished high school or got a GED
   [3] Did some college or training after high school
   [4] Finished college
   [5] Master’s degree or PhD
   [6] I don’t know

16. How much school did your father (step-father or male guardian) complete? Circle the highest level.
   [1] Did not finish high school
   [2] Finished high school or got a GED
   [3] Did some college or training after high school
   [4] Finished college
   [5] Master’s degree or PhD
   [6] I don’t know

17. What is your mother’s marital status?
   [1] Married (first time)
   [2] Never Married
   [3] Separated
   [4] Divorced
   [7] Married (third time)
18. What is your father’s marital status?
[1] Married (first time)
[2] Never Married
[3] Separated
[4] Divorced
[7] Married (third time)

The next set of questions asks about your physical and mental health.

19. In general, how would you describe your health?
[1] Poor
[2] Fair
[3] Good
[4] Very Good
[5] Excellent

20. Do you see a healthcare provider (doctor or nurse practitioner) for routine checkups?
[1] Yes
[2] No
[3] I don’t know

21. Do you have any physical or mental health problems?
[1] Yes
[2] No

22. List health problems you have (e.g., ADD/ADHD, asthma, allergies, digestive problems, high blood pressure, diabetes, depression, anxiety):

23. How often do you get a headache?
[0] Almost never
[1] Once a month
[2] Once every other week
[3] Once a week
[4] Twice a week
[5] Every other day
[6] Almost every day

How are you feeling? Please circle the response that is the best answer for you?

24. In the past 2 weeks, how much stress have you had?
Not at all   A little   Some   Quite a bit   A lot

25. In the past 2 weeks, how much worry have you had?
Not at all   A little   Some   Quite a bit   A lot
26. In the past 2 weeks how down or sad have you felt?
Not at all    A little    Some    Quite a bit    A lot
27. In the past 2 weeks, how interested have you been in doing the things that you usually like to do?
Not at all    A little    Some    Quite a bit    A lot

28. In your life, are there things that you can think of that prevent YOU from leading a healthy lifestyle?
[1] Yes
[2] No
[3] I don’t know

29. Please describe things that prevent YOU from leading a healthy lifestyle?

30. How many days a week do you exercise at least 30 minute a day?

The next set of questions asks about body weight.

31. How do you describe your weight?
[1] Very underweight
[2] Slightly underweight
[3] About the right weight
[4] Slightly overweight
[5] Very overweight

32. Which of the following are you trying to do about your weight?
[1] Lose weight
[3] Stay the same weight
[4] I am not trying to do anything about my weight

33. During the past 30 days, did you exercise to lose weight or to keep from gaining weight?
[1] Yes
[2] No

34. During the past 30 days, did you eat less food, fewer calories, or foods low in fat to lose weight or to keep from gaining weight?
[1] Yes
[2] No

35. Is your biological mother overweight?
[1] Yes
[2] No
[3] I don’t know
36. Is your biological father overweight?
   [1] Yes
   [2] No
   [3] I don’t know

37. How many siblings (brothers and sisters) do you have that are overweight?

The next set of questions asks about your physical activity.

38. During the past 7 days, on how many days were you physically active for a total of at least 60 minutes per day? (Add up all the time you spent in any kind of physical activity that increased your heart rate and made you breathe hard some of the time.).
   [0] 0 days
   [1] 1 day
   [2] 2 days
   [3] 3 days
   [4] 4 days
   [5] 5 days
   [6] 6 days
   [7] 7 days

39. On an average school day, how many hours do you watch TV?
   [0] I do not watch TV on an average school day
   [1] Less than 1 hour per day
   [2] 1 hour per day
   [3] 2 hours per day
   [4] 3 hours per day
   [5] 4 hours per day
   [6] 5 or more hours per day

40. On an average school day, how many hours do you play video or computer games or use a computer for something that is not school work? (Include activities such as Nintendo, Game Boy, PlayStation, Xbox, computer games, and the Internet.)
   [0] I do not play video/computer games or use a computer unless it is for school work
   [1] Less than 1 hour per day
   [2] 1 hour per day
   [3] 2 hours per day
   [4] 3 hours per day
   [5] 4 hours per day
   [6] 5 or more hours per day

41. Are you currently taking a physical education class (PE) at school?
   [1] Yes
   [2] No
42. If yes, in an average week when you are in school, on how many days do you go to physical education (PE) classes?
[0] 0 days
[1] 1 day
[2] 2 days
[3] 3 days
[4] 4 days
[5] 5 days

43. During the past 12 months, on how many sports teams did you play? (Include any teams run by your school or community groups.)

