2015

An After-School Wellness Program for Children in Low Socioeconomic Neighborhoods

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AN AFTER-SCHOOL WELLNESS PROGRAM FOR CHILDREN IN LOW SOCIOECONOMIC NEIGHBORHOODS

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A Scholarly Project

Submitted to the Occupational Therapy Department

of the

University of North Dakota

In partial fulfillment of the requirements

for the degree of

Master of Occupational Therapy

Grand Forks, North Dakota
May 16th
2015

This Scholarly Project Paper, submitted by Sarah Faehnrich and Kalee McCann in partial fulfillment of the requirement for the Degree of Master of Occupational Therapy from the University of North Dakota, has been read by the Faculty Advisor under whom the work has been done and is hereby approved.

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Department	Occupational Therapy
Degree	Master of Occupational Therapy

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ACKNOWLEDGMENTS

The authors of this scholarly project would wish to thank their advisor, Sclinda Janssen, PhD, OTR/L for her continued support throughout the completion of this scholarly project. Dr. Janssen contributed her expertise and knowledge into this scholarly project and showed a passion for this project. The authors would also like to thank all of the faculty at University of North Dakota's Occupational Therapy Department in support and preparation for the authors future career as occupational therapists.

ABSTRACT

The purpose of this scholarly project was to develop an interdisciplinary after-school program for fifth graders living in low socioeconomic neighborhoods. This program entitled *Let's Move, Cook, and Learn With Friends!* is intended to reduce obesity through promoting healthy habits in children by increasing physical activity, consumption of healthy food, and positive interactions with peers. Childhood obesity is a worldwide epidemic that can result in lifelong health problems if not treated proactively (Vizcaino et al., 2008). Therefore, the goal of this scholarly project is to raise their knowledge about obesity and decrease the risk factors for childhood obesity.

A literature review was conducted by the authors of this scholarly project to examine the problem of childhood obesity and obtain research about other after-school programs regarding what has worked and what has not worked at reducing childhood obesity. Researchers supported the need for this interdisciplinary after school program for children living in low socioeconomic neighborhoods. These children are at a higher risk of obesity than their peers. The researchers also provided evidence of effective health promotion strategies that was used to design *Let's Move, Cook, and Learn With Friends!*.

An after-school program manual was developed through multiple theoretical frameworks including pedagogy, self-efficacy theory, person-environment-occupation

[PEO] model and Cole's Seven Steps (Bastable & Dart, 2011; Cole, 2012; Law, Cooper, Strong, Stewart, Rigby, and Letts, 1996). This product has a strong focus on increasing children's self-efficacy through their engagement in meaningful occupations. This manual includes an introduction section with background information for the program coordinator, three separate booklets for each session area addressed (i.e. physical activity, nutrition, and well-being) and a parent handout for implementing healthy habits into the home environment. *Let's Move, Cook, and Learn with Friends!* program is intended to run 30-weeks, with three 90-minute sessions each week.

This after-school program will provide professionals and children with knowledge about physical activity, healthy eating and implementing positive interactions with peers at school. It is unique to existing after-school program as it is interdisciplinary and focuses on children from low socioeconomic neighborhoods, while coordinated by an occupational therapist, who is trained in group process and occupation-based activities.

CHAPTER I

INTRODUCTION

Childhood obesity has become a worldwide growing concern (Lueke, 2011). Researchers have asserted that children who live in low socioeconomic societies are at a greater risk of becoming overweight or obese, leading to lifelong health problems (Vizcaino, et al., 2008). Many risk factors are associated with childhood obesity. Some of these factors include type two diabetes, fatty liver disease, pulmonary complications, high blood pressure, higher risk for developing heart disease, and depression, all of which can be very serious conditions (Ogden, Carroll, Curtin, Lamb, & Flegal, 2010). Not only can childhood obesity lead to poor physical health, but mental health problems as well. Children who are obese or overweight are more likely to be perpetrators of bullying, compared to their peers who are normal-weight (Janssen et al., 2004). There are many factors that can lead to obesity in young children, including poor nutrition habits, decreased engagement in physical activity, and increased use of screen time including watching television, and playing video games (Coon, Goldberg, Rogers, & Tucker, 2001). Because children are not provided with adequate education and programs regarding health and wellness (Lueke, 2011), the authors of this scholarly project have developed an interdisciplinary after-school program to target this issue. The title of the program is *Let's Move, Cook, and Learn with Friends!*

The authors of this scholarly project are specifically developing their after-school program to benefit fifth grade students who live in low socioeconomic neighborhoods.

They hope to especially attract students who are obese or who are at risk for

obesity. However, any child is welcome to participate because all children would benefit from learning about how to implement healthy habits into their daily lives. The program includes fifth grade student participants because this is when children are in the midst of puberty when their bodies begin to undergo significant changes (e.g. weight), they start having more independence in their choices, and they are at the highest risk for bullying.

Let's Move, Cook, and Learn with Friends! will target three main areas: physical activity, nutrition, and mental well-being. The program is designed to cover 30 sessions occurring on Mondays, Wednesdays, and Fridays for 90 minutes, with many hands-on and occupation-based activities. The children will engage in exercise and games, gain a better understanding of nutrition and how to prepare healthy snacks and meals, and learn about healthy, positive relationships. Children will be encouraged and challenged to broaden their knowledge and application of healthy lifestyles by taking the skills they learn during the program and applying them into their home environment and daily lives. The ultimate goal is to raise their knowledge about obesity and decrease the risk factors for childhood obesity.

An occupational therapist would be well suited for the role of the program coordinator, with collaboration of professions from other disciplines who have expertise in the areas of physical education and activity, nutrition, and psychology. With this professional and interdisciplinary team, the three main components of the after-school program will be delivered in the best way possible. Activities will be planned by the program coordinator in collaboration with the other professionals who will add their expertise in designing and implementing the activities for each session. At the conclusion of each activity, the occupational therapist will lead a discussion following the

format of Cole's seven steps (Cole, 2012).

Childhood obesity is an emerging area of practice as recognized by the American Occupational Therapy Association (AOTA, 2014). Occupational therapy is a profession that provides individuals, groups and society with interventions targeted to promote health and wellness (AOTA, 2007). Through health promotion and other programs aimed at lifestyle changes, occupational therapists can implemented interventions for children to target obesity (AOTA, 2007). Occupational therapy provides individuals with services that address weight management and other health concerns through the use of engagement in meaningful activities (AOTA, 2007). Additionally, occupational therapists can also partner with teachers, nutritionists, and other health professionals to promote healthy lifestyle habits in children, which is what *Let's Move, Cook, and Learn with Friends!* intends to do (Northrop, 2014). The AOTA is supportive of preventing obesity, or preventing complications that arise from obesity, which is consistent with the goal of *Healthy People 2020* (Blanchard, 2012; U.S. Department of Health and Human Services, 2010).

Let's Move, Cook, and Learn with Friends! is based on several conceptual frameworks. These include: pedagogy (Bastable & Dart, 2011), the self-efficacy theory (Bastable & Dart, 2011), PEO (Law et al., 1996) and Cole's seven steps (Cole, 2012). Based on these evidence-based theories and conceptual frameworks, the authors have created a boxed product for use. The product includes an introduction, which illustrates the purpose and research of an after-school program to target childhood obesity. In addition, three booklets are included with session examples, one for each main component (i.e. physical activity, nutrition, and mental well-being). Finally, a handout is

included to educate parents on childhood obesity and tips on how to implement healthy lifestyle concepts in the children's home environment.

The PEO model has been selected as the primary theoretical foundation for this scholarly project (Law et al., 1996). The children's perceptions of healthy habits, mental well-being, occupations, engagement in cooking and exercise, and environmental influences are explicitly explored within the program sessions. The center construct of PEO, occupational performance, is the ultimate goal of the program, which is to promote participation in health-promoting occupations (Law et al., 1996). The authors of this scholarly project found that the children's environment, occupations, and personal factors were transactive, thus all had an effect on the other (Law et al., 1996). This ultimately affects their occupational performance. The children's perception of the way they eat and exercise affects their actual performance of the occupations of cooking, eating healthy, and exercising. The environment, which is low socioeconomic neighborhoods, greatly affects a child's ability to engage in occupations as they are at a disadvantage due to fewer resources. This in turn, affects children's perceptions of this environment. These factors ultimately affect their occupational performance of health promoting activities and habits. The PEO model was used to plan the example sessions that were used for the product of this scholarly product (Law et al., 1996).

Because many schools already implement after-school programs, *Let's Move, Cook, and Learn with Friends!* will be easy to apply in many schools. It is likely school administration will need to approve of this program. It will be important for the program coordinator to explicitly educate any stakeholders on the prevalence and implications of childhood obesity, as well as how effective an after-school program can be to decrease

this epidemic. In addition, the program coordinator would have to communicate and recruit professionals to make up the interdisciplinary team. The team members may be recruited from the schools or by partnering with agencies that also do after-school programs (e.g YMCAs).

The authors of this scholarly project, through the use of evidence and several conceptual frameworks, created an after-school program to target the main areas of concern that are related to childhood obesity. Chapter two illustrates the findings of the literature review, which entails the latest research on after-school programs that attempted to decrease childhood obesity, as well as strategies that were effective and strategies that were not. Chapter three describes the methodology used to design the after-school program. Chapter four is an in-depth description of the product, including an introduction, session examples, a parent handout, and assessment tools. Chapter five includes a summary of this scholarly project as well as suggestions for successful application and implementation.

CHAPTER II

LITERATURE REVIEW

Childhood obesity is a major concern in today society and the rates continue to rise (Lueke, 2011).More than one-third of all children ages six to 19 are at risk for becoming overweight or are already overweight, putting them at risk for many health-related problems (Center for Health and Health Care in Schools, 2005). In America today, children have not been provided with adequate education and programs regarding health and wellness (Lueke, 2011). Lueke agrees, "If children are unable to make informed, healthy decisions, then the population will continue to grow obese" (2011, p. 206). Studies have shown that children who grow up in low-income neighborhoods are particularly at risk for obesity as the availability of healthy options is much lower than children who grow up in higher income neighborhoods (Friedrich, 2007).

Purpose of Literature Review

The purpose of this literature review was to research effective after-school programs that focus on the promotion of healthy eating habits, physical activity, and mental well-being in children living in a low socioeconomic (SES) setting. The overall goal is to reduce and prevent childhood obesity. It is necessary to complete a literature

review to identify past and current after-school programs and look at ways in which they were successful, as well as areas that need further tailoring and adjusting to increase success. The authors of this scholarly project have utilized the evidence to guide the design of the product, *Let's Move, Cook, and Learn with Friends!.*

Obesity and Childhood Obesity

It is clear that obesity has become a worldwide epidemic. According to the World Health Organization (WHO), very few researchers have examined the worldwide situation regarding childhood obesity because there is no standard or reference that is agreed upon internationally. Additionally, although a large number of studies on adults that have examined the relationship between SES factors and obesity, very few studies use data representing large populations to examine the effects of these relationships on children. This epidemic does not affect solely one area of the world. Childhood obesity is a problem worldwide, even in developing countries (Wang & Lim, 2012). Vizcaino et al. (2008) conducted a study that compared the associations between SES factors and obesity across countries. The results show that on average, American and Russian children and adolescents were taller and heavier than Chinese subjects. The overall prevalence of being overweight or obese was highest in the United States (25.4%), lowest in China (7.0%) and moderate in Russia (16.0%). These numbers suggest that national SES development levels influence the epidemic of obesity. Evidence has made it clear that children in the United States who live in low SES areas are at the highest risk of obesity (Vizcaino et al., 2008).

Although obesity is a worldwide problem, the contents of this scholarly project will focus solely on the United States. In the United States, the prevalence of being obese

and overweight among American adolescents was lowest in the high-income group (Vizcaino et al., 2008). The medium-income group and low-income group were at a higher risk in both the United States and Russia. The United States SES rate was the only one that was significantly related to obesity in children between the ages of 12 and 17 (Vizcaino, et al., 2008).

Childhood obesity is one of society's most serious health issues being faced today (Dietz, 1998). It proves to be not only a current problem, but one that has been prevalent in the United States for many years. Ogden et al., 2006 stated that children and adults have been showing a dramatic increase in weight and obesity for the last 30 years. There has been a lack of literature that supports preventing obesity in children worldwide that are respective of ethnicity and race (Herscovici, Kovalskys, & De Gregorio, 2013; Story, et al., 2003). However, researchers asserted that obesity rates are more prevalent in minority youth (Ogden, Carroll, Kitt, & Flegal, 2012). Over 17% of two through 19 year-olds are overweight and 16.5% are considered at risk for being overweight (Ogden et al., 2006). Additionally, studies have found that ethnicity is a significant risk factor in obesity levels. Vizcaino et al. (2008) found that compared to European Americans, African Americans and Mexican American children and adolescents were at a higher risk for being obese and overweight. Additionally, in the United States, African American and Mexican girls were more likely to have a higher body mass index, than European American girls, even when controlled for family income and place of residence. However for males, ethnicity was not a significant risk factor (Vizcaino et al., 2008). Kimm et al., (2002) found similar results, that low income and minority youth are more obese and less active than higher-income or European-American peers.

One source described major behaviors that influence the rise in childhood obesity: poor nutritional habits, decreased physical activity, increase in soda intake and use of screen time including watching television, and playing video games (Coon, Goldberg, Rogers, & Tucker, 2001). Additional evidence identified the factors contributing to this health challenge include the increase of sedentary behaviors combined with the increase of high-fat/high-sugar foods, with a low intake of fruits and vegetables (Baranowski, 2006).

Many risk factors are associated with childhood obesity. Some of these factors include type two diabetes, fatty liver disease, pulmonary complications, high blood pressure, higher risk for developing heart disease, and depression, all of which can be very serious conditions (Ogden, Carroll, Curtin, Lamb, & Flegal, 2010). Daniels et al., even described an increased occurrence of psychological or psychiatric problems shown with childhood obesity (2005). Childhood obesity not only affects those dealing with the issue directly, but obesity has now been identified as a large economic cost to society (Ludwig, 2007). Despite the lack of research, childhood obesity has quickly become a significant priority for national health (Eaton et al., 2006). To gain control of this epidemic, it is crucial to consider who is at risk and the factors involved.

Socioeconomic Status

The first factor that influences childhood obesity is children who live in low SES neighborhoods. The obesity epidemic most significantly affects children who live in low income neighborhoods (Ogden, Carroll, & Felgal, 2008). Low SES, or *at risk* populations are those considered to engage in less than 300 minutes of physical activity per week, consume less than the recommended servings of fruits and vegetables per day, and have a

body mass index level of greater than the 85th percentile (Sandoval Iverson, Nigg, & Tichenal 2011). Many schools also identify children to be from low SES neighborhoods if they receive free or reduced-priced meals (Puma et al., 2013). Additionally, it was stated that up to one-third of children living in low SES areas begin school as overweight or obese (Food and Research Action Center, 2010). Ludwig et al. (2011) found that families who live in higher SES areas, have higher incomes and tend to have a lower rate of diabetes and obesity. Thus, families who live in low SES neighborhoods may have higher rates of obesity and diabetes. These findings suggest that neighborhood environments and a family's SES level are associated with the prevalence of obesity and diabetes, which may have implications for understanding trends and disparities in overall health across the United States (Ludwig et al., 2011).

Nearly 49 million people living in the United States live in food-insecure homes. Out of those 49- 16 million of them are children (Coleman-Jensen, Nord, & Singh, 2013). Food insecurity is a term that means when the food intake of one or more people from a household is reduced, it disrupts one's eating pattern, because the household lacks enough money for food (Academy of Nutrition and Dietetics, 2014). Food insecurity is most common in large cities and rural areas, compared to suburban areas and exurban areas near large cities (Coleman-Jensen, Nord, & Singh, 2013). There are many significant effects of food insecurity on children's health as well as their emotional, cognitive and behavioral development (Academy of Nutrition and Dietetics, 2014). Children who are food insecure have higher rates of asthma, iron deficiency, stomach aches, colds and headaches (Leadership for Healthy Communities, 2012). In addition to physical conditions, food insecurity can cause behavior problems in children at school.

Behavior problems can result in poor academic performance, which leads to an increase in suspensions and lower overall graduation rates (Cook & Jeng, 2009). Although living in a low SES neighborhood can increase the chance of food insecurity and thus, childhood obesity, it is important to consider the other factors as well, such as limited physical activity and poor nutritional habits.

Physical Activity

A large number of American children and adolescents are not meeting the guidelines established for engagement in physical activity (Trost, Rosenkranz, & Dzewaltoqski, 2008). There are several reasons for the lack of participation in physical activity among children who live in poverty-stricken areas. First, they are limited by fewer opportunities to engage in physical activity outside because the areas are perceived to be unsafe (Molnar, Gortmaker, Bull, & Buka, 2004). Although the lack of physical activity is more prevalent in children in low SES areas, the majority of all children are not engaging in 60 minutes or more of physical exercise, which is the daily recommended amount (Colley et al., 2011). In addition, in the United States, over 60% of children in the school system engage in almost no organized physical activity outside of school and 23% engage in little to no physical exercise on their own (Eaton et al., 2006). Children in low SES areas are not only limited to physical activity opportunities, but are limited in nutritional aspects as well.

Nutrition

It was found that children from low SES are hindered in that they have less access to affordable, healthy food options (Los Angeles County Department of Public Health, 2007). Researchers have shown that the average amount of time an American

engages in meal preparation is a mere 27 minutes, leaving numerous hours spent doing other activities, many of which are non-active (Hamrick, Andrews, Guthrie, Hopkins & McClelland, 2011; Pollan, 2009). However, researchers have also explored and found that there is a strong association between the time spent in meal preparation and healthy meal choices (Larson, Story, Eisenberg, & Neumark-Sztainer, 2006; Larson, Perry, Story, & Neumark-Stztainer, 2006). Children's' habits and preferences regarding food and nutrition begin when they are young and researchers have shown that allowing them to have hands-on experience can impact their understanding of the positive effects of healthy eating (Kirby, Baranowski, Reynolds, & Taylor, 1995). Children have the tendency to make better food related choices when they are included and have the opportunity to be engaged and involved in the preparation of healthy meals (Larson et al., 2006). Children also make healthier food choices when they have the opportunity to be engaged in the process of growing their own food (Koch, Waliczek, & Majicek, 2006; Morris & Zidenberg-Cherr, 2002).

