Physical Activity Patterns and School Aged Children Perceptions of After School Programs

by

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ABSTRACT

With many students of all ages attending after school programs (APSs) where there are a variety of program specific goals, this study examined the physical activity (PA) patterns of youth and teens attending afterschool programs as well as their physical activity during the school week. The first phase of the study used a validated observational instrument System for Observing Play and Leisure in Youth (SOPLAY) to record PA data and contextual aspects. Data was analyzed using cross-tabulations, chi-square test, and a table created to understand moderate to vigorous physical activity (MVPA) levels and contextual variables of the ASP. Findings suggest both girls and boys engaged in MVPA in environments built for play, while the mean percentage of girls engaged in MVPA was less than boys regardless of activity area. The second phase of the study used a survey comprised of two self-administered instruments. The first section used the Middle School Health Behavior Survey (MSHBS), which has been previously validated to record youth and teens PA behaviors during the past school week inside and outside of school. The second portion of the survey asked youth and teens about PA participation, leisure time, perceptions of the after school program, and choices within the after school program using the validated Kaiser Physical Activity Survey (KPAS). Data was analyzed using descriptive statistics to calculate and summarize data within and across both groups. Results showed more than half of youth and teens surveyed were active in some form during the past week regardless of being in school or outside of school, approximately less than a third are in front of a television or computer for less than an hour, and the favorite part of the ASP to youth and teens was the *Gym* and *Friends* respectively.

DEDICATION

This dissertation is dedication to my entire family, especially my wife Nicole and children Reya and Levi, for without your support I could not have done this without you.

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Chapter 1: Introduction

This study has two distinctive phases. The first phase included gathering the physical activity (PA) levels of youth attending an after school program (ASP). It also included describing how the PA venues influence PA levels. The second phase included gathering the perceptions of youth toward PA in general activity and in after school programs (ASPs).

Overweight and Obesity in the United States

Over the last decade what and who is defined/described as obese and/or overweight has changed. The Centers for Disease Control and Prevention (CDC) (2013) defined overweight as having excess body weight from fat for particular height, muscle, bone, water, or a combination of these factors, whereas it defines obesity as having excess body fat. The CDC report also places specific labels on children and adolescents ages 2 through 19. Children and adolescents above the sex specific 95th percentile for Body Mass Index (BMI) are defined as *obese* and those between the sex specific 85th and 95th percentile as *overweight* (Ogden, Carroll, Kit, & Flegal, 2012).

Currently, there are many health related problems with both children and adults within the United States. Many of these health related problems stem from being overweight or obese. The United States is known as one of the fattest nations in the world with 20.5% – 34.7% of adults overweight and 35.7% who are obese (CDC, 2013). In addition 17% of children and adolescents between the ages 2 – 19 are obese. Since 1980 the global prevalence of overweight and obesity has increased and continues to increase at a rapid rate (Stevens et al., 2012). In addition, with the Westernization of many

cultures throughout the world, there has been a dramatic shift on how the world's population eats, drinks, and moves, which in turn has created a dramatic change in overall body composition (Popkin, Adair, & Ng, 2011). Children with high BMI (usually overweight or obese) have a greater risk for developing chronic conditions including diabetes and cardiovascular diseases (Ogden et al., 2012; Ungar, 2012).

Environmental Influence on Physical Activity

Today our society is forming an always connected, in-demand, and instant gratification network among people. Technology is always changing and influencing our day-to-day lifestyle. This in turn has had a negative influence on children's motivation to be physically active. A change in diet and lifestyle reflected by a reduction in PA during work and leisure has also accounted for some of problems with obesity (World Health Organization [WHO], 2010).

Another factor influencing the obesity epidemic is the amount of television watched and the marketing that influences youth's life choices. Zuppa, Morton and Mehta (2003) showed that youth are exposed to an average of 23 hours of television watching a week, with 240 minutes dedicated to the marketing towards children which has an influence on the choices these young people make regarding their health behavior. The more time youth spend inside watching television, the more of an adverse effect it has on their PA engagement and opportunities. In addition, the food marketed to youth on television, is often not high in nutrients and can be less healthy than food that is not marketed towards children. This marketing also influences what the child desires to eat. This food marketing, in addition to the environment (household influence, local

community, and convenience of fast food restaurants) in which these children are raised, promotes the intake of unhealthy fast food in excessive amounts (French, Story, & Jeffery, 2001). Along with the marketing of foods found in groceries, the marketing of fast food restaurants has an impact on healthy behavior choices.

There have been multiple research studies conducted looking at environmental barriers for people being physically active. These barriers include physical and social barriers, and policy-related influences. The views of parents' influence of children/youth PA participation, including free play, and active transportation throughout their own neighborhoods (Carver, Timperio, & Crawford, 2008). Youth PA is also influenced by the parents' perceptions of their neighborhoods, for example whether they think it is safe for children to be outside alone, without adult supervision, while also restricting activities for their children (Carver et al., 2008; Weir, Etelson, & Brand, 2006). Financial barriers are also an issue that many people face. Rimmer, Riley, Wang, Rausworth, and Jurkowski (2004), found fitness facilities were more concerned with their profit than making fitness accessible for all. Parents who live in inner-city communities were more worried and anxious compared to middle class suburban communities about their children being unsupervised. These lower socioeconomic status (SES) communities, where people have lower education levels, are less likely to have access to facilities where people can engage in PA and workout (e.g., Gordon-Larsen, Nelson, Page, & Popkin, 2006)

After School Programs

After school time is the period identified as time for children to participate in programming at schools. Currently 6.5 million children attend ASPs, while 20-25% of children 6 to 14 years of age of low to moderate income spend time at ASPs (Halpern, 2002; Trost, Rosenkranz, & Dzewaltowski, 2008). ASPs have developed over time into various types of programming but there is not a consensus of what defines an ASP (Aspler, 2009). One type of ASP program design focuses on the development of students, which includes homework time, adult interaction, tutoring assistance, and safe places for PA (Halpern, 1999). Programs may also attempt to prevent young people from getting into trouble by using programs to avoid potentially unsafe activities (Pittman, Irby, Tolma, Yohalem, & Ferber, 2002). There are even ASPs that promote the engagement and promotion of PA (e.g., Beets, Beighle, Erwin, & Huberty, 2009). With the potential of ASPs to support youth in achieving 60 minutes of PA, ASPs are a great way for youth to reach the daily-recommended levels of health-optimizing PA (Beets, 2012).

After School Programs and Physical Activity

With the growing need to increase PA for all people because of the rise of obesity in our nation, and increased sedentary lifestyles ASPs are an ideal opportunity for students to reach their recommended 60 minutes or more of daily PA (U.S. Department of Health and Human Services [USDHHS], 2013). These 60 minutes can be reached with a combination of providing students with Physical Education classes, recesses, classroom PA breaks, before school PA, after school PA, and within ASPs. ASPs are usually community-based and take place after school during the weekdays, Monday through

Friday, typically between the hours of 3:00 – 6:30 p.m. Most are located either at a school or a community organization outside the school environment and provide a combination of activities including opportunities for children to be physically active (Halpern, 1999). Beets, Beighle, Erwin, and Huberty (2009) identified focusing on PA at ASPs as a recent trend. ASPs are also recognized as being the most logical environment for promoting health through PA, their potential to contribute to the positive development of youth, and since 6.6 million youth currently participate in some form of ASPs and 22 million would be interested in ASP if they were available. It is important to find what is happening currently in lower SES communities (Beets et al., 2009; Carruthers, 2006; McKenzie, Marshall, Sallis, & Conway, 2000).

Theoretical Framework

This study used a social-ecological framework defined by Stokols (1996) and Golden and Earp (2012) that demonstrates individuals are a part of a larger community that influences behaviors and decisions made within the community. Metzler, McKenzie, van der Mars, Barrett-Williams, and Ellis (2013) further elaborated a social-ecological framework through an explanation about the influences on individuals, by social environments, natural and built places for people to be active, and the surrounding context that people live; which in turn will reflect their own values, customs and social conditions. Authors went on to explain that behavior is not just an individual changing but influenced by their surrounded community by supportive people and in an environment where people are encouraged to be physical active, therefore they are more inclined to be more physically active (Metzler et al., 2013). Public policy also affects

people's level of participation by providing guidelines for PA behavior inside and outside of schools. These guidelines often ask for partnerships from public entities (community programs, support services, parks and recreations, etc.) to improve resources for the community at large (Bauman et al., 2012).

Bronfenbrenner (1994) further detailed the social-ecological model as an interlinked system which combines three interrelated systems where environments closest to the individual have the greatest influence on individual decision making throughout a lifetime. Bronfenbrenner's most influential environment is the *Microsystem,* which is experienced by the individual usually through face-to-face interactions (family, peers, siblings, and classroom) that develop relationships with the environment. The *Mesosystem* combines the linkage and processes taking place between multiple systems. The *Exosystem* is the next level, which consists of associations that occur between two or more setting. The *exosystem* is a parent/guardian's work environment, extended family, mass media, the neighborhoods where the youth live, and the school board. The furthest system away from the individual is the *Macrosystem* which includes the laws, culture, social conditions, the economic system, and life-style of where the individual lives which are embedded in each of the broader systems (Bronfenbrenner, 1994).

Purpose

The purpose of this study was to gather PA of youth and adults (the ASP youth and teens were between ages 5 and 18 years of age) attending an ASP in order to give data to executive directors about PA and promotion of PA or lack there of by branch

directors and employees using SOPLAY as well as gather information regarding their PA and perceptions of after school programs.

References

Aspler, R. (2009). After-school programs for adolescents: A review of evaluation research. *Adolescence*, *44*, 1-20.

Bauman, A., Reis, R., Sallis, J., Wells, J., Loos, R., & Martin, B. (2012). Correlates of physical activity: Why are some people physically active and others not? *The Lancet, 380*, 258-271.

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 Preventative Medicine, 36(6),* 527-537.

Beets, M.W. (2012). Active Living Research: Research Brief May 2012. Policies and standards for promoting physical activity in after-school programs. Retrieved from http://www.activelivingresearch.org/afterschool

Bronfenbrenner, U. (1994). *Ecological models of human development*. (2nd ed., Vol. 3, pp. 37-43). Oxford: Elsevier.

Campbell, K.J., Crawford, D. A., Salmon, J., Carver, A., Garnett, S.P., & Baur, L.A. (2006). Associations between the home food environment and obesity-promoting eating behaviors in adolescence. *Obesity, 15*, 719-730.

Carruthers, C. (2006). Process and outcomes of an after-school program for adolescent girls. *Journal of Park and Recreation Administration, 24*, 127-152.

Centers for Disease Control and Prevention. (2013). *Adult obesity facts*. Retrieved from http://www.cdc.gov/obesity/data/adult.html

Centers for Disease Control and Prevention. (2013). *Healthy Youth*. Retrieved from http://www.cdc.gov/healthyyouth/obesity/facts.htm

Centers for Disease Control and Prevention. (2013). Obesity and extreme obesity rates decline among low-income preschool children. Division of Nutrition, Physical Activity, and Obesity. Retrieved from http://www.cdc.gov/obesity/data/childhood.html

Carver, A., Timperio, A., & Crawford, D. (2008). Playing it safe: The influence of neighbourhood safety on children's physical activity - a review. *Health & Place, 14*, 217-227.

French, S.A., Story, M., & Jeffery, R.W. (2001). Environmental influences on eating and physical activity. *Annual Review of Public Health, 22*, 309-335.

Golden, S.D., & Earp, J.L. (2012). Social ecological approaches to individuals and their contexts: Twenty years of health education & behavior health promotion interventions. *Heath Education Behavior, 39*, 364-372.

Gordon-Larsen, P., Nelson, M.C., Page, P., & Popkin, B.M. (2006). Inequality in the built environment underlies key health disparities in physical activity and obesity. *Pediatrics, 117,* 417-424.

Halpern, R. (2002). A different kind of child development institution: The history of after-school programs for low-income children. *Teachers College Record, 104,* 178-211.

Halpern, R. (1999). After-school programs for low-income children: Promise and challenges. *The Future of Children, 9,* 81-95.

Metzler, M.W., McKenzie, T.L., van der Mars, H., Barrett-Williams, S., & Ellis, R. (2013). Health optimizing physical education (HOPE). A new curriculum for school programs. Part 1: Establishing the need and describing the model. *Journal of Physical Education Recreation and Dance, 84,* 41-47.

McKenzie, T.L., Marshall, S.J., Sallis, J.F., & Conway, T.L. (2000). Leisure-time physical activity in school environments: An observational study using SOPLAY. *Preventive Medicine, 30,* 70-77.

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

Pittman, K., Irby, M., Tolman, J., Yohalem, N., & Ferber, T. (2002*). Preventing problems, promoting development, encouraging engagement: Competing priorities or inseparable goals?* Washington, DC: Forum for Youth Investment.

Popkin, B., Adair, L., & Ng, S. (2011). Global nutrition transition and the pandemic of obesity in developing countries. *Nutrition Reviews, 70,* 3-21

Rimmer, J.H., Riley, B., Wang, E., Rauworth, A., & Jurkowski, J. (2004). Physical activity participation among persons with disabilities. *American Journal of Preventative Medicine,26,* 419-425.

Stevens, G.A., Sing, G. M., Lu, Y., Danaei, G., Lin, J.K., Finucane, M.M., Bahalim, A. N., … Ezzati, M. (2012). National, regional, and global trends in adult overweight and obesity prevalences. *Population Health Metrics, 10,* 1-16.

Stokols, D. (1996). Translating social ecological theory into guidelines for community health promotions. *American Journal of Health Promotions, 10,* 282-298.

Trost, S.G., Rosenkranz, R.R., & Dzewaltowski, D. (2008). Physical activity levels among children attending after-school programs. *Medicine & Science in sports & exercise, 40,* 622-629.

Ungar, R. (2012, April 30). *Obesity now costs Americans more in healthcare spending than smoking*. Retrieved from http://www.forbes.com/sites/rickungar/2012/04/30/obesity-now-costs-americans-more-in-healthcare-costs-than-smoking/

U.S. Department of Health and Human Services (2013). *Physical activity guidelines for Americans midcourse report: Strategies to increase physical activity among youth*. Washington DC: Author

Weir, L.A., Etelson, D., & Brand, D. A. (2006). Parents' perceptions of neighborhood safety and children's physical activity. *Preventative Medicine*, *43*, 212-217.

World Health Organization, (2000). Obesity: Preventing and managing the global epidemic. *World Health Organization technical report series*, *894*. Retrieved from http://www.who.int/nutrition/publications/obesity/WHO_TRS_894/en/

Zuppa, J.A., Morton, H., & Mehta, K.P. (2003). Television food advertising: Counterproductive to children's health? A content analysis using the Australian guide to healthy eating. *Nutrition & Dietetics*, *60*, 78-84.

Chapter 2: Literature Review

This literature review examines issues of overweight and obesity among children, low-income, and ethnic differences in weight patterns in the United States. A section will follows on at after school programs (ASPs) designs, and physical activity (PA) rates of children attending the programs. Finally my literature review ends by examining the utilization of after school time, and the tools to measure PA.

Obesity in the United States:

Children. Children with high Body Mass Index (BMI) often become obese adults who are at a greater risk for chronic conditions, although some obese children are already experiencing complications from obesity (Kuyama & Grier, 2006). Symptoms of obesity in children may include excess levels of insulin, poor glucose tolerance, increase risk of type 2 diabetes, hypertension, sleep apnea, social exclusion, and depression (Lobstein, Baur, & Uauy, 2004). Through the year 1980, the prevalence of obesity and overweight for children and adolescents was low, but since then, the obesity rate for children has tripled and the overall obesity percentage has risen 34% (Hedley et al., 2004; Trost, Rosenkraz, & Dzewaltowski, 2008). In the United States the occurrence of obesity and overweight increases with age (Shields, 2006). In addition, socioeconomic status (SES) is also associated with obesity regardless of ethnicity (Baskin, Ard, Franklin, & Allison, 2005; Kumanyika & Grier, 2006). Ogden, Carroll, Kit, and Flegal (2012) found that the prevalence of obese children between the ages of 2-5 was 12.1%, ages 6-11 was 18%, and between ages 12-19 were 18.4%. These percentages reflect changes in both the eating habits and PA of youth living in the United States. Obese and overweight youth

with low activity levels also affect the nation's spending on health care. Currently it is estimated that within the United States, the annual medical cost related to obesity is at $190 billion dollars (Center for Disease Control and Prevention [CDC], 2013). These needed days off to seek medical attention, usually 5-10 days a year, cost employers 6.4 billion dollars per year (Begley, 2012). Even comparing obesity rates of girls in America to Canadian girls, the American girls were almost twice as likely to be obese than Canadians (Shields, 2006). The cost and prevalence of obesity and the prevalence of obesity in children and youth has increased steadily, and so it is important for researchers in the United States and around the world to find evidence-based interventions to reverse these trends.

Low-Income and Ethnic Differences. Different groups of minorities in the United States are at a greater risk of becoming overweight and/or obese than white youth. Minority low-income children watch more television, and thus are exposed to more commercials that advertise unhealthy food during the average hour of television than White children (Kumanyika & Grier, 2006). In addition, black women's ideal body size is larger than those of white women, and they have a positive view of their own bodies until they pass the overweight status (Padgett & Biro, 2003). All women regardless of ethnicity have higher obesity rates than men (Hedley et al., 2004). Modesty in the Hispanic culture is supported by overweightness among women, where low weight is associated with sensuality (Padgett & Biro, 2003). Although different, both minority groups (Hispanics and Blacks) have many similarities when relating to influences of family, culture, and traditions on societal norms. Hispanic and black high school students engage in significantly less PA than their white peers (Day, 2007). Black and hispanic-

Americans have a disproportionately higher rate of health problems linked to overweight and obesity (Day, 2007). In addition, obesity rates for minority children surpass white children by 10-12 percentage points within the same age group (Kumanyika & Grier, 2006). Traditional African-American and Latino (Mexican) foods increase the health risks, as these foods have high amounts of cholesterol and saturated fats (Day, 2007).