44. Do you currently participate in any other organized physical activities, such as martial arts, dance, gymnastics, cheerleading, or other individual sports?
[1] Yes
[2] No

45. Please list activities you like to do to be physically active.

The next set of questions asks about your Sleep Patterns.

46. How hard is it for you to fall asleep at night?
[1] Not at all
[2] A little
[3] Somewhat
[5] Very much so

47. Do you wake up during the night once you fall asleep?
[1] Yes
[2] No

48. How many hours on average do you sleep at night?

49. How much support from your parents/family do you have to do well in school?
[1] None
[2] A little
[3] Some
[5] Very Much
Healthy Lifestyles Belief Scale for Pre-Teens
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Bernadette Melnyk

Below are 16 statements that relate to your overall health and well-being. Please circle the number that best describes your agreement or disagreement with each statement. There are no right or wrong answers

1. I am sure that I will do what is best to lead a healthy life  
2. I believe that exercise and being active will help me to feel better about myself  
3. I am certain that I will make healthy food choices.  
4. I know how to deal with things in a healthy way that bother me.  
5. I believe that I can reach the goals that I set for myself  
6. I am sure that I can handle my problems well  
7. I believe that I can be more active  
8. I am sure that I will do what is best to keep myself healthy  
9. I am sure that I can spend less time watching TV  
10. I know that I can make healthy snack choices regularly  
11. I can deal with pressure from other people in positive ways  
12. I know what to do when things bother or upset me  
13. I believe that my parents and family will help me reach my goals  
14. I am sure that I will feel better about myself if I exercise regularly  
15. I believe that being active is fun  
16. I am able to talk to my parents/family about things that bother or upset me  
Pre-TEEN Evaluation of COPE Healthy Lifestyles Program

1. Did you find information from the COPE (Creating Opportunities for Personal Empowerment) Healthy Lifestyles Pre-TEEN Program helpful?
   [1] Yes
   [2] No

   If yes, what did you find the most helpful?

2. What are three things that you learned most from the COPE program?
   A. ___________________________________________________________
      ___________________________________________________________
      ___________________________________________________________
   B. ___________________________________________________________
      ___________________________________________________________
      ___________________________________________________________
   C. ___________________________________________________________
      ___________________________________________________________
      ___________________________________________________________

3. Have you changed any of your behaviors as a result of the COPE Program?
   [1] Yes
   [2] No

   If yes, what behaviors have you changed?

4. Would you recommend the COPE program to other high school students?
   [1] Yes
   [2] No

   If yes, why?

5. What would YOU change about the COPE program?

6. Did you do the homework for most of the COPE program sessions?
   [1] Yes
   [2] No

   If you did not do the homework, why not?
7. Did you discuss the COPE program information with your parent (or guardian) when you brought home the newsletter from school?
   [1] Yes
   [2] No

If you did not discuss the materials with your parent (or guardian), why not?

8. Did you discuss the COPE Program information with your classmates or friends?
   [1] Yes
   [2] No

9. What sessions from the COPE program did you find the most helpful? (Please circle all that apply).
   1. Healthy Lifestyles
   2. Self-Esteem and Positive Thinking/Self Talk
   3. Setting Goals
   4. Stress and Coping
   5. Dealing with Your Emotions in Healthy Ways
   6. Personality and Effective Communication
   7. Activity: Let’s Keep Moving
   8. Heart Rate & Stretching
   9. Nutrition Basics
   10. Reading Labels
   11. Portion Sizes
   12. Eating for Life & Social Eating—Party Heart(y)
   13. Snacking Can Be Healthy Too
   14. Healthy Choices
   15. COPE Healthy Lifestyles TEEN Program; Pulling It All Together for a Healthy YOU!

10. What topics from the COPE program did you find the least helpful? (Please circle all that apply)
    1. Healthy Lifestyles
    2. Self-Esteem and Positive Thinking/Self Talk
    3. Setting Goals
    4. Stress and Coping
    5. Dealing with Your Emotions in Healthy Ways
    6. Personality and Effective Communication
    7. Activity: Let’s Keep Moving
    8. Heart Rate & Stretching
    9. Nutrition Basics
    10. Reading Labels
    11. Portion Sizes
    12. Eating for Life & Social Eating—Party Heart(y)
    13. Snacking Can Be Healthy Too
14. Healthy Choices
15. COPE Healthy Lifestyles TEEN Program; Pulling It All Together for a Healthy YOU!