Health Promotion in Schools

Childhood obesity will continue to be a worldwide epidemic unless action is taken. Children and adolescents are in high need of social and environmental resources to effectively decrease this global obesity and overweight epidemic (Vizcaino et al., 2008). Fortunately, researchers have asserted that the implementation of evidence-based programs in an after-school setting can reduce and prevent childhood obesity by focusing on a number of different areas such as encouraging physical activity and healthy eating habits (Slusser et al., 2013). Story et al. (2003) conducted an after-school wellness program and found that the intervention group increased their physical activity level and

improved their knowledge about healthy eating, nutrition, and physical activity, compared to the control group. Johnston et al. (2013) conducted a similar study to evaluate if a school-based obesity program for elementary children would slow down the rate of weight gain in children. The researchers found that after two years, students who were obese or overweight in the professional-facilitated intervention (PFI) category had significantly reduced their BMI scores, compared to students in the self-help (SH) category. The researchers also found that 10.8% who were normal-weight at baseline became obese or overweight after two years (Johnston et al., 2013). These studies indicate the importance of implementing an after-school wellness program in the actual setting a student spends most of their time in.

School Settings

In an average school year, children spend most of their time in a school environment. A school setting has many advantages towards implementing a wellness program aimed at lowering obesity in school-aged children. Researchers have explained that a school setting is ideal to host an obesity prevention program due to its access for children, it is low cost, and it provides access to a large group of students at once (Slusser, 2013). Slusser et al. (2013) identified school as a prime location where healthy behaviors of physical activity and nutrition can be learned. There are multiple reasons why the school is ideal for health promotion. First, the location offers good timing because after-school programs in the school are held during hours when children engage in unhealthy behaviors (Mahoney, Lord, & Carryl, 2005). In addition, schools have staff members who are interested in participating in health promotion. Schools also have structured facilities that are used to promote physical activity such as a playground or

gymnasium. Finally, school personnel have an ability to interact with physical activity providers out in the community (Pate et al., 2000). With all these resources located at the school setting, it makes sense to offer after-school health promotion programs in the school settings. Children would benefit from having a program that uses their after-school time constructively, especially students living in impoverished neighborhoods (Beets, Beighle, Erwin & Huberty, 2009; Story et al, 2003).

Socioeconomic Status of Schools

Because there is limited physical activity that children can engage in while living in low income neighborhoods, health disparities have subsequently occurred (Chen, Martin, & Matthews, 2006). It is important, then, to address these issues in areas of low SES so that children in these schools can be given the same opportunity, thereby reducing health inequalities. After-school programs in these areas have demonstrated significant progress and success regarding with increasing physical activity in children who are considered to be from low-income households (Vander-Ploeg et al., 2014). In addition, it was found that after two years, levels of physical activity in disadvantaged children caught up and matched those from higher income households (Vander-Ploeg et al., 2014).

Schools serve as a primary location to educate and engage children in physical activity and healthy eating habits as they are commonly provided at a low or free cost and can reach most families, even those who reside in low income areas (Wright, Giger, Norris, & Suro, 2013). After-school programs that took SES into account had promising results. In addition, staff members at schools are able to reach children of various ethnic backgrounds (Kropski & Keckley, 2008; Zenzen & Kridli, 2009). Also, school staff can provide children with the opportunity to learn about living a healthy lifestyle and promote

engagement in physical activity (Johnston et al., 2013). Addressing these issues in low income areas is vital, as these children commonly have limited control regarding their physical activity (Wright et al., 2013).

Schools and Physical Activity

Children who live in low socioeconomic areas greatly benefit from an after-school program that promotes physical activity (Madsen, Thompson, Adkins, & Crawford, 2013). Many researchers found that after-school wellness programs aimed at increasing physical activity in school aged children to decrease rates of obesity are effective. Fortunately, many after-school programs put a large emphasis on increasing physical activity. Caballero et al described effective programs as those that implement three or more 30-minute periods each week for children to engage in physical activity, as well as structuring recess time, and breaks during classroom learning to engage in physical activity (2003). Some programs promote physical activity by introducing children to various sports and fun and motivating games (Coleman, Geller, Rosenkranz, & Dzewaltowski, 2008). Focusing on more of a technical aspect, the Sports, Play, and Active Recreation for Kids (SPARK) program implements teaching and training children on the basic components of physical activity. The main components include games and sports which encompass catching, throwing, and kicking as well as the importance of teamwork and sharing. The activities taught to the students were all designed and implemented into the curriculum due to the fact that they can be independently replicated in any other setting as well as engaged in as leisure activities as well (Sandoval Iversen et al., 2011).

Trost, Rosenkranz, and Dzewaltoqski, found similar results that showed the

importance of after-school program in promoting physical activity for students (2008). These authors found that after-school programs typically provide around 20 minutes of moderate to vigorous physical activity daily. This level of activity was higher while the students were engaging in free play, as opposed to a structured activity. In addition, girls had a lower rate of activity compared to the boys. The researchers also found that the type of session, gender, and weight of participants are all important moderators of physical activity in an after-school program. Also, program leaders could do more promotion of physical activity to increase the levels of moderate to vigorous activity experienced by students in the after-school program. One strategy to meet this challenge would be to increase the amount of time children spend in free play and organized physical activity sessions (Trost et al., 2008). Coleman et al. (2008) furthermore suggested training after-school staff in various activities and games to implement as well as training on how to effectively encourage healthy choices and physical activity. Doing so can make a significant impact on children's motivation and engagement in physical activity in an after-school setting (Coleman et al., 2008).

The results of increased implementation of physical exercise can have a positive effect not only on children's health but other aspects as well. Classroom and school participation, goals, motivation, and problem solving can also all be positively impacted by an increase in physical activity (Madsen et al., 2011). In addition, a reduction in health inequalities in low SES areas can be made from an increase in physical activity in children who attend after-school programs (Vander-Ploeg et al., 2014). Youth resilience, social interaction, and ameliorating low emotional well-being can all be achieved with an increase in physical activity from children attending an after-school program (Madsen et

al., 2011). Although a decrease in physical activity can greatly increase the prevalence of childhood obesity, another aspect to pay close attention to is nutrition. There is evidence that supports that school-based programs can influence dietary practices on children and affect their overall health (Herscovici, Kovalskys, & De Gregorio, 2013).

Schools and Nutrition

After-school nutrition programs have enabled children to make healthier choices. It is important to review strategies of each program and outcomes in order to extract the activities that have the best outcomes as indicated by the evidence. One study described how the Catch Kids Club was designed to educate kids by teaching them about healthy foods and snacks, as well as demonstration on how to prepare these meals (Slusser et al., 2013). The Catch Kids Club, an evidenced-based program, included 32 sessions which included giving kids an education manual regarding nutrition, and activities that included hands-on opportunities to prepare healthy snacks (Slusser et al., 2013). Many programs also focused on cooking and allowing the children to help prepare healthy meals, using healthy ingredients while decreasing amounts of unhealthy ingredients such as sugar, salt, and fat (Isoldi, Calderon, & Dolar, 2014). Meal time and tasting of the foods prepared by the help of students, was also demonstrated in some programs, followed by discussions to encourage students to identify and converse about how good the healthy foods were and other nutrition related topics (Gatto, Ventrua, Cook, Gyllenhammer, & Davis, 2012; Isoldi et al., 2014).

Many programs found it was important to emphasize nutrition even further, by having youth specialists serve as role models that demonstrated healthy eating behaviors and encouraged kids to make the same, healthy choices (Sandoval Iverson et al., 2011;

Slusser et al., 2013). Positive reinforcement was even used if kids demonstrated healthy eating habits or brought healthy snacks (Sandoval Iverson et al., 2011). Educating children about healthy nutrition has shown to be the most effective strategy to overcome malnutrition and diet-related diseases.

The researchers of the Fun Five program described many different motivating and interactive ways to promote healthy eating in their program. For example, Fun Five promotes healthy eating by providing booklets containing coloring pages, word searches, and other fun activities that kids would enjoy, all of which encourage healthy eating habits (Sandoval Iverson et al., 2011). Other program strategies include giving students age-appropriate recipe books and incentive money or gift cards to be redeemed only at specific supermarkets (Isoldi et al., 2014).

One program found success by emphasizing eating more healthy food, rather than the common nagging remarks to eat less junk food, showing that more positive talk and emphasis on eat the good instead of do not eat the bad, is essential (Puma et al., 2013). Sometimes, children did not have any engagement in attempts to increase healthy eating habits. Some schools make dietary decisions in their lunch menus, focusing on reducing the amount of energy dense foods, and decreasing the amount of fat in school meals as well as replacing foods with more fruits and vegetables. Providing skilled training to school lunch room workers has also be explored and implemented (Caballero et al., 2003).

Many after-school programs, have an emphasis on nutrition, however, many do not cover it to the extent needed. For example, one program was reported to have only served snacks including fruits, fruit juice, or vegetables 36% of the days observed

(Coleman et al., 2008). This is a concern as the same school setting was found to have only 20% of children consuming the recommended intake of five servings of fruits and vegetables per day (Eaton, Kann, Kinchen., et al., 2006). One possible explanation for the low adherence to healthy eating, is because of the snacks and beverages being provided to the children. For example, bottled water was never an option to the children, and instead drinks were commonly fruit juice, that contained an average of 119 calories, 19% fat, and 17g of carbohydrates (Coleman et al., 2008). The snacks provided rarely consisted of whole fruits or vegetables and were often found to also be high in carbohydrates, high-fructose corn syrup, and sugar (Coleman et al., 2008). In comparison to the previously described program, Catch Kids Club and Fun Five, this program did not have positive role models and encourage healthy eating habits (Coleman et al., 2008).

The combination of the role models and interactive activities for children ultimately leads to positive results. These results included an increased consumption of fruits and vegetables per day for the at-risk population, which meant they were meeting the recommended intake of five servings, demonstrating a 77% increase in health food consumption (Sandoval Iverson et al., 2011). Catch Kids Club results were positive and resulted in a significant increase in children's overall knowledge regarding nutrition, as well as a decrease in consumption of foods that were considered junk foods (Slusser et al., 2013). However these results were still below baseline, indicating that future after-school programs need to tailor their curriculum to make an even larger emphasis on the nutrition aspect (Slusser et al., 2013).

An after-school program can also limit screen time and consumption of unhealthy

foods and beverages, that if not in an after-school program, children are more likely to indulge in (Coleman et al., 2008). The benefits of including nutrition in after-school programs extend beyond increasing their intake of fruits and vegetables. Children that actively participate in education and hands-on experiences with growing food and preparing healthy meals have increased improvements in diastolic blood pressure, fiber intake, and obesity (Davis, Ventrua, Cook, Gyllenhammer, & Gatto, 2011).

In one study, there was a 2% decrease in overweight or obese children after completing an after-school program with a focus on eating healthy (Isoldi et al., 2014). Although the result was not significant, it is important to consider the duration of the program, as extending it could surely show improved outcomes. Children are also more likely to be able to recognize foods that are healthier versus junk food, increase his or her knowledge regarding the Food Guide Pyramid, and improve their ability to read nutrition labels (Puma et al., 2013).

Programs have also seen significant increases in children's ability and self-efficacy regarding cooking and gardening as well as their preferences towards home-grown organic vegetables (Gatto et al., 2012). Gatto et al. (2012) involved children by allowing them to participate in hands-on gardening opportunities and provided lessons regarding planting, growing, harvesting, and maintaining crops. Children can furthermore greatly reduce their chance of obesity as well as life-threatening diseases caused by obesity by increasing their intake of fruits and vegetables daily (Puma et al., 2013). One study also suggested improved cardiovascular health as well as increased self-esteem (Isoldi et al., 2014).

Programs with a focus on nutrition and healthy eating habits have demonstrated

the importance of allowing the children be a part of the process by allowing them to engage in hands-on experiences to participate in food preparation (Gatto et al., 2012). In addition, researchers have shown more positive effects of healthy eating behaviors when trained leaders model healthy behaviors and provide encouragement and positive reinforcement (Slusser et al., 2013). Many programs have found that their curriculums have not been long enough to statistically discover and reap significant benefits in food shopping and meal preparation; however, many results show positive increases in trends of healthy eating behaviors (Gatto et al., 2012). Researchers stress the importance of finding success through age-appropriate learning as well as changing and modifying school environments to place a higher promotional aspect on healthy eating habits (Cullen & Zakeri, 2004; Kubik, Lytle, Hamnan, Perry & Story, 2003). These changes, such as increasing the amount of readily available fresh fruits and vegetables, as well as decreasing unhealthy ingredients, could ensure longer lasting effects and life-long changes and attitudes regarding student's choices to engage in healthy eating patterns (Puma et al., 2013).

Researchers have indicated that gender does make a difference when it comes to obesity and losing weight. There are gender differences in relation to diet change and appearance. Girls have more of a desire to change their diet intake, based on what the researchers believed was for physical appearance (Herscovici, Kovalskys, & De Gregorio, 2013). Herscovici, Kovalskys, and De Gregorio (2013) also found that girls in the intervention group increased their intake of healthy foods which the program promoted, and decreased their intake of the competitive foods on the questionnaire. Boys in the intervention group however, only decreased consumption of hamburgers and hot

dogs. The researchers suggest girls are more accepting of changing their dietary intake due to either concern with physical appearance or because social learning may have worked more effectively for them (Gatto et al., 2012). One study suggests that education programs that focus on nutrition need to be more intensive and place a greater emphasis on peer influences especially during preadolescent years. The researchers recommend taking into account gender differences when designing preventative program interventions (Herscovici, Kovalskys, & De Gregorio, 2013).

Parental Involvement

Family involvement with both nutrition and physical activity promotion can be key in obesity prevention in children. Parents have a strong influence on their children and have the opportunity to create an environment that fosters a positive healthy lifestyle. In one study, authors suggest that kids observe and model the behaviors their parents engage in regarding healthy eating and cooking, however state that the opportunity to observe some of these behaviors is diminishing, such as meal preparation (Lichtenstein, & Ludwig, 2010; Veit, 2011). One study found that a community-based, after-school program that emphasized physical activity through fun, engaging activities and participation in healthy eating behaviors can have a positive impact among girls and their parents (Story, et al, 2003). Perry et al. (1998) found that parents who were involved in their children's school-based program to eat healthier showed promising and improved behaviors in their children.

There are various ways in which parents can be involved in after-school programs that focus on nutrition, physical activity, and mental well-being. For example, one study reported giving out parent surveys, and monthly newsletters describing free, easily

accessible, and affordable activities for children (Vander Ploeg, Maximoa, McGavock, Davis & Veugelers, 2014). This same study held a program in which included collaboration of parents and students for events and promotional activities. Wright et al. (2013) described involving parents in physical activity and nutrition classes alongside with their kids and presenting a small incentive of a ten-dollar token to use at the grocery store.

Summary of Literature Review

Childhood obesity continues to rise and be of concern, especially for children who live in low SES areas. The main contributors of childhood obesity include a decrease in physical activity and poor nutritional habits, leading to weight gain and decreased mental well-being. Because of this, there is a need for a health and wellness program to target obesity in children in low socioeconomic areas by providing them with education and hands-on experience in occupations that relate to healthy lifestyles and living. With the school setting being an ideal location, a focus on physical activity, nutrition, and mental well-being would be beneficial for decreasing or preventing childhood obesity and other health related diseases. Led by an occupational therapist with collaboration and expertise from a physical activity professional, nutritional professional, and mental health professional, this interdisciplinary team will guide students through various wellness sessions throughout the school year. This scholarly project focuses on occupation-based sessions that will educate, encourage, and challenge participants to engage in healthy habits and routines to make a positive lifetime impact. Chapter three will describe how the product of this scholarly project was created, through the use of the literature review and various theories.

CHAPTER III

METHODOLOGY

Problem

The *Let's Move, Cook, and Learn With Friends!* program was created because the authors of this scholarly project identified the concern that childhood obesity has become a growing concern in today's society. More specifically, the authors have learned in several of their Master of Occupational Therapy studies courses that children who live in low socioeconomic areas are at a greater risk for being overweight or obese. This is primarily because children in these areas do not have the access to safe playgrounds and outdoor facilities in which they can play or get exercise at (Friedrich, 2007). In addition, most healthy food options are hard to acquire because they are too expensive for people living on very limited incomes. From the literature reviewed, researchers concluded that leading causes of this epidemic included decreased physical activity, poor nutrition habits, and increased screen time and sedentary behaviors (Coon, Goldberg, Rogers, & Tucker, 2001). The authors of this scholarly project wanted to develop a program to prevent and reduce childhood obesity in low socioeconomic areas.

Multiple researchers found that the best location to implement a health and wellness program to target obesity would be in the school setting as an after-school

program (Beets, Beighle, Erwin & Huberty, 2009; Slusser, 2013; Story et al, 2003). The program is organized into three major components, which include: physical activity, nutrition, and mental well-being. The authors have chosen to focus on these main areas because research shows them as the main contributors (decreased physical activity and poor nutrition) and effects (decreased mental well-being) of childhood obesity.

The program includes an interdisciplinary team, which embraces the expertise of multiple professionals in order to provide best practice in the three main components of the program. A physical activity professional, nutritional professional, and mental health professional will collaborate with an occupational therapist, who will be the program coordinator, to develop evidence-based program sessions. Collaboration with experts in these areas will ensure that the program sessions will be as effective as possible.

Literature

The authors of this scholarly project have focused primarily on implementing an after-school program in low socioeconomic neighborhoods for many reasons. First and foremost, through their research, the authors have identified that children in low-socioeconomic areas are at a heightened risk of becoming overweight or obese (Ogden, Carroll, & Felgal, 2008). In addition, the authors found it was important to target this population because low SES, or *at risk* populations are those considered to engage in less than 300 minutes of physical activity per week, consume less than the recommended servings of fruits and vegetables per day, and have a body mass index level of greater than the 85th percentile (Sandoval Iverson, Nigg, & Tichenal 2011). Because it is more difficult for children in these areas to access facilities and acquire natural and healthy foods, becoming overweight and obese has become easier. Therefore, the authors have chosen to create a system to defeat this health disparity by educating and providing

children the resources and opportunities to engage in healthy lifestyles that not only affect their childhood, but their adult life as well. The authors have also decided to target their program for the whole low socioeconomic area instead of narrowing their focus on just children who are of low socioeconomic status where there might be kids of higher statuses around them. The reasoning for this was because the authors felt as though picking out children who are of low socioeconomic status among a large group of children with varying statuses, could set them up to be bullied or their socioeconomic status to be exposed, causing decreased self-esteem and confidence.

School Setting

As mentioned earlier, the best location to conduct a wellness program for children is in the school setting because of a variety of reasons. The school setting is ideal because the children do not require additional transportation, the program can be at no cost, and it provides access to a large group of students at once (Slusser et al., 2013). In addition, the location offers good timing because after-school programs at the school are held during hours when children engage in unhealthy behaviors (Mahoney & Lord, 2012). Finally, schools also have structured facilities that are used to promote physical activity such as a playground or gymnasium. Because of these reasons, the authors have chosen a school-setting for the desired location that they would like their program to be implemented in. The authors also have many reasons for the way in which they designed their wellness sessions, keeping in mind what activities to incorporate and how.