After School Programs

Often ASPs are defined by content area or goals of the program, but there is not one unifying definition of what is an ASP (Aspler, 2009). After school programs have the design structure and ability to reach many children and adolescents throughout the United States (Trost, Rosenkranz, & Dzewaltowski, 2008). Schools often serve as an ideal and logical environment to hold an ASP, where the promotion of PA and public health can be taught (McKenzie, Marshall, Sallis, & Conway, 2000). Currently, in 2014, there are 10.2 million children enrolled in some form of an ASP and 22 million families would be interested in ASPs if they were offered, including the 14 million children who are home alone at the end of the school day (Afterschool Alliance, 2014; Smith, 2007; Orlowski, Hallam, & Wonders, 2010). ASPs, defined by Halpern (1999), are community-based programs taking place immediately after the school day, typically from 3:00-6:00 p.m., located in a school or community organization outside the school, Monday through Friday during the school year, and provide a variety of activities/programming.

These activities can include homework time, snacks, enrichment activities, arts and crafts, PA, cultural awareness, and field trips (Beighle & Moore, 2012; Halpern, 1999). ASPs have the opportunity to correspond with these school's health programs and

tailor their program to the needs of the community and the participants (Weaver, Beets, Webster, Beighle, & Huberty, 2014). ASPs also provide PA and place children in an environment where sedentary behavior is limited compared to being at home (Coleman, Geller, Rosenkranz, & Dzewaltowski, 2008).

Types of ASPs that are currently being implemented are school-aged childcare programs, youth development programs, and educational ASPs (Miller, 2001). Understanding the participants, their culture, and community is important when structuring any ASP and connecting with the participants through positive interactions and experiences (Bruening, Dover, & Clark, 2009). ASP may be structured differently for participants attending and the community where the ASP is held. This could be meeting the needs of young children, a lower income community, or even senior citizens. Senior citizens are often overlooked when thinking about ASPs. The number of those over 60 years of age is increasing so rapidly that eventually there will be more adults (seniors) than children for the first time in the world's history (Marques et al., 2011). The flexibility of ASPs enables the design to fit the needs of those using the program. In addition, the programming offered can make better use of the youths' free time that would otherwise not be structured.

ASPs can provide children and youth opportunities to utilize their free time, making it more productive, more structured, and better supervised then by being alone at home after school (Baker & Witt, 1996). The structured environment that ASPs provide has been shown to positively impact academic success and socialization for those who attend (Posner & Vandell, 1994).

Responsibility Model. In the past, ASPs have been used as development programs for youth. The programs have focused on treatment, prevention of at-risk youth participating in undesirable activity, and educational programs for those leaning towards becoming at-risk (Pittman, Irby, Tolma, Yohalem, & Ferber, 2002). Furthermore, programs may provide professional preparation, field experiences, opportunity for PA, and building the four levels of youth personal and social responsibility model (RM) (respect for rights and feeling of others, self-motivation, self direction, and caring and leadership) into PA based programs (Hellison, 2000). Many of these at-risk youth are in underserved communities, which are lower in SES and underfunded, and thus face challenges that other youth who do not live in similar communities may encounter. Youth whose programs use RM are increasingly becoming more responsible with respecting other people, others' emotions, be given and express their voice, goal setting, and creating positive experiences for all people attending the program (Hellison, 2000). Hellison and Wright (2003) found that the effectiveness of a PA program on personal improvement and retention rates of youth attending the program in underserved communities were linked. Through the PA program youth felt empowered by those conducting the program, in addition to the program, youth reported social development at the personal and social levels both inside and outside the program. Finally, youth who consistently attended the program for multiple years had greater success rates with the programs and were more successful limiting their discipline problems within communities and schools.

ASP Physical Activity Levels. Little is known about the PA rates of children attending ASPs (Beets, Huberty, & Beighle, 2013). What is known is that using ASPs

can encourage *changes in constructs related to* the levels of PA, cardiovascular fitness, and favorable body composition of children and adolescents that attend these programs (Beets, Beighle, Erwin, & Huberty, 2009, p. 528). Many children in low-income communities do not have access to ASPs (Yin et al., 2005). Traditionally, barriers to ASPs are transportation and the cost and time attending the program (Orlowski, Hallam, & Wonders, 2010). ASPs offer opportunities to increase PA, which may account for 25% of their time daily for being active (Orlowski, Hallam, & Wonders, 2010). These programs have the potential to promote PA through structured and unstructured activities while also incorporating lessons on behavioral and movement skills that will help lead to lifelong PA participation (Trost, Rosenkraz, & Dzewaltowski, 2008). Although it has been shown that the best way to encourage children to become active is to tailor PA to the each individual, many ASPs do not have the resources to make individualized programming possible (Lobstein, Baur, & Uauy, 2004). ASPs do; however, provide opportunities for youth to utilize free time that would otherwise not be structured or supervised. ASPs, when properly constructed, are an excellent way to increase PA for the participants who attend.

Over the past two decades there has been a trend of school districts refocusing time allocated to Physical Education during the school day. Many are reducing the number of days Physical Education is offered, as school districts are more focused upon core subjects and standardized testing as implemented by No Child Left Behind (e.g., Center on Educational Policy, 2007; Common Core, 2009; Trost & van der Mars, 2010), and now Common Core policies. Eliminating Physical Education further reduces the opportunity for PA during the school day. In addition, there is now a substantial body of

evidence that show a relationship between students' PA and academic performance (e.g., Coe, Pivarnik, Womack, Reeves, & Malina, 2006; Ramstetter, Murray, & Garner, 2010; Taras, 2005; Trost & van der Mars, 2010). ASPs are an excellent way for children to create opportunities to reach the recommended 60 minutes of daily moderate to vigorous PA (Beets et al., 2009; U.S. Department of Health and Human Services [USDHHS], 2013). Combining the minutes children accumulate in their Physical Education class, recess time, and the PA provided in ASP, children may be able to reach the recommended 60 minutes of daily PA. In some cases ASPs may be able to provide one third of the recommended daily minutes (Bassett et al., 2013; Beets, Huberty, & Beighle, 2013; Trost et al., 2008) while others can provide at least 30 minutes of daily moderate-to-vigorous PA (Beets, 2012).

Beets et al. (2014) evaluated the effectiveness of design strategies to assist ASPs to meet recommended levels of moderate to vigorous physical activity (MVPA) at Young Men's Christian Association (YMCA) at four large YMCA locations supervised by a single executive officer. Authors took baseline data for the ASPs in fall of 2011 and followed up twice in spring of 2012 and spring of 2013. Participants consisted of 450-550 children who were enrolled daily ranging in ages from 5-12 attending the ASPs Monday through Friday during the school year between times ranging from 2:30pm to 6:30pm (Beets et al., 2014). PA was collected using ActiGraph accelerometers for at minimum of four nonconsecutive days. The data were then analyzed with descriptive means, standard deviations, and percentages calculated separately for boys and girls along with demographics and levels of PA and sedentary behavior (Beets et al., 2014). Of all the children (3,654) at the four YMCA's, 895 children were included in the data. Authors

found both girls and boys at baseline engaged in 17.5 and 22.7 minutes per day of MVPA and 58.0 and 52.3 minutes per day of sedentary behavior while attending a YMCA respectively. This in turn resulted in 13.3% of girls and 28% of boys attending YMCA's meeting the minimum 30 minutes of MVPA standard for an ASP. When the third assessment was conducted at the ASPs, MPVA increased to 21.6 and 30.6 minutes per day for girls and boys respectively, resulting in an increase to 29.3% of girls and 49.6% of boys meeting the MPVA per day standard by the end of the intervention (Beets et al., 2014).

Utilizing after school time. Programs for at-risk children are important for many communities; ASPs can be a place where young people can go when encountering issues that poverty can create (Baker & Witt, 1996). Other health related problems that can occur directly after school are related to becoming a victim of crime, obesity related health problems, teenage pregnancy, and lack of PA are among the top health related issues (Bruening, Dover, & Clark, 2009). The most frequent juvenile crime occurs on school days after school between 3:00 and 6:00 p.m. after they are released from school and are unsupervised. In addition this is the same time unsupervised teens have sex (Flannery, Williams, & Vazsonyi, 1999; National Campaign to Prevent Teen Pregnancy, 2003; Snyder & Sickmund, 2006). This three-hour window is also the time most ASPs occur, thus limiting opportunities for adolescents to engage in criminal behaviors and become sexually active. Adolescents who attend ASPs are engaged in more sports programs, more art enrichment activities, snack less, and watch less television than they would if at home (Vandell et al., 2005). Many lower income parents do not have the resources to pay for supervision, time, or energy to provide active playtime in the house

or surrounding communities for their children. Therefore ASPs can help give their children the opportunity to engage in PA and other enrichment activities (Milteer & Ginsburg, 2012).

Measurement of Physical Activity

There are multiple means of measuring PA, including heart rate monitors, accelerometers, pedometers, direct observation, PA logs/diaries, questionnaires, and surveys. Each approach has its advantages and disadvantages. In this study, Systematic Observation was used to assess the participants' PA levels.

Systematic observation. The System for Observing Play and Leisure Activity in Youth (SOPLAY) is a direct observation instrument designed to record PA in recreational and leisure opportunity environments, as well as various contextual variables in which the PA is occurring (McKenzie, Marshall, Sallis, & Conway, 2000; McKenzie, 2002). SOPLAY is frequently used in schools to record PA, but it can also be used in a variety of other settings including before school, during school, after school, recess, parks, and ASPs. For this study, after school time was observed and recorded.

McKenzie, Marshall, Sallis, and Conway (2000) investigated leisure time PA levels of boys and girls in relation to before school, lunch time, and after school time at 24 middle schools in Southern California. The school's average enrollment was 1,081 students with 49% of them being girls, 43% nonwhite, and 39% receiving free and reduced meals (McKenzie et al., 2000). Many students did not utilize the opportunity to be physically active during their leisure time although the spaces were provided. Students who did use the spaces provided were very active. Several of the designated target areas

were usable, but frequently not accessible when students had availability to access them because of school policy and supervision. McKenzie et al. (2000) found that the most popular time for PA was during lunch, when supervision and equipment was provided to the students. In addition, boys utilized the various activity areas more than girls. For future studies, the authors recommended that targeted areas should be made more appealing to girls, and a focus should be on recruiting more girls to these areas (McKenzie et al., 2000).

Since the validation of the SOPLAY instrument (McKenzie et al., 2000), there have been many studies that used SOPLAY as the primary tool for collecting data on PA levels and the characteristics of targeted areas. Bocarro et al. (2011) examined school sport policy and school athletic environments in association with children's PA, and supervision in relationship to supervisors within the school. In both schools studied with varsity programs and intramural programs, 52.4% of students were sedentary, 29.8% were walking, and 17.8% were engaged in vigorous activity. In addition, PA levels were positively associated with active children who were the same gender. Finally, authors also examined where activity took place, determining setting as an important correlations representing the likelihood of engaging in activity for boys but not girls (Bocarro et al., 2011).

Brink et al. (2010) examined whether schoolyard improvements led to an increase in activity levels among boys and girls. In addition, using SOPLAY, they examined the aspects of a schoolyard that had an impact on PA. Specifically authors compared elementary schoolyards in metropolitan Denver to see how facility improvements

improved PA and to understand gender specific effects of schoolyard components. They compared newly renovated playgrounds described in the study as *Learning Landscapes.* These playgrounds were transformed from neglected playgrounds to safe, green, attractive play areas designed for the surrounding community needs. Boys used *Learning Landscapes* more than boys at schools that had not been renovated. Girls used playgrounds at a higher percentage that had not been newly renovated than to be using the *Learning Landscapes.*

Coleman, Geller, Rosenkranz, and Dzewaltowski (2008) studied the PA levels of children attending ASPs, to compare PA levels in specific activity sessions and to compare activity contexts using SOPLAY, as well as to evaluate sex and weight status differences in after school PA. Authors used SOPLAY to document the session type and various contextual variables of the specified afterschool sessions. From the 140 children attending the ASP, there were more boys than girls, and a significant number of students of diverse ethnic and economic backgrounds (18% African American; 11% Hispanic; 34% eligible for free and reduced lunch). Students engaged in both free play and organized active recreation games including but not limited to basketball, jump rope, running, cleaning, follow the leader, and gymnastics.

Sallis et al. (2001) assessed characteristics of school environments, including supervision, equipment, and space on students' PA. Of the 24 middle schools assessed, the average enrollment was 1081 students with 39% receiving subsidized meals, 38% bussed to and from school, and 43% of the students being non-White. Observation of environmental variables included area type, area size, and permanent improvements.

From all the schools 151 areas, 90.72% were accessible, with 43% of them being outdoor fields, and 13% being inside. The percentage of students physically active across the multiple activity areas ranged from 0% to 5% for girls with a mean of 1.6%, and 1%-11% with a mean of 5.5% for boys (Sallis, et al., 2001).

There are many reports that have been published looking at the PA rates of youth attending ASPs, the influence of peers on PA, and the lack of PA in general for youth. With the prevalence of ASPs, many communities, and parents desire to have their child supervised instead of being home alone, ASPs need to be further studied to understand them better. This study covers the gap in the literature, by determining whether/how ASP staff influences influenced PA behaviors without a planned intervention.

References

Afterschool Alliance (2014). *Key Findings.* Retrieved from http://www.afterschoolalliance.org/AA3PM/

Aspler, R. (2009). After-school programs for adolescents: A review of evaluation research. *Adolescence, 44,* 1-20.

Baker, D., & Witt, P.A. (1996). Evaluation of the impact of two after-school programs. *Journal of Park and Recreation Administration, 14,* 60-81.

Baskin, M.L., Ard, J., Franklin, F., & Allison, D.B. (2005). Prevalence of obesity in the United States. *The International Association of the Study of Obesity. Obesity Reviews. 6,* 5-7.

Bassett, D.R., Fitzhugh, E.C., Heath, G.W., Erwin, P.C., Frederick, G.M., Wolff, D.L., ... & Stout, A.B. (2013). Estimated energy expenditures for school-based policies and active living. *American Journal of Preventive Medicine, 44,* 108-113.

Beets, M.W. (2012). Active Living Research: Research Brief May 2012. *Policies and standards for promoting physical activity in after-school programs*. Retrieved from http://www.activelivingresearch.org/afterschool

Beets, M.W., Beighle A., Erwin H.E., & Huberty, J. (2009). Impact of after-school programs to increase physical activity: A meta-analysis. *American Journal of Preventative Medicine.* 36, 527–537.

Beets, M.W., Huberty, J., & Beighle, A. (2013). Physical activity of children attending after school programs. research and practice-based implications. *American Journal of Preventative Medicine, 42,* 180-184.

Beets, M., Weaver, R., Moore, J., Turner-McGrievy, G., Pate, R., Webster, C., & Aaron, B. (2014). From policy to practice: Strategies to meet physical activity standards in YMCA afterschool programs. *American Journal of Preventive Medicine, 46,* 281-288.

Beighle, A., & Moore, M. (2012). Physical activity before and after school. *Journal of Physical Education Recreation and Dance, 83*(6), 25-28.

Begley, S. (2012, April 30). *As America's waistline expands, costs soar*. Retrieved from http://www.reuters.com/article/2012/04/30/us-obesity-idUSBRE83T0C820120430

Bocarro, J.N., Kanters, M.A., Cerin, E., Floyd, M.F., Casper, J.M., Suau, L.J., & McKenzie, T.L. (2011). School sport policy and school-based physical activity environments and their association with observed physical activity in middle school children. *Health & Place, 18,* 31-38.

Brink, L.A., Nigg, C.R., Lampe, S., Kingston, B.A., Mootz, A.L., & van Vliet, W. (2010). Influence of schoolyard renovations on children's physical activity: The learning landscapes program. *American Journal of Public Health, 100,* 1672-1678.

Bruening, J.E., Dover, K.M., & Clark, B.S. (2009). Preadolescent female development through sport and physical activity: A case study of an urban after-school program. *Research Quarterly for Exercise and Sport, 80,* 87-101.

Centers for Disease Control and Prevention. (2013). *Healthy youth.* Retrieved from http://www.cdc.gov/healthyyouth/obesity/facts.htm

Coe, D.P., Pivarnik, J.M., Womack, C.J., Reeves, M.J., & Malina, R.M. (2006). Effect of physical education and activity levels on academic achievement in children. *Medicine and Science in Sports and Exercise*, *38,* 1515-1519.

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,* 33-640.

Common Core of Data [CCD] (2012). *CCD Public school district data for the 2010-2011, 2011-2012 school years.* Retrieved from http://nces.ed.gov/ccd/districtsearch/district_detail.asp?Search=1&InstName=rooseveltCity=phoenix&DistrictType=1&DistrictType=2&DistrictType=3&DistrictType=4&DistrictType=5&DistrictType=6&DistrictType=7&NumOfStudentsRange=more&NumOfSchoolsRange=more&ID2=0407080&details=5

Day, K. (2007). Active living and social justice: Planning for physical activity in low-income, Black, and Latino communities. *Journal of the American Planning Association, 72,* 88-99.

Flannery, D.J., Williams, L.L., & Vazsonyi, A.T. (1999). Who are they with and what are they doing? Delinquent behavior, substance use, and early adolescents' after-school time. *American Journal of Orthopsychiatry, 69,* 247-253.

Halpern, R. (1999). After-school programs for low-income children: Promise and challenges. *The Future of Children, 9,* 81-95.

Hedley, A.A., Ogden, C.L., Johnson, C.L., Carroll, M.D., Curin , L.R., & Flegal, K.M. (2004). Prevalence of overweight and obesity among us children, adolescents, and adults, 1999-2002. *Journal of the American Medical Association, 291,* 2847-2850.

Hellison, D. (2000). Physical activity patterns for underserved youth. *Journal of Science and Medicine in Sport, 3,* 238-242.

Hellison, D., & Wright, P. (2003). Retention in an urban extended day program: A process-based assessment. *Journal of Teaching in Physical Education, 22,* 369-381.

Kumanyika, S., & Grier, S. (2006). Targeting interventions for ethnic minority and low-income populations. *The Future of Children, 16,* 187-207.

Lobstein, T., Baur, L., & Uauy, R. (2004). Obesity in children and young people: A crisis in pubic health. *The International Association of The Study of Obesity. Obesity Reviews, 5,* 4-85.

Marques, A., Rosa, M.J., Soares, P., Santos, R., Mota, J., & Carvalho, J. (2011). Evaluation of physical activity programmes for elderly people - a descriptive study using the EFQM' criteria. *BMC Public Health, 11,* 123-140.