11. What other things would you have liked to have learned about in the COPE Program?

12. Did you use the Movband throughout the semester?
   [1] Yes
   [0] No
   If not, why did you not use the Movband throughout the semester?

13. Did the Movband help you increase your physical activity?
   [1] Yes
   [0] No

14. Did your family change anything as a result of the COPE Program?
   [1] Yes
   [0] No
   If yes, what did your family change?

15. Please tell us anything else you would like us to know about the COPE Program.

Thank you for participating in the COPE Healthy Lifestyles Pre-TEEN Program!!!

Beck Youth Inventory – II. Here is a list of things that happen to people and that people think or feel. Read each sentence carefully and circle the one word (Never, Sometimes, Often, or Always) that tells about you best. There are no right or wrong answers.

1. I work hard
2. I feel strong
3. I like myself
4. People want to be with me
5. I am just as good as the other kids
6. I feel normal
7. I am a good person
8. I do things well
9. I can do things without help
10. I feel smart
11. People think I am good at things
12. I am kind to others
13. I feel like a nice person
14. I am good at telling jokes
15. I am good at remembering things
16. I tell the truth
17. I feel proud of the things I do
18. I am a good thinker
19. I like my body
20. I am happy to be me
21. I worry someone might hurt me at school
22. My dreams scare me
23. I worry when I am at school
24. I think about scary things
25. I worry people might tease me
26. I am afraid that I will make mistakes
27. I get nervous
28. I am afraid I might get hurt
29. I worry I might get bad grades
30. I worry about the future
31. My hands shake
32. I worry I might go crazy
33. I worry people might get mad at me
34. I worry I might lose control
35. I worry
36. I have problems sleeping
37. My heart pounds
38. I get shaky
39. I am afraid that something bad might happen to me
40. I am afraid that I might get sick
41. I think that my life is bad
42. I have trouble doing things
43. I feel that I am a bad person
44. I wish I were dead
45. I have trouble sleeping
46. I feel no one loves me
47. I think bad things happen because of me
48. I feel lonely
49. My stomach hurts
50. I feel like bad things happen to me
51. I feel like I am stupid
52. I feel sorry for myself
53. I think I do things badly
54. I feel bad about what I do
55. I hate myself
56. I want to be alone
57. I feel like crying
58. I feel sad
59. I feel empty inside
60. I think my life will be bad
61. I think people try to cheat me
62. I feel like screaming
63. I think people are unfair to me
64. I think people try to hurt me
65. I think my life is unfair
66. People bully me
67. People make me mad
68. I think people bother me
69. I get mad at other people
70. When I get mad I stay mad
71. When I get mad, I have trouble getting over it
72. I think people try to control me
73. I feel people try to put me down
74. I feel mean
75. I feel like exploding
76. I think people are against me
77. I get angry
78. When I get mad I feel mad inside my body
79. I hate people
80. I get mad
81. I steal
82. Other people get me into trouble
83. I think about running away from home
84. I do mean things
85. I break into cars, houses, and other places
86. I fight with others
87. I like getting people mad
88. I skip school
89. I hate listening to other people
90. I argue with adults
91. I hurt people
92. I like being mean to others
93. I break the rules
94. I like it when people are scared of me
95. I like to hurt animals
96. I like to bully others
97. I tell lies
98. I like to trick people
99. I break things when I am mad
100. I swear at adults
Appendix G: COPE Newsletters
Session 1: Healthy Lifestyles

We are teaching your student about how to lead a healthy lifestyle. This includes making healthy choices. Healthy choices include exercise and eating healthy foods. Your student will learn more about this during the semester.

Your student is also being taught how to cope with stress in healthy ways instead of smoking or using alcohol or drugs.

Signs that your student may be stressed are when they feel:

- Anxious
- Nervous
- Depressed
- Irritable
- Angry
- Overwhelmed
- Burned out

If you see these signs of stress, ask your student to talk about what is bothering him or her. If he or she is really depressed or stressed, it is a good idea to have him or her seen by the doctor or nurse practitioner who can evaluate your student and further help him or her.