Occupational Involvement

The authors have found that in order to make this wellness program truly occupation-based, they would ensure that the children in the after-school program would

have the opportunity to actually *do* or *perform* the activities. This is why each and every session includes the children actually performing and engaging in occupations. For example, in the physical activity sessions, children are not only learning about the importance of physical activity, games and how to stay fit at home, but they are playing the games, teaching each other, and demonstrating their strategies to their parents. For the nutrition sessions, children are not only lectured about good and bad foods, but have the opportunity to engage in cooking and tasting different foods during that time as well. Finally, the mental well-being sessions, allow the children to practice and engage in healthy behaviors and positive relationships through fun and motivating activities. The activities and meaning behind them were carefully thought out, just as the duration of the program. In addition, there will be a handout given to each parent or guardian as a tip guide to involving carry over lessons into the home environment. These include tips for eating healthy, cooking on a budget, and encouraging physical activity in the home.

Program Description

The authors have decided that the after-school wellness program would be set up to fulfill 30 weeks of the school year. There are typically approximately 36 weeks in a school year, therefore allowing weeks off for the first and last week of school, holidays or breaks. This would allow adequate amount of time for the program coordinator to set up and collaborate with the other members of the interdisciplinary team to organize and create the remainder of the sessions they see fit. The program is set up to last 90 minutes. The authors decided on this time frame because from personal experience of working at an after-school program, children are tired because they have been in a classroom setting all day, do not have a large enough attention span to be any longer. However, 90 minutes

would provide just enough time allow the children to engage in the occupations and then have a rich discussion afterwards. The authors planned which days of the week will be set aside for which component. In the event that the after-school session is completed in less than 90 minutes, children will have the opportunity to engage in free play. This was appropriate because research shows that children are more active when allowed to engage in free play versus a structured physical activity or game (Trost et al., 2008).

This wellness program would be best if ran every Monday, Wednesday, and Friday. Having a program that does not run every day after school allows children to still be participants or engage in other after-school activities if they choose. However, it is important to implement the program consistently and for more than for example one day a week, where children can easily forget or put the learned information to the side. Finally, since there are three specific focus areas, each day can be set aside for one component, allowing each component to be explored thoroughly for the duration of a whole session. Because of this, the focus of Monday's is to be on physical activity.

Because children will be coming back to school from weekends, and not having been engaged in physical activity each day as they are during the school week through physical education class, it is likely that they may not have had the opportunity or resources to have been engaged in physical activity during the weekend. Having Monday sessions focus on this area, will allow children an additional opportunity aside from physical education class to engage in play. In addition, the after-school sessions will encourage and motivate the children for the rest of the week to incorporate these activities into their routines and habits at home. The session focus for Wednesdays will be on nutrition and cooking. Because the leaders of the wellness program will not know

the home life of the children and how they are being fed at home, this will give them an opportunity mid-week to educate and teach children about healthy foods and also how to cook them.

Finally, mental well-being will be the focus for Friday sessions. The authors have decided on this day as it is right before children are away from the school setting entirely for the weekend. It is perhaps during these 2 days, that children may experience isolation or feelings of depression as they may not be surrounded by positive peers, who can model positive relationships. It is the authors hope that these Friday sessions will allow children to go home with an increased sense of confidence and self-esteem for the weekend. The authors will be addressing bullying, however will use non-threatening terms, such as using positive interactions, to encourage supportive and encouraging behavior in the children.

Role of Occupational Therapy

Occupational therapists are well suited for the role of the program coordinator as they have the ability and expertise in group process and occupational performance. With their skills, they can work in underserved locations and provide both children and their families with interventions that focus on habits and routines both at home and in the school setting (Cahill & Suarez Balcazar, 2009). In addition, occupational therapists can facilitate motivational activities and are skilled in the behavior portion of the program (Cahill & Suarez Balcazar, 2009). It will be the responsibility of the occupational therapist to introduce each session as well as work with the other professionals to conduct the activity, and then lead the discussion using Cole's Seven Steps. The occupational therapist will be responsible for implementing the assessment tool, the Preteen Play

Profile (Kielhofner, 2008) as well as the pre-post questionnaire to each child and parent or guardian. The questionnaire will be the outcome measure of the program to assess the changed behaviors and habits in the children. The questionnaire specifically addresses physical activity, nutrition habits and the mental well-being of each child. The questionnaires should be given on the first day of the program to each child and parent or guardian. At the end of the program, the occupational therapist will then reassess each child and parent with the same questionnaire.

Methods for Creation of Program

The authors gained their research and needed information through various evidence-based professional journals during the literature review process. In addition, the authors have explored at a deeper level the models and processes used, such as Cole's Seven Steps (Cole, 2012), person-environment-occupation model (Law et al., 1996), as well as the self-efficacy theory (Bastable & Dart, 2011). In addition, they were able to compare and contrast different after-school programs to identify what is and is not effective in reducing or preventing obesity. Using this knowledge, the authors were able to create a program that incorporates evidence-based concepts and strategies to deliver the best possible sessions to expect the best possible outcomes.

The authors of this scholarly project identified one initial assessment for the occupational therapist, or program coordinator, to use on the children. The model of human occupation (Kielhofner, 2008) lists three pediatric interest profiles, one being the Preteen Play Profile (Kielhofner, 2008). This assessment is for children ages nine to 12 to assess play and leisure interests (Kielhofner, 2008). The Preteen Play Profile includes five questions about 59 play and leisure activities. These questions are grouped into eight

categories including: sports, outdoor activities, summer activities, winter activities, indoor activities, creative activities, lessons/classes, and socializing (Kielhofner, 2008). If the child answers yes to engaging in an activity then they are asked how often they do it, how much they like to do it, how good they are at it, and who they do that activity with (Kielhofner, 2008). The occupational therapist can use the results from this assessment to identify what activities are of importance to the children and implement these activities into future session. This will increase the client-centeredness of this program and allow flexibility within each school. Child and parent questionnaires will also be given to each child and parent at the beginning of this program. The questionnaire addresses the areas of physical activity, nutrition and mental well-being. The United States Department of Agriculture [USDA] (2014) website was used in creating the questionnaire to get information about appropriate nutritional servings and physical activity levels for children.

Theoretical Frameworks

Let's Move, Cook, and Learn with Friends! is based on several conceptual frameworks. These include: pedagogy (Bastable & Dart, 2011), the self-efficacy theory (Bastable & Dart, 2011), PEO (Law et al., 1996), and Cole's seven steps (Cole, 2012). Pedagogy is the philosophical model used as a foundation for this program. Pedagogy is the art and science of children learning (Bastable & Dart, 2011). All children are subject centered learners, thus this program will teach children three main subjects (i.e. physical activity, nutrition and mental well-being). Pedagogy will be used in each session to facilitate each child's learning.

The philosophical model, pedagogy was used, along with the theoretical model,

the self-efficacy theory, as a fundamental principle of this program. “The self-efficacy theory is based on a person’s expectations relative to a specific course of action” (Bastable & Dart, 2011, p. 212). This theory has the belief that someone can accomplish a specific behavior, with the use of competency and capability (Bastable & Dart, 2011). This theory has been shown to be beneficial when predicting the course of a health behavior (Bastable & Dart, 2011). We plan to use this theory to guide our program by increasing the children's’ self-efficacy which will result in changed behavior habits. These behaviors include an increase in physical activity, eating healthy and increasing the mental attitudes of children.

In addition to the philosophical and theoretical model, an occupational behavior model was also used for this program. The PEO model served as the building blocks of the program (Law et al., 1996). Each area of the child's personal aspects, environment and occupations were taken into account when creating the format of the sessions for this program. Since an occupational therapist will be the program coordinator, this occupation-based model will be used to incorporate occupations into each session. The occupational therapist will use PEO for each session, especially when addressing occupational performance (Law et al., 1996).

The PEO model includes many factors from the *Let’s Move, Cook, and Learn with Friends!* after-school program into its 3 components: person, environment, and occupation. PEO is proven to be a valid model to guide this scholarly project because of the congruence between the components of both the model and program. The *person* component of PEO includes being 5th grade students, and how a person is affected, or relates to obesity, nutrition, and mental well-being such as self-esteem, confidence, and

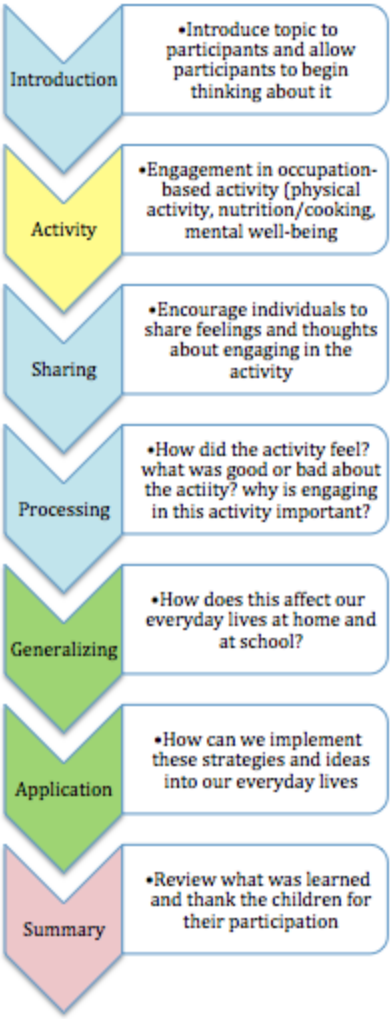
motivation.(Law et al., 1996). These factors are all considered to fit under the *person* aspect of the model because each child to an extent can decide how much or how little they will take control of these aspects of their lives. The extent to which they are involved, can affect their overall occupational performance. These also relate to occupation and environment as well, which demonstrates that the PEO model is truly transactive (Law et al., 1996).

The environment aspect of PEO includes school, home, and low socioeconomic area (Law et al., 1996). These environments affect which occupations can be performed. For example, a child living in a low SES community has decreased ability to engage in play at the park because it is deemed unsafe, and unable to participate in extracurricular activities because the funds are not available. The environment also affects how the person feels or relates to their occupations, altering their self-esteem or confidence of the occupation, ultimately affecting their occupational performance.

Finally, the occupation component of PEO includes play or physical activity, eating/cooking nutritious meals, and practicing positive relationships (Law et al., 1996). These occupations are affected by the environments in which they take place, and can affect one's feelings or attitudes towards them as well, once again overall affecting their occupational performance.

The PEO graph illustrated on the next page links with the next figure, Cole's Seven Steps (Cole, 2012; Law et al., 1996). Coles Seven Steps is used to structure each session (Cole, 2012). The occupational therapist will follow these steps in order to guide the program sessions: introduction, activity, sharing, processing, generalizing, application and summary. This format allows for congruence and consistency across each session. By

matching the colors, the reader can understand how the two theories interlock. The introduction, sharing, and processing components of Cole's Seven Steps match with the *person* aspect of PEO because the children are discussing how the activity relates to them and how they feel (Cole, 2012; Law et al., 1996). Generalization and application relate to the environment aspect of PEO because the children are discussing how they can take the skills they just learned and apply them into their home and community environments. Doing the actual activity relates to the *occupation* component of PEO because the children are engaged in an occupation-based activity. Finally, the summary, relates to the core of PEO, occupational performance because the children are getting an overview how each component of PEO affects their ability to engage in occupations through the discussion based on Cole's Seven Steps (Cole, 2012; Law et al., 1996).



The authors of this scholarly project have designed the after-school program *Let's Move, Cooks, and Learn with Friends!* by carefully using their findings from various literature as well as several evidence-based models. Because of recent literature, an after-school health promotion program was created for children living in low socioeconomic status neighborhoods. The role of occupational therapy and the idea of occupational performance was the core focus of the program. Finally, several theories and models have been identified and implemented into the program in order to make it evidence-based and have a high chance for success. The overall product of *Let's Move, Cook, and Learn with Friends!* is illustrated in chapter four.

CHAPTER IV

PRODUCT

The product of this scholarly project is an interdisciplinary after-school wellness promotion program for fifth graders who live in low-socioeconomic conditions. The purpose of this program is to promote physical and mental health and well-being among the child participants, thereby decreasing risks and rates of obesity and mental health challenges associated with low socioeconomic conditions. The program is entitled, *Let's Move, Cook, and Learn With Friends!* and includes a total of 19 sessions, scheduled Monday, Wednesday, Friday of each week in the fall and spring of each year. The authors of this scholarly project created one introductory session and six sessions for each targeted area, which includes: physical activity, nutrition, and mental well-being.

The program coordinator, who will be an occupational therapist (OT), will have the role of organizing each session, in collaboration with another professional. The program is designed as an interdisciplinary approach, with specialists in nutrition, physical activity and mental health. The program is designed to last 30 weeks, running three days a week (Monday, Wednesday and Fridays). Monday sessions will address physical activity. Wednesday sessions will address cooking and nutrition. Friday sessions will address mental well-being.

The developed product is designed to be a starting ground for the interdisciplinary team members and OT program coordinator to use to implement this program in a school located in a low socioeconomic neighborhood. The OT program coordinator is encouraged to create his or her future sessions with collaboration from other interdisciplinary team member, following Cole's Seven Steps and the format of the program (Cole, 2012). The authors of this scholarly project did not create the total number of sessions, due to the inability to predict the individual needs of the children involved. The OT should take into account the students' interests to create future sessions that target physical activity, nutrition and mental well-being. In addition, the authors wanted to encourage each specialist to use sue their expertise to further create sessions using the foundational framework, or session outline worksheet, provided.

Occupational Therapy

The authors have decided that an occupational therapist will play the role of the program coordinator for this scholarly project. Because of occupational therapists' skills, they can work in underserved locations and provide both children and their families with interventions that focus on habits and routines both at home and in the school setting (Cahill & Suarez Balcazar, 2009). Occupational therapists' can take on the role of facilitating motivational activities and focus on the behavior portion of the program (Cahill & Suarez Balcazar, 2009). Additionally, since occupational therapists have an expertise in group process and occupational performance, the occupational therapist would collaborate with other professions in order to bring group processes of occupation into the teaching and learning activities of the program. Because of this, the program coordinator will not only be responsible for introducing the activity, topics, and co-

leading the activities of the program, but leading the discussion afterwards, following Cole's Seven Steps (Cole, 2012).

Nutrition

Researchers have asserted that after-school nutrition programs have enabled children to make healthier choices. Educating children about healthy nutrition has shown to be the most effective strategy to overcome malnutrition and diet-related diseases (Larson et al., 2006). The benefits of including nutrition in after-school programs extend beyond increasing their intake of fruits and vegetables. Children that actively participate in education and hands-on experiences with growing food and preparing healthy meals have increased improvements in diastolic blood pressure, fiber intake, and obesity (Davis, Ventrua, Cook, Gyllenhammer, & Gatto, 2011). Children are also more likely to be able to identify foods that are healthier versus junk food, increased knowledge regarding the Food Guide Pyramid, and ability to read nutrition labels (Puma et al., 2013).

Programs have also seen significant increases in children's ability and self-efficacy regarding cooking and gardening as well as their preferences towards home-grown organic vegetables (Gatto, Ventrua, Cook, Gyllenhammer, Davis, 2012). Programs with a focus on nutrition and healthy eating habits have demonstrated the importance of allowing the children be a part of the process by allowing them hands-on experience to engage in food preparation (Gatto et al., 2012).

The authors chose to include Registered Dietitian Nutritionists (RDNs), Dietetic Technicians, Registered (DTRs) and/or Licensed Dietitians (LDs) to be a part of the after-school program due to their expertise in the nutrition field. The Academy of Nutrition and Dietetics (2014) reported RDNs and DTRs are equipped to take an active

part in preventing childhood obesity. They have the skills to implement nutrition interventions for children, caregivers and parents. These nutrition practitioners should be promoting dietary recommendations for children ages two to 11 years. Nutritional practitioners understand how school-based programing is effective in treating childhood obesity and that incorporating parents into these interventions can be especially beneficial (Academy of Nutrition and Dietetics, 2014).

Physical Activity

Because there is limited physical activity that children can engage in while living in low income neighborhoods, health disparities have subsequently occurred (Chen, Martin, & Matthews, 2006). It is important, then, to address these issues in areas of low SES so that children in these schools can be given the same opportunity, thereby reducing health inequalities. Low SES children greatly benefit from an after-school program that promotes physical activity (Madsen, Thompson, Adkins, & Crawford, 2013). There is a wide range of literature supporting after-school wellness programs aimed at increasing physical activity in school aged children to decrease rates of obesity. After-school programs in these areas have seen significant progress and success regarding increases in physical activity in children considered to be from low-income households.

For this after-school program, the authors included experts in physical activity. These specialists could include exercise scientists, physical education teachers, and/or physical therapists. While there is a wide range of experts that could be incorporated into this after-school program, they all have some overlapping skills that would be of benefit. These physical activity experts have depth of understanding about kinesiology and physical activity. They also can assess lifestyle behaviors, eating habits and stress levels.

Promoting ideal health is also an area of strength for these professionals, as they can assist to promote health and physical activity to children. Having a physical activity specialist on the after-school program team will increase the interdisciplinary team to promote healthy habits in children.

Mental Well-being

Janssen, Craig, Boyce and Pickett (2004) identified that children who are obese or overweight tend to be victims and perpetrators of bullying, compared to their peers who are normal-weight. In addition, children who are overweight tend to be subjects of discrimination, social isolation and teasing, which can result in a low self-esteem and self-confidence (Bellisari, 2013; Lobstein, Baur, Uauy, 2004). It is the goal of this program to educate and train the school children on many ways on how to prevent bullying, and increase self-esteem and confidence in order to maintain overall mental well-being.

Psychologists and/or school counselors will also be on the team of health professionals for this after-school program. These specialists have advanced skills to assess children's mental health. School counselors in particular can assist with bullying prevention and awareness, conflict resolution, education on understand self and other people which includes peer relationships, social skills and coping strategies. These specialists can use their expertise to promote healthy and confident children to achieve academic success (Loudoun County Public Schools, 2012). Susan Johnson, the American Psychological Association's president, reported psychologists have the skills to work in the area of childhood obesity (2012). Psychologists understand human behavior and the developmental process of children. They are also experts in maintaining behavior change

at the level of a person, family, or organization (Johnson, 2012). These skills and the skills of a school counselor would be beneficial to the after-school program to address mental health issues that arise from obesity, including bullying and low self-esteem.

Participant Selection

Accessing children who are at risk of obesity and mental health challenges is accomplished by providing this program at a school located in a low socioeconomic neighborhood where children at risk live. Multiple researchers asserted there is a strong correlation between low socioeconomic status and obesity and mental health problems. By targeting the school and accepting all children for voluntary participation in this program, children at risk will not be isolated from the group; isolating individual children at risk could place them in a social situation where they could become vulnerable to bullying for being *fat* or *poor*, which are derogatory terms often used by other children. These terms would be first hand language that bullies may use on children who are being stigmatized for bullying. The children who do have health and wellness needs will naturally emerge from the student body because they typically are not as involved in after-school sports due to lack of physical ability and financial resources.