McKenzie, T.L. (2002). System for Observing Play and Leisure Activity in Youth (SOPLAY) Protocol. San Diego: Author. Retrieved from *https://ssrl.sdsu.edu/faculty/sallis/Documents/SOPLAYprotocol.pdf*

McKenzie, T.L. (2005). Systematic for observing play and leisure activity in youth (SOPLAY). Description and Protocol. *San Diego, California: San Diego State University*.

McKenzie, T.L., Marshall, S.J., Sallis, J.F., & Conway, T.L. (2000). Leisure-time physical activity in school environments: An observational study using SOPLAY. *Preventive Medicine, 30,* 70-77.

McKenzie, T.L., Sallis, J.F., & Nader, P.R., (1991). SOFIT: System of observing fitness instruction time. *Journal of Teaching in Physical Education, 11,* 195-205

Miller, B.M., (2001). The promise of after-school programs. *Educational Leadership, 58,* 6-12.

Milteer, R.M., Ginsburg, K.R., (2012). Council on communications and media, & committee on psychosocial aspects of child and family health. The importance of play in promoting healthy child development and maintaining strong parent-child bond: Focus on children in poverty. *American Academy of Pediatrics, 129,* e204-213.

National Campaign to Prevent Teen Pregnancy (2003). *Where and when teens have sex.* Retrieved from www.teenpregnancy.org/work

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

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

Orlowski, M., Hallam, J., & Wonders, K. (2010). Physical activity in an organized after school program: A pilot study. *Journal of Exercise Physiology, 13,* 12-21.

Padgett, J., & Biro, F.M. (2003). Different shapes in different cultures: Body dissatisfaction, overweight, and obesity in African-American and Caucasian females. *Journal of Pediatric and Adolescent Gynecology, 16,* 349-354.

Pittman, K., Irby, M., Tolman, J., Yohalem, N., & Ferber, T. (2002*). Preventing problems, promoting development, encouraging engagement: Competing priorities or inseparable goals?* Washington, DC: Forum for Youth Investment.

Posner, J.K., & Vandell, D.L. (1994). Low-income children's after-school care: are there beneficial effects of after-school programs? *Child Development, 65,* 440-456.

Ramstetter, C.L., Murray, R., & Garner, A.S. (2010). The crucial role of recess in schools. *Journal of School Health, 80,* 517-526.

Rowe, P., van der Mars, H., Schuldheisz, J., & Fox, S. (2004). Measuring students' physical activity levels: Validating SOFIT for use with high-school students. *Journal of Teaching in Physical Education, 23,* 235-151.

Saint-Maurice, P.F., Welk, G., Ihmels, M.A., & Krapfl, J. R. (2011). Validation of the SOPLAY direct observation tool with an accelerometry-based physical activity monitor. *Journal of Physical Activity and Health, 8,* 1108-1116.

Sallis, J.F., Conway, T.L., Prochaska, J.J., McKenzie, T.L., Marshall, S.J., & Brown, M. (2001). The association of school environments with youth physical activity. *American Journal of Public Health, 9,* 618-620.

Shields, M. (2006). Overweight and obesity among children and youth. *Health Reports, 17,* 27-42.

Smith, E.J., (2007). The role of afterschool settings in positive youth development. *Journal of Adolescent Health. 41,* 219-220.

Snyder, H.N., & Sickmund, M. (2006). *Juvenile offenders and victims: 2006 national report.* Washington, DC: U.S. Department of Justice, Office of Juvenile Justice Programs, Office of Juvenile and Delinquency Prevention.

Taras, H. (2005). Physical activity and student performance at school. *Journal of School Health, 75,* 241-218.

Trost, S.G., Rosenkranz, R.R., & Dzewaltowski, D. (2008). Physical activity levels among children attending after-school programs. *Medicine & science in sports & exercise, 40,* 622-629.

Trost, S.G., & van der Mars, H. (2010). Why we should not cut P.E. *Health and Learning, 61,* 60-65.

U.S. Department of Health and Human Services (2012*). Physical Activity Guidelines for Americans Midcourse Report: Strategies to Increase Physical Activity Among Youth*. Washington, DC: U.S. Department of Health and Human Services.

Vandell, D. L., Shernoff, D.J., Pierce, K.M., Bolt, D.M., Dadisman, K., & Brown, B.B. (2005). Activities, engagement, and emotion in after-school programs (and elsewhere). *New Directions for Youth Development, 105*, 121–129.

Weaver, R.G., Beets, M.W., Webster, C., & Huberty, J. (2014). *System for observing staff promotion of activity and nutrition (SOSPAN). Journal of Physical Activity and Health, 11*, 173-185.

Yin, Z., Hanes, J., Moore, J.B., Humbles, P., Barbeau, P., & Gutin, B. (2005). An after-school physical activity program for obesity prevention in children: The medical college of Georgia FitKid project. *Evaluation and the Health Professionals*, *28*, 67-89.

Chapter 3: After School Program Physical Activity Levels

Obesity with its related health problems, and lack of physical activity (PA) are amongst the top of health related issues for youth (Bruening, Dover, & Clark, 2009). Currently, in the United States medical cost related to obesity total about $190 billion dollars (Centers for Disease Control and Prevention [CDC], 2013). Much of this cost is associated with the eating habits and PA trends of U.S. people. The increase in obesity levels in the United States started many years ago across all age groups. Through the year 1980, the prevalence of obesity and overweight for children and adolescents was low. Since then, the obesity rate for children and youth has tripled and the obesity percentage overall has risen 34% (Hedley et al., 2004; Trost, Rosenkranz, & Dzewaltowski, 2008). Some of the symptoms related to obesity are excess levels of insulin, poor glucose tolerance, risk of type-2 diabetes, and social exclusion within schools and amongst peers (Lobstein, Baur, & Uauy, 2004). With the majority of youth attending school daily, schools are an ideal place to promote the promotion of PA (McKenzie, Marshall, Sallis, & Conway, 2000).

This study involved an after school program (ASP) using the social-ecological framework that reveals individuals as being part of a larger community, where behavior is not an individual change but influenced by the surrounding community and supportive people, which influence judgment and decision making within the community (Bronfenbrenner, 1994; Golden & Earp, 2012; Metzler, McKenzie, van der Mars, Barrett-Williams, & Ellis 2013; Stokols, 1997). Bronfenbrenner (1994) described the social-ecological model as a layered system that combines interrelated systems where environments influence the individual throughout a lifetime. Bronfenbrenner's most

influential environment is the *Microsystem,* which is an environment where individuals have face-to-face interactions that develop relationships to the environment, which includes family, peers, and siblings. The next environment, the *Mesosystem,* combines the linkage and processes that takes place between several systems. The following environment consists of the associations that occur between two or more setting which does not include the developing person, it is called the *Exosystem* and encompasses a parents' work environment, extended family, mass media, the neighborhoods where the youth live, and the school board. The last system, the *Macrosystem,* consists of the laws, culture, social conditions, the economic system, and life-style of where the individual lives which are embedded in each of the broader systems (Bronfenbrenner, 1994). The combination of the social-ecological frame work and Bronfenbrenner's four systems have a direct relationship to what takes place in many environments, including neighborhoods, communities, schools and after school programs (ASPs).

After School Programs

With millions of youth attending school on a regular basis, schools are an ideal and logical environment for promotion of PA and public health (McKenzie et al., 2000). Having the ability to carry over the promotion of PA from schools into ASPs' curricula is invaluable. ASPs can expand on Health and Physical Education being taught at schools within the community, specifically tailoring the ASP to the community and the youth attending (Weaver, Beets, Webster, Beighle, & Huberty, 2014). In 2014, ASPs had 10.2 million children enrolled in some type of ASP, and 22 million families would be interested in signing their child up for an ASP if they were offered (Afterschool Alliance,

2014; Smith, 2007). Parents who are most interested in ASPs, are those whose children spend many hours alone at home, without supervision, where sedentary behavior is commonplace (Coleman, Geller, Rosenkranz & Dzewaltowski, 2008; Lobstein et al., 2004).

ASPs take place immediately following regular school hours, from 3:00-6:00 p.m., located inside a school or community organization, occurring Monday through Fridays during the school year, while proving numerous types of programs (Beets, Wallner, & Beighle, 2010; Halpern, 1999). They may include dedicated time for homework, snack, PA, cultural awareness experiences, enrichments activity, and arts and crafts (Beets et al., 2010; Beighle & Moore, 2012; Halpern, 1999). ASPs can provide children a more productive, structured, social, and supervised environment, than by being at home alone where watching television is more likely to occur (Baker & Witt, 1996; Vandell et al., 2005).

ASPs can have a positive impact on academic success and better socialization for those who attend (Posner & Vandell, 1994). Programs offered at ASPs can vary between ASPs, based on the design of the individual program. ASPs may range from childcare programs, youth development programs, educational ASPs to tailoring the program for the needs of the community (Miller, 2001; Weaver et al., 2014). In higher risk communities, ASPs have been used as development programs for youth. ASPs in these areas have been focused on prevention programs for at-risk youth to prevent their engagement in undesirable activities, as well as educational programs for those who are more likely to become at-risk (Bruening, Dover, & Clark, 2009). This timeline, from

3:00p.m. – 6:00p.m is when most ASPs are held and also the time when most youth crime occurs (Flannery, et al., 1999; Snyder & Sickmund, 2006). The parents of youth living in higher risk community may not have the resources or time to provide opportunities play in their houses or communities, therefore attending an ASP can assist in giving their child the opportunity to engage in various enrichment activities and PA (Milteer & Ginsburg, 2012).

Activity Levels at ASPs

Little is known about the PA rates of children attending ASPs (Beets, Huberty, & Beighle, 2012). With millions of youth interested in attending ASPs, the improvement of PA, physical fitness, and body composition can be positively affected by regularly attending ASP (Beets, Beighle, Erwin, & Huberty, 2009). Currently, the recommended national guidelines are for children to accumulate at least 60 minutes of moderate to vigorous PA per day (U.S. Department of Health and Human Services [USDHHS], 2013). ASPs are an ideal setting for the accumulation of 60 minutes of PA to occur because ASPs typically offer 25% of their programming towards activity while offering a third of the recommended daily minutes (Beets et al., 2012; Orlowski, Hallam, & Wonder, 2010; Trost et al., 2008). In addition, ASPs have the ability to develop lifelong PA skills through various activities taught, as well as developing behavioral and movement skills (Trost et al., 2008).

Beighle et al. (2010) presented ideas for promoting and increasing PA within ASPs. Authors focused on both program-level recommendation and staff-level recommendations. In ASPs dedicated to increasing overall health and academic

enrichments, the at least half of the programs time should be dedicated to PA. Staff should also be adequately trained to promote, motivate, and manage behavior, and in developmentally appropriate activities. Facilities and equipment are some of the most important influences for promoting PA. Equipment provided to youth to promote and increase PA at ASPs should include but not be limited to playground balls, jump ropes, bean bags, soccer balls, basketballs and cones (Beighle et al., 2010).

Posner and Vandell (1999) conducted a longitudinal study with white and black youth focusing on their choice of after school activities. Authors found girls of both races spent more time focusing on their academics and talking with friends while boys chose to involve themselves playing *coached* sports. In regards to specifically white youth, boys spent more time than girls playing video games. Black girls occupied their time in more extracurricular activities then boys, but spent less time then boys watching television.

In a study on PA levels of youth during ASP programs, Trost et al. (2008) found, using accelerometers, that on average, youth exhibited 42.6 minutes of sedentary, 40.8 minutes of light PA, 13.4 minutes of moderate PA, 6.9 minutes of vigorous PA, and an average of 20.3 minutes of moderate to vigorous physical activity (MVPA) [to calculate the percentage of MVPA, the walking and very active categories were added together]. Boys had higher levels of moderate PA, vigorous PA, and MVPA with lower levels of sedentary and light PA than girls. MVPA levels were highest during free-play sessions regardless of being inside our outdoors (12.1-12.7 minutes). Organized activity inside had higher MVPA levels (9.2 minutes) than organized activity outside (5.7 minutes).

Using pedometers during ASPs, Beets, Huberty, and Beighle (2012) found children on average attended ASPs for 125 minutes per days, amassed 2,944 steps per day; and spent 26.6 minutes per day engaged in PA. Boys on average attended 125 minutes per day; spent about 28.5 minutes per session engaged in PA; accumulated 404 more steps and 2.3 more minutes per day of PA than girls. Girls attended 127 minutes per day; totaled 2,784 steps per day; and 24.8 minutes per day engaged in PA. Authors speculated that PA opportunities (flag football and kickball) may have been more appealing towards boys than girls (Beets et al., 2012). In addition, obese youth had 266 less steps than compared to their *healthy-weight* peers, and there was considerable variability across ASPs, where some ASP averaged less than 1,500 steps and other ASPs had up to 4,600 steps per day.

Although there is a paucity of studies on PA participation in ASPs (Beighle et al., 2010), there have been several studies in recent years that addressed multiple aspects of ASPs including PA participation. They include but are not limited to, multi-venues ASPs (Beets, Huberty, & Beighle, 2012; Trost et al., 2008), reviews on ASPs impact on PA (Beets et al., 2009), and strategies to meet PA standards in ASPs (Beets et al., 2014).

Beets et al. (2014) evaluated the effectiveness of design strategies to assist ASPs to meet recommended levels of PA (e.g. 60 minutes per day) at Young Men's Christian Association (YMCA's) at four large YMCA locations supervised by a single executive officer. The intervention consisted of modifying program schedules, development training, and weekly checklist to ensure PA opportunities were maximized. At baseline, both girls and boys engaged in 17.5 and 22.7 minutes per day of MVPA and 58.0 and

52.3 minutes per day of sedentary behavior respectively, while attending a YMCA. This, in turn, resulted in 13.3% of girls and 28% of boys attending YMCA's meeting the minimum 30 minutes of MVPA standard. When the final assessment was conducted at the ASPs, MPVA increased to 21.6 and 30.6 minutes per day for girls and boys, resulting in an increase to 29.3% of girls and 49.6% of boys meeting the MPVA per day standard by the end of the intervention, which focused on strategies to modify ASP's schedule, employee professional development training, and using a checklist to review activity opportunities at the ASP (Beets et al., 2014).

Beets et al. (2009) conducted a systematic review of ASPs' impact on PA, physical fitness, or measures related to PA. In addition, the review included an assessment of the number of intervention sessions, adherence to the program, quality of delivery, participation responsiveness, and program differentiation. From the 797 articles meeting the criteria, 314 articles were retrieved. In intervention studies, the average length of time for the interventions was 26.9 weeks, with a range of 9 to 96 weeks. Time dedicated to PA was 274.5 minutes per week with a range of 42 minutes per week to 400 minutes per week (Beets et al., 2009). Thirteen articles reported effects of the interventions effectiveness, from which there was nothing found that specified if a combined approach was more or less effective than another approach. Interventions varied from focusing on a combined PA and dietary intervention, weight related issues, changes in body composition, and sedentary activity behaviors. All of the studies used a randomized control design or a nonrandomized pre-test/post-test design with or without a control group. Attendance was positively associated with improved outcomes (including physical fitness and body composition). From all articles reviewed, positive ratings were

given, without displeasure. Authors concluded that ASPs can be an effective in promoting health enhancing levels of PA, but finding the exact components of an effective ASP remained uncertain (Beets et al., 2009).

Although ASPs have been studied, that have researched various components of APSs only Beet et al. (2014) have looked at the design effectiveness of ASPs. The current study will add to the body of literature by observing and understanding the PA participation and contextual characteristics of youth across designated venues in an ASP while observing the promotion of PA by staff towards youth using two observation tools SOPLAY AND SOFIT. The information gathered in this study can assist directors of all similar ASPs in order to give data to executive directors about current PA at the ASP and the implementation of PA promotion by branch directors and employees, as well as gather information regarding their PA and perceptions of after school programs to the body of literature. The rationale for this study is to provide evidence on how multiple designated areas at an ASP, and staff, influence activity levels of ASP members so directors can take the results and tailor their ASPs to optimize PA opportunities.

Therefore, the purpose of the study were to examine PA levels of youth and selected contextual variables at one urban ASP in the western United States. The specific questions guiding this study were: (a) What were the PA rates in the predetermined areas? (b) What PA venues produced the highest levels of PA? (c) To what extent did the staff promote PA? and (d) Was there a difference in PA between male and female participants?

Methods

Participants

The number of participants for this study ranged between, 49 – 157 youth, ages 7 – 18, and grades 3rd – 12th grade who attended the ASP and staff in the ASP facility. The youth attending the ASP were from six surrounding schools ranging from Kindergarten through the 12th grade. The six schools included four elementary schools, one middle school, and one high school. The sample population included about 84% white or white bi-racial of the total population and those who defined themselves by one race included about 90% white, 2% black, 2% Asian, 4% other, and 4% bi-racial (Common Core of Data [CCD], 2012). From the total population of youth enrolled at the ASP, 60 youth had limited English proficiency (with English being their second language) and 90 youth were enrolled at Title 1 schools.

The study was approved by the University Human Subjects committee, parents provided informed consent youth provided assent, and adults participant provided inform consent. Participants in the study consist of youth and 13 staff members (adults) at the ASP.

Program facilitators. Staff were responsible for teaching/instructing in their designated areas within the ASP. These areas include Teen Outside, Teen Game Room, Teen Kitchen, Discovery Center, Game Room, Gymnasium/Stage, Blacktop, Four-Square area, Field East, and Field West.

Procedural program facilitator training. As a standard protocol for the ASP, training for the program staff took place a few days before the start of the new ASP school year. The training covered the expectation of staff, safety and supervision, interacting with children, quality customer service, always being professional, promoting activity, and keeping the ASP clean and organized. This session lasted one hour and included an overview of what to expect with the data collection over 15 weeks. This included prompting, giving feedback, and creating a positive environment for learning and practice. In the training, strategies and scenarios were discussed by the ASP director to prepare the staff to handle various common situations. For example, staff learned how to calmly separate two children who are having an argument without escalating the situation, the process of speaking with the ASP director, and parents of the involved youth. A new employee training and orientation checklist is provided in Appendix (A).