Remind your student to use the COPE strategies he or she is learning in class to deal with stress in healthy ways (like relaxation and positive self-talk).

Your student also will be learning about how to make healthy food choices, like eating more fruits and vegetables, instead of foods high in carbohydrates and fats.

Did you know that serving your student a glass of water instead of a can of soda or juice once a day can keep him from gaining weight or help him or her to lose weight if they need to?

Upcoming Newsletter #2

- Learning about Self Esteem
- Setting Goals
- Stress and Coping
- Dealing with Your Emotions in Healthy Ways

I have read and discussed this newsletter with my student.

Parent- Please sign and have your student return this part of the newsletter to his or her teacher.

Parent's signature ___________________________ Date ____________

Teen's name ___________________________ School ___________________________

--- cut here ---
Dear Parent(s)

Welcome to the COPE (Creating Opportunities for Personal Empowerment) TEEN (Thinking, Emotion, Exercise and Nutrition) Program. Your student's school has partnered with The Ohio State University College of Nursing to provide a healthy lifestyles program during their regular health class.

COPE is a 15 session program that teaches students how to make healthy lifestyle choices. This includes positive thinking and emotions, exercise and nutrition. The goal of the COPE TEEN program is to give information and activities to teens that help them to make healthy choices and lead a healthy life.

For example, if a student believes he can't do anything right, (like get good grades, negative thinking), he will probably feel depressed (negative emotion), and not try to do well with school work (negative behavior). In the COPE program, we are teaching your student to think more positively. They can do this by turning negative thoughts into positive ones. Please ask your student to share some examples of the thinking, feeling, behaving triangle from class.

Your student will bring home 4 newsletters so that you can keep up with the information he or she is learning in the COPE program.

By knowing what is in the program, you can talk with your student about what he or she is learning. You also can do some of the COPE activities together.

The first few sessions of the COPE program focus on healthy lifestyles. Your student is being taught that how he or she thinks affects how he or she feels and behaves. This is called the thinking, feeling, behaving triangle.

Thinking, feeling and behaving are all connected to each other.

Help your student to think positive and to feel good about him- or herself by saying at least one positive thing to him or her every day!
THINK POSITIVELY!!!!

Remember, how you think affects how you feel and how you act.

---

Upcoming Newsletter #3
- Personality and Effective Communication
- Activity: Let's Keep Moving!
- Heart Rate & Stretching
- Nutrition Basics

---

I have read and discussed this newsletter with my teen.

Parent(s): please sign and have your teen return this part of the newsletter to their teacher.

Parent's signature
Date
Teen's name
School

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Dear Parent(s),

This is the second of four parent newsletters for the COPE (Creating Opportunities for Personal Empowerment) TEEN (Thinking, Emotions, Exercise and Nutrition Program). Your child has completed five of the 11 sessions of the program. These five sessions have focused on ways for your teen to live a healthy lifestyle.

Each week during your child’s health class, the program is reviewed and new material is given to the student. Each session of the program is focused on the thinking, feeling, and behaving triangle in which thinking, feeling, and behaving are all connected with each other.

Session 2: Learning about Self-Esteem

In session 2 of the program, you too were given information about self-esteem. Self-esteem is how you think about how you view yourself. Self-esteem comes from within you and can be affected by many things, including friends, family, and what you see on TV.

Self-esteem is like a balloon. A person with good self-esteem can be compared to a balloon full of air. If your self-esteem is decreased, the air is let out of the balloon. If your self-esteem is increased, it is like adding air to the balloon.

Signs of Positive Self-Esteem
- Action
- Feeling Happy
- Standing up for what you believe in
- Not giving into peer pressure

Signs of Negative Self-Esteem
- Worrying about what others think
- Giving into peer pressure
- Using drugs and alcohol
- Feeling depressed

Steps to improve your child's self-esteem
- Pray for your teen, what he or she deserves it.
- Help your teen to think positively.
- Encourage your teen by saying “You can do it” when faced with something difficult.
Session 3: Setting Goals
Session 3 of the COPE TEEN Program
look at your teen's dreams and goals

Your teen was asked what they want to be when they are older and how to make that dream come true. Your teen also was asked to write down their goal and then plan how to reach it. Your teen was told that planning your goal is like getting a map to take a trip.