Theoretical Frameworks

The self-efficacy theory is the theoretical model that serves as a fundamental principle of this program. This theory has the belief that one can accomplish a behavior when they feel competent and capable to do so (Bastable & Dart, 2011). This theory guides the program by increasing the children's self-efficacy that will result in changed behavior habits, specifically related to physical activity, nutrition, and well-being. The self-efficacy theory is interdisciplinary, in which a variety of disciplines can use and

understand (Bastable & Dart, 2011).

In addition to the self-efficacy theory, the person-environment-occupation (PEO) model was used to organize the framework of each session (Law et al., 1996). This model works well with school-aged children and fits into with the Cole's Seven Step outline for each session (Cole, 2012). Each aspect of the PEO model is addressed into this after school program (Law et al., 1996).

The product of this scholarly project includes a box set that could hypothetically be used, for successful implementation of the after-school program. The box has been created to include the title of the program as well as the title of the scholarly project. Inside, the box contains a manual that describes the reasoning and purpose for the development of the after-school program. In addition, directions are given as well as insight into the many theories and models that were used to construct the program. Finally, a manual with six examples in each area of focus (physical activity, nutrition, and mental well-being) is given for the program coordinator to use. Blank outlines are provided of Cole's Seven Steps that can be copied and used for creating further session outlines (Cole, 2012).

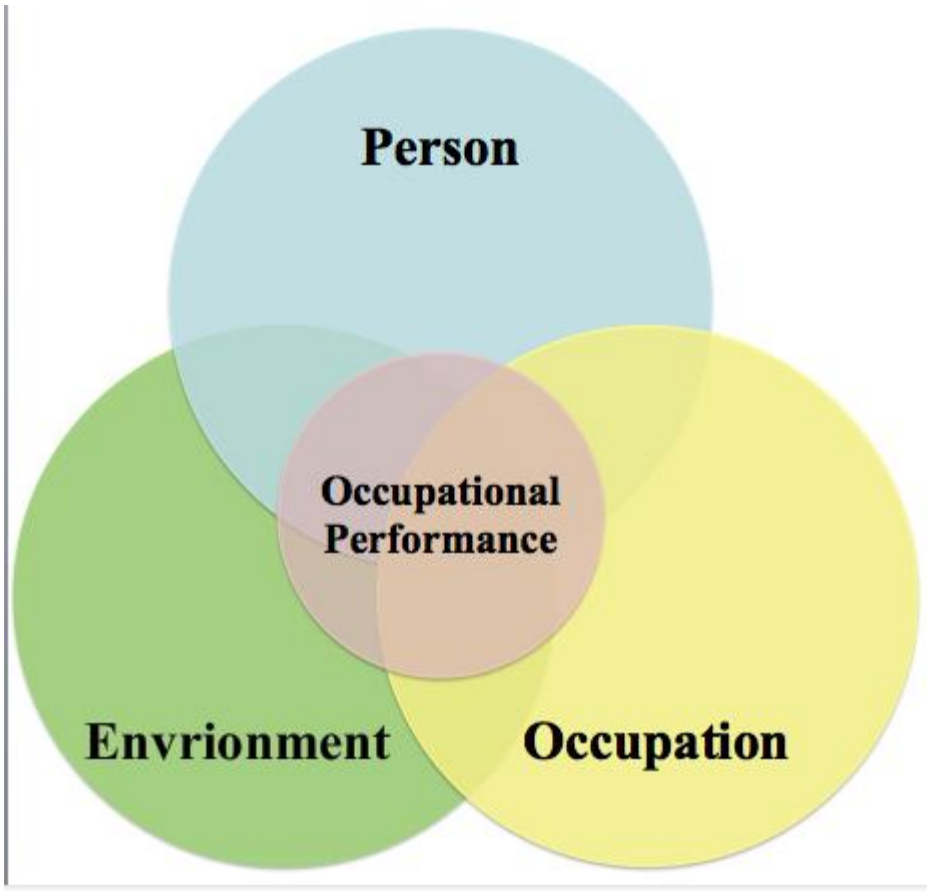


Figure 1. Main components of the PEO model, created by Mary Law (Law et al., 1996). This shows the transactive relationship of each component, person, environment, occupation, and the overall goal and focus of PEO, occupational performance. The colors are strategically coordinated with *Figure 2* on the next page. By matching the colors, the reader can understand how the two theories interlock.

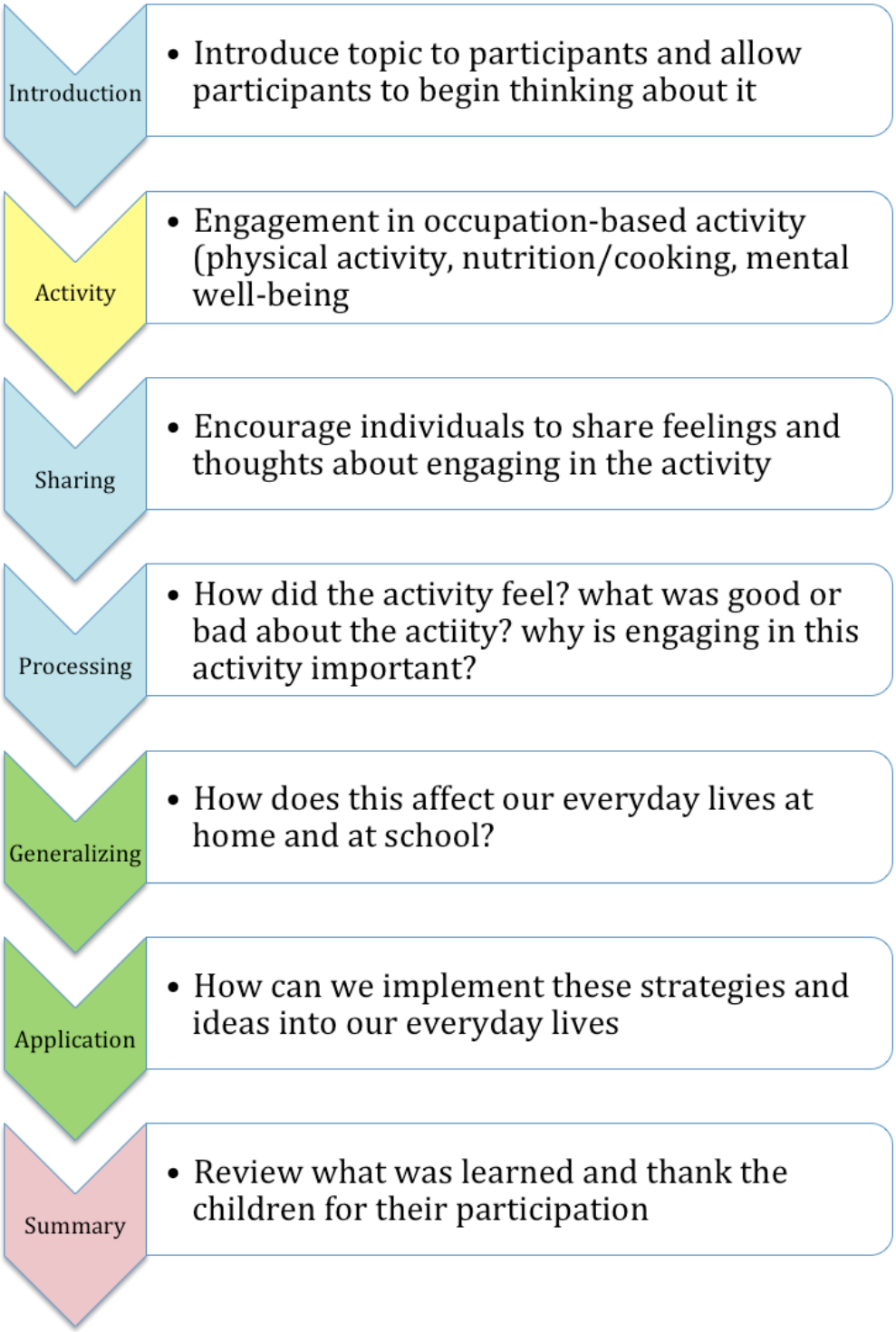


Figure 2. The stages of Cole's Seven Steps, that will be used by the OT program coordinator for discussion after the completion of the activity (Cole, 2012). The introduction, sharing, and processing components of Cole's Seven Steps match with the

"person" aspect of PEO because the children are discussing how the activity relates to them and how they feel (Cole, 2012; Law et al., 1996). Generalization and application relate to the environment aspect of PEO because the children are discussing how they can take the skills they just learned and apply them into their home and community environments. Doing the actual activity relates to the "occupation" component of PEO because the children are engaged in an occupation-based activity. Finally, the summary, relates to the core of PEO, occupational performance, because the children are getting an overview how each component of PEO affects their ability to engage in occupations through the discussion based on Cole's Seven Steps (Cole, 2012).

The appendix contains the actual product of the *Let's Move, Cook and Learn With Friends!* program with sections listed in the following order: introduction, physical activity sessions, nutrition session, and mental well-being sections.

CHAPTER V

SUMMARY

The purpose of this scholarly project is to provide a multidisciplinary after-school wellness program to be implemented in a school located in a low socioeconomic neighborhood. The *Let's Move, Cook, and Learn with Friends!* program is used to promote healthy habits to fifth graders through the use of sessions that target physical activity, nutrition, and mental well-being. This program will provide an occupational therapist with a guide for promoting health and wellness, in collaboration with a physical activity specialist, nutrition specialist, and mental health specialist. *Let's Move, Cook, and Learn with Friends!* is unique to existing after-school programs to reduce obesity in school-aged children, because it is multidisciplinary and focuses on occupation-based activities to promote healthy habits within a child's natural environment.

Let's Move, Cook, and Learn with Friends! is structured to have 90-minute sessions that are facilitated three times a week on Monday, Wednesday, and Friday. The program is intended to run for 30 weeks total. Monday sessions are for physical activity, Wednesday sessions are for nutrition and Friday sessions are for mental well-being. A strength of this program is that it is multidisciplinary and uses a variety of theoretical

frameworks to serve as a foundation of the program. The goal of this after-school program is to raise the children's knowledge about obesity and decrease the risk factors for childhood obesity.

Discussion

This program could have a large impact on not only children, but society as a whole. This program is intended to market children at a young age, before they enter into junior high. Educating children about healthy habits will promote life-long patterns of healthy behaviors. When humans engage in healthy behaviors and are a healthy weight, they tend to have less medical complications as they age. This could result in lower medical costs for individuals and place a higher emphasis on the area of prevention. As healthcare moves toward the area of prevention, occupational therapists must position themselves as being able to work in this area. This after school program portrays the role of an occupational therapist in the prevention role. As after-school programs that target childhood obesity show positive benefits and results, there could be research proving their effectiveness. As more research is conducted there could be more funding for these programs, so all children can experience a health promotion program while they are young. This program shows promising results not only to prevent medical complications as children age that arise with obesity, but could position the role of occupational therapy as working in prevention.

Limitations

This after-school program has some limitations. One limitation is that the program is designed to have an occupational therapist as its coordinator; therefore there must be an occupational therapist at each session, for a total of 30 weeks. Another limitation is that

the program is designed to have other health professionals facilitate sessions on their area of expertise, so it may be challenging to find enough professionals to commit to this program for the full 30 weeks. Lastly, there is limited funding to implement this specific program for the intended time span.

Recommendations

In order for this program to be successful, various steps should be taken. The authors of this scholarly project recommend the program coordinator apply for a grant to receive adequate funding to implement the created program. Additionally, this program should also be followed as it was intended with the Monday, Wednesday, Friday routine. This will ensure a regular schedule that the children will be able to remember and engage in. Another recommendation is for the occupational therapist to follow through with evaluating the outcome measures of this program to measure its effectiveness, which could possibly result in a future research study. Lastly, the occupational therapist could collaborate this program with other agencies who have after-school programs, which would increase the public knowledge about the role of occupational therapy in this type of a setting.

Program Assessment

To evaluate *Let's Move, Cook, and Learn with Friends!* in it's entirely, there is a child and parent/guardian questionnaire attached that will serve as a pre and post-test measure. This questionnaire is to be completed at baseline of the program and at the end, to evaluate the effectiveness of promoting healthy lifestyle habits in children and in their parent or guardian. Depending on the sample of students for the program, the evaluation could be changed accordingly. The authors of this scholarly project did not wish to take

body mass index (BMI) scores or weight of the children, due to the possibility of creating anxiety and or negative effects in children. Instead, the hope would be to only create a positive environment and promote healthy habits, instead of focusing on traits or behaviors that could be perceived as negative.

This after-school program is intended to increase healthy habits in school-aged children that will create these habits to be carried over as these children age. With appropriate implementation, the authors of this scholarly project foresee positive results for both the children and parents who participate in this program.

APPENDICES

let's MOVE COOK & LEARN WITH Friends!

AN INTRODUCTORY GUIDE

Introduction

The contents of this kit include materials needed to deliver sessions for an after-school program that is targeted towards fifth graders. The overall purpose of this program is to reduce obesity and promote healthy habits for children through physical activity, healthy eating and improving one's mental well-being. The program is intended for the span of 30 weeks, running three days a week (Monday, Wednesday and Fridays) for 90 minutes total. Monday sessions will address physical activity. Wednesday sessions will address cooking and nutrition. Friday sessions will address mental well-being. The program is designed as an interdisciplinary approach, with an occupational therapist who serves as the program coordinator. Specialists in nutrition, physical activity and mental health are also included in this interdisciplinary team.

Childhood Obesity

More than one third of children and adolescents were classified as being overweight or obese in the year 2012 (Centers for Disease Control and Prevention, 2014). In addition, greater than one-third of all children ages six to 19 are at risk for becoming overweight or are already overweight, putting them at risk for many health-related problems (Center for Health and Health Care in Schools, 2005). Although it is a worldwide concern, through conducting evidence, researchers have made it clear that children in the United States living in low SES areas are at the highest risk of obesity (Vizcanio, et al., 2008).

Some of the major behaviors that influence the rise in childhood obesity include: poor nutritional habits, decreased physical activity, increase in soda intake, and use of screen time including watching television, and playing video games (Coon, Goldberg,

Rogers, & Tucker, 2001). Daniels, Arnett, Eckel et al., even described an increased occurrence of psychological or psychiatric problems associated with childhood obesity (2005).

Since children spend a majority of their time in school, Slusser et al., identified the school as a prime location where healthy behaviors of physical activity and nutrition can be learned (2013). This is a vital time to target these aspects because after-school programs are held during hours when children engage in unhealthy behaviors (Mahoney & Lord, 2012). Fortunately, researchers have indicated that the implementation of evidence-based programs in an after-school setting can reduce and prevent childhood obesity by focusing on a number of different areas such as encouraging physical activity and healthy eating habits (Slusser et al., 2013).

Occupational Therapy

The authors have decided that an occupational therapist will play the role of the program coordinator for this scholarly project. Because of occupational therapists' skills, they can work in underserved locations and provide both children and their families with interventions that focus on habits and routines both at home and in the school setting (Cahill & Suarez Balcazar, 2009). Occupational therapists can take on the role of facilitating motivational activities and focus on the behavior portion of the program (Cahill & Suarez Balcazar, 2009). Additionally, since occupational therapists have an expertise in group process and occupational performance, the occupational therapist would collaborate with other professions in order to bring group processes of occupation into the teaching and learning activities of the program. Because of this, the program coordinator will not only be responsible for introducing the activity, topics, and co-

leading the activities of the program, but leading the discussion afterwards, following Cole's Seven Steps (Cole, 2012).

Nutrition

Researchers have asserted that after-school nutrition programs have enabled children to make healthier choices. Educating children about healthy nutrition has shown to be the most effective strategy to overcome malnutrition and diet-related diseases (Larson et al., 2006). The benefits of including nutrition in after-school programs extend beyond increasing their intake of fruits and vegetables. Children that actively participate in education and hands-on experiences with growing food and preparing healthy meals have increased improvements in diastolic blood pressure, fiber intake, and obesity (Davis, Ventrua, Cook, Gyllenhammer, & Gatto, 2011). Children are also more likely to be able to identify foods that are healthier versus junk food, increased knowledge regarding the Food Guide Pyramid, and ability to read nutrition labels (Puma et al., 2013).

Programs have also seen significant increases in children's ability and self-efficacy regarding cooking and gardening as well as their preferences towards home-grown organic vegetables (Gatto, Ventrua, Cook, Gyllenhammer, Davis, 2012). Programs with a focus on nutrition and healthy eating habits have demonstrated the importance of allowing the children be a part of the process by allowing them hands-on experience to engage in food preparation (Gatto et al., 2012).

The authors chose to include Registered Dietitian Nutritionists (RDNs), Dietetic Technicians, Registered (DTRs) and/or Licensed Dietitians (LDs) to be a part of the after-school program due to their expertise in the nutrition field. The Academy of Nutrition and Dietetics (2014) reported RDNs and DTRs are equipped to take an active

part in preventing childhood obesity. They have the developed skills to implement nutrition interventions for children, caregivers and parents. These nutrition practitioners should be promoting dietary recommendations for children ages two to 11 years. Nutritional practitioners understand how school-based programing is effective in treating childhood obesity and that incorporating parents into these interventions can be especially beneficial (Academy of Nutrition and Dietetics, 2014).

Food Insecurity

Nearly 49 million people living in the United States live in food-insecure homes. Out of those 49, 16 million of them are children (Coleman-Jensen, Nord, & Singh, 2013). Food insecurity is a term that means when the food intake of one more more people from a household was reduced, which disrupted ones eating pattern, because the household lacked enough money for food (Academy of Nutrition and Dietetics, 2014). Food insecurity is most common in large cities and rural areas, compared to suburban areas and exurban areas near large cities (Coleman-Jensen, Nord, & Singh, 2013). There are many large effects of food insecurity on children's health, emotional, cognitive and behavioral development (Academy of Nutrition and Dietetics, 2014). Children who are food insecure have higher rates of asthma, iron deficiency, stomach aches, colds and headaches (Leadership for Healthy Communities, 2012). In addition to physical conditions, food insecure can cause behavior problems in children at school, which causes poor academic performance, increased in suspensions and lower overall graduation rates (Cook & Jeng, 2009). Due to the impact of food insecurity of children, the authors will be implementing this after-school program in elementary schools in low socio-economic neighborhoods.

Physical Activity

Because there is limited physical activity that children can engage in while living in low income neighborhoods, health disparities have subsequently occurred (Chen, Martin, & Matthews, 2006). It is important, then, to address these issues in areas of low SES so that children in these schools can be given the same opportunity, thereby reducing health inequalities. Low SES children greatly benefit from an after-school program that promotes physical activity (Madsen, Thompson, Adkins, & Crawford, 2013). There is a wide range of literature supporting after-school wellness programs aimed at increasing physical activity in school aged children to decrease rates of obesity. After-school programs in these areas have seen significant progress and success regarding increases in physical activity in children considered to be from low-income households.