Target Variables

This study focused on demographic (i.e., background), behavioral, and contextual variables related to PA participation during an ASP. The demographic variables included participants' age, school grade levels, and gender. The behavioral variables included the participants' PA levels while at the ASP. This includes the following PA behaviors: Sedentary, Walking, and Vigorous. The latter two behaviors combined constitute the central target behavior of MVPA. Contextual variables included adult supervision, usability of the facility, the availability of equipment, and the degree to which activities are organized.

Setting. The ASP was located within an urban community in a metropolitan city in the Western United States. The program took place in the evenings of the fall into spring semesters of 2013-2014, Monday through Friday from 2:45p.m. – 6:00p.m.

The ASP contained multiple designated areas. They included the gym, game room, learning center, art studio, dance studio, field, and teen center. First, the gym (95' x 65') had a wood floor with a full-size basketball court, with an additional four hoops along the sidewalls. In the gym closet where equipment was stored the ASP had 26 cones, eight volleyballs, six footballs, four foam *Gator* balls, 50 baseballs and 10 bats, 20 whiffle balls, 10 jump ropes, 12 batons, 12 lacrosse sticks, 30 basketballs, 8 scooter-boards, 40 bowling pins, 2 horseshoe sets, 40 hockey sticks, 3 hockey pucks, 17 playground balls, and nine soccer balls, seven hula-hoops, seven Frisbees, and two small soccer goals. Second, the game room (39' x 38') contained 54 cubbies for youth to place backpacks and other personal items. It also had a Ping-Pong table, two pool tables, foosball, shuffle board, air hockey, and a bumper pool table. Third, the learning center (23.5' x 19.5') contained two white boards, an overhead projector, books, DVD player, one computer, a television, and a fish tank. In the learning center there were no tables or chair, the youths learning is done on the carpeted floor. Fourth, the teen-center was combination of two adjoining rooms. The first half of the teen center (18.5' x 32') contained a small table and chairs, a sectional sofa, small kitchenette, bathroom, dark room, and a music recording area. Fifth, the second half of the adjoining teen center room (22.5' x 31') had board games, books, foosball, art supplies, 3 small tables, a stereo, television, DVD, gaming system, a sectional, and a loveseat. Sixth, directly outback of the second half of the teen center was a concrete area (62' x 37') with two freestanding

basketball hoops. Seventh and eighth, is the combination of two adjoining grass field (350’ x 150’). Ninth was a blacktop (52.5’ x 85.25’) with a basketball court. Finally, the tenth area was a 4-square area (41’ x 52’).

Overall the ASP’s inside facilities were well maintained. Every room excluding the game area had a door that could be locked to prevent access. There were lights, air conditioning, and clean spaces and floors throughout the well-maintained center. The ASP outdoor facility included a large grass field, small blacktop sports area, a garden, and teen center blacktop area. The outdoor facility was not as well maintained for youth as the indoor facilities of the ASP. To access the outside area, youth were required to first go through the ASP and check-in. The large field had no direct shade, as its trees only covered one side of the field with eight combination bench tables underneath. The small blacktop had one freestanding basketball hoop and two foursquare courts. There were no lights outside so when it became dark, the space was not usable. The blacktop had small cracks, but is still in usable condition. Directly behind the basketball hoop was a small garden that is in good shape.

Daily, youth and teens would arrive at the ASP when school ended or a van from the ASP picked them up. Once arriving teens went directly to the teen room or the gym. Youth checked in as they walked into the building, then proceeded outside until 3:30p.m. when they headed into the gym for daily announcements. While youth were outside, teens were allowed and often utilized the gym until youth came in for announcements. After daily announcements youth broke into groups that rotated clockwise throughout the

ASP's designated rooms (the gym, game room, learning center, computer lab, art room, and homework room) at 30 minutes intervals.

Neighborhood. The surrounding neighborhood near the ASP (a 3 block radius) consisted of a mix of homes, schools, businesses, and restaurants. The average household income for the area was $64,517 with the average home price of $299,400. In this community roughly 53% of adults over the age of 25 had at least a bachelor's degree (U.S. Census, 2010). Many of the people that attended the community center were from a family with more than one child. The language heard most from those attending the center in the surrounding community was English, even though many of the youth had English as a second language. There are shops, restaurants, a church, schools and a park within square four-block area. The houses in the community ranged from apartment complexes to four bedroom single-family homes. Depending upon the block, houses were well maintained or unkempt. Many people in the community could be seen walking and riding bikes to and from the ASP but there were just as many that drove and rode in the van carpool provided by the ASP that picked participants up at the surrounding schools.

Data Collection

SOPLAY. The researchers used a systematic observation instrument, the System for Observing Play and Leisure Activity in Youth ([SOPLAY] McKenzie et al., 2000) to collect data on PA of youth attending the ASP, and environmental/contextual characteristics of the ASP. SOPLAY users collect data on temperature, time of day, start time, area, condition, PA level, and activity (McKenzie et al., 2000 & McKenzie, 2005). The SOPLAY instrument is also designed to record the time the scanning occurs, and

other contextual characteristics including if an area is accessible, usable, supervised, if organized activities are occurring, and if equipment is provided. In addition, SOPLAY records the predominant type of activity in each predetermined area both boys and girls are engaged in using a list of 14 activities (McKenzie et al., 2000). Temperature was recorded at the beginning of the sweeps, for later reference. All data were collected during after school hours. Start time were recorded using military time for each designated area for that specific sweep. Area referred to a specific predestinated target area (e.g., fields, basketball court, baseball field, courtyard, etc.).

The condition of each activity area was determined by assessing whether it was accessible, useable, if supervision was provided, if the activity was organized in structure, and if loose equipment was available (e.g., racquets, balls). Categorizing the PA of youth within the area was defined as being sedentary, walking, or very active. The last subcategory recorded was the predominant activity being performed by both the girls and the boys in the area (McKenzie, 2005).

The following areas were identified and predetermined for use in this study. The inside targeted areas were the gym, game room, learning center, and both rooms of the teen center. Outside targeted areas included a two adjoining grass field, blacktop area (including a small garden), foursquare court, and a teen center blacktop basketball court. When recording the PA of the children, the researchers followed SOPLAY's momentary time sampling technique of scanning at a sequence of one second per child, from left to right. The researcher coded the PA of the individuals into categories of sedentary, walking, or very active. In addition girls and boys were scanned separately. To calculate

the percentage of MVPA, occurring in the targeted area, the walking and very active categories were added together (McKenzie et al., 2000).

Finally, the researcher divided the summation of the MVPA category by the number of people observed in the designated area to get the levels of sedentary, moderate, and vigorous behavior. The PA categories defined in SOPLAY have been validated previously in other studies through the use of heart rate monitors (McKenzie et al., 1991; Rowe, Schuldheisz, & van der Mars, 1997) and accelerometers (Maduro & Fredrico, 2009; Saint-Maurice et al., 2011).

Observations using SOPLAY recorded the PA levels of individuals as sedentary, walking, or very active. Separate scans are conducted for boys and girls, to get an accurate count of people in a predetermined area. Summary counts were used to accurately describe the number of boys and girl in each setting and activity level for each group. Between November 7, 2013 and March 7, 2014, two to three observations took place per week for a total of 28 (n = 28) observations.

SOFIT. To assess staff influence in PA levels of youths attending the ASP, researchers used one *phase* of the direct observation instrument SOFIT (System for Observing Fitness Instruction Time) (McKenzie, Sallis, & Nader, 1991). SOFIT is used to measure variables associated with youths' activity levels and their opportunity to be physically active. SOFIT uses a three-phase decision system of observation. Phase 1 looks at the PA levels of students. This is done by preselecting a student and determining their PA level every 20 seconds throughout the duration of the class. Phase 2 evaluates the curriculum context variables. Phase 2 involves coding the curricular lesson context of

the class observed. Throughout the class, every 20 seconds, the researcher determines if class time falls into one of two categories, *general content or actual subject matter.* If physical education is taking place then the class content is coded into either *knowledge content* or *motor content*. If motor content is selected researchers then further expand their decision making coding if the context is fitness, skill practice, or game play (McKenzie et al., 1991). Phase 3, the only *phase* used in this study, assesses teacher and staff behaviors by coding the teacher/staff involvement into one of six behavior categories. These categories are the promotion of fitness, demonstration of fitness, instructs generally, manages, observes, and is off task (McKenzie et al., 1991). For this study researchers were only focusing on the promotion of fitness at the ASP.

SOFIT users employ momentary time sampling students' PA level and the lesson context, and interval recording to assess teacher behaviors that are believed to promote health related PA. Researchers alternate between observing and recording at 10-second intervals.

For this study, during the observations of teacher behavior six categories were used that most aligns with what the teacher/staff did during the observation following the hierarchy: Promotes fitness (P), Demonstrates fitness (D), Instructs generally (I), Manages (M), Observes (O), and Other task (T). As stated SOFIT protocol by McKenzie (2009), "categories are listed in hierarchical order and researchers code only one category for each 10-secon observed interval. For example, category one (promotes fitness) is scored if it occurs at any time during the interval; category two is scored if it occurs during an interval unless a category one behavior occurs" (p.12).

Inter-observer agreement

To ensure data trustworthiness the researcher utilized a second trained independent researcher to conduct Inter-Observer Agreement (IOA) checks. Using the acceptable criteria defined by McKenzie et al., (2000), inter-observer agreement and intra-class correlations were calculated to establish data credibility. The acceptable SOPLAY and SOFIT criteria on all categories should exceed 90%. Throughout the data collection process, IOA checks were conducted during 17.86% of the total number of sessions; 5 of 28 sessions).

Data analysis

PA levels (sedentary, walking, and vigorous) gathered using SOPLAY were the dependent variables in this study. The use of equipment, supervision, gender, and predetermined PA area were the mediating variables. Data were analyzed based upon the strategies suggested by Willenberg et al. (2010) using cross-tabulations to determine individuals who are engaged in sedentary behavior, moderate PA, and vigorous PA to the multiple predetermined activity areas via Statistical Product and Service Solutions (SPSS). The differences across the individuals with and/or without the influence of predetermined activity areas environment were calculated using a chi-square test. In addition, a table was created following the data analysis of McKenzie et al. (2000) in order to assist the understanding the contextual variables of the ASP and the levels of MVPA shown by the youth at the ASP.

Results

IOA checks confirmed high levels of IOA, ranging from 95% - 100% for the five of 28 observation sessions (17.86%) using the SOPLAY instrument which met the acceptable rate (≥ 90%). The results from the SOPLAY instrument included the activity codes (walking, sedentary, or very active) and contextual characteristics of each designated area (accessible, useable, where supervised, organized and if equipment was provided) (McKenzie et al., 2000).

IOA correlation coefficients between observers for tallies of PA were high for sedentary girls, girls in moderate PA, and girls in vigorous PA. The IOA correlation coefficients for boys were similar to girls with high coefficients for boys being sedentary, boys involved in moderate PA, and boys involved in vigorous PA. Excluding the IOA coefficient for moderate boys, the correlation coefficients exceeded the acceptable recommendation ($R^2 > 0.75$) provided by McKenzie et al. (2000). Recording PA between observers, coefficients of determination (R^2) show a greater variability while recording sedentary, moderate, and vigorous activity for girls and boys (Table 1).

Table 1.

Inter-Observer Correlation Coefficients and R^2 Values for Physical Activity Counts

	Girls		Boys	
Intensity	*r*	R^2	*r*	R^2
Sedentary	0.9983[a]	0.99	0.9914[a]	0.98
Moderate	0.9401[a]	0.88	0.8365[a]	0.69
Vigorous	0.9292[a]	0.86	0.9209[a]	0.84

[a] Statistically significant bivariate correlation coefficient

IOA of the context variables yielded percent agreement values that met acceptable criteria (at or above 90%; McKenzie et al., 2000) for Accessible (99%), Usable (99%), Supervised (97%), Organized (97%), and Equipped (95%) (Table 2). Observer reliability data were also collected for the SOFIT instrument on four for the 28 sessions (14.28%). Inter-observer agreement of the staff behavior, specifically the promotion of fitness, yielded percent agreement met acceptable criteria (at or above 80%; McKenzie et al., 2000) for the promotion or non-promotion of fitness (95.45%).

Table 2.

Inter-Observer Agreement of Context Variables

Area	*r*	R^2
Accessible	1.0[a]	1.0
Useable	1.0[a]	1.0
Supervised	0.9798[a]	0.96
Organized	0.9798[a]	0.96
Equipment Provided	0.9596[a]	0.92

[a] Statistically significant bivariate correlation coefficient

ASP Contextual Characteristics

The observed predetermined activity areas that were accessible, useable, supervised, organized, and had equipment provided for PA opportunity (*Figure 1).* During the ASP, at the start of each session, supervision and the equipment provided increased as more students arrived at the program. As the weeks progressed through the ASP more organized activities were provided for the youth.

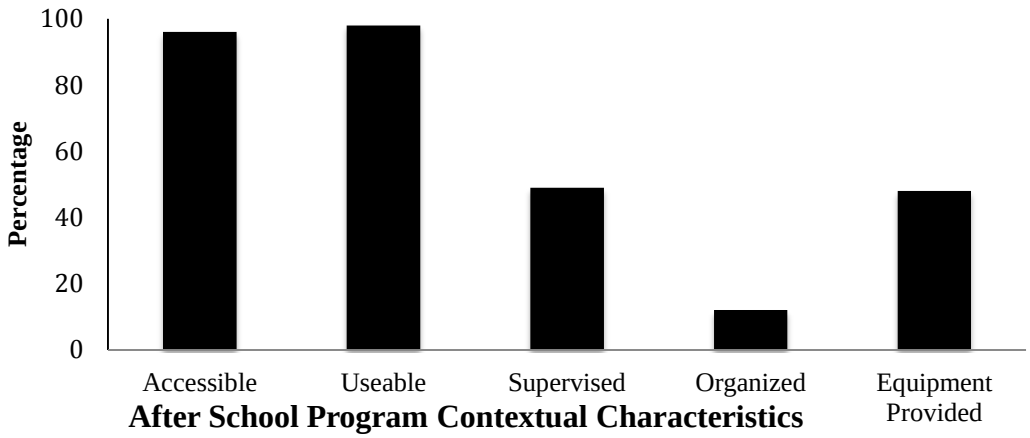


Figure 1. *Percentage of the Observed Contextual Characteristics for the ASP to be Accessible, Useable, Supervised, Organized, and Provide with Equipment for the Predetermined Activity Areas.*

Physical Activity

A visual analysis table was created showing the number of observed youth engaged in MPVA for both boys and girls can be seen in *Figure 2,* and the percentage of MVPA for boys and boys in predetermined the activity areas in *Figure 3*. In addition a table was created to show MVPA for boys and girls in each activity area (*Figure 4*). Throughout the study, boys overall had higher numbers of MVPA than girls. In addition, 99.9% of the time staff did not promote PA to youth in activity areas.

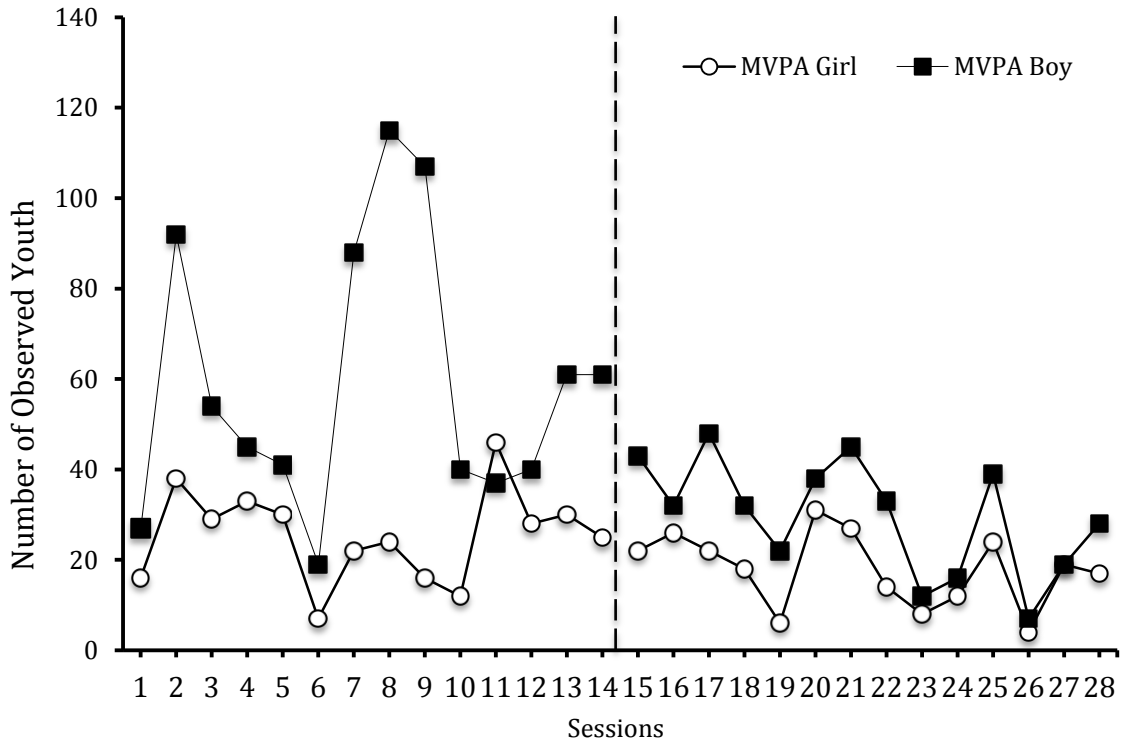


Figure 2. *The Number of Observed Boys and Girls Engaged in MVPA Across 28 Observations.*

There were many ($x \geq 11$) girls and boys engaged in MVPA in areas as the gym, blacktop, and field east. Boys had high levels of observed MVPA also in the foursquare area, field west, teen outside and game room, while girls had high levels of MVPA in the teen kitchen.