Part of reaching a goal is problem solving. The 4 steps to problem solving are:
- Knowing what the problem is
- What causes the problem
- What the possible ways to solve the problem are
- What the best solution is

Try This Relaxation Technique with your Teen:

Abdominal Breathing
Have your teen place his or her hands on their abdomen - right over the umbilicus - and take a deep breath. Your teen should feel his or her hands move out on inspiration and in on expiration. On inspiration, they should be thinking, "I am calm." On expiration, they should be thinking, "I'm blowing stress out."

Session 4: Stress and Coping
Session 4 of the COPE TEEN Program
focused on stress and coping

Stress is when you don't have the ability or skills to deal with things that worry or frighten you or that you find unpleasant. Stress can be good or bad. Good stress can help your teen to study for an exam, while bad stress can make him/her feel bad.

Teens are stressed because they worry about whether others like them, how they look, their parents, and their grades in school.

Healthy ways to cope include:
- Exercising
- Relaxation techniques, including abdominal breathing and focusing on the present moment
- Talking about feelings
- Listening to music
- Deep breathing

Responses to stress include:
- Depression
- Sweating
- Anger
- Headaches
- Fast heart and breathing rate
- Stomach aches
- Unhappiness
- Narcissism
- Anxiety
- Sleep problems

Depression is common in teenagers. Some things to look for if your teen is depressed are:
- Feeling hopeless
- Lack of energy
- Thoughts or plans to harm him or herself
- Frequent anger
- And sleep problems.

If your teen shows any of these signs, they should get help.

Help your teen to think positive and to feel good about himself/herself by saying at least one positive thing to him/herself every day.

Session 5: Dealing With Your Emotions in Healthy Ways
Session 5 of the COPE TEEN program
focused on healthy ways to handle emotions.

One way to handle emotions is mental imagery in which you place your eyes and think of your favorite place or activity. You may want to think about being at the beach. All emotions, including anger, jealousy, anxiety, and fear are normal, but we need to control how we act on these emotions. Some signs of your responses to these emotions include red faces, using hurtful words, shouting, and saying hurtful things.

Your teen can learn self-control by telling themselves to stay calm and saying things like "This won't help, and they don't mean what they are saying."

Finding Healthy Coping Strategies for the Whole Family
It is important to find healthy coping strategies for the whole family. Here are some common healthy coping strategies:
- Listening to music
- Exercise, such as walking or riding a bike
- Spending time with a friend
- Relaxation techniques
- Writing in a journal
- Reading a favorite book
- Watching a funny movie (Laughing releases stress and endorphins in the body, just like physical exercise).
- Singing
- Having quiet time
- Doing hobbies
- Helping others

Encourage your teen to talk to you about what they are learning in the COPE TEEN program and remind them to do the activities they are learning at home.

Thank you for helping your teen lead a healthy lifestyle. Your teen will bring home another newsletter at weeks 9 and 14.

Remind your teen to believe in himself/herself.

Remind your teen to use the COPE strategies he or she is learning in class to deal with stress in healthy ways (like relaxation and positive self-talk).
Session 9: Stoplight Diet

One way to look at the food you eat is through the Stoplight Meal Plan. This plan helps you to look at your food like a stoplight. Green—GO, Yellow—SHOW Caution, and Red—STOP (think WHOA). Let’s look a little more closely.

**Green Foods (GO or almost anytime foods):**

- Foods that are very low in calories.
- Most green foods are high in vitamins and minerals, high in fiber, and very low in fat.
- Examples: carrots, asparagus, lettuce, broccoli, tomatoes, grilled fish, grilled chicken, fat free milk and milk products, white grains, brown rice.

**Yellow Foods (SHOW Caution):**

- Moderate in calories but lower in nutrients and fiber.
- Examples: Whole wheat bread, 100% fruit juice, 2% low fat milk, lean ground beef, chicken with skin, peanut butter, whole eggs, rice, spelt drinks, avocado and vegetables like potatoes, corn, and yams, soft margarine.

**Red Foods (WHOA or Once in a while foods):**

- Provide very little nutrition for the amount of calories.
- Examples: Fried foods, cookies, ice cream, alcoholic beverages, some soups, sweet rolls, mug breakfast cereals, whole milk, choose products, broccoli, chili, meats, fried eggs, butter, margarine, sour cream, regular soda and increased used teas and lemonade.

**Upcoming Newsletter #4**

- Reading Labels
- Portion Sizes
- Eating for Life & Social Eating --Party Heart(y)
- Snacking Can Be Healthy Too
- Healthy Choices

Remember, keep encouraging your student to make healthy choices and role model for him or her!

