Exercise has always been thought of as beneficial for one’s well-being. This philosophy dates back in history even to before the writings of the ancient Greek.1 Health promotion utilizing physical activity can therefore be deemed as common knowledge that is as old as the ancient Greeks. However, to this day there is still an increase in overweight and obese children globally which has brought this topic to the forefront of public health concerns.1,2 Studies show that at least 1 in every 3 children or adolescents are considered to be overweight.3,4 The massive increase in childhood obesity in the past 20-30years has caused an increase in the prevalence of developing chronic conditions such as metabolic syndrome, type 2 diabetes mellitus, and hypertension that affects one’s adulthood as well.2,3,5,6 These risk factors have actually been identified in children as young as five years old.2 Healthy eating and physical activity are considered the primary contributing factors in prevention of these chronic diseases such as heart disease, cancer, and stroke which are the leading causes of death in those greater than 18 years old.6,7 In addition to chronic illnesses, some examples of musculoskeletal complications as a result of childhood obesity include, slipped capital femoral epiphyses, tibia varum, skeletal fractures, decreased lower extremity strength, poor dynamic balance, and generalized complaints of musculoskeletal pain and difficulty moving.7 These are all conditions that could be prevented with the right interventions utilizing a customized health promotion program to encourage increased physical activity and improved nutrition in young children. The American Physical Therapy Association (APTA) and the APTA Section on Pediatrics have included the scope of physical therapy practice to include health promotion in youth both with and without disabilities.8 The best environment to provide a specified health promotion program that targets the youth population would be in an environment that they are familiar with and spend the most time in which would be considered their school with an afterschool program.

Childhood obesity is both a national and a global problem. A recent study indicated there has been a twofold increase in the number of obese children in Britain and more than a threefold increase in developing countries.2 At a national level, North America and Europe are examples of industrialized areas which have the highest rates of childhood obesity whereas developing countries in areas such as Africa and Asia have the lowest rates.2 In the United States specifically, lower income families have been found to be at greater risk for obesity.2 Studies now indicate that physical inactivity is now recognized globally as the fourth leading risk factor for mortality in the category of noncommunicable diseases.1 Also, ethnicity has been found to have an impact where those with Hispanic and African American backgrounds have a 40% greater prevalence of obesity compared to the one in three factor noted generally in Caucaisians.9 Therefore the United States government has worked to develop the Affordable Care Act to address the overwhelming health care costs to Americans and to improve the quality of care that they receive.9 This Act helps to fund prevention programs targeted to the youth of America through the First Lady’s “Let’s Move!” campaign and the President’s Childhood Obesity Task Force.9 This evidence supports the fact that there is a direct need for a youth oriented health promotion program in the area of improved physical activity.

The United States Department of Health and Human Services recommends 60 minutes of moderate to vigorous physical activity daily for young children and adolescents.1,3,6,10 Guidelines also indicate that children and adolescents should participate specifically in vigorous intensity muscle-strengthening and bone-strengthening activities at least 3days of the week.6 However, children spend the majority of their day in school attempting to meet school wide expectations on academic goals and priorities. When a child is in school, the opportunity to achieve physical activity throughout their day typically occurs during recess and their physical education class. Locally in our schools, studies have shown that only 18% of the US school districts require elementary schools to provide access to daily recess and physical education classes are becoming expendable when considering school budgets.1 The same study indicated that only 29% of high school students actually achieved 60minutes of physical activity per day yet 32% of the children reported watching television for 3 or more hours on average per every school day.1 In the younger population between 9-13 years old, in 2002 statistics showed that 62% of these age group children did not participate in any organized non-school hour physical activity.6 This statistic alone shows the need for additional after school programs and support that could address the lack of age appropriate organized physical activity programs. The Center for Disease Control and Prevention has a campaign called Healthy People 2020 which aims to increase the number of adolescents who actually meet the guidelines for both aerobic and muscle strengthening activity.6 Through the implementation of an after school program to encourage increased physical and strengthening activities, local communities could start moving toward the objectives and goals of the Healthy People 2020 movement.

Changing one’s habits is not always easy as behavior is typically viewed as affecting and being affected by various social factors and the social environment.11 The impact of one’s personal factors and environment on health behavior and promotion has been termed the Social Ecological Model (SEM). According to a report by McLeroy et al, the SEM is made up of five separate categories or areas of influence on behavior and choices that include interpersonal (individual), intrapersonal, institutional factors, community, and public policy (population).11 Children’s health behavior choices are affected at many levels. A child’s lack of knowledge on the benefits of improved physical activity and good nutritional choices would have a direct impact on their motivation to participate in good health choices at the intrapersonal level of the SEM. This could be addressed by an afterschool program that dedicated a portion of their time to an actual lesson or lecture on benefits of exercise that is age appropriate along with handouts and materials that could be beneficial for them and for them to take home to their families as well.