For this after-school program, the authors included experts in physical activity. These specialists could include exercise scientists, physical education teachers, and/or physical therapists. While there is a wide range of experts that could be incorporated into this after-school program, they all have some overlapping skills that would be of benefit. These physical activity experts have depth of understanding about kinesiology and physical activity. They also can assess lifestyle behaviors, eating habits and stress levels. Promoting ideal health is also an area of strength for these professionals, as they can assist to promote health and physical activity to children. Having a physical activity specialist on the after-school program team will increase the interdisciplinary team to promote healthy habits in children.

Mental Well-being

Janssen, Craig, Boyce and Pickett (2004) identified that children who are obese or

overweight tend to be victims and perpetrators of bullying, compared to their peers who are normal-weight. In addition, children who are overweight tend to be subjects of discrimination, social isolation and teasing, which can result in a low self-esteem and self-confidence (Bellisari, 2013; Lobstein, Baur, Uauy, 2004). It is the goal of this program to educate and train the school children on many ways on how to prevent bullying, and increase self-esteem and confidence in order to maintain overall mental well-being.

Psychologists and/or school counselors will also be on the team of health professionals for this after-school program. These specialists have advanced skills to assess children's mental health. School counselors in particular can assist with bullying prevention and awareness, conflict resolution, education on understand self and other people which includes peer relationships, social skills and coping strategies. These specialists can use their expertise to promote healthy and confident children to achieve academic success (Loudoun County Public Schools, 2012). Susan Johnson, the American Psychological Association's president, reported psychologists have the skills to work in the area of childhood obesity (2012). Psychologists understand human behavior and the developmental process of children. They are also experts in maintaining behavior change at the level of a person, family, or organization (Johnson, 2012). These skills and the skills of a school counselor would be beneficial to the after-school program to address mental health issues that arise from obesity, including bullying and low self-esteem.

Parental Involvement

Family involvement with nutrition, physical activity, and mental well-being promotion can be key in obesity prevention in children. Parents have a strong influence

on their children and have the opportunity to create an environment that fosters a positive healthy lifestyle. Educating caregivers and involving parents in the interventions is a crucial in determining whether or not kids will comply (Kuo et al., 2013). There are many ways in which this program hopes to include parents in the process of developing healthy habits and routines in the daily lives of school-children. Parent handouts will be given out, parents will be invited to participate in some of the activities, and activities will be provided for parents and children to do together in their home setting.

Theoretical Frameworks

The after-school program is based off the PEO model, an occupational therapy model that focuses on the interaction between a person, the effects his or her environment has and how these interactions influence their occupations (Law et al., 1996). Haracz, Ryan, Hazelton, & James (2013) found there is a "strong evidence of an occupation focussed approach and recognition of the need to consider the interaction between person, environment and occupation in supporting sustainable behaviour change" in relation to obesity interventions for occupational therapists to implement. With regards to this after-school program the developers will be targeting aspects of the person, or group of children.

PEO describes that the person consists of emotional, cognitive, spiritual and physical components (Cole, 2012). The developers will specifically address obesity, self esteem/self image and parental involvement. Cole (2012) explains that occupations and roles are influenced by family and that children's roles are typically a learner, player and friend.

The PEO model describes the environment as the physical, social, cultural, and

institutional aspects (Law et al., 1996). The authors will target the environment of the children by incorporating the school setting, home setting and low socioeconomic neighborhoods.

According to this model, the occupations include self-care, productivity, and leisure (Law et al., 1996). The authors will be addressing a variety of occupations that target those areas including cooking, shopping, preparing food, play, and leisure. Children continue to develop and grow through their occupational roles, as their environment continuously changes (Cole, 2012). At the center of the interaction between the person-environment-occupation is occupational performance, which consists of the ability to perform a meaningful occupation while putting emphasis on the person's experience and their performance (Cole, 2012; Law et al., 1996).

The PEO model can be used in group interventions when they are centered around member goals and priorities (Cole, 2012). The leader should provide the group members with a just-right-challenge and if possible, in their natural environments (Cole, 2012). The developers plan to provide activities that meet the group members needs and will be conducted in their natural environment, which will be at their school.

In combination with the PEO model, the developers will be laying out each session using Cole's Seven Steps. This model is client-centered and dynamic (Cole, 2012). Cole described, "the primary purpose for which this method of group facilitation was designed is to enable the participation of members in doing a shared task or activity and to reflect upon its meaning for each of them" (2012). The seven steps include: introduction, activity, sharing, processing, generalizing, application and summary (Cole, 2012). The developers will use this format to structure each session, while incorporating

the PEO model into each session.

Pedagogy is the philosophical model used as a foundation for this program. Pedagogy is the art and science of children learning (Bastable & Dart, 2011). All children are subject-centered learners, thus our program will teach children three main subjects (i.e. physical activity, nutrition and mental well being). The authors plan to use pedagogy in each session to facilitate each child's learning.

The philosophical model, pedagogy was used, along with the theoretical model, the self-efficacy theory, as a fundamental principle of this program. "The self-efficacy theory is based on a person's expectations relative to a specific course of action" (Bastable & Dart, 2011). This theory has the belief that someone can accomplish a specific behavior, with the use of competency and capability (Bastable & Dart, 2011). This theory has been shown to be beneficial when predicting the course of a health behavior (Bastable & Dart, 2011). This theory will guide the program by increasing the children's' self-efficacy which will result in changed behavior habits. These behaviors include an increase in physical activity, eating healthy and increasing the mental attitudes of children.

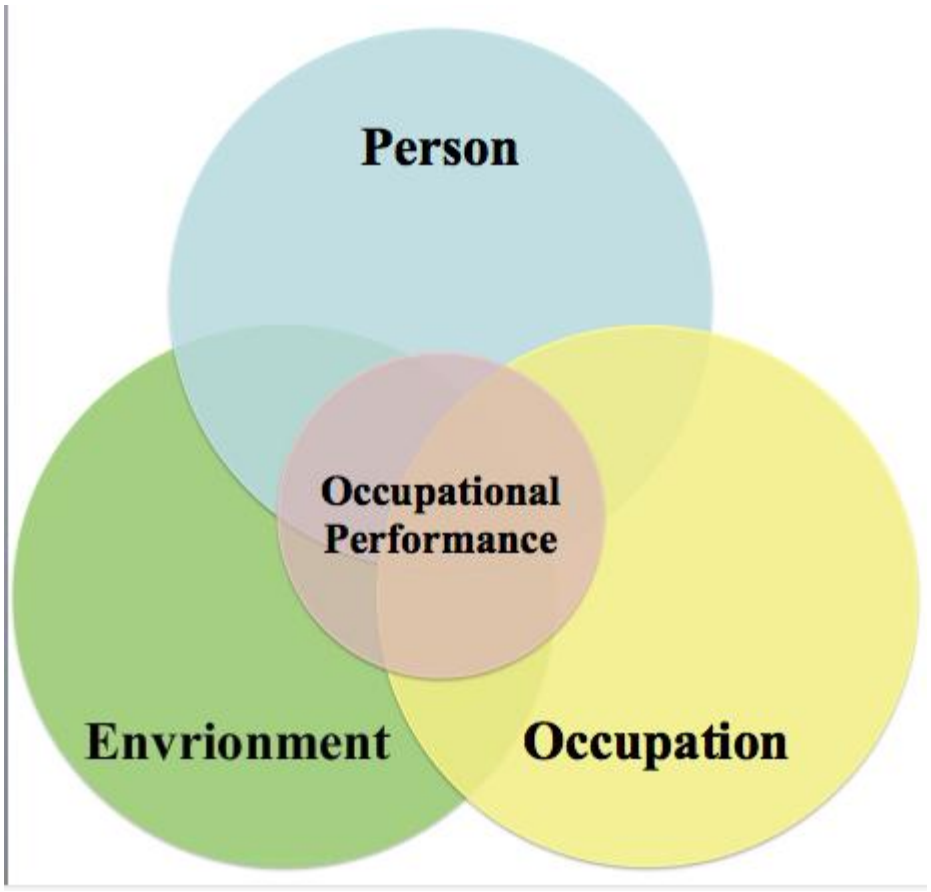


Figure 1. Main components of the PEO model, created by Mary Law (Law et al., 1996). This shows the transactive relationship of each component, person, environment, occupation, and the overall goal and focus of PEO, occupational performance. The colors are strategically coordinated with *Figure 2* on the next page. By matching the colors, the reader can understand how the two theories interlock.

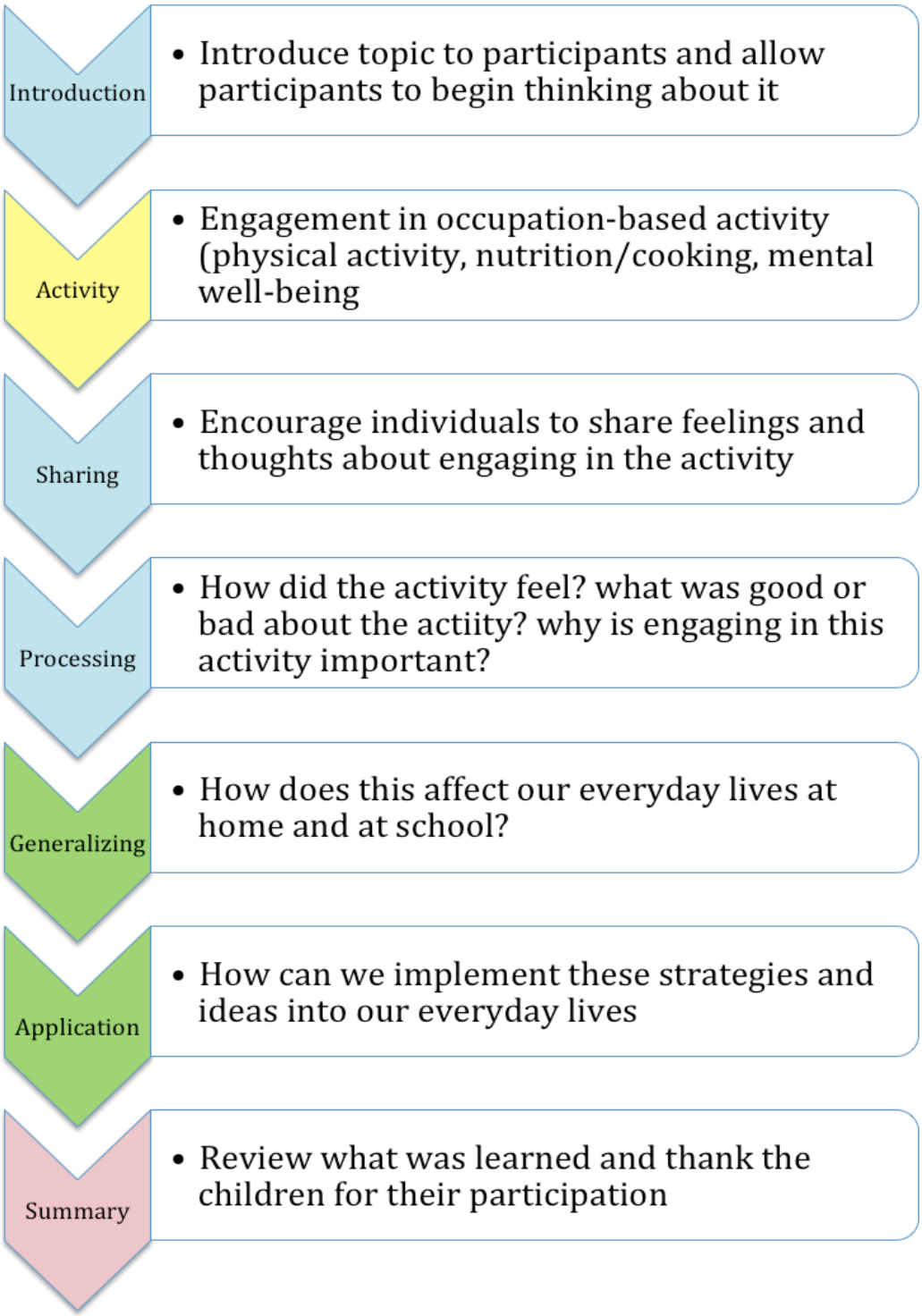


Figure 2. The stages of Cole's Seven Steps, that will be used by the OT program coordinator for discussion after the completion of the activity (Cole, 2012). The introduction, sharing, and processing components of Cole's Seven Steps match with the

"person" aspect of PEO because the children are discussing how the activity relates to them and how they feel (Cole, 2012). Generalization and application relate to the environment aspect of PEO because the children are discussing how they can take the skills they just learned and apply them into their home and community environments. Doing the actual activity relates to the *occupation* component of PEO because the children are engaged in an occupation-based activity (Law et al., 1996). Finally, the summary, relates to the core of PEO, occupational performance, because the children are getting an overview how each component of PEO affects their ability to engage in occupations through the discussion based on Cole's Seven Steps (Cole, 2012; (Law et al., 1996).

Introductory Session

Goal: To educate the children about what the program entails and get them excited to participate each week

Materials needed: Dependent on how each professional will introduce their topic

Group Process	Description
Introduction	● Welcome children to the program ● Have children form a circle ● Have one member go first and state their name and a food that begins with the same letter as their name ● Then, the next person in the circle must say the first persons name and food plus say their own name and a food item ● Each person in the circle continues to add to the list of names and food items ● Activity is ended once everyone shares their name
Activity	● The coordinator will introduce this program and explain to the children the basics of the program including: ○ Monday sessions will be for physical activity ○ Wednesday sessions will be for nutrition ○ Friday sessions will be for our well-being ○ Each session will be an hour and a half ○ Other adults will help lead each program on the different days ● Next, there will be a physical activity specialist that will explain to the children the importance of activity for our bodies ● Then, the nutritional specialist will educate the children on why eating healthy is good for our bodies ● Lastly, the mental health specialist will educate the students on self-image, self-esteem and positive interactions ● In between each specialists discussion, the children should engage in one short activity to keep them focused ● To end, the coordinator will pass out pre-test questionnaires to each child to complete ● They should also give one pre-test questionnaire to each child for them to give to their parent to complete ○ Pre-test/post-test questionnaires attached at end
Sharing	● Do any of you have any questions? ● What are you most excited about for this program? ● What are some activities you would like to try during this program?
Processing	● Why is it important to learn about eating healthy? ● Why is it important to move around and play active games?

	• What is important to have a high self-esteem?
Generalizing	• Apply learned knowledge and summarize main points
Application	• Have each child bring home pre-test for their parent or guardian to take and tell them to bring this back completed for the next session.
Summary	• Thank members for their participation and introduce what the next session will be about.

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PHYSICAL ACTIVITY

Problem

Factors that have been found to contribute to the obesity epidemic include an increase in sedentary behaviors and a decrease of consumption of healthy foods, with a low intake of fruits and vegetables (Baranowski, 2006). A large number of American children and adolescents are not meeting the guidelines established for engagement in physical activity (Centers for Disease Control and Prevention, 2005; Trost, Rosenkranz,& Dzewaltoqski, 2008). There are several reasons for the lack of participation in physical activity among children who live in disadvantaged areas. First, they are limited by fewer opportunities to engage in physical activity outside these areas are perceived to be unsafe (Molnar, Gortmaker, Bull, & Buka, 2004) so children are advised to avoid playing outside. Children who are from a low socioeconomic status (SES) greatly benefit from an after-school program that promotes physical activity (Madsen, Thompson, Adkins, & Crawford, 2013). Many researchers found that after-school wellness programs aimed at increasing physical activity in school aged children decrease rates of obesity are effective.

Goal

The occupational therapist program coordinator will collaborate with a physical activity specialist to provide the best after-school sessions possible. The sessions will target children's habits and routines. These will be related to engagement in physical activity through education about how physical activity can make their bodies and minds stronger and healthier and provide children the opportunity to engage in physical activity. Children will be taught a variety of strategies and activities they can do in their homes when accessing the outdoors or playgrounds is not possible. Finally, children will be

challenged to apply their knowledge and skills in their home environment to increase the implementation of physical exercise into their daily routines.

Musical Paper Plates

Goal: Teach and engage children in a competitive, but fun game that requires running and simple exercises.

Materials needed: paper plates (enough for each child), exercise examples, radio/stereo

Group Process	Description
Introduction	• Instruct the children to engage in 30 seconds of running in place
Activity	• Write a different exercise on each paper plate (10 jumping jacks, 5 sit ups etc.) • Scatter paper plates around the gym floor • There are enough plates for each child, but one, similar to musical chairs • Play music and instruct children to begin running around the gym and to stop when the music stops • When the music stops, children find a paper plate to stand on as quickly as possible and do the activity instructed on the plate. • Whoever does not get to a plate, must sit out, and a plate is removed, • Continue until there is a winner
Sharing	• What was your favorite exercise? • What was your least favorite exercise? • How did it feel to race and engage in this exercise?
Processing	• What benefits can engaging in this game have for you and your body?
Generalizing	• How can continuing these exercises increase your ability to engage in other activities?
Application	• How can these activities be done at home? • Discuss with children that this activity is inexpensive and can be recreated in one's home
Summary	• Thank children for their participation

Reference

Getting kids moving-fun exercise games for kids [Web log message]. (2013, January 12).

Retrieved from http://meaningfulmama.com/2013/01/getting-kids-moving-fun-exercise-games.html

Giant Exercise Memory

Goal: Incorporate brain exercises into physical activity

Materials needed: Tagboard

Group Process	Description
Introduction	• Children will engage in a game of tag for 5 minutes.
Activity	• Split children up into two teams • Place large tagboard pieces with exercises written on them face down on the gym floor, much like the game Memory • Taking turns, each student will turn over a tag board • A team member will try to find the matching one, that has the same exercise written on it • When a team makes a match, they will perform the exercise • The team also gets to create an exercise for all to perform • The team with the most matches, wins
Sharing	• What were your favorite parts of this game? Least favorite?
Processing	• What areas of our bodies are each of these exercises working on?
Generalizing	• How can performing these exercises as kids, help us as adults?
Application	• How could you do this at home, by yourself, or with your siblings/parents?
Summary	• Provide positive reinforcement for participating

Reference

Oversized memory game [Web log message]. (2013, August 14). Retrieved from

http://dollarstorecrafts.com/2013/08/tutorial-oversized-memory-game/

Fun Kids Yoga

Goal: Educate children on simple yoga poses

Materials needed: Ideas for yoga poses, if not familiar with yoga

Group Process	Description
Introduction	• Have children share what they know/don't know about yoga
Activity	• Provide verbal, and visual demonstrations of different yoga poses • Educate children on benefits of engaging in yoga
Sharing	• What is something you learned about yoga?
Processing	• Do you think you will continue to try yoga? Why or why not?
Generalizing	• What are the benefits of doing yoga?
Application	• How could you use these skills at home or away from this environment? • Educate children on the no cost and small space needed to perform these exercises
Summary	• Summarize the activity and encourage children to show parents at home

Let's Play Soccer!