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**Session 6: Personality and Effective Communication**

Dear Parent(s),

This is the third of four parent newsletters for the COPE (Creating Opportunities for Personal Empowerment) TEEN (Thinking, Eating, Emotion, and Nutrition Program). Your student has completed 9 sessions of the 14 sessions of the program. These 9 sessions have focused on ways for your student to live a healthy lifestyle.

Each week during your student’s health class, the program is reviewed and new material is given to your child. Each session of the program focuses on the thinking, feeling, and behaving triangle. Remember, how you think affects how you feel and how you behave.

Thank you for helping your student to choose a healthy lifestyle. Your teen has done a lot of work to learn about healthy choices. Your student will bring home another newsletter at week 14 of the program.

Session 6 of the COPE program focused on different styles of personality and effective communication.

People have different personality styles that change the way they behave and relate to one another.

One way to look at personality differences is to compare Type A personality to Type B personality. A person with a Type A personality likes to be in charge, often gets angry, and has a hard time relaxing. In contrast, Type B personalities are usually more relaxed, rarely get upset, and have a hard time getting started on projects.

Some people have a combination of both types of these personalities.

Another way to look at personalities is in the DISC system where each letter represents a different type of personality:

- D—Driving, Determined
- I—Inspirational, Influencing
- S—Steady, Steady
- C—Cautionous, Competent, Careful

You are born with your personality style and it changes little over time, but you can learn to communicate with other people who have different styles. This takes Effective Communication skills.
Session 7: Activity: Let's Keep Moving
Session 7 of the COPE TEEN Program
focused on activity as a healthy choice

Physical activity has many health benefits including making you look and feel better. One of the easiest ways to be physically active is to walk. When you are walking and looking at all around you, you are more “in the present” moment and can breathe your worries.

Some ways to increase your physical activity are:
- Walk 10-15 minutes in blocks, 2-3 times per day
- While talking on the phone, do some stretching
- When watching TV, do some jumping jacks and sit-ups or jog in place
- Set up straight with better posture
- Dance to music
- Walk the dog
- Park farther away from the building you are going into in order to walk more

Session 8: Heart Rate and Stretching
Session 8 of COPE TEEN Program
focused on heart rate and stretching.

Stretching is important to prevent injuries. You should stretch before and after exercise and hold each stretch for 10-15 seconds.

Why you should stretch:
- Causes muscles to increase blood flow so the body can work better during exercise.
- Warms up muscles so you have less chance of getting hurt while you exercise.
- Helps you to be more flexible, which can decrease the chances of injury.
- Can help you release tension and stress.

Maximum Heart Rate
Knowing your maximum heart rate will tell you how much exercise is too much. You should not let your heart rate go above this maximum when you are exercising.

To find out your heart rate, you can use your pulse. You can check your pulse at your wrist or on the side of your neck. Count for 10 seconds and multiply by 6 for your heart rate.

Tips for Healthy Eating:
- The portion of meat should be the size of a deck of cards
- A goal for eating fruits and vegetables should be to eat them 5 times a day
- We need the vitamins and minerals that are only found in fat. Without enough fat, our hair and our skin get dry, flaky, cracks and open to infection.
- Alcohol (ethanol) is the intoxicating agent in beer, wine and spirit. Alcohol is a source of calories; however, it does not contain nutrients.
Session 14: Healthy Choices

Session 14 was focused on reviewing and putting all of the healthy food choices together. Some things to remember are to drink plenty of water. Try thinking one less soda a day, a person can lose ten pounds in a year.

Strategies for Success:

- Balance of Food and Exercise
- Give yourself credit for doing well
- Plan ahead
- Have a Good Attitude

Your student will have one more session to review the COPE for HOPE Healthy Lifestyles TEEN program. This session will focus on your student’s success in the program. Your student will be reminded that he or she can make healthy choices to be a healthier person.

Thank you for helping your student choose a healthy lifestyle. Your student has done a lot of work to learn about making healthy choices.

Remember, keep encouraging your student to make healthy choices and be a role model for him or her!

Take some time to ask your student what he/she has learned during these last 14 weeks.

Parent(s): I have read and discussed this newsletter with my student.

Parent’s signature: 
Date: 
Student’s name: 
School:

Where can you find vitamins, minerals, and other nutrients?