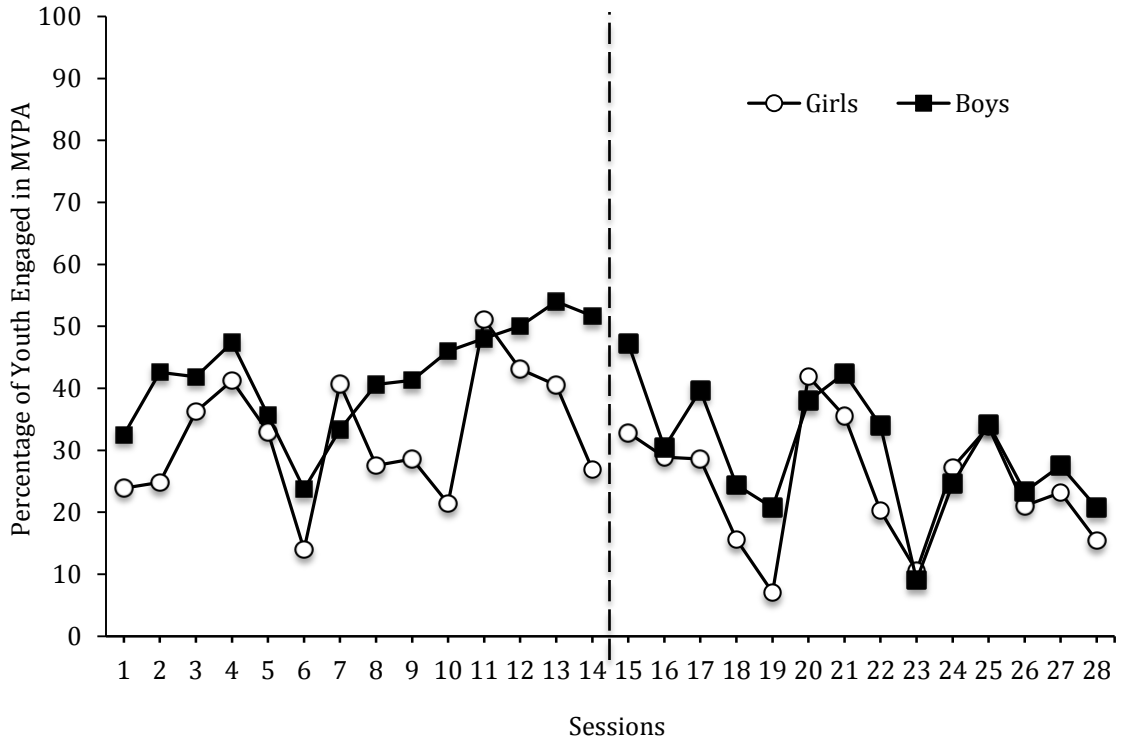


Figure 3. *Mean Percentage of MVPA for Girls and Boys Across Sessions*

Using Chi-square analysis significant differences were found in the average numbers of sedentary girls ($F(9, 583) = 6.368$, $p < 0.0001$, walking girls ($F(9, 583) = 7.011$, $p < 0.0001$, vigorous girls ($F(9, 583) = 5.541$, $p < 0.0001$, sedentary boys ($F(9, 583) = 17.721$, $p < 0.0001$, walking boys ($F(9, 583) = 8.307$, $p < 0.0001$, and vigorous boys ($F(9, 583) = 6.203$, $p < 0.0001$ observed in the predetermined activity areas (*Table 3*).

Girls in activity areas had a high tendency to engage in volleyball, basketball, and soccer activities when in the gym our outside on the field east, field west, or teen outside. Boys most frequently chose to play basketball and/or football when equipment was provided, regardless of activity area.

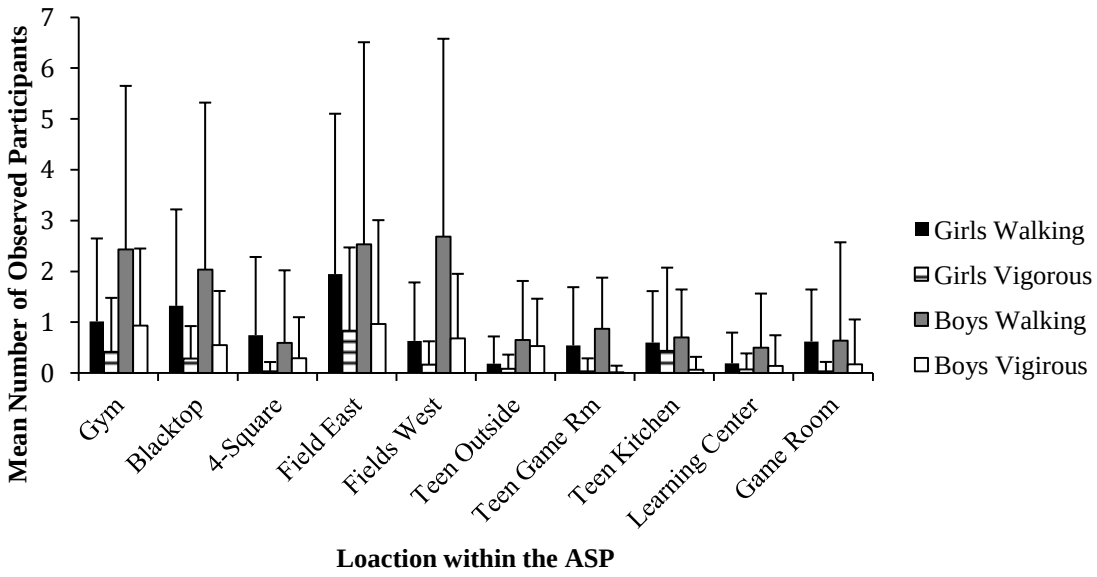


Figure 4. *The Average Number of Girls and Boys Observed in MVPA Across Activity Areas for 28 ASP Sessions.*

Regardless of designated activity areas, the mean percentage of observed girls engaged in MVPA was 28.39%, while 35.90% of the observed boys engaged in MVPA regardless of area. On most days the researcher conducted two sweeps of the ASP, where the mean percentage of girls and boys engaged in MVPA was 29.52% and 36.81%, but on other days one sweep (0.07%) or three sweeps (10.71%)were done, the mean percent of girls and boys engaged in MVPA was 28.46% and 39.62%, respectively, because time allotted and special early release days from surrounding schools.

Table 3.

Mean number of Total Observed Girls and Boys in Sedentary, Walking, and Vigorous Activity.

	Sedentary		*Walking*		*Vigorous*	
Area	Girls	Boys	Girls	Boys	Girls	Boys
Gym	6.23±13.0	7.15±12.11	1.01±1.63	2.43±3.21	0.41±1.06	0.93±1.51
Blacktop/ Basketball	1.81±2.83	1.72±3.54	1.32±1.89	2.06±3.30	0.28±.064	.055±1.07
Foursquare	1.01±2.97	1.11±2.76	0.74±1.53	0.59±1.42	0.33±0.18	0.82±0.81
Field East	2.88±5.40	2.11±3.40	1.94±3.15	2.57±3.99	0.84±1.64	0.98±2.05
Field West	0.98±1.78	1.51±2.75	0.63±1.14	2.68±3.89	0.16±0.45	0.68±1.26
Teen Outside	1.32±1.68	1.35±1.49	0.18±0.54	0.66±1.16	0.08±0.28	0.54±0.93
Teen Game Room	3.32±2.37	8.67±3.77	0.54±1.14	0.86±1.00	0.32±0.25	0.01±0.12
Teen Kitchen	4.30±2.73	2.88±2.31	0.61±1.01	0.17±0.94	0.44±1.65	0.67±0.25
Learning Center	2.18±3.46	2.03±3.06	0.18±0.60	0.49±1.05	0.67±0.31	0.13±0.60
Game Room	2.06±5.28	2.46±3.48	0.62±1.02	0.63±1.93	0.03±0.18	0.17±0.88

Note: Values reported are the mean ± standard deviation of the total number of observed girls and boys. These are arithmetic averages and are for comparison purposes, and are not suggestive that fractions of people were present.

ASP Personnel Promotion of Physical Activity

Throughout the duration of the study, staff members were seen talking with youth, teens, and other staff members. Other times they played video games and were physically active with ASP members playing basketball and other sporting activities. As seen in Figure 5, staff rarely staff promoted PA inside (1.49%) or PA outside (1.21%). Most often staff was observed not promoting any PA (97.29%).

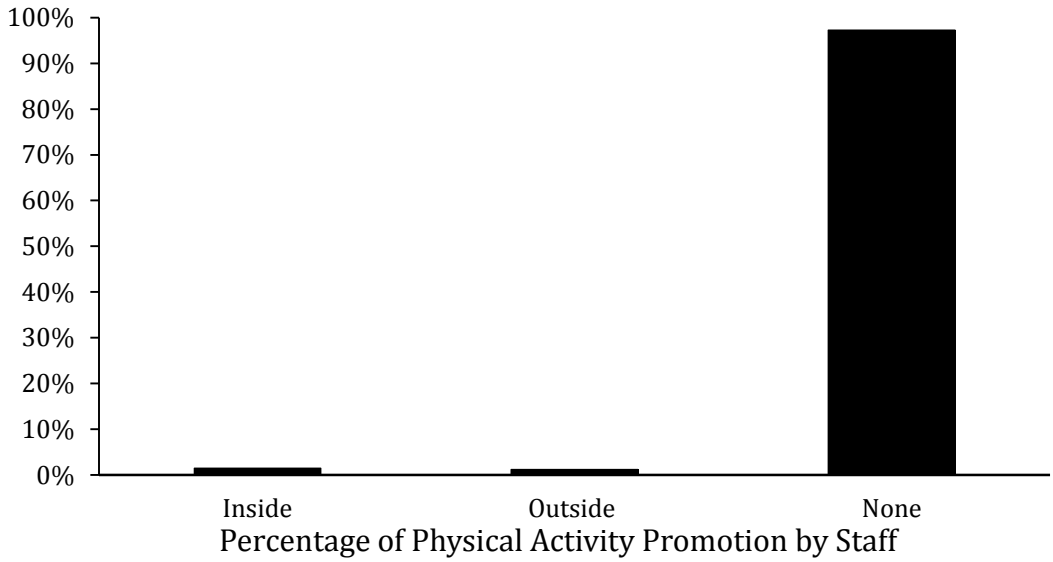


Figure 5. *The Percentage of Physical Activity Promotion by Staff.*

Discussion

The literature on ASPs, activity levels at ASPs, and measurement of PA informed this study. This study improves our understanding of PA rates at one, nationally offered, and prominent ASP in a major metropolitan city.

As in many studies describing characteristics of ASPs (Beighle & Moore, 2012; Halpern, 1999; Sallis et al., 2001) this study also was held at a similar time after school, provided equipment, supervision, and a safe environment to youth. Unique to this study, staff of the ASPs did not encourage youth of the ASP to engage in activity. Although an email was sent to the ASP director a few weeks before the start of the study, and the director's emphasis during training to change the focus of the ASP and encourage staff to promote opportunities for PA, staff did not promote PA in any way and instead continued their sedentary ways. Staff members were seen participating in sedentary activity with or without youth. This included playing videogames, being on the computer, sitting on the

sofa, or focusing on their personal cellular device. Even when participating in active games, employees did not give positive praise to youth engaged in PA. Nor did they encourage youth to come and join active games. This directly reflects the importance of the theoretical framework used to frame this study. The social-ecological model where individuals are a part of a larger community where environments (ASP, friends, staff) directly influence the decisions of the youth/teen, when at the ASP. Specifically this study targeted the *Microsystem* (face-to-face interaction), *Mesosystem* (linkage between multiple levels) and *Exosystem* (associations between multiple levels) of the Bronfenbrenner model (1994) (Metzler et al., 2013). In other studies conducted in ASPs, each study had a clear focus on what they intended to research at each unique ASP; the focus on the relationship of attending ASPs and number of absences/tardiness/self-esteem, grades, and behaviors (Baker and Witt, 1996), the evaluation of policies on ASPs (Beets et al., 2014), violence prevention (Hellison, 2000), retention of youth (Hellison & Wright, 2003), preventing problems/promoting development/encouraging engagement (Pittman et al., 2002), and beneficial effects of ASPs on low-income children (Posner & Vandell, 1994).

The ASPs studied here did not have a specific program goal for youth attending like previous studies, for its staff; or possibly the staff did not express the goal for the youth attending. Although on the ASP website it has five clear program goals, with one of the five being *health and well*-being, the researcher did not see this being implemented during the observations. Furthermore, the lack of promoting the PA of youth could have been the result of not emphasizing the importance of promotion to the staff during staff training. Therefore the consequence was not having staff promote PA to youth at the

ASP. Beighle et al. (2010) recommends staff at ASPs to constantly move around and interact with all youth in order to show PA movement and not exclude youth, the staff at this ASP did not follow any of this researchers recommendations.

This study was also in line with previous research on ASPs (Baker & Witt, 1996; Beets et al., 2014) indicating there is a need for future research to be conducted on the impact of programs on PA once youth are outside of the ASPs. Having little to no promotion of PA by staff as seen in this study had also been found in a previous study by Trost et al. (2008) there where a lack of PA promotion by staff members. Having many staff members who are mostly part-time employees, with a high turnover rate, complied with a lack of continuous training resulted in a struggle to promote PA to youth (Kelder et al., 2005). This current study also had similar outcomes to Donnelly et al. (2009), finding that staff who engaged with youth and modeled PA behavior, resulted in young people being more incline to increase the PA rates, then when staff were not active/present. Huberty, Beets, Beighle, and McKenzie (2013) found, that even when staff are engaged and promoted PA, girls, not boys, participated more and were found to ben engaged in higher levels of MVPA. The ASP provided opportunities for youth reach Beets et al. (2010) recommended of 30-minute minimum of MVPA during the ASP. The findings from this study are consistent with other studies where boys being were seen to be more active consistently, ranging between 6 – 14.1%, than girls regardless if their time was structured or unstructured (Sallis et al., 2001; McKenzie et al., 2000; & Trost et al., 2008).

The observers IOA correlation coefficients levels ($R^2 > 0.75$) were consistent with McKenzie et al. (2000) except for the coefficients for moderate PA for boys (0.69). This may be a consequence of the variance in the pacing of counting between the multiple observers when IOA checks occurred. On average during IOA checks observers recorded more sedentary girls (0.089), vigorous girls (0.079), sedentary boys (0.139), and vigorous boys (0.099) than the primary researcher; while the main researcher recorded walking girls (0.079) and walking boys (0.128) higher than IOA observation checkers.

PA levels Across Participants' Sex and Activity Areas

Amongst the designated activity areas within the ASP youth were active where expected (Fields East and West, Gym, and Blacktop). They also engaged in MVPA in areas that were unexpected to produce PA. They included the Teen Kitchen, Game Room, and Teen Outside Area. In the Teen Kitchen girls were observed in MVPA more than twice what boys were. Almost daily, music was playing in that room, girls consistently were dancing either alone or with each other to music they brought into the ASP. Boys on the other hand rarely danced, instead choosing to listen to music while sitting on the sofa talking or looking at their cell phones. In addition, the game room was an active area. Although the ASP provided table games, pool tables, and shuffleboard, many other active game were conducted in the space (e.g., throwing and catching, balance games, etc.).

The Gym was one of the few designated areas that were utilized by both teens and youth. Before youth arrived at the ASP, teens were permitted to use the Gym to play basketball or volleyball. Over the 28 observations no other activity occurred in the area.

Usually a handful of teen played basketball while the others sat, watched, and talked with their friends or staff members. The staff did not encourage teens to be active, and was only active when a teen would ask the staff member to join in a game of basketball.

One strength of this study was being able to track participating youth and teens PA levels over 28 observations and provide the ASP and its director's data on one of their many programs. This study is similar to Beighle et al. (2010) focusing on program and staff level recommendation but with a goal of giving the ASP information to inform changes based upon the results of this study. The ASP had no information on what occurred in an average day in regards to their employees. Once data were collected and analyzed the ASP program was satisfied with the information presented.

In future studies, data could be collected daily over many months and years to see how PA rates progress throughout a school year. This would also give a more accurate account on what occurs at an ASP regardless of season and weather, which may affect outdoor PA levels depending on geography.

In addition, for future studies, accelerometers could be added which gives valid and reliable data (Trost et al., 2008) and pedometers to my study in order to get a more thorough account of the PA levels of youth attending ASPs in addition to using SOPLAY. As Beets et al. (2014) collected data at baseline to see how effective design strategies were for meeting recommend PA levels. Investigators could build upon that research. First, by collecting baseline data at an ASP, then teaching employees how to actively encourage and setup activity areas for youth to engage in PA.

Conclusion

The availability of ASP programs has steadily increased over the past years, with more programs being created and available to many to families regardless of where they live. With many youth attending ASP regularly it is important to capitalize on their time spent at these programs increasing and providing the opportunities for youth and teens to be physically active. Currently, there is little evidence, however, that youth are active during ASPs and meeting these opportunities, and when provided, not meeting one ASP recommendations of at least half the time being dedicated to PA (Beighle et al., 2010). The current study highlights participants' PA levels at one after- school program as well as staff behaviors' influence on youth PA levels. Staff members had no influence on activity levels of youth and teens attending the program. Although there were observed high levels of MVPA in both outside and inside areas designated for PA for both girls and boys overall less than half of those attending the program were seen engaged in MVPA regardless of designated area. What really stood out was the MVPA in areas not designed for activity. That is, teenage girls had higher MVPA in the kitchen, because they tended to dance while listening to music, and youth showing MVPA in the game room throwing and catching, playing tag, and balancing games in an environment not designed for high levels of PA. To increase PA opportunities program directors and staff need proper training to facilitate PA and motivational strategies to positively impact youths PA at ASPs.

References

Baker, D., & Witt, P.A. (1996). Evaluation of the impact of two after-school programs. *Journal of Park and Recreation Administration, 14*, 60-81.

Beets, M.W. (2012). Active Living Research: Research Brief May 2012. Policies and standards for promoting physical activity in after-school programs. Retrieved from http://www.activelivingresearch.org/afterschool

Beets, M.W., Beighle, A., Bottai, M., Rooney, L., & Tilley, F. (2012). Pedometer-determined step-count guidelines for afterschool programs. *Journal of Physical Activity & Health*, *9*(1).

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 Preventative Medicine, 36*, 527-537.

Beets, M.W., Huberty, J., & Beighle, A. (2012). Physical activity of children attending after school programs. research and practice-based implications. *American Journal of Preventative Medicine, 42*, 180-184.

Beets, M.W., Wallner, M., & Beighle, A. (2010). Defining standards and policies for promoting physical activity in afterschool programs. *Journal of School Health, 80*, 411-417.