Goal: Engage children in a simple, but active game, involving a simple soccer skill

Materials needed: One soccer ball for each child

Group Process	Description
Introduction	• Have each student pair up with one soccer ball • Have the students stand about 10 feet away from one another • Have each pair try and pass the soccer ball back and forth 30 times in a row • Have each pair sit down once they finish passing the ball 30 times
Activity	• Divide the children into five groups, each group will go to one station already set up • Station 1: juggling a soccer ball • Station 2: create-your-own soccer ball tricks • Station 3: moving the soccer ball between feet back and fourth • Station 4: soccer ball pushups - performing with soccer ball under chest • Station 5: toe touches with soccer ball • Play music in-between stations • When the music starts, the children dribble his or her soccer ball to the next station.
Sharing	• What were your favorite parts of this game? Least favorite?
Processing	• What benefits can engaging in this game have for us and our bodies?
Generalizing	• What other activities can you do with a soccer ball?
Application	• How can you do some of these same moves at home if you do not own a soccer ball?
Summary	• Provide positive reinforcement for their participation • Encourage them to engage in a physical activity at home within the next week.

Reference

Three-five PE lessons [Web log message]. (2011, December 9). Retrieved from http://pecentral.org/lessonideas/ViewLesson.asp?ID=10799

Running Fast and Being Strong

Goal: Educate and engage children in simple strength building and cardio activities
Materials needed: Light hand weights, if desired

Group Process	Description
Introduction	● Lead simple stretches to warm up arms, legs, and torso.
Activity	● Split children up into two equal groups ● One group engages in physical activities to increase muscle strength ○ Examples: wall push-ups, bicep curls, abdominal crunches, squats, etc. ● The other group will engage in vigorous physical activities ○ Examples: fast walking, jogging, skipping, galloping, etc. ● Have each group switch back and forth between activities when you blow a whistle
Sharing	● What was your favorite activity? ● What was your least favorite activity?
Processing	● How did your body feel when you did different activities? ● What activity made you the most tired? ● Least tired?
Generalizing	● How can performing these activities now help our bodies grow and stay healthy?
Application	● Talk about engaging in these activities at home.
Summary	● Provide positive reinforcement for their participation and encourage them to engage in a physical activity at home within the next week.

Reference:

Healthy Schools Resource Guide. (2005). Daily physical activities in schools.

Retrieved from http://www.edu.gov.on.ca.

Kick Ball

Goal: Engage children in a fun game of kickball

Materials needed: Kickball and bases

Group Process	Description
Introduction	• Simon-says with stretching activities
Activity	• Split the children up in two groups • Lay out 4 mats to indicate first base, second base, third base and home plate • Facilitate the game kick ball to be played with a soft bouncy ball
Sharing	• How much did you like playing kickball? • What was your favorite part? • What was your least favorite part of the game? • What was your favorite position to play and why?
Processing	• Why is it good for our bodies to exercise and play active games?
Generalizing	• How can we involve physical activities into each day?
Application	• Where else can you play kickball outside of school that is safe?
Summary	• Provide positive reinforcement for their participation • Encourage them to engage in a physical activity at home within the next week

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NUTRITION

Problem

Poor nutrition habits are a leading contributor to increased obesity rates in children (Coon, Goldberg, Rogers, & Tucker, 2001). Evidence has shown that educating children in a school-setting on nutritional aspects can decrease the percentage of overweight or obese children (Isoldi et al., 2014). It was found that children from low SES are hindered in that they have less access to affordable, healthy food options (Los Angeles County Department of Public Health, 2007; Los Angeles County Department of Public Health, 2008). Childrens' habits and preferences regarding food and nutrition begin when they are young and researchers have shown that allowing them to have hands-on experience can impact their understanding of the positive effects of healthy eating (Kirby, Baranowski, Reynolds, & Taylor, 1995). Children have the tendency to make better food related choices when they are included and have the opportunity to be engaged and involved in the preparation of healthy meals (Larson et al., 2006). Healthy eating habits is a main contributor to preventing obesity and related diseases.

Goal

The goal is to develop after-school sessions that include providing children with the ability to learn about, engage in, and alter their own eating habits. The OT program coordinator will collaborate with a nutrition specialist, who will provide his/her expertise in the area of nutrition and healthy eating. Throughout the after-school sessions, children will be educated about healthy foods, including how to read nutrition labels, learn about the effects good and bad foods can have on the body, and the importance of balanced meals. Children will also have the opportunity to help grow healthy foods, prepare simple and healthy meals, and will learn how to make grocery lists and purchase healthy foods

on a budget. Finally, children will be challenged and reinforced for applying health eating habits in their home and school-settings.

Stop Light Foods

Goal: Educate children on how to compare how cars need the proper fuel, just as their bodies need the proper food, to run and be healthy.

Materials needed: Pictures of healthy, sometimes healthy, and never healthy foods.

Group Process	Description
Introduction	• Have children imagine their bodies as cars and compare how cars need fuel like people need healthy food
Activity	• Teach children about what foods to eat and not to eat by comparing them to red light (avoid), green light (always good), and yellow light (sometimes) • Once children are taught about each one and which category they belong in, have them line up in the gym • Have pictures or verbalize the foods • Kids will run forward it if is a 'green' food, will walk forward if it is a 'yellow' food, and will stay where they are if it is a 'red' food
Sharing	• What are some green foods you eat at home and at school? • What are some yellow foods you eat at home and at school? • What are some red foods that you eat at home and at school?
Processing	• Which red foods could you cut back on? • Which green foods could you incorporate more into your diet?
Generalizing	• What can green foods do to our bodies? Red? Yellow?
Application	• How could you teach your parents about these foods? • Could you help them make the next grocery list?
Summary	• Provide positive reinforcement for participation.

Reference

How to talk to kids about real food [Web log message]. (2013, April 19). Retrieved from http://www.100daysofrealfood.com/2013/04/19/how-to-talk-kids-about-real-food/

Nutrition Punch Card

Goal: Educate children on the importance of trying new foods

Materials needed: "Punch cards" with different foods listed on them

Group Process	Description
Introduction	• Have each children go around and say a food they would never try
Activity	• Distribute punch cards with different food groups on the cards • Instruct the children to keep these cards with them and bring them to each after school session • Each time the child tries a new and healthy food, they will receive a punch • Once they reach 10 punches, they will be rewarded
Sharing	• In what circumstances would you consider trying a food that you don't want to?
Processing	• How can these certain foods contribute to good nutrition and overall health?
Generalizing	• How can trying new foods be good for us?
Application	• Is there a food that your mom or dad likes that you don't that you could try at home?
Summary	• Thank children for their participation

Reference:

New food punch [Web log message]. (2011, May 15). Retrieved from

http://www.smalltypes.com/2011/05/new-food-punch.html

Let's Learn about Labels!

Goal: Educate children on the components of nutrition labels, in easy to understand terms

Materials needed: Examples of nutrition labels from different foods

Group Process	Description
Introduction	• Pass out sample nutrition labels • Have students with a partner tell each other what they already know and what they don't know about reading food labels
Activity	• Slowly go through each component on the food label and tailor it to the age of the children • Use labels of foods that are popular for children both healthy and unhealthy foods • After describing each component, hand out food labels with the name of the product deleted • Have children in small groups guess which label belongs to what food.
Sharing	• How many did you get right? • Which are similar?
Processing	• What is still hard to understand? • What did you learn?
Generalizing	• How is learning how to read food labels helpful in your daily life? • In what ways will you use these skills?
Application	• What foods are you wondering about that you eat at home? • How can you educate your parents on reading food labels?
Summary	• Thank the kids for participating • Provide them with a healthy snack

Foods of the Alphabet

Goal: To increase a child's knowledge about different types of food that they could eat.

Materials needed: An alphabet dice and paper with each letter of the alphabet on it

Group Process	Description
Introduction	● Have children roll an alphabet dice to determine which letter to work with ● The letter that is rolled will be the food for the next snack session ● For example, "A" snack will include- apricots, apples, avocado, etc..
Activity	● Provide children with a sheet of paper with all the letters of the alphabet on it ● Have them think of healthy foods that start with each letter of the alphabet
Sharing	● What letter has the most foods you like? ● What letter has the most foods you like? ● Did you not fill out any letters?
Processing	● Why is it important to try different foods? ● How can this activity encourage you to try different foods? ● What was one food your classmate shared that you could try?
Generalizing	● Educate on importance of eating a variety of foods and how there are many different types of food they could try
Application	● How can you implement this at home with your parents?
Summary	● Review the session, and thank kids for their participation

Reference:

Be the best mom: Kids and good nutrition [Web log message]. (2013, January 10). Retrieved from http://b-inspiredmama.com/2013/01/be-the-best-mom-2/

"A What?"

Goal: To increase the child's knowledge about vegetables and encourage their increase of vegetable consumption.

Materials needed: Either pictures of a variety of rare vegetables or have the actual vegetables available for use (i.e. turnip, chicory, eggplant, parsnip, shallot, yam, artichoke, brussel sprout, collard green, and summer squash)

Group Process	Description
Introduction	● Discuss the importance of eating vegetables for our bodies and how each vegetable has a variety of vitamins that positively impact our bodies (i.e. spinach helps to keep our skin healthy) ● Have the nutrition specialist share this information and the appropriate amount of servings a fifth grader should eat of vegetables everyday
Activity	● Split the children up into two groups and assign one leader for the whole class ● Have each group stand in a line facing the other group ● The leader receives a picture of a turnip (or other vegetable) ● The leader then runs across to the other group and gives the first person in line the picture and says "this is a turnip" ● The receiver then says "A what?" and the presenter repeats, "A turnip." ● The receiver then says "Oh! A turnip" as they take the picture ● The receiver then should run across to the other group and should speak to the first person in line "This is a turnip, etc." to the new receiver ● Once this picture has been passed along a few times, hand the original leader a new picture of a vegetable and ask them to pass it along, thus making two pictures in rotation ● Add as many pictures the group can handle (up to five) ○ A possible list of vegetables include: turnip, chicory, eggplant, parsnip, shallot, yam, artichoke, brussel sprout, collard green, and summer squash ○ You can bring in the actual vegetables if they are applicable instead of using only pictures (if you bring them in, have the students try them at the end of the game)
Sharing	● Have each student share how they can eat vegetables for dinner (i.e. salad, soup, etc.) ● What vegetables have you heard of before?

	• Which ones did you learn today?
Processing	• Why is it important to eat vegetables everyday?
Generalizing	• Discuss learned knowledge and importance of trying new foods.
Application	• What is one vegetable could you try eating at home that you learned today?
Summary	• Review the session, and thank kids for their participation.

Reference:
New York Road Runners. (2014). A what?! (vegetable version). Retrieved from http://www.nyrr.org/youth-and-schools/running-start/nutrition-activities/elementary-school/dinner/a-what-vegetable-version

Red Light Green Light

Goal: To educate the children about how different foods affect our body, to promote healthy eating of "go" foods.

Materials needed: Bring in a healthy snack that is on the list of "go" foods (optional)

Group Process	Description
Introduction	● Discuss how different food can make you feel either good or bad ● Teach the children that "go" foods help their bodies grow and move and that "slow" foods are high in fat and sugar and can slow them down
Activity	● Have all the children line up facing you ● Call out different dinner foods that are either a "go" food or "slow" food, and have the children identify each ● Next, explain to them the activity that when you call out a dinner food item, they should hop forward when it is a "go" food and freeze when it is a "slow" food ● If they hop or freeze when it is the wrong time, then the child needs to start back at the starting line ○ "Go" foods could include: brown rice, asparagus, black beans, carrots, corn, green beans, salad, peas, yogurt, watermelon, whole-grain noodles, grilled chicken, corn, and low-fat milk ○ "Slow" foods could include: hamburgers, bacon, pop, cookies, fried chicken, hot dogs, pizza, french fries, and fried fish sticks
Sharing	● Have each child share what they learned from the activity
Processing	● How did you feel after you eat "go" foods? ● How do you feel after you eat "slow" foods?
Generalizing	● Why is it good for our bodies to eat healthy foods?
Application	● What is one healthy "go" food that you can eat tomorrow? ● What is another healthy "go" food that you can eat for lunch at school? ● What is a different healthy "go" food that you can ask your parent to buy you next time they go grocery shopping?
Summary	● Review the session and thank the children for their participation

Reference

New York Road Runners. (2014). Red Light Green Light. Retrieved from http://www.nyrr.org/youth-and-schools/running-start/nutrition-activities/elementary-school/dinner/red-light-green-light

Let's MOVE COOK & LEARN WITH Friends!

MENTAL WELLBEING

Problem

It has been proven that obesity in children can lead to an increase in psychiatric or psychological problems such as depression (Daniels et al., 2005). Childhood obesity is a predictor for bullying, which can also lead to decreased mental well-being. Janssen, Craig, Boyce, and Pickett (2004) identified that children who are obese or overweight tend to be victims and perpetrators of bullying, compared to their peers who are normal-weight. There have been strong relationships between children who are overweight with experiencing withdrawn friendships, having rumors spread about them, and physical aggression towards them such as kicking, punching, and hitting (Janssen et al, 204). In addition, children who are overweight tend to be subjects of discrimination, social isolation, and teasing, which can result in a low self esteem and self confidence (Bellisari, 2013; Lobstein, Baur, Uauy, 2004). School-aged children, especially those who are in the beginning stages of puberty may be at the greatest risk. Because children of this age group experience physical changes to their bodies, such as size and appearance, which are salient features in this age group, bullying is more likely to occur (Janssen et al, 2004). Overall, these factors can lead to significant problems in psychological and social development both short-term and long-term.

Goal

The OT will collaborate with a mental health professional to provide mental well-being sessions. The sessions will target children's well-being related to self-esteem, self-image, and bullying. These children will learn strategies to promote positive behaviors during school and how to increase their self-image and self-esteem. It has been shown that school-based interventions that target bullying behaviors by increasing awareness

and providing support have reduced these negative behaviors by 30-50% (Janssen et al, 2004). To increase the effectiveness, it is important to specifically target children at risk and those who are overweight or obese, as they are the likely target (Janssen et al, 2004). It is the goal of this program to educate and train the school children in many ways on how to prevent and deal with bullying, as well as to increase self-esteem and confidence in order to maintain overall mental well-being.

Positive Interaction Poster Making

Goal: To increase the children's actions of making positive interactions with others.

Materials needed: Two blank posters and markers

Group Process	Description
Introduction	• Have students stand on a taped line • Leader show videos that demonstrate specific behaviors that are considered to be bullying • Tell the students to take a step forward if they have ever seen bullying • After the question is asked, the students are asked to step back on the tape • Next the leader will ask to take a step forward if they have ever been bullied, been a bully to someone else, been injured from bullying, or been in trouble from bullying • Share a few facts about bullying from stopbullying.gov
Activity	• Split the children into two groups • Have each group create a positive interactions poster that they can hang up at their school to encourage other children to show positive behaviors towards others
Sharing	• Have each group share their poster and explain their process of creating it
Processing	• Why do others sometimes not show nice behaviors? • What can you do if you see someone being mean to another peer? • How can you team up together to show positive interactions towards others?
Generalizing	• How can increasing our positive interactions affect us? • How can our positive interactions affect our school as a whole?
Application	• How can you apply what you learned today in your classroom? • How can you apply what you learned today at home?
Summary	• Acknowledge children's feelings and thank them for their participation

Body Creations

Goal: To increase the children's self-awareness of how mean words can make you feel, in order to promote nice and positive interactions among the children.

Materials needed: Whiteboard, whiteboard markers, four large paper posters and markers

Group Process	Description
Introduction	• Write on a whiteboard the phrase "What makes me feel happy is…" • Then have each student come up to the whiteboard and write down a response
Activity	• Split up the class into two groups • Have the children trace an outline of a full body person on a sheet of paper provided • Once this is completed, the students should write all unkind, disrespectful, and rude statements on the outline • After the drawing is completely filled with many negative comments, have the students crumple the drawing, and then un-crumple it • Next have the students trace a new person on a sheet of paper • On this body write many positive comments on the drawing • Cut out the drawing (do not wrinkle it) • Hang up both images side by side
Sharing	• Have each group share both of their drawings
Processing	• Describe the difference between the two people • How do unkind words make you feel? • How do nice words make you feel?
Generalizing	• Discuss how positive words are better to use than unkind words
Application	• How can you use nice words in your classroom? • How can you use nice words at home?
Summary	• Summarize activity and thank students for their participation

Mirror Mirror on the Wall

Goal: To increase the children's awareness of self-image, self-esteem and to promote positive thinking about oneself.

Materials needed: Full body mirror and one hand-held mirror for each child

Group Process	Description
Introduction	• Have each child look in a full body mirror • Then, have them write down three words to describe their appearance
Activity	• Give each student a hand-held mirror • Direct the children to decorate this mirror with nice words and sayings about themselves
Sharing	• Have each student share their words from the warm-up activity, if they feel comfortable, and then share their mirror with the group
Processing	• What does self-esteem mean to you? • Why do children sometimes have poor self-esteem and self-image? • What can you do to help someone increase their self-image? • What can you do to make yourself feel better? • What are healthy ways to feel better? • Prompt for discussion about healthy habits (i.e. eating healthy foods and engaging in physical activity)
Generalizing	• Discuss how everyone can have aspects they don't like about themselves but we should still focus on the positives about ourselves
Application	• Discuss what can we do everyday at school and at home to make ourselves have a higher self-esteem
Summary	• Acknowledge students feelings, thank them for their participation, and have them take their mirror home and look at it whenever they have any bad thoughts about themselves

Compliments and Collages

Goal: To increase the children's self-perception of themselves to increase self-esteem and self-image.

Materials needed: computer paper, color pens/markers, and a variety of children friendly magazines

Group Process	Description
Introduction	• Have each child give the person to their right a compliment of any kind
Activity	• Provide kids with computer paper, color pens, and some magazines • Ask them to make a collage that will represent themselves • They can cut pictures from magazines, or draw them • The collage should include what they like, or what they want to become when they grow up
Sharing	• Have each child share their collage to the group
Processing	• How did you feel when you were creating your collage? • How did you feel when you were sharing your collage to the group? • Why is it good to have a collage of our interests? • How does looking at your collage make you feel?
Generalizing	• Where could you hang this collage?
Application	• Encourage children to bring their collage home to share with his or her parent
Summary	• Summarize activity and thank students for their participation

Roll Your Marble

Goal: To have children increase their self-esteem and confidence by sharing talents that is unique to them.