- Calcium
- Fat free dairy is best, sodium and a small amount is absorbed from eating green vegetables
- Folic Acid and Vitamin B Complex;
- These can be found in whole grains, beans, green and colorful vegetables, and fruits
- Protein and Minerals;
- These important elements can be found in lean meats, fish and poultry, nuts, seeds, and beans
- Monounsaturated Fats;
- Found in nuts and seeds, salsas and olives, avocados, and margarine. These fats are the healthy fats
- Water:
- Water is very important because the body is mostly made of water. Flavored water is fine, but be careful about drinks with added sodium (like Gatorade).

Session 10: Food Labels and Healthy Food Choices

In session 10 of the program, your student was given information about healthy food choices. Making healthy food choices requires some planning for what you are going to eat.

Dear Parent(s),

This is the last parent newsletter for the COPE (Creating Opportunities for Parent Empowerment) TEEN (Thinking, Emotion, Feeling, and Nutrition) Program. Your student has completed 14 sessions of the 15 session program. These 14 sessions have focused on ways for your student to live a healthy lifestyle. Each week during your student’s health class, the program is reviewed and new material is given to the student.

Each session of the program has focused on the thinking, feeling, and behaving triangle. We have been teaching your student how thinking affects how he or she feels and behaves.

 [...]
### Session 10: Food Labels and Healthy Food Choices

**Nutrition Facts**
- **Serving Size:** 1/2 Apple
- **Nutrient per Serving:**
  - Calories: 42
  - Total Fat: 0g
  - Saturated Fat: 0g
  - Sodium: 0mg
  - Total Carbohydrate: 9g
  - Sugar: 0g
  - Fiber: 2g
- **Calories from Fat:** 0%
- **% Daily Value:**
  - Total Fat: 0%
  - Sodium: 0%
  - Total Carbohydrate: 0%

**Serving Size:**
- Standardized size based on amounts of food people actually eat. Similar food products have similar serving sizes making it easier to compare foods in the same category.
- **% Daily Value:** Indicates how food fits within a 2,000 calorie diet. Nutrients are based on dietary recommendations for most healthy people. This helps you to understand if the food has a "lot" or "a little" of the most important nutrients.

**Middle Section:**
- The nutrients Pontiac in the middle section are the ones most important to good health. This helps you to calculate your daily limits for fat, fiber, sodium, and other nutrients.

**Middle Section:**
- The nutrients Pontiac in the middle section are the ones most important to good health. This helps you to calculate your daily limits for fat, fiber, sodium, and other nutrients.

**Vitamins & Minerals:**
- The Pontiac Daily Value is the same as the U.S. Recommended Daily Allowance for vitamins and minerals.

### Session 11: Portion Sizes

*Did You Know?*
- The average dinner plate in 1956 was 8 inches.
- The average dinner plate now is 10.5 inches.
- A large drink at McDonald's is 20 oz.
- The average restaurant serving in 1960 was 11 oz.
- The average restaurant serving now is 21 oz.

### Session 12: Eating for Life and Social Eating: Party Heart(y)

**Social Eating Pointers**

**Ways to Eat Healthy Every day:**
- Remember the food pyramid and eat at least 5 fruits and vegetables every day.
- Plan ahead.
- Look for meals on healthy food.
- Limit eating out to once a week.
- If you don't cook, you can buy healthy meals at the grocery store.
- If you don't eat meat or dairy, learn what to eat to stay healthy.

**Tips for Easy to Fix Healthy Meals!**
- Prepare food ahead and freeze meals.
- Vegetables and greens can be washed and frozen the night before.
- Get in the habit of preparing enough so that you can eat twice from that recipe.

### Session 13: Snacking Can Be Healthy Too

**Apple in a green bowl:**

**For example:**
- Fresh fruits are a great snack.

**Green Snack Foods:**
- Carrots, tomatoes, potato, salad, fresh fruit, fresh berries, nuts, and seeds, whole grain bread, chicken breast, eggs, fish, yogurt, cheese, milk, nuts, seeds, peanut butter, whole wheat, etc.

**Yellow Snack Foods:**
- Grilled chicken, peanut butter, yogurt, cheese, eggs, rice, pasta, bread, pasta, salad, etc.

**Red Snack Foods:**
- Pasta, bread, fruits, vegetables, yogurt, cheese, eggs, rice, pasta, etc.

*333 calories*

*1000 calories*