Beets, M., Weaver, R., Moore, J., Turner-McGrievy, G., Pate, R., Webster, C., & Aaron, B. (2014). From policy to practice: Strategies to meet physical activity standards in YMCA afterschool programs. *American Journal of Preventive Medicine, 46*, 281-288.

Beighle, A., Beets, M.W., Erwin, H.E., Huberty, J., Moore, J.B., & Stellino, M. (2010). Promoting physical activity in afterschool programs. *Afterschool Matters, 11*, 24-32.

Beighle, A., & Moore, M. (2012). Physical activity before and after school. *Journal of Physical Education Recreation and Dance, 83*, 25-28.

Bronfenbrenner, U. (1994). *Ecological models of human development*. (2nd ed., Vol. 3, pp. 37-43). Oxford: Elsevier.

Bruening, J.E., Dover, K.M., & Clark, B.S. (2009). Preadolescent female development through sport and physical activity: A case study of an urban after-school program. *Research Quarterly for Exercise and Sport, 80*, 87-101.

Campbell, K.J., Crawford, D.A., Salmon, J., Carver, A., Garnett, S.P., & Baur, L.A. (2006). Associations between the home food environment and obesity-promoting eating behaviors in adolescence. *Obesity, 15*, 719-730.

Carruthers, C. (2006). Process and outcomes of an after-school program for adolescent girls. *Journal of Park and Recreation Administration*, *24*, 127-152.

Centers for Disease Control and Prevention. (2013). Healthy Youth. Retrieved from http://www.cdc.gov/healthyyouth/obesity/facts.htm

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*, 633-640.

Common Core of Data [CCD] (2012). *CCD Public school district data for the 2010-2011, 2011-2012 school years.* Retrieved from http://nces.ed.gov/ccd/districtsearch/district_detail.asp?Search=1&InstName=roosevelt&City=phoenix&DistrictType=1&DistrictType=2&DistrictType=3&DistrictType=4&DistrictType=5&DistrictType=6&DistrictType=7&NumOfStudentsRange=more&NumOfSchoolsRange=more&ID2=0407080&details=5

Donnelly, J.E., Greene, J.L., Gibson, C.A., Smith, B.K., Washburn, R.A., Sullivan, D.K., DuBose, K., Mayo, M.S., Schmelze, K.H., Ryan, J., Jacobsen, D.J., & Williams, S.L. (2009). Physical activity across the curriculum (PAAC): A randomized controlled trial to promote physical activity and diminish overweight and obesity in elementary school children. *Preventive Medicine,* 336-341.

Golden, S.D., & Earp, J.L. (2012). Social ecological approaches to individuals and their contexts: Twenty years of health education & behavior health promotion interventions. *Health Education Behavior, 39,* 364-372.

Halpern, R. (1999). After-school programs for low-income children: Promise and challenges. *The Future of Children, 9,* 81-95.

Hedley, A.A., Ogden, C.L., Johnson, C.L., Carroll, M.D., Curin, L.R., & Flegal, K.M. (2004). Prevalence of overweight and obesity among us children, adolescents, and adults, 1999-2002. *Journal of the American Medical Association, 291*, 2847-2850.

Huberty, J.L, Beets, M.W., Beighle, A., & McKenzie, T.L. (2013). Association of staff behaviors and afterschool program features to physical activity: Findings from movin' after school. *Journal of Physical Activity and Health, 10,* 423-429.

Kelder, S., Hoelscher, D.M., Barroso, C., Walker, J.L., Cribb, P., & Hu, S. (2005). The CATCH kids club: A pilot after-school study for improving elementary students' nutrition and physical activity. *Public Health Nutrition, 8,* 133-140.

Lobstein, T., Baur, L., & Uauy, R. (2004). Obesity in children and young people: A crisis in pubic health. *The International Association of The Study of Obesity. Obesity Reviews, 5*, 4-85.

Maduro, D.S.M., & Frederico, P. (2009). Validation of the SOPLAY direct observation tool with an objective accelerometry-based physical activity monitor. (Doctoral dissertation - Iowa State University). Retrieved from http://lib.dr.iastate.edu/kin_etd/

Metzler, M.W., McKenzie, T.L., van der Mars, H., Barrett-Williams, S., & Ellis, R. (2013). Health optimizing physical education (HOPE). A new curriculum for school programs. Part 1: Establishing the need and describing the model. *Journal of Physical Education Recreation and Dance, 84(4),* 41-47.

McKenzie, T.L. (2005). *SOPLAY. System for observing play and leisure activity in youth. Description and protocol*. Informally published manuscript, Department of Exercise and Nutritional Sciences, San Diego State University, San Diego, CA.

McKenzie, T. (2009). SOFIT-System for observing fitness instruction time: SOFIT Protocol. *San Diego, CA: San Diego State University*.

McKenzie, T.L., Marshall, S.J., Sallis, J.F., & Conway, T.L. (2000). Leisure-time physical activity in school environments: An observational study using SOPLAY. *Preventive Medicine, 30,* 70-77.

McKenzie, T.L., Sallis, J.F., & Nadar, P.R., (1991). SOFIT: System of observing fitness instruction time. *Journal of Teaching in Physical Education, 11,* 195-205.

Miller, B.M., (2001). The promise of after-school programs. *Educational Leadership, 58,* 6-12.

Milteer, R.M., Ginsburg, K.R., (2012). Council on communications and media, & Committee on psychosocial aspects of child and family health. The importance of play in promoting healthy child development and maintaining strong parent-child bond: Focus on children in poverty. *American Academy of Pediatrics, 129,* e204-213.

Lobstein, T., Baur, L., & Uauy, R. (2004). Obesity in children and young people: A crisis in public health. *The International Association of the Study of Obesity. Obesity Reviews, 5,* 4-85.

Orlowski, M., Hallam, J., & Wonders, K. (2010). Physical activity in an organized after school program: A pilot study. *Journal of Exercise Physiology, 13,* 12-21.

Posner, J.K., & Vandell, D.L. (1994). Low-income children's after-school care: are there beneficial effects of after-school programs? *Child Development, 65,* 440-456.

Posner, J.K., & Vandell, D.L., (1999). After-school activities and the development of low-income urban children: A longitudinal study. *Developmental Psychology, 35,* 868-879.

Rowe, P., Schuldheisz J.M., & van der Mars, H. (1997). Measuring physical activity in physical education: Validation of the SOFIT direct observation instrument for use with first – to eighth – grade students. *Pediatric Exercise Science, 9*, 136-149.

Saint-Maurice, P., Welk, G., Ihmels, M.A., & Krapfl, J.R. (2011). Validation of the SOPLAY direct observation tool with an acceleromtery-based physical activity monitor. *Journal of Physical Activity and Health, 8*, 1108-1116.

Sallis, J.F., Conway, T.L., Prochaska, J.J., McKenzie, T.L., Marshall, S.J., & Brown, M. (2001). The association of school environments with youth physical activity. *American Journal of Public Health, 9*, 618-620.

Snyder, H.N., & Sickmund, M. (2006). Juvenile offenders and victim: 2006 national report. *Office of Juvenile Justice and Delinquency Prevention.*

Trost, S.G., Rosenkranz, R.R., & Dzewaltowski, D. (2008). Physical activity levels among children attending after-school programs. *Medicine & science in sports & exercise, 40*, 622-629.

Ungar, R. (2012, April 30). *Obesity now costs Americans more in healthcare spending than smoking*. Retrieved from http://www.forbes.com/sites/rickungar/2012/04/30/obesity-now-costs-americans-more-in-healthcare-costs-than-smoking/

U.S. Census Bureau (2010). *Demographics in the United States*. Retrieved from http://www.zip-codes.com/zip-code/85250/zip-code-85250.asp

U.S. Department of Health and Human Services (2012*). Physical Activity Guidelines for Americans Midcourse Report: Strategies to Increase Physical Activity Among Youth*. Washington, DC: U.S. Department of Health and Human Services.

Vandell, D.L., Shernoff, D.J., Pierce, K.M., Bolt, D.M., Dadisman, K., & Brown, B.B. (2005). Activities, engagement, and emotion in after-school programs (and elsewhere). *New Directions for Youth Development, 105*, 121–129.

Willenberg, L.J., Ashbolt, R., Holland, D., Gibbs, L., MacDougall, C., Garrard, J., Green, J.B., & Waters, E. (2010). Increasing school playground physical activity: A mixed methods study combining environment measures and children's perspectives. *Journal of Science and Medicine in Sport, 13*, 210-216.

Weaver, R.G., Beets, M.W., Webster, C., & Huberty, J. (2014). *System for observing staff promotion of activity and nutrition (SOSPAN). Journal of Physical Activity and Health, 11*, 173-185.

Chapter 4: Perceptions of Youth Enrolled in After-School Programming on Access and Opportunity for Physical Activity

Obesity with its related health problems, teenage pregnancy, and lack of physical activity (PA) are amongst the top of health related issues (Bruening, Dover, & Clark, 2009). In the United States, the annual medical cost related to just obesity is $190 billion dollars (Centers for Disease Control and Prevention [CDC], 2013). This reflects what is currently happening with the eating habits and PA trends of people living within the United States. The rise in obesity levels in the United States started many years ago. For the past 10 years, the prevalence of obesity with both children and adults has had no significant change (Ogden, Carroll, Kit, & Flegal, 2012). Some of the symptoms related to obesity are excess levels of insulin, poor glucose tolerance, risk of type-2 diabetes, social exclusion within schools and amongst peers (Lobstein, Baur, & Uauy, 2004). With the majority of youth attending school daily, schools are an ideal place to promote the promotion of PA (McKenzie, Marshall, Sallis, & Conway, 2000). The current study used a social-ecological framework to study stakeholders' views of an after school program (ASP) using a social-ecological framework (e.g., Golden & Earp, 2012; Metzler, McKenzie, van der Mars, Barrett-Williams & Ellis 2013).

Social-Ecological Framework

This study incorporates an ASP within a social-ecological framework that shows individuals being part of a society, where actions are influenced by others within the community, supportive people, and where opinions and beliefs are influenced within groups of people around individuals (Bronfenbrenner, 1994; Golden & Earp, 2012;

Metzler, McKenzie, van der Mars, Barrett-Williams & Ellis 2013). Bronfenbrenner (1994) further elaborated on the social-ecological as a layered system that combines multiple interrelated systems where environments influence the individual throughout a lifetime. Bronfenbrenner's environment includes the *Microsystem,* where individuals have interactions that develop relationships. These relationships include family, peers, and siblings. The *Mesosystem* contains processes that take place between several systems. The *Exosystem* environment encompasses the associations that occur between two or more setting, including the working environments of parents, extended family members, media, and neighborhoods. Finally the *Macrosystem* consists of laws, culture, social conditions, economic system, and lifestyle of where the individual lives all of which are embedded in each of the broader systems.

Perceptions and Physical Activity

Group size poses a problem for assessing PA (Kohl, Fulton, & Casperen, 2000). In large-scale surveillance research examining perceptions of youths' PA participation surveys, or questionnaires are commonplace data collection tools (DuRant et al., 1993), and these have become the basis for much of subsequent intervention studies.

There are limitations associated with using self-reporting include prior recall of PA. Since PA varies greatly from one day to the next it recommended not to ask participants about PA for more time than a week prior (Sallis & Saelens, 2000). Another limitation of self-reporting is the limitation of participants being able to accurately recall the intensity level of their activity, especially youth (Chinapaw et al., 2010). When participants recall intensity level, moderate activity has a lower reliability rate than

vigorous intensity (Baranowski, 1988). Podsakoff, MacKenzie, Lee, and Podsakoff (2003) found self-reporters wrote what the researcher wanted to see rather than accurate recalling prior PA. They also attempted to stay consistent with their answers throughout the survey, and responding in such a way to similarly worded questions producing relationships that would not other wise exists in a real life situation. Finally, another limitation of self-reporting is the dependence of relying upon a participant for thorough information. Pate and O'Neil (2008), found self-reporting to have mixed results over the duration of the study. Through three interventions using self-reporting, one of the three randomized controlled trail had a significant increase in their PA compared to the control group. The second intervention had no significant increase with their levels of PA, while the third intervention group never reported their findings.

Ekelund et al. (2005) conducted a survey study to describe the association between self-reported PA and fat mass fat mass percentage in three groups of adolescents 4-5, 12-13, and 16-17 years old. Boys had significantly greater amounts of self-reported PA than did the girls; the total amount of PA was significantly and inversely associated with fat mass percentage in boys. Finally, when researchers calculated Body Mass Index (BMI) as the outcome variable, the association between obesity and PA was significant and inversely associated with BMI in males but not females.

Youth in Latin America were surveyed to assess PA and daily energy expenditure over school days, and vacation activities during the past year. The survey was easily understood by both boys and girls of all ages, and showed high reproducibility. However, children were not able to accurately estimate the duration of activity time and they

directly linked intensity and enjoyment to the duration of the activity (Barbosa, Sanchez, Vera, Perez, Thalabard, & Rieu, 2007).

Chaumeton, Ducan, Duncan and Strycker's (2011) study sought to determine whether peer, parent and self-report responses reflected a hidden measurement of youth PA and determined whether the measurement model of youth PA was similar across three age groups (10, 12, and 14 years) and both genders. The measurement model was comprised of a higher order factor model from the three reports that targeted youth PA (youth self-report, parent report, and peer report). Authors found the oldest group of boys (14 years) differed significantly from all other groups with fewer days per week engaged PA through self-reporting. In addition, this same group of boys had significantly higher PA patterns for days they worked hard and engaged in PA compared to the reports from their parents and the other groups. Authors found that as youth increase in age, the time spent with family decreases and time increases with their peers. Authors recommend it is best to use parent-report for ages 10-14, but combining all three reports result in a more comprehensive estimate of PA, than by one test alone (Chaumeton et al., 2011).

The self-perception of children has a direct impact with their own PA levels. Raustorp, Stahle, Gudasic, Kinnunen, & Mattsson (2005) examined the relationship between PA and self-perception. Authors found children who had lower self-perception scores also had lower PA levels. They suggest to design PA programs that encourage self-perception to also increase PA (Raustorp et al., 2005). Perceptions of parents also directly impact the physical activity rates of their children; allowing them to play outside, sometimes unsupervised. Tappe, Glanze, Sallis, Zhous and Saelens (2013) studied the

association between parent views of their neighborhood and their children's physical activity. A total of 730 families participated in the study, where parents were asked questions relating to their child's physical activity. The questions included frequency of PA, activity in *park-like* environments, the number of times they were active in any way, and number of days per week their child participated in 60 or more minutes of PA. Statistical analyses were run, along with accelerometer data from the children. Authors found better walking facilities, safer neighborhoods, and closer playgrounds increased the probability of children going to parks two more days and increasing their PA (Tappe et al., 2013). These results were consistent with Weir, Etelson, and Brand (2006) who also studied parents' perceptions of neighborhood safety and the impact on their children's PA. Authors issued a questionnaire about the PA of their child, their child's activity in a variety of situations, and anxiety levels in regards to crime, personal safety, and child aggression amongst others. Authors found parents living in inner cities have children who were less active than children in suburban settings.

With the need of non-parental childcare and complex parental work schedules, many more youth are involved in extracurricular activities (including ASPs), and consequently have the chance to develop positive behaviors (Colchico, Zybert, & Basch, 2000; Eccles & Templeton, 2002). Recently, studies have begun to focus on the wide experiences of youth attending these programs. Shernoff and Vandell (2007) conducted a study at an ASP and found participants to think highly of staff and employees. Colchico et al. (2000) found that participating minority girls increased their physical, and emotional self-perceptions.

Looking at the associations between children attending ASPs and their adjustment to school experiences, Pierce, Hamm, and Vandell (1999) found low to moderate correlations between children's after school experiences where staff positivity was negatively correlated with staff negativity. In addition, peer interaction was not associated with other parts of the ASP experience. With the understanding that many youth attend a variety of ASPs, further exploration into understanding youth's perceptions of their experience within these programs in invaluable. The rationale for this study is to provide evidence on how the built environment at an ASP, the surrounding community, peers, and staff influence activity levels of ASP members, so directors can structure their ASPs from the results of this study.

Therefore, the purpose of this study was to assess the perceptions of youth toward PA. A secondary purpose was to see assess youth's view of the ASP and the staff to understand how the ASP and staff fits the needs and wants of its members

Methods

Participants. The participants for this study were individuals between 3rd to 12th grades, ages 7 to 18, who attended an ASP in a metropolitan city in the western United States. The youth attending the ASP were from schools in close proximity (Figure 6 provides the participants' demographic composition). The sample population included about 84% white or white bi-racial of the total population and those who defined themselves by one race included about 90% white, 2% black, 2% Asian, 4% other, and 4% bi-racial (Common Core of Data [CCD], 2012). From the total population (N = 1259) of youth enrolled at the ASP, 4.7% had limited English proficiency (with English being

their second language) and 7.1% were enrolled in Title 1 schools. Participants completed questionnaires after they signed assent forms and their parents signed an informed assent and consent forms, respectively. The University's Office of Research Integrity and Assurance approved the study.

Contextual Characteristics

The survey respondents were between the third and twelfth grade with ages of 8 – 18 years old. Of the total 337 surveys given (youth (n = 173) and teens (n = 164)), seven were excluded for not completing the entirety of the survey front and back.