Materials needed: 10 marbles per child

Group Process	Description
Introduction	• Two Truths and a Lie: have each child share two true things about themselves and one false thing • Then, have the group guess what the lie is
Activity	• Each child is given 10 marbles and sits in a circle • Have each child go around the circle and share one thing in their life that they think is special or some talent or ability they possess • Make sure the students understand that there is no winning in this game, the marbles are simply to keep the children engaged and actively listening to their peers • Other students roll a marble to the one sharing if that is something they do not have in common with the sharer • For example: I say, "I can play the guitar." If you can also play the guitar you do nothing, but if you cannot play the guitar you roll a marble to the student.
Sharing	• Sharing is tied into the activity
Processing	• What did you think of this activity? • How did you feel while hearing the talents of your classmates? • How did you feel while sharing your own talents?
Generalizing	• What did you learn from this activity? • How do you feel about people having different talents?
Application	• Encourage each student to name one activity they could try at home that they heard from one of their classmates
Summary	• Review the highlights from the activity and thank students for their participation

Positive Thoughts About Ourselves

Goal: To increase positive thoughts of children throughout the day to increase self-esteem.
Materials needed: computer paper, writing utensils per child, and paper with printed activity questions

Group Process	Description
Introduction	● Write down each child's name on separate pieces of paper ● Pass around the names and have each member write down on thing they like about that individual, without leaving any names of who is writing the positive thing ● At the end, each child should receive their name back with a list of positives about themselves
Activity	● Pass out these questions on a sheet of paper for each student. Have them finish the sentences ○ I am a brave person. An example of a time I was brave is… ○ I am capable of being happy. A time I was happy was… ○ I am a good friend. A time I was there for a friend was... ○ I am capable of making decisions for myself. A time I made a good decision was.. ○ I am loved and cared about. People who care about me are… ○ I am talented. Two things I am really good at are…
Sharing	● Have each child share three of their answers, as they feel comfortable
Processing	● What it easy or hard to fill this out? ● How did you feel sharing your answers? ● What was hard about sharing your answers? ● Did you find any similarities in you and your classmates answers?
Generalizing	● Why is it good to engage in positive thoughts about ourselves?
Application	● How can you engage in positive thoughts at home? ● How can you engage in positive thoughts at school?
Summary	● Acknowledge students feelings and thank them for their participation

Reference:

Building Self Acceptance Through Positive Self-Talk. (2013). Retrieved October 10, 2014 from www.childprotectionstrategy.org/resources/resource_files/self%20acceptance%20handout.pdf

--Blank outline to be used--

Group Process	Description
Introduction	
Activity	
Sharing	
Processing	
Generalizing	
Application	
Summary	

After-school Child Questionnaire

This is not a test. We only want to learn more about your eating habits, physical activity and happiness. There are no wrong answers so try and answer as best as you can!

How old are you? _____
Are you a boy or girl? _____

Please **circle** your answer.

Yesterday, did you eat french fries, chips, or something like them?

a. no, I didn't eat any yesterday
b. yes, I ate them one time yesterday
c. yes, I ate them two times or more yesterday

Yesterday, did you eat any vegetables?

a. no, I didn't eat any vegetables yesterday
b. yes, I ate vegetables one time yesterday
c. yes, I ate vegetables two times or more yesterday

Yesterday, did you eat any fruit?

a. no, I didn't eat any yesterday
b. yes, I ate fruit one time yesterday
c. yes, I ate fruit two times or more yesterday

Yesterday, did you drink any pop or soda?

a. no, I didn't drink pop yesterday
b. yes, I did drink pop one time yesterday
c. yes, I did drink pop one or more times yesterday

Yesterday, did you eat any sweets (such as cookies, donuts, brownies or cake)?

a. no I didn't eat any sweets
b. yes, I ate sweets one time
c. yes, I ate sweets two or more times

Yesterday, did you exercise, play a sport or activity that made you sweat or breathe hard?

a. yes
b. no

How many hours a day do you usually watch TV?
a. I do not watch TV
b. 30 minutes to 1 hour
c. 1 hour to 2 hours
d. 2 hours or more

How many hours a day do you usually use the computer or play video games?
a. I do not use the computer or watch video games
b. 30 minutes to 1 hour
c. 1 hour to 2 hours
d. 2 or more hours

How many times should you eat fruits or vegetables each day?
a. 2
b. 5
c. 9
d. 10
e. I don't know

I eat healthy foods
a. yes, always
b. yes, sometimes
c. no

I am happy with my life
a. yes, all the time
b. sometimes
c. usually not
d. never

I am happy with how I look
a. yes, all the time
b. sometimes
c. usually not
d. never

I want to change a lot of things in my life
a. yes
b. no
c. maybe

Thank you for your help with answering these questions!

After-school Parent Questionnaire

This is not a test. We only want to learn more about your child's eating habits, physical activity and happiness. There are no wrong answers so try and answer as best as you can!

Please **circle** your answer:

Yesterday, did you feed your child eat french fries, chips, or something like them?

a. no
b. yes, I fed my child them one time yesterday
c. yes, I fed my child them two times or more yesterday

Yesterday, did you feed your child any vegetables?

a. no, I didn't feed my child vegetables yesterday
b. yes, I fed my child vegetables one time yesterday
c. yes, I fed my child vegetables two times or more yesterday

Yesterday, did you feed your child any fruit?

a. no, , I didn't feed my child any fruit yesterday
b. yes, I fed my child fruit one time yesterday
c. yes, I fed my child fruit two times or more yesterday

Yesterday, did give your child any pop or soda?

a. no, I gave my child pop yesterday
b. yes, I gave my child pop one time yesterday
c. yes, I gave my child pop one or more times yesterday

Yesterday, did feed your child any sweets (such as cookies, donuts, brownies or cake)?

a. No, I didn't feed my child any sweets
b. yes, I fed my child sweets one time
c. yes, I fed my child sweets two or more times

Yesterday, did your child exercise, play a sport or activity that made him or her sweat or breathe hard?

a. yes
b. no

How many hours a day does your child usually watch TV?

a. My child does not watch TV
b. 30 minutes to 1 hour
c. 1 hour to 2 hours
d. 2 hours or more

How many hours a day does your child usually use the computer or play video games?
a. My child does not use the computer or watch video games
b. 30 minutes to 1 hour
c. 1 hour to 2 hours
d. 2 or more hours

How many times should your child eat fruits or vegetables each day?
a. 2
b. 5
c. 9
d. 10
e. I don't know

My child eats healthy foods
a. yes, always
b. yes, sometimes
c. no

My child is happy with his or her life
a. yes, all the time
b. sometimes
c. usually not
d. never

My child is happy with how they look
a. yes, all the time
b. sometimes
c. usually not
d. never

Thank you for your help with answering these questions!

Graphics Used

The *Let's Move, Cook, and Learn with Friends!* after-school program was created to target and prevent childhood obesity by including three main components: physical activity, nutrition, and mental well-being.

Physical activity is being targeted because research has shown that children do not get the recommended amount of exercise as they should. This is particularly difficult for children who live in low SES communities, as they do not have access to playgrounds or outdoor areas. This lack of physical activity is a main contributor to childhood obesity.

Nutrition is the second component being targeted in the after-school program. Literature shows that children do not have the proper intake of healthy and nutritious foods, which like decreased physical activity, leads to obesity. Children in low SES communities are also at a disadvantage in this aspect as many times healthy foods are not affordable.

Finally, mental well-being is an area that will be covered because children who are overweight or obese are at a higher risk of experiencing negative peer relationships and are often targets of bullying. It is important to educate children on how to cope with their feelings and emotions as well as promoting positive and healthy relationships. Through the application of the after-school program, children will be encouraged and challenged to engage in healthy lifestyle patterns through occupational performance, therefore decreasing and preventing childhood obesity. Chapter five will provide an overall summary and conclusion of this scholarly project.

REFERENCES

Academy of Nutrition and Dietetics (2014). Position of the academy of nutrition and dietetics: nutrition guidance for healthy children ages 2 to 11 years. *Journal of the Academy of Nutrition and Dietetics,* 114:1257-1276.

Baranowski, T. (2006). Advances in basic behavioral research will make the most important contributions to effective dietary change programs at this time. *Journal of American Diet Association,* 106(6), 808.

Bastable, S.B., & Dart, M.A. (2011). Developmental stages of the learner. In S.B. Bastable, P. Gramet, K. Jacobs, & D.L. Sopczyk (Eds.). *Health Professional as Educator: Principles of Teaching and Learning.* (173-176). Sudbury, MA; Jones & Bartlett Learning, LLC.

Bellisari, A. (2013). *The obesity epidemic in North America: Connecting biology and culture.* Long Grove, IL: Waveland Press.

Be the best mom: Kids and good nutrition [Web log message]. (2013, January 10). Retrieved from http://b-inspiredmama.com/2013/01/be-the-best-mom-2/

Building Self Acceptance Through Positive Self-Talk. (2013). Retrieved October 10, 2014 from www.childprotectionstrategy.org/resources/resource_files/self%20acceptance%20handout.pdfhttp://lin.ca/sites/default/files/attachments/Anti-Bullying%20Activities%20And%20Lesson%20Plans.pdf

Cahill, S. M., & Suarez-Balcazar, Y. (2009). Promoting children's nutrition and fitness in the urban context. *American Journal of Occupational Therapy, 63*(1), 113–1

Centers for Disease Control and Prevention. (2014, August 13). *Childhood obesity facts* .

Retrieved from http://www.cdc.gov/healthyyouth/obesity/facts.htm

Center for Health and Health Care in Schools. (2005). Childhood overweight: what the research tells us. Retrieved March 7, 2014, from http://www.healthinschools.org/News-Room/Fact-sheets/ChildhoodObesityUpdated07.aspx

Chen, E., Martin, A.D., & Matthews, K.A. (2006). Socioeconomic status and health: do gradients differ within childhood and adolescence? *Social Science & Medicine 62*(9), 2161-2170.

Cole, M. B. (2012). *Group dynamics in occupational therapy: The theoretical basis and practice application of group intervention*. (Fourth ed.). Thorofare, NJ : SLACK Incorporated.

Coleman-Jensen, A., Nord, M., & Singh, A. (2013). Household food security in the United States in 2012, ERR-155. Washington, DC: US Department of Agriculture, Economic Research Service.

Cook, J., & Jeng, K. (2009). Child food insecurity: the economic impact on our nation. Chicago, IL: Feeding America.

Coon, K., Goldberg, J., Rogers, B. L., & Tucker, K. L. (2001). Relationships between the use of television during meals and children's food consumption patterns. *Pediatrics, 107*(1), e7

Daniels, R. S., Arnett, K. D., Eckel, H, R., Gidding, S. S., Hayman, L. L., Kumanyika, S., Williams, L. C. (2005). Overweight in children and adolescents: Pathophysiology, consequences, prevention, and treatment. *Circulation*, *111*(15), 1999-2012.

Davis, J. N., Ventrua, E. E., Cook, L. T., Gyllenhammer, L. E., & Gatto, N. M. (2011). LA Sprouts: A gardening, nutrition, and cooking intervention for latino youth improves diet and reduces obesity. *Journal of the American Diet Association, 111*(8), 1224-1230.

Gatto, N.M., Ventrua, E.E., Cook, L.T., Gyllenhammer, L.E., & Davis, J.N. (2012). LA sprouts: A garden-based nutrition intervention pilot program influences motivation and preferences for fruits and vegetables in Latino Youth. *Journal of the Academy of Nutrition and Dietetics, 112*(6) 913-920.

Getting kids moving-fun exercise games for kids [Web log message]. (2013, January 12). Retrieved from http://meaningfulmama.com/2013/01/getting-kids-moving-fun-exercise-games.html

Haracz, K., Ryan, S., Hazelton, M., & James, C. (2013) Occupational therapy and obesity: an integrative literature review. *Australian Occupational Therapy Journal, 60*, 356–365, doi: 10.1111/1440-1630.12063

Healthy Schools Resource Guide. (2005). Daily physical activities in schools. Retrieved from http://www.edu.gov.on.ca.

How to talk to kids about real food [Web log message]. (2013, April 19). Retrieved from http://www.100daysofrealfood.com/2013/04/19/how-to-talk-kids-about-real-food/

Isoldi, K.K., Calderon, O., & Dolar, V. (2014). Cooking up energy: response to a youth focused afterschool cooking and nutrition education program. *Topics in Clinical Nutrition, 29*(2), 123-131.

Janssen, I., Craig, W. M., Boycem W. F., & Pickett, W. (2004). Associations between overweight and obesity with bullying behaviors in school-aged children.

Pediatrics, *113*(5), 1187-1194.

Johnson, S. (2012). Psychology's role in addressing the childhood obesity epidemic. *American Psychology Association.* Retrieved from http://www.apa.org/about/governance/president/childhood-obesity-epidemic.pdf

Kirby, S., Baranowski, T., Reynolds, K., & Taylor, G. (1995). Children's fruit and vegetable intake: Regional adult-child, socioeconomic, and urban-rural influences. *Journal of Nutrition Education,* 27(5), 261-271.

Kuo, F., Goebel, L., Satkamp, N., Beauchamp, R., Kurrasch, J., Smith, A., & Maguire, J. (2013). Service Learning in a Pediatric Weight Management Program to Address Childhood Obesity. *Occupational Therapy in Healthcare, 27*(2), 142-162.

Larson, N. I., Perry, V. L., Story, M., & Neumark-Stztainer, D. (2006). Food preparation by young adults is associated with better diet quality. *Journal of the American Diet Association, 106,* 2001-2007. doi:10.1016/j/jada/2006.09.008

Law, M., Cooper, B., Strong, S., Stewart, D., Rigby, P., and Letts, L. (1996). The person-environment-occupation model: a transactive approach to occupational performance. *Canadian Journal of Occupational Therapy, 63*(1), 9- 23.

Leadership for Healthy Communities. (2012). Robert Wood Johnson Foundation. Making the Connection: Linking policies that prevent hunger and childhood obesity. Retrieved from http://www. leadershipforhealthycommunities.org/ images/stories/lhc_hunger_obesity_ 02.14.12.pdf.

Lobstein, T., Baur, L., & Uruy, R. (2004). Obesity in children and young people: a crisis in public health. *Obesity Reviews,* 5(suppl 1):4-10.

Los Angeles County Department of Public Health. (2007). Preventing childhood obesity:

the need to create healthy places. A cities and communities report. Retireved from www.lapublichealth.org/epi

Loudoun County Public Schools. (2012). The role of the elementary school counselor. Retrieved from www.loudoun.k12.va.us/cms/lib4/VA01000195/Centricity/Domain/123/Role%20of%20Elementary%20School%20Counselors.pd

Madsen, K., Thompson, H., Adkins, A., & Crawford, Y. (2013). School-community partnerships. A cluster-randomized trial of an after-school soccer program. *The Journal of the American Medical Association Pediatrics, 167*(4), 321- 326. doi:10.1001/jamapediatrics.2013.107

Mahoney, J. L., Lord, H., & Carryl, E. (2005). After-school program participation and the development of child obesity and peer acceptance. *Applied Developmental Science, 4*, 202–15.

Molnar, B. E., Gortmaker, S. L., Bull, F. C., & Buka, S. L. (2004). Unsafe to play? Neighborhood disorder and lack of safety predict reduced physical activity among urban children and adolescents. *American Journal of Health Promotion*, *18,* 378-86.

New food punch [Web log message]. (2011, May 15). Retrieved from http://www.smalltypes.com/2011/05/new-food-punch.html

New York Road Runners. (2014). A what?! (vegetable version). Retrieved from http://www.nyrr.org/youth-and-schools/running-start/nutrition-activities/elementary-school/dinner/a-what-vegetable-version

New York Road Runners. (2014). Red Light Green Light. Retrieved from

http://www.nyrr.org/youth-and-schools/running-start/nutrition-activities/elementary-school/dinner/red-light-green-light

Oversized memory game [Web log message]. (2013, August 14). Retrieved from http://dollarstorecrafts.com/2013/08/tutorial-oversized-memory-game/

Puma, J., Romaniello, C., Crane, L., Scarbro, S., Belansky, E., & Marshall, J.A. (2013). Long-term student outcomes of the integrated nutrition and physical activity program. *Journal of Nutrition Education and Behavior, 45(*6), 635-642.

Slusser, W.M., Sharif, M.Z., Erausquin, J.T., Kinsler, J.J., Collin, D.C., Prelip, M.L. (2013). Improving overweight among at-risk minority youth: Results of a pilot intervention In after-school programs. *Journal of Health Care for the Poor and Underserved, 24*(2), 12-24.

Strong, S., & Rebiero-Gruhl, K. (2011). In Brown, C., & Stoffel, V. *Occupational Therapy in Mental Health.* (pp. 225-240). Philadelphia, PA: F. A. Davis Company

Three-five PE lessons [Web log message]. (2011, December 9). Retrieved from http://pecentral.org/lessonideas/ViewLesson.asp?ID=10799

Trost, S., Rosenkranz, R., Dzewaltoqski, D. (2008). Physical activity levels among children attending after-school programs. *Medicine and Science in Sports and Exercise,* 622-629. doi: 10.1249/MSS.0b013e318161eaa5.

Vizcaino, M., Aguila, S., Gutierrez, F., Martinez, S., Lopez, S., Martinez, S., Garcia, L., & Artalejo, R. (2008). Assessment of an after-school physical activity program to prevent obesity among 9- to 10-year-old children: a cluster randomized trial. *International Journal of Obesity. 32*,12-22. doi:10.1038/sj.ijo.0803738

REFERENCES

Academy of Nutrition and Dietetics (2014). Position of the academy of nutrition and dietetics: nutrition guidance for healthy children ages 2 to 11 years. *Journal of the Academy of Nutrition and Dietetics*, 114:1257-1276.

American Occupational Therapy Association [AOTA]. (2007). Obesity and occupational therapy (position paper). *American Journal of Occupational Therapy*, *61*(6).

AOTA. (2014). Childhood obesity. Retrieved from http://www.aota.org/Practice/Children-Youth/Emerging-Niche/Childhood-Obesity.aspx

Baranowski, T. (2006). Advances in basic behavioral research will make the most important contributions to effective dietary change programs at this time. *Journal of American Diet Association,* 106(6), 808.

Bastable, S.B., & Dart, M.A. (2011). Developmental stages of the learner. In S.B. Bastable, P. Gramet, K. Jacobs, & D.L. Sopczyk (Eds.). *Health Professional as Educator: Principles of Teaching and Learning.* (173-176). Sudbury, MA; Jones & Bartlett Learning, LLC.

Be the best mom: Kids and good nutrition [Web log message]. (2013, January 10).

Retrieved from http://b-inspiredmama.com/2013/01/be-the-best-mom-2/

Beets, M. W., Beighle, A., Erwin, H. E., & Huberty, J, L. (2009). After-school program impact on physical activity and fitness: a meta-analysis. *American Journal of Preventive Medicine, 36*(6), 527-537.