This leads to the next level of influence on a child’s behavior which is family. The SEM interpersonal level of influence would include one’s social support system which for a child would focus around family and friends. Reports show that the positive social norms and support from friends and family lead to increased participation in physical activity in all children and adolescents.6 Examples of family support has been defined as either participating with the child in the physical activity or the action of signing the child up for an organized physical activity program shows support.6 Parent reports of support and youth perceptions have been shown to be strongly related to a child’s willingness to participate in both structured and non-structured structured physical activity.6 A structured afterschool program would address the intrapersonal level of health behavior change by providing the opportunity for a family to join or observe their child participating in the physical activity program. Therefore participation in an afterschool program would provide a parent or family member the opportunity to be directly involved in the physical activity and serve as a role model, or simply provide transportation and encouragement in participation with the afterschool program.12 A structured after school program will further influence a young child or adolescent at the intrapersonal level by providing an environment to participate in physical activity along with the friends they have or even provide an opportunity to make new friends. Social relationships provide emotional support and are considered an essential component of one’s overall wellbeing.11

The community level of health behavior change in the life of our youth can include their neighborhood and school environment. For example, a lack of a safe location to perform or participate in physical activities can be a barrier along with lack of access to equipment, cost, and time constraints.6 Therefore utilizing a safe and familiar environment such as an individual’s school with a structured afterschool program would provide a safe environment, equipment, and no need for transportation to get to the program as the child would already be at the location. The school environment itself has a direct influence on participation of children and adolescents in physical activities.6,12 Reports indicate that in 2006 only 4% of elementary, 8% of middle school, and 2% of high schools provided daily physical education for their students.6 To reach the recommended daily value of 60minutes of moderate to vigorous physical activity per day additional interventions are a must.

Any intervention when addressing a motor impairment or even one’s physical activity levels and impact on a chronic illness, should have baseline measurements in order to determine progress at the end of a program or intervention. The program would have to start with initial assessment of each individual’s Body Mass Index Scale (BMI). According to the Centers for Disease and Control (CDC) this is the most accurate and cost-effective way of measuring an individual’s risk for obesity.13 However, studies indicate that BMI alone will not provide the optimal picture of an individual’s physical health and additional tests and measures such as functional strength testing, functional aerobic capacity testing, and specific skill based balance and power testing would be more comprehensive.13,14

Specifically the afterschool program would occur 5days per week for 60-90minutes. This would include opportunity for physical activity as well as an educational classroom experience to include families as well. Specific interventions that would provide opportunity for movement would be to include yoga, dance activities, and non-competitive structured play to include sports activities and circuit training sessions as well. This number of activities and categories will provide variety with hopes for improved compliance to be distributed throughout the 5day school week. Yoga is described as a holistic technique to incorporate both mind and body strategies to promote strength, flexibility, and utilizes breathing techniques to improve attention and emotion regulation skills.15 Studies have shown that children who participated in yoga were able to report feeling stronger, happy, having fun, and feeling more relaxed.16 Additional evidence supports that yoga applied to the pediatric population has resulted in significant improvements in body composition (BMI), cardiopulmonary fitness, flexibility, and muscular strength.17

Dance activities can be administered solely by itself or in conjunction with an “exergaming” dance method. One study was able to combine dance with video games to provide an alternate but familiar method of physical activity to a youth population. This allowed overweight participants who have avoided traditional physical activity to get active in a non-threatening way.18 However, this particular study used exergaming alone and this may have increased compliance but results did not indicate a decrease in BMI values in the participants.18 Therefore one could conclude that adding the exergaming dance technique as just one of the options provided in an afterschool program in conjunction with more traditional forms of exercise and education on nutrition and physical fitness would be necessary to achieve further weight loss outcomes.

More traditional exercise opportunities would be provided including walking, running, jump rope, and strength training activities. Programs that have utilized the traditional style of activities has been shown to cause an increase in overall activity levels and reduced BMI measurements.19,20 Combining aerobic and resistance training has been found to produce greater decreases in percentage body fat, waist circumference, and BMI than aerobic training alone in a youth study.20 So an afterschool program that provided variety and an opportunity for access to both types of training would be most beneficial.

However, none of these interventions will be effective without the use of application of health behavior change to achieve the desired outcome of improved health and fitness. The Health Belief Model (HBM) is a theory that was developed to predict and explain compliance behavior to take action to prevent, screen for and control illness conditions.21 It is divided into several distinct constructs including one’s perceived susceptibility, perceived severity/seriousness of a disease, perceived benefits, perceived barriers, cues to action, and self-efficacy.21 Perceived barriers such as lack of knowledge can be addressed in the afterschool program by providing an educational or class time for both children and parents and families to participate in. This would provide the opportunity for both written handouts and verbal education to occur on the benefits of exercise and nutrition on health. Also, a safe location and transportation to the activity program could be considered as barriers to participation. However, this is addressed by providing the program in a safe school environment, also the children would not need transportation to get to the activity. Finally, an advantage to parents would be the ability to pick their children up after work and provide them with the reassurance that their children are with competent and trained staff. Self-efficacy has been reported as being the most widely reported determinant of physical activity in children.12 The use of a familiar activity like dance exergaming could provide children with an opportunity for improved self-efficacy and improved self-confidence and competence in their ability to perform exercise activities in general.18 Performing these activities in a group setting can boost each other’s self-efficacy and belief in handling any perceived barrier as a group.18 Another motivating factor in the area of self-efficacy would be to provide participants with a group t-shirt that would serve as an incentive to join and show unity among the participants.

Children with chronic illnesses have the potential to grow up to be adults with chronic illnesses which in turn will continue to put a stress and burden on our health system. It is important to provide the opportunity for early intervention in terms of health promotion to our youth population. A comprehensive afterschool program would have the chance to provide both physical activity and educational opportunities to children, families, and teachers. This could lay the foundation and groundwork for a lifetime of adherence to a healthy lifestyle.

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