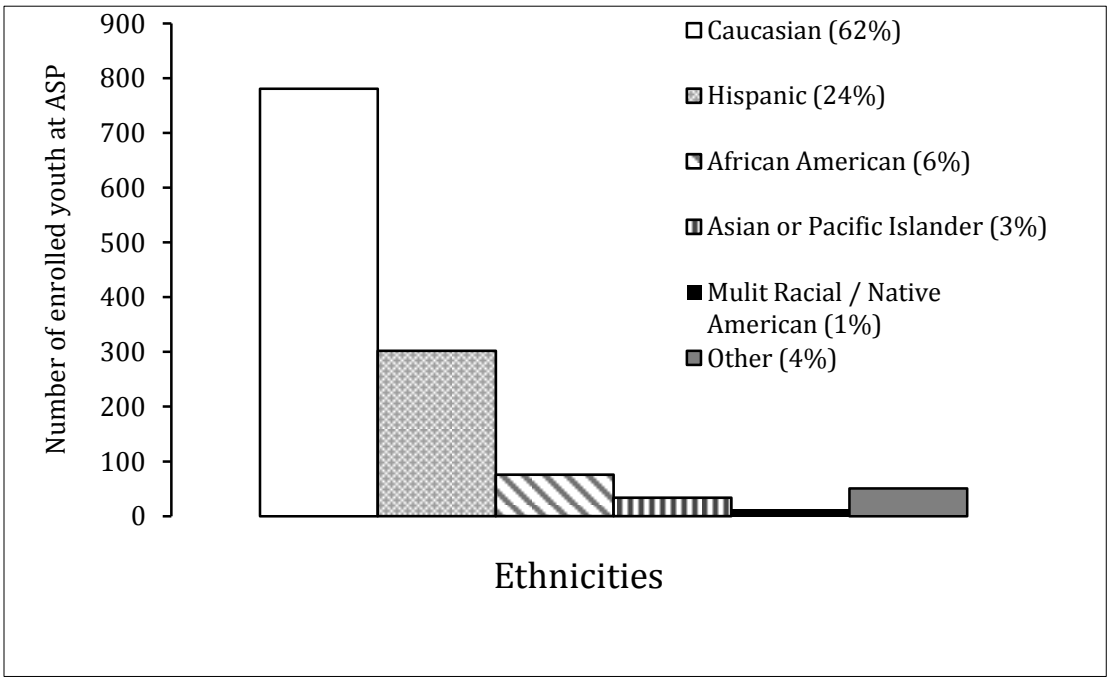


Figure 6. *Ethnic Background within the After School Program of their Registered Youth.*

Setting

After school program. The ASP study took place in the evenings of the fall 2013 and spring 2014 school semesters, for 15 weeks, Monday through Friday from 2:45p.m. –

6:00p.m. The ASP is located within an urban community in a metropolitan city in the Western United States.

The ASP contained a multiple designated areas including (a) teen outside area consisting of a blacktop space with two portable basketball hoops; (b) teen game room which had two sofas, a large TV with a gaming system, one pool table, one foosball table, and ten computers; (c) teen kitchen with a sectional sofa, two tables, eight chairs and a boom box; (d) learning center has a computer, books educational resources, and a whiteboard; (e) a game room is a large areas with two pool tables, air hockey, foosball, shuffleboard, and 54 cubbies for youth; (f) a gymnasium with a full-size basketball court with six hoops and an adjoining stage; (g) blacktop that is located outside with two basketball hoops and an area for free play; (h) a foursquare area which also outside painted onto the blacktop, (i) East field and (j) West field combined make up a grassy field just smaller than a regulation football field.

Neighborhood. The surrounding neighborhood near the ASP facility (a 3 block radius) contained homes, schools, businesses, and restaurants. The average household income for the area was $64,517 with the average home price of $299,400. In this community roughly 53% of adults over the age of 25 had at least a high bachelor's degree (U.S. Census, 2010). Many of the people attending the center were from a family with more than one child. The language heard most from those attending the center in the surrounding community was English. There were shops, restaurants, a church, schools and a park within a square four-block area. The housing in the community ranged from apartment complexes to four bedroom single-family houses. Depending upon the block,

homes were well maintained or unkept. Many people in the community were seen walking and riding bikes to and from the ASP, but there were just as many that drive and ride in the van/car-pool.

Target Variables

The questions guiding this study focused on the (a) perceptions of youth who attended the ASP, (b) youths' behaviors while attending the ASP, and (c) average weekly PA participation. Perceptions of the youth included questions about their weekly PA participation, preferred activities, opportunities to be active during the ASP, and their attitudes towards PA in general.

Instrument

The survey for this study was an adapted version of the Kaiser Physical Activity Survey (KPAS) (Baecke, Burema, & Fritjers, 1982; Sternfeld, Ainsworth, & Quesenberry, 1999). The KPAS, has been shown to produce reliable and valid scores in a similar population. It is a self-administered instrument 5-point Likert-scale (1="strongly disagree" – 5="strongly agree") (Ainsworth, Sternfeld, Bensfield, & Criscoe, 1996). The questions in this section (*n=9)* of the survey covered PA participation leisure-time PA, perceptions of the ASP, and of choices within the ASP (e.g., I like the available activity choices I have here at the ASP).

The other portion of the survey was taken from the PA section of the Middle School Health Behavior Survey (MSHBS) (Florida Department of Health, 2013). Questions (*n=24)* include youth PA behaviors, in-school and out-of-school activities

(e.g., thinking about yesterday, did you exercise or do a PA that made you sweat or breathe hard?), transportation (e.g., how did you get to school yesterday?), and television viewing (e.g., on average how many hours do you watch TV?) and over the previous seven days (e.g., How did you get to school yesterday?). The MSHBS PA portion used questions from the original 1998 Youth Risk Behavior Surveillance (CDC, 1998), which was validated by Brener et al. (2002).

Data Collection

The Physical Activity Survey (PAS) was distributed at three different time points to any youths or teens in attendance at the ASP: (a) During the first week of the program the ASP, (b) at the midway point of the study (week 7), and (c) over week 14 of the study. Student surveys were divided into youth and teen by the ASP staff during data collection. When completed, surveys were submitted to staff.

Data Analysis

When analyzing the surveys, data was recorded and analyzed to understand the proportion of answers. Descriptive statistics for the PA data were run for all variables on the survey (Barr-Anderson et al., 2007) to calculate and summarize all data across and within both groups of youth ages (a) 8 – 12 and (b) 13 – 18.

Results

General Physical Activity

During the Past Seven Days. From all surveys collected, ASP members were active one or less days with participation within a team sport (31.2%). A little bit more than half of the ASP members were active in any way (54.3%), were involved in martial arts (74.5%), dance (68.8%), skateboarding (47.2%), swimming (64.1%), or bike riding (56.1%) for one or less days during the past week (*Figure 7*).

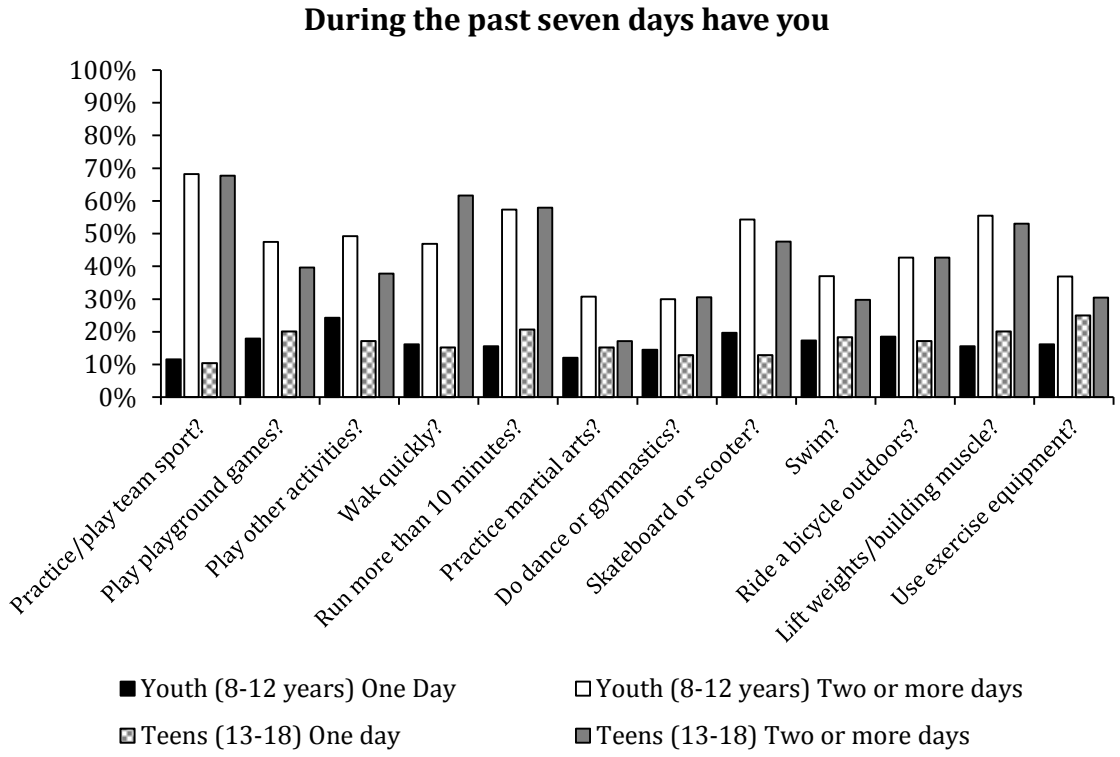


Figure 7. *Youth and Teen Responses to Activities They Have Done in the Past Seven Days.*

Analyzing all surveys regardless of youth or teens, 54% of members went to the park two or more days. They also went to the ASP (62.6%), were physically active in the

neighborhood (51.6%), and played on a team sport (50.4%) two or more days in the past seven days when they were not in school. About a fifth of youth when not in school went to the skate-park or field (22.5%), biked, walked, or jogged (21.4%) and did PA in their neighborhood (21.4%) only one day during the past seven days. At least two days during the last week when youth were not in school youth when not in school, slightly more than half went to an ASP (58.9%), biked, jogged, or walked (52.6%), went to a skate-park/field (52%), or played on a sports team (51.5%). Around a fourth of teens (23.8%) went to a field or skate-park one day a week when they were not in school. Other teens more than half of the time went for a bike, walk, or jog (58.5%), skate-park or field (54.9%), an after-school program (54.6%), or were physically active in their neighborhoods (50.5%) at least two times of the past seven days (*Figure 8*).

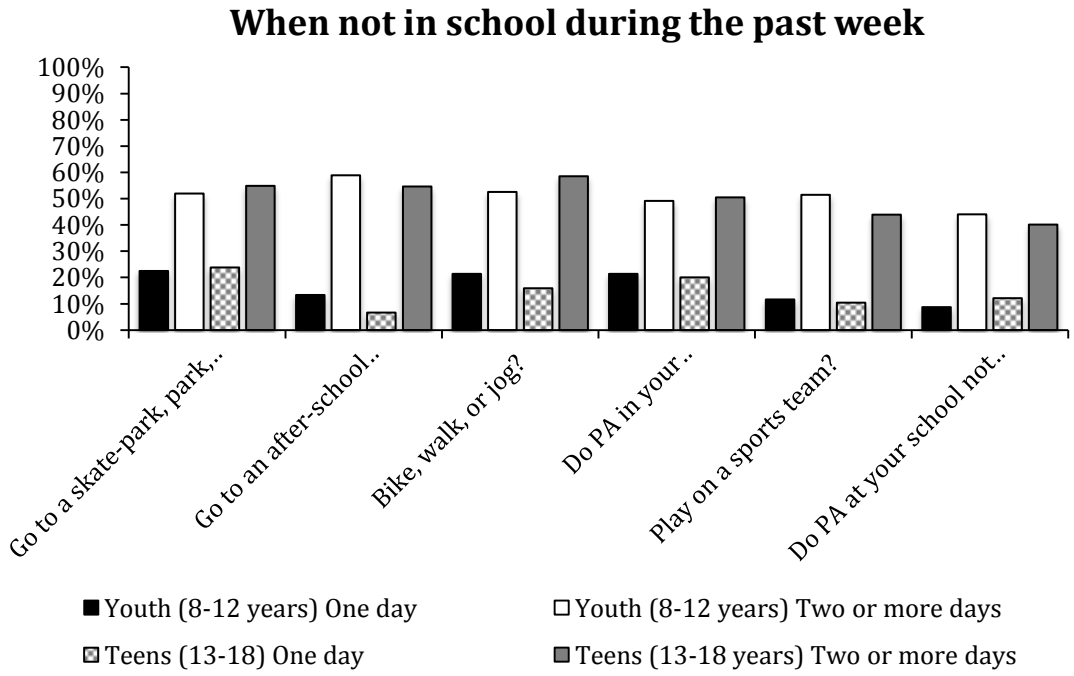


Figure 8. *Percentage of Youth and Teen Responses to Activities they Have Done when not in School.*

Recounting their PA from yesterday, regardless of location approximately a fifth of youth did not participate in more than 20 minutes PA that made them sweat or breath hard (19.7%). 19.1% of youth did not engage in PA that made them sweat. Over half of the surveyed youth (51.6%) of youth sweated or breathed hard when doing more than 20 minutes of activity. Only 22.6% of teens engaged in PA for less than 20 minutes and did not break a sweat, while the majority (64.7%) of teens breathed hard and sweated during more than 20 minutes of activity (*Figure 9*).

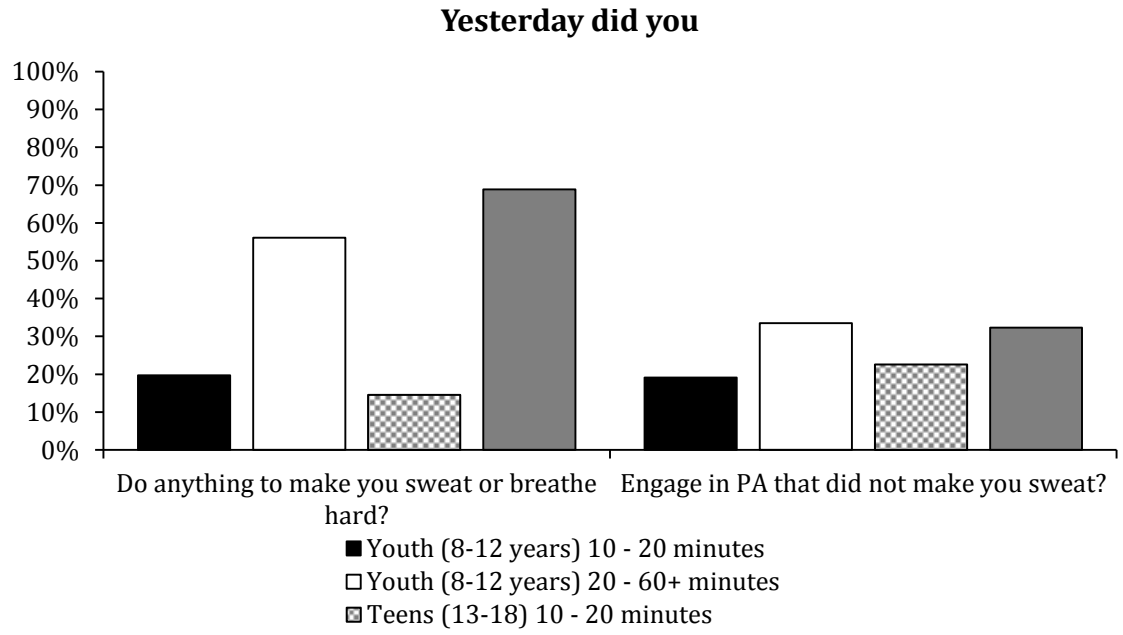


Figure 9. *Responses from Youth and Teens about Their Physical Activity from Yesterday.*

Days Physically Active. Slightly less than one fourth (24.3%) of youth engaged in any type of activity only one day during the past seven days, with riding skateboarding or scooter being the most popular answer (19.7%). One-fourth of teens (25%) who where only active one day a week chose to use exercise equipment as their activity. Other

popular activity playground games (20.1%), running for more than 10 minutes (20.7), and lifting weights were other top responses for teens (*refer to Table 4*).

Youth who engaged in PA two or more days chose to practice/play a team sport (68.2%). About half of the youth survey where involved in playing other activities (49.2%), running more than 10 minutes (57.3%), skateboarding/scooting (54.3%), and lifting weights (55.5%) when physically active. As with the youth, teens were most often practicing or playing a team sport (67.7%), with walking quickly also very popular (61.6%). About half of teens also ran more than 10 minutes twice a week (57.9%), lifted weights (53%), and skateboarding/scootered (47.6%) (*Table 4 and Figure 7*).

Table 4.

Percentages of Physical Activity Survey Response Answers for Youth and Teens.

		Youth (8 – 12 years)			Teens (13 – 18 years)		
		One Day	Two or more day		One day	Two or more days	
During the past seven days, have you	Practice/play team sport?	11.6%	68.2%		10.4%	67.7%	
	Play playground games?	17.9%	47.5%		20.1%	39.6%	
	Play other activities?	24.3%	49.2%		17.1%	37.8%	
	Walk quickly?	16.2%	46.9%		15.2%	61.6%	
	Run more than 10 minutes?	15.6%	57.3%		20.7%	57.9%	
	Practice martial arts?	12.1%	30.7%		15.2%	17.1%	
	Do dance or gymnastics?	14.5%	30%		12.8%	30.5%	
	Skateboard or scooter?	19.7%	54.3%		12.8%	47.6%	
	Swim?	17. 3%	37%		18.3%	29.8%	
	Ride a bicycle outdoors?	18.5%	42.7%		17.1%	42.7%	
	Lift weights/ building muscle?	15.6%	55.5%		20.1%	53%	
	Use exercise equipment?	16.2%	36.9%		25%	30.4%	
When not in school during the past week?	Go to a skate-park, park or field?	22.5%	52%		23.8%	54.9%	
	Go to an after-school program?	13.3%	58.9%		6.7%	54.6%	
	Bike, walk, or jog?	21.4%	52.6%		15.9%	58.5%	
	Do PA in your neighborhood?	21.4%	49.1%		20.1%	50.5%	
	Play on a sports team?	11.6%	51.5%		10.4%	43.9%	
	Do PA at your school not during school?	8.7%	44%		12.2%	40.2%	
		10 – 20 minutes	20 – 60+ minutes		10 – 20 minutes	20 – 60+ minutes	
	Made you sweat or breathe hard yesterday?	19.7%	56.1%		14.6%	68.9%	
	Yesterday engage in PA that did not make you sweat?	19.1%	33.5%		22.6%	32.3%	
		0 – 1 Hour	1+ Hours		0 – 1 Hour	1+ Hours	
	On average hours of television watched on a school day?	34.1%	61.4%		34.7%	64.7%	
	On average hours playing video or computer games on a school day?	28.9%	67.7%		25.6%	71.4%	
		Walked	Non-motorized	Motorized	Walked	Non-motorized	Motorized
	Get to school yesterday?	6.4%	11.6%	79.2%	16.5%	7.3%	70.1%
	Get home from school yesterday?	5.8%	6.9%	74.6%	25%	6.7%	61.5%

The School Day

Screen Time. From all surveyed ASP members' 64.7% watch at least one or more hours of television per school night, while 70.9% played an hour or more of videogames during an average school night. On average about a third of youth watched less than an hour of television (34.1%), and played video or computer games (28.9%) during a school day. The majority of youth watched on average more than an hour of television (61.4%) and/or played video and computer games 67.7% on average. Similarly, 34.7% and 25.6%of teens watched television or played computer games less than an hour, respectively. On a typical school day, the majority of teens watched television and/or played video games for more than an hour (68.9% and 71.4%, respectively) (*Figure 10*).