Bellisari, A. (2013). *The obesity epidemic in North America: Connecting biology and culture.* Long Grove, IL: Waveland Press.

Blanchard, S. (2012). AOTA's societal statement on obesity. *The American Journal of Occupational Therapy, 66*(6).

Building Self Acceptance Through Positive Self-Talk. (2013). Retrieved October 10, 2014 from www.childprotectionstrategy.org/resources/resource_files/self20acceptance%20handout.pdf

Caballero, B., Clay, T., Davis, S. M., Ethelbah, B., Rock, B.H., Lohman, T., Norman, J., & Story, M. (2003). Pathways: A school-based, randomized controlled trial for the prevention of obesity in American Indian schoolchildren. *The American Journal of Clinical Nutrition, 78,* 1030-1038.

Cahill, S. M., & Suarez-Balcazar, Y. (2009). Promoting children's nutrition and fitness in the urban context. *American Journal of Occupational Therapy, 63*(1), 113–1

Centers for Disease Control and Prevention. (2014, August 13). *Childhood obesity facts* . Retrieved from http://www.cdc.gov/healthyyouth/obesity/facts.htm

Center for Health and Health Care in Schools. (2005). Childhood overweight: what the research tells us. Retrieved March 7, 2014, from http://www.healthinschools.org/News-Room/Fact-

sheets/ChildhoodObesityUpdated07.aspx

Chen, E., Martin, A.D., & Matthews, K.A. (2006). Socioeconomic status and health: do gradients differ within childhood and adolescence? *Social Science & Medicine 62*(9), 2161-2170.

Childhood Obesity: Tipping the Balance Toward Healthy, Active Children, LA Health. (2008, July 1). Retrieved June 4, 2014, from http://publichealth.lacounty.gov/epi/docs/Childhood_Obesity_final.pdf

Children Now. (n.d.). Retrieved May 19, 2014, from http://www.cde.ca.gov/

Cole, M. B. (2012). *Group dynamics in occupational therapy: The theoretical basis and practice application of group intervention*. (Fourth ed.). Thorofare, NJ : SLACK Incorporated.

Coleman, K.J., Geller, K.S., Rosenkranz, R.R., & Dzewaltowski, D.A. (2008). Physical activity and healthy eating in the after-school environment. *Journal of School Health*, 78(12), 633-637.

Coleman-Jensen, A., Nord, M., & Singh, A. (2013). Household food security in the united states in 2012, ERR-155. Washington, DC: US Department of Agriculture, Economic Research Service.

Colley, R.C., Garriguet, D., Janssen, I., Craig, C.L., Clarke, J., & Tremblay, M.S. (2011). Physical activity of Canadian children and youth: accelerometer results from the 2007 to 2009 Canadian health measures survey. *Health Reports 2*(1), 15-23.

Cook, J., & Jeng, K. (2009). Child food insecurity: the economic impact on our nation. Chicago, IL: Feeding America.

Coon, K., Goldberg, J., Rogers, B. L., & Tucker, K. L. (2001). Relationships between the

use of television during meals and children's food consumption patterns. *Pediatrics, 107*(1), e7.

Crockett, S. J., Mullis, R., Perry, C. L., & Luepker, R. V. (1989). Parent education in youth-directed nutrition interventions. *Journal of Preventative Medicine, 18*, 475–491.

Cullen, W., & Zakeri, I. (2004). Fruits, vegetables, milk, and sweetened beverage consumption and access to a la carte/snack bar meals at school. *American Journal of Public Health, 94*, 463-467.

Daniels, R. S., Arnett, K. D., Eckel, H, R., Gidding, S. S., Hayman, L. L., Kumanyika, S., Williams, L. C. (2005). Overweight in children and adolescents: Pathophysiology, consequences, prevention, and treatment. *Circulation, 111*(15), 1999-2012.

Davis, J. N., Ventrua, E. E., Cook, L. T., Gyllenhammer, L. E., & Gatto, N. M. (2011). LA Sprouts: A gardening, nutrition, and cooking intervention for latino youth improves diet and reduces obesity. *Journal of American Diet Association, 111*(8), 1224-1230.

Dietz, W. H. (1998). Health consequences of obesity in youth: childhood predictors of adult disease. *Pediatrics, 101*(3 Pt 2), 518–25.

Eaton, D., Kann, L., Kinchen, S., Ross, J., Hawkins, J., Harris, W., Wechsler, H. (2006). Youth risk and behavior survelliance-United States, 2005. *Morbidity and Mortality Weekly Report, 55*, 1-108.

Friedrich, M. J. (2007). Researchers address childhood obesity through community-based programs. *Journal of the American Medical Association, 298*(23), 2728-2730.

Food and Research Action Center. (2010). Overweight and obesity in the U.S. Retrieved

from http://frac.org/initiatives/hunger-and-obesity/obesity-in-the-us/#

Gatto, N.M., Ventrua, E.E., Cook, L.T., Gyllenhammer, L.E., & Davis, J.N. (2012). LA sprouts: A garden-based nutrition intervention pilot program influences motivation and preferences for fruits and vegetables in Latino Youth. *Journal of the Academy of Nutrition and Dietetics, 112*(6) 913-920.

Getting kids moving-fun exercise games for kids [Web log message]. (2013, January 12). Retrieved from http://meaningfulmama.com/2013/01/getting-kids-moving-fun-exercise-games

Hamrick, K., Andrews, M., Guthrie, J., Hopkins, D., & McClelland, K. (2011). How Much Time Do Americans Spend on Food? *U.S. Department of Agriculture, Economic Research Service, EIB-86*.

Haracz, K., Ryan, S., Hazelton, M., & James, C. (2013) Occupational therapy and obesity: an integrative literature review. *Australian Occupational Therapy Journal, 60*, 356–365 doi: 10.1111/1440-1630.12063.

Healthy Schools Resource Guide. (2005). Daily physical activities in schools. Retrieved from http://www.edu.gov.on.ca.

Herscovici, C., Kovalskys, I., & De Gregorio, M. (2013). Gender differences and school-based obesity prevention program in Argentina: a randomized trial. *Pan American Journal of Public Health, 34*(2).

How to talk to kids about real food [Web log message]. (2013, April 19). Retrieved from http://www.100daysofrealfood.com/2013/04/19/how-to-talk-kids-about-real-food/

Isoldi, K.K., Calderon, O., & Dolar, V. (2014). Cooking up energy: response to a youth focused afterschool cooking and nutrition education program. *Topics in Clinical*

Nutrition, *29*(2), 123-131.

Janssen, I., Craig, W. M., Boycem W. F., & Pickett, W. (2004). Associations between overweight and obesity with bullying behaviors in school-aged children. *Pediatrics*, *113*(5), 1187-1194.

Johnson, S. (2012). Psychology's role in addressing the childhood obesity epidemic. *American Psychology Association.* Retrieved from http://www.apa.org/about/governance/president/childhood-obesity-epidemic.pdfhttp://www.apa.org/about/governance/president/childhood-obesity-epidemic.pdf

Johnston, C., Moreno, J., El-Mubasher, A., Gallagher, M., Tyler, C., & Woehlers, D. (2013). Impact of a school-based pediatric obesity prevention program facilitated by health professionals. *Journal of School Health, 83*(3).

Keeping children healthy in California's child care environments: Recommendations to improve nutrition and increase physical activity. (n.d.). Retrieved May 17, 2014, from http://www.cde.ca.gov/ls/nu/he/documents/keepchildhealexecsumm.pdfhttp://www.cde.ca.gov/ls/nu/he/documents/keepchildhealexecsumm.pdf - search

Keeping children healthy in California's child care environments: recommendations to improve nutriti&view=FitH&pagemode=none

Kielhofner, G. (2008). *Model of human occupation: theory and application*. Baltimore, MD: Lippincott Williams & Wilkins.

Kirby, S., Baranowski, T., Reynolds, K., & Taylor, G. (1995). Children's fruit and vegetable intake: Regional adult-child, socioeconomic, and urban-rural

influences. *Journal of Nutrition Education,* 27(5), 261-271.

Kimm, S. Y., Glynn, N. W., Kriska,, A. M., Barton, A. B., Kronsberg, S. A., Daniels, R. S., Crawford, B. C., Sabry, I. Z., & Liu, K. (2002). Decline in physical activity in black girls and white girls during adolescence. *New England Journal of Medicine, 347*(10), 709-715.

Koch, S., Waliczek, T., & Majicek J. M. (2006). The effect of a summer garden program on the nutritional knowledge, attitudes, and behaviors of children. *HortTechnology, 16*(4), 620-625.

Kropski, J. A., Keckley, P. H., & Jensen, G. L. (2008). School-based obesity prevention programs. *Obesity, 16*(5), 1009-1018. doi:10.1038/oby.2008.29

Kubik, M. Y., Lytle, L. A., Hamnan, P. H., Perry, C. L., & Story, M. (2003). The association of the school food environment with dietary behaviors of young adolescents. *American Journal of Public Health, 93*, 1168-1173.

Kuo, F., Goebel, L., Satkamp, N., Beauchamp, R., Kurrasch, J., Smith, A., & Maguire, J. (2013). Service Learning in a Pediatric Weight Management Program to Address Childhood Obesity. *Occupational Therapy in Healthcare, 27*(2), 142-162.

Larson, N. I., Perry, V. L., Story, M., & Neumark-Stztainer, D. (2006). Food preparation by young adults is associated with better diet quality. *Journal of the American Diet Association, 106,* 2001-2007. doi:10.1016/j/jada/2006.09.008

Larson, N. I., Story, M., Eisenberg, M. E., & Neumark-Sztainer, D. (2006). Food preparation and purchasing roles among adolescents: associations with sociodemographic characteristics and diet quality. *Journal of the American Diet Association, 106*, 211-218. doi: 10.1016/j.jada.2005.10.029

Law, M., Cooper, B., Strong, S., Stewart, D., Rigby, P., and Letts, L. (1996). The person-environment-occupation model: a transactive approach to occupational performance. *Canadian Journal of Occupational Therapy, 63*(1), 9- 23.

Leadership for Healthy Communities. (2012). Robert Wood Johnson Foundation. Making the Connection: Linking policies that prevent hunger and childhood obesity. Retrieved from http://www. leadershipforhealthycommunities.org/ images/stories/lhc_hunger_obesity_ 02.14.12.pdf.

Lichtenstein, A. H., & Ludwig, D. S. (2010). Bring back home economics education. *Journal of the American Medical Association, 303,* 1857-1858. doi: 10.1001/jama.2010.592.

Lobstein, T., Baur, L., & Uruy, R. (2004). Obesity in children and young people: a crisis in public health. *Obesity Reviews*, 5(suppl 1):4-10.

Los Angeles County Department of Public Health. (2007). Preventing childhood obesity: the need to create healthy places. A cities and communities report. Retireved from www.lapublichealth.org/epi

Loudoun County Public Schools. (2012). The role of the elementary school counselor. Retrieved from www.loudoun.k12.va.us/cms/lib4/VA01000195/Centricity/ Domain/123/Role%20of%20Elementary%20School%20Counselors.pdf

Ludwig, J., Sanbonmatsu, L., Gennetian, L., Adam, E., Duncan, G., Katz, L., Kessler, R., Kling, J., Lindau, S., Whitaker, R., & McDade, T. (2011). Neighborhoods, obesity, and diabetes- a randomized social experiment. *New England Journal of Medicine*, *365*(16).

Ludwig, D. S. (2007). Childhood obesity-the shape of things to come. *New England*

Journal of Medicine, 357, 2325-2327. doi: 10.1056/NEJMp0706538

Lueke, L., (2011). Devouring childhood obesity by helping children help themselves. *Journal of Legal Medicine,* 32, 205-220. doi: 10.1080/01947648.2011.576621

Madsen, K.A., Hicks, K., & Thompson, H. (2011). Physical activity and positive youth development: Impact of a school-based program. *Journal of School Health, 81*(8), 462-470.

Madsen, K., Thompson, H., Adkins, A., & Crawford, Y. (2013). School-community partnerships. A cluster-randomized trial of an after-school soccer program. *The Journal of the American Medical Association Pediatrics, 167*(4), 321- 326. doi:10.1001/jamapediatrics.2013.107

Mahoney, J. L., Lord, H., & Carryl, E. (2005). After-school program participation and the development of child obesity and peer acceptance. *Applied Developmental Science, 4*, 202–15.

Molnar, B. E., Gortmaker, S. L., Bull, F. C., & Buka, S. L. (2004). Unsafe to play? Neighborhood disorder and lack of safety predict reduced physical activity among urban children and adolescents. *American Journal of Health Promotion*, *18,* 378-86.

Morris, J. I., & Zidenberg-Cherr, S. (2002). Garden-enhanced nutrition curriculum improves fourth-grade school children's knowledge of nutrition and preferences for some vegetables. *Journal of the American Diet Association*, *102*(1), 91-93.

New food punch [Web log message]. (2011, May 15). Retrieved from http://www.smalltypes.com/2011/05/new-food-punch.html

New York Road Runners. (2014). A what?! (vegetable version). Retrieved from

http://www.nyrr.org/youth-and-schools/running-start/nutrition-activities/elementary-school/dinner/a-what-vegetable-version

New York Road Runners. (2014). Red Light Green Light. Retrieved from http://www.nyrr.org/youth-and-schools/running-start/nutrition-activities/elementary-school/dinner/red-light-green-light

Northrop, H. (2014). Occupation-focused family intervention and expanding the role of occupational therapy in childhood obesity. *Physical & Occupational Therapy in Pediatrics*, *34(*3):335–337, 2014. doi: 10.3109/01942638.2014.932613

Ogden, C. L., Carroll, M. D., Curtin, L. R., McDowell, M. A., Tabak, C. J., & Flegal, K. M. (2006). Prevalence of overweight and obesity in the United States, 1999–2004. *Journal of the American Medical Association, 295*,1549–1555.

Ogden, C. L., Carroll, M. D., Curtin, L. R., Lamb, M., Flegal, K. M. (2010). Prevalence of high body mass index in U.S. children and adolescents, 2007-2008. *Journal of the American Medical Association*, *303*(3),242-249.

Ogden, C. L., Carroll, M. D., Kitt, B. K., & Flegal, K. M. (2012). Prevalence in obesity and trends in body mass index among US children and adolescents 1999-2010. *Journal of the American Medical Association*, *307*, 483-490. doi:1001/jama.2012.40.

Ogden, C. L., Carroll, M. D., & Flegal, K. M. (2008). High body mass index for age among US children and adolescents, 2003-2006. *Journal of the American Medical Association*, *299*(20), 2401-2405.

Oversized memory game [Web log message]. (2013, August 14). Retrieved from http://dollarstorecrafts.com/2013/08/tutorial-oversized-memory-game/

Pate, R. R., Trost, S. G., Mullis, R., Sallis, J. F., Wechsler, H., & Brown, D. R. (2000). Community interventions to promote proper nutrition and physical activity among youth. *Preventative Medicine, 31*, S138–49.

Perry, C. L., Luepker, R. V., Murray, D. M., Kurt, C., Mullis, R., Crockett, S, Jacobs, D. R. (1988). Parent involvement with children's health promotion: The Minnesota Home Team. *American Journal of Public Health, 78,* 1156–60.

Pollan, M. (2009, July 29). Out of the Kitchen, Onto the Couch. *The New York Times*.

Preventing childhood obesity: The need to create healthy places. (2007, October 1). Retrieved May 17, 2014, from http://lapublichealth.org/wwwfiles/ph/hae/epi/chr2-childhood_obesity.pdf

Preventing childhood obesity: The need to create healthy places. (2007, October 1). Retrieved May 17, 2014, from http://lapublichealth.org/wwwfiles/ph/hae/epi/chr2-childhood_obesity.pdf

Puma, J., Romaniello, C., Crane, L., Scarbro, S., Belansky, E., & Marshall, J.A. (2013). Long-term student outcomes of the integrated nutrition and physical activity program. *Journal of Nutrition Education and Behavior, 45(*6), 635-642.

Sandoval Iverson, C.S., Nigg, C., & Tichenal C.A. (2011). The impact of an elementary after school nutrition and physical activity program on children's fruit and vegetable Intake, physical activity, and body mass index: Fun 5. *Hawai'i Medical Journal, 70*, 37-41.

Slusser, W.M., Sharif, M.Z., Erausquin, J.T., Kinsler, J.J., Collin, D.C., Prelip, M.L. (2013). Improving overweight among at-risk minority youth: Results of a pilot intervention In after-school programs. *Journal of Health Care for the Poor and*

Underserved, 24(2), 12-24.

Story, M., Sherwood, N., Himes, J., Davis, M., Jacobs, D., Cartwright, Y., Smyth, M., & Rochon, J. (2003). An after-school obesity prevention program for African-American girls: the Minnesota GEMS pilot study. *Ethnicity & Disease, 13.*

Three-five PE lessons [Web log message]. (2011, December 9). Retrieved from http://pecentral.org/lessonideas/ViewLesson.asp?ID=10799

Trost, S., Rosenkranz, R., Dzewaltoqski, D. (2008). Physical activity levels among children attending after-school programs. *Medicine and Science in Sports and Exercise,* 622-629. doi: 10.1249/MSS.0b013e318161eaa5.

United States Department of Agriculture. (2014). Choose my plate. Retrieved from http://www.choosemyplate.gov/

United States Department of Health and Human Services. (2010). *Healthy People 2020.* Retrieved Dec, 2, 2014, from http://www.healthypeople.gov/2020.

Vander Ploeg, K.A., Maximova, K., McGavock, J., Davis, W., & Veugelers, P. (2014). Do school based physical activity interventions increase or reduce inequalities in health? *Social Science & Medicine*, *112*, 80-87.

Veit, H. Z. (2011, September 5). Time to revive home ec. *The New York Times.*

Vizcaino, M., Aguila, S., Gutierrez, F., Martinez, S., Lopez, S., Martinez, S., Garcia, L., & Artalejo, R. (2008). Assessment of an after-school physical activity program to prevent obesity among 9- to 10-year-old children: a cluster randomized trial. *International Journal of Obesity. 32*,12-22. doi:10.1038/sj.ijo.0803738

Youth Risk Behavior Surveillance - United States, 2005. (2006). *MMWR,55/SS-5*, 23-26.

Wang, Y., & Lim, H. (2012). The global childhood obesity epidemic and the association

between socioeconomic status and childhood obesity. *International Review Psychiatry, 24(*3):176–88.

Wright, K., Giger, J.N., Norris, K., & Suro, Z. (2013). Impact of a nurse-directed, coordinated school health program to enhance physical activity behaviors and reduce body mass index among minority children: A parallel-group, randomized control trial. *International Journal of Nursing Studies, 50,* 727-737.

Zenzen, W., & Kridli, S. (2009). Integrative review of school-based childhood obesity prevention programs. *Journal of Pediatric Health Care, 23,* 242-258.