Transportation. The majority of youth took a motorized vehicle to school (79.2%) and back home (74.6%). While a little more than a tenth (11.6%) of youth went to school via a non-motorized means of transportation. Most teens went to school in a motorized vehicle (70.1%) and went home the same way (61.5%). Less than a fifth (16.5%) walked to school; and a fourth of teens (25%) walked home (*Figure 11*).

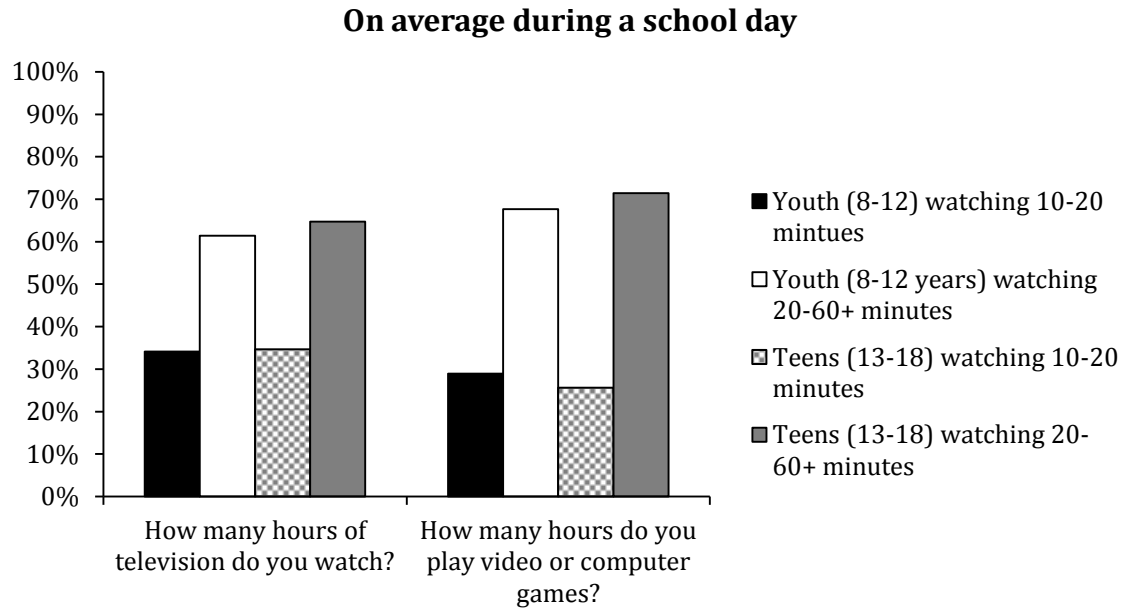


Figure 10. *Percentage of Responses from Youth and Teens about their Screen Time During the School Week.*

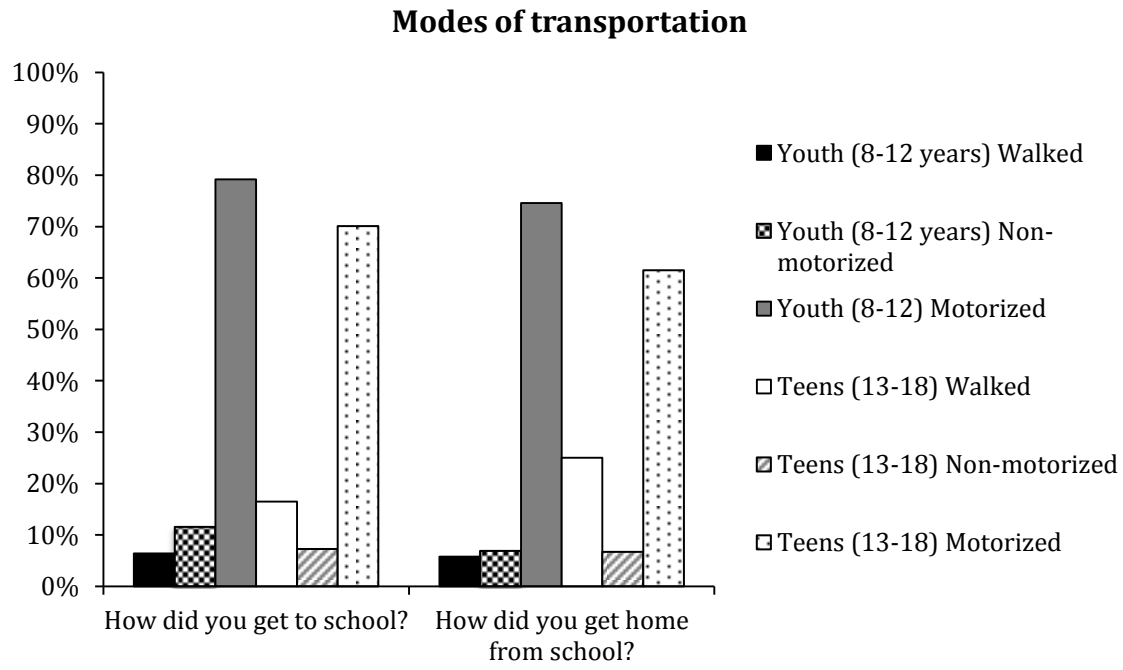
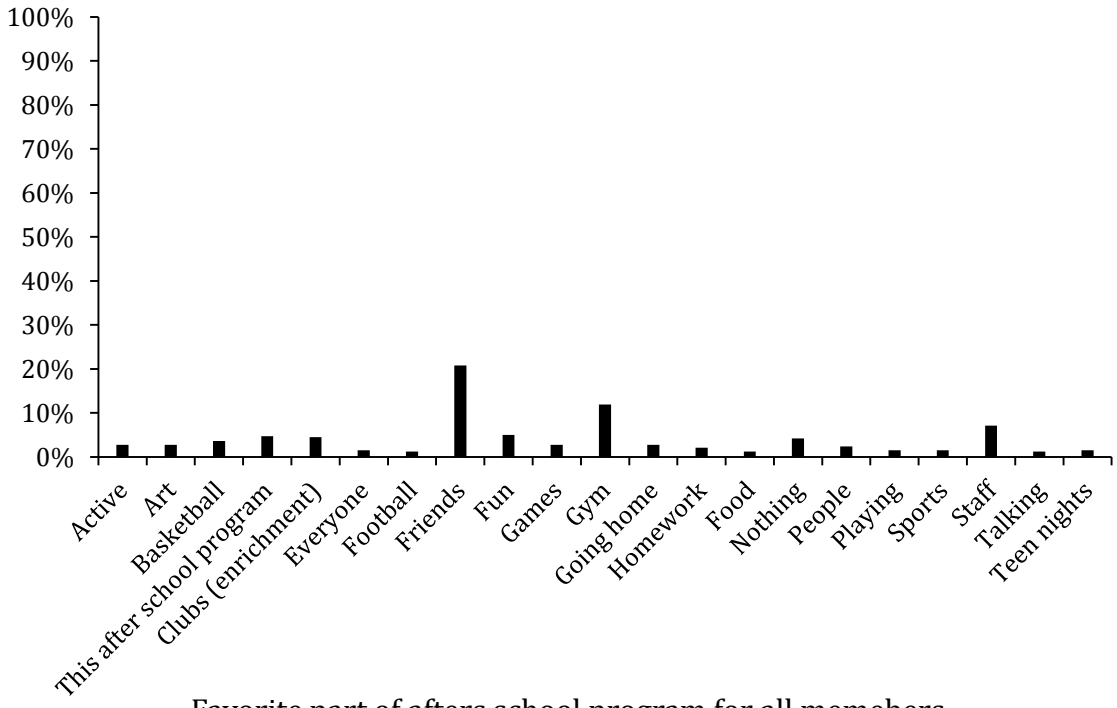


Figure 11. Youth and Teen Responses from their Mode of Transportation to and from School.

The After School Program

Favorite part. Friends (20.8%) were the most favorite part of all members attending the ASP. The Gym (11.9%) and Staff (7.1%) were also common responses for those attending. Other favorites for all members included the ASP (4.7%), Clubs (4.5%), and Basketball (3.6%) are shown in Figure 12.



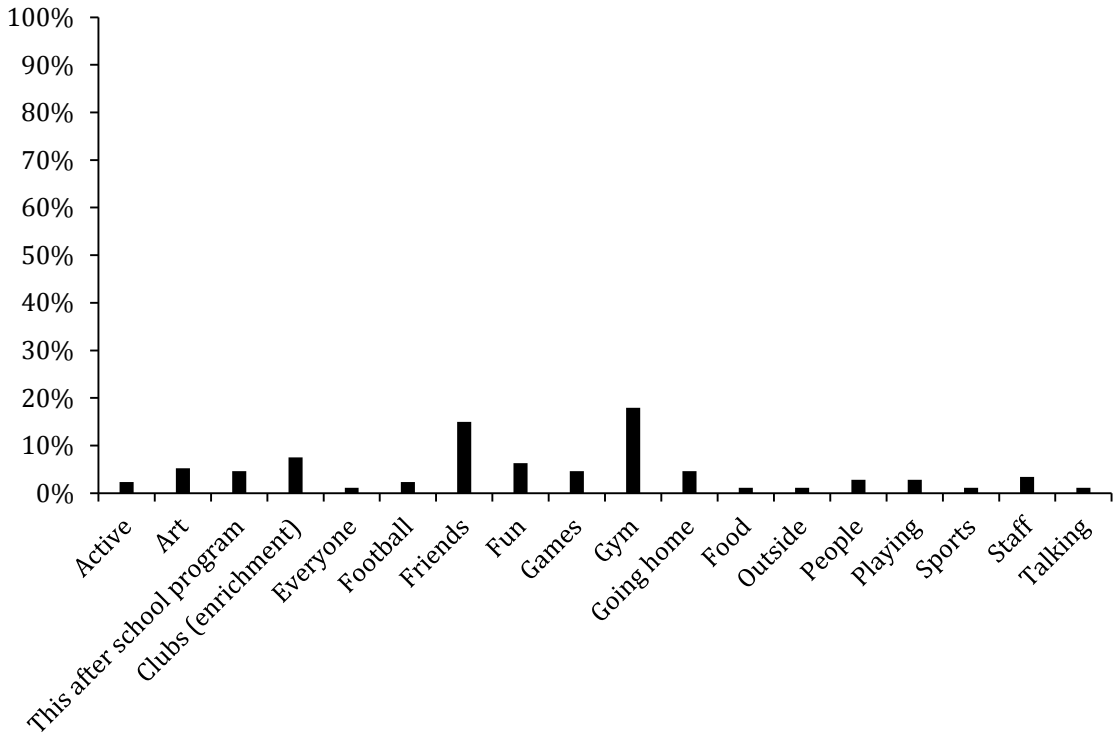
Favorite part of afters school program for all memebers

Note: From 337 surveys, the (12.8%) did not provide a response, therefore; was not included on the graph, in addition the responses to *New people, Outside,* and *Kids* had less than one percent response rate ($n < 1\%$) and were not displayed on the graph.

Figure 12. *Favorite part of the After School Program.*

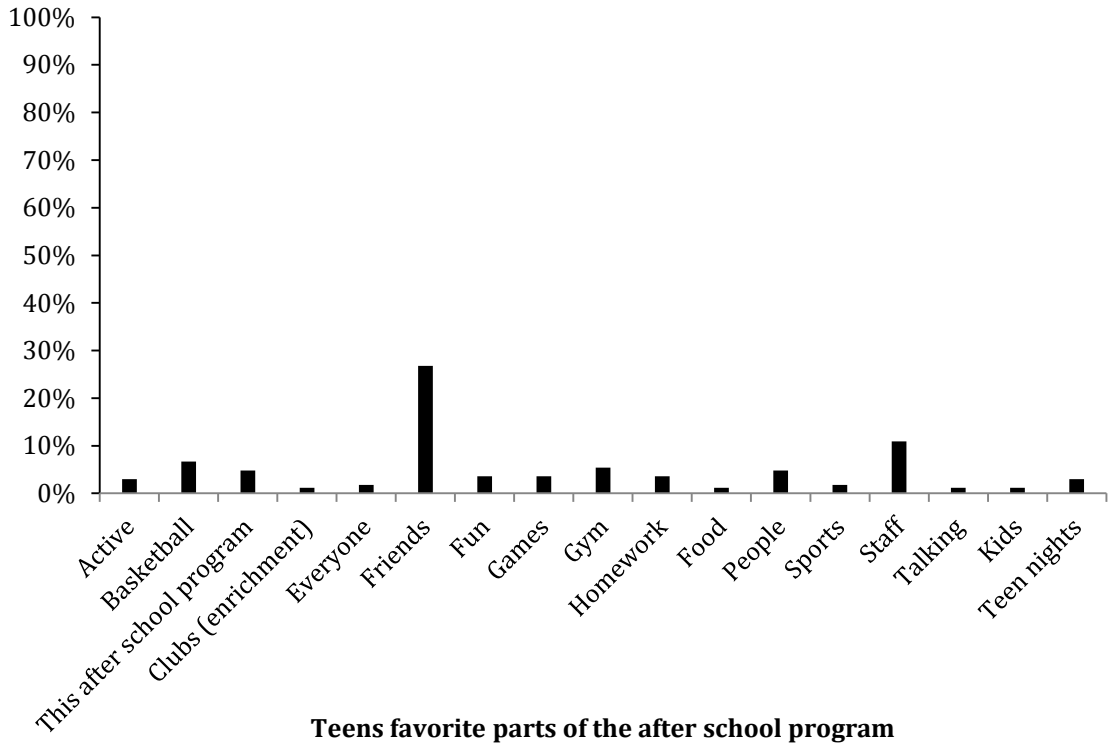
The favorite part of the ASP for youth was being in the Gym (17.9%). They also liked being with Friends (15%), participating in Clubs (7.5%), doing Nothing (7%), having Fun (6.3%), Art (5.2%), and being at the ASP (4.6%). Only 3.4% of youth said Staff was their favorite part of the ASP (*Figure 13*). Friends (26.8%) were teens' most

favorite part of the ASP with Staff (10.9%) being second most popular. The only other categories teen mentioned more than three percent of the time were Basketball (6.7%), the Gym (5.4%), the ASP in general (4.8%), People (4.8%), Homework (3.6%), and Teen nights (3%) (*Figure 14*).



Note: From 337 surveys the *No answer* (14.4%) response was not included on the graph in addition to responses with less than (n < 1%). These eliminated responses from the graph include *Basketball, New people, Kids, Homework, and Teen Nights.*

Figure 13. *Youths Favorite Parts of the After School Program*

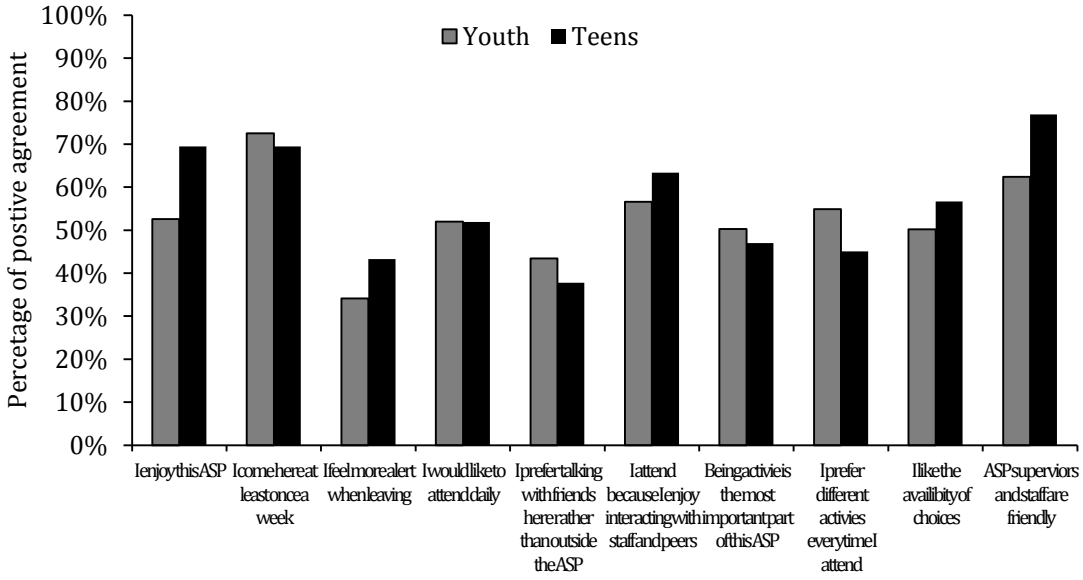


Note: From 337 surveys the *No answer* (10.9%) response was not included on the graph in addition to responses with less than (n < 1%). These eliminated responses from the graph include *Art, Football, Outside, Going Home, Playing,* and *New People.*

Figure 14. *Teens Favorite Parts of the After School Program*

Statements in Relation to the After School Program. As shown in Figure 15, both youth and teens had positive attitudes toward their experience when at the ASP. More than half of youth in all categories except *feeling more alert* (34.1%) and *preferring to talk with friends at the program instead of outside the program* (43.4%) agreed with statements relating to the ASP, including *activity as the most important element of the program* (50.3%). Like youth, teens recorded scores lower than 50 percent for *feeling alert* (43.3%), *choosing to talk with friends at the ASP over outside the ASP* (37.8%), *being active* (47%), and *wanting to play different activities every time attending* (45.1%).

Over 50 percent recorded *enjoying the ASP* (52.6% [youth] / 69.5% [teen]), *attending at least once a week* (72.5%/69.5%), *would like to attending the program daily* (52%/51.9%), *attended daily because they enjoy talking with staff and friends* (56.6%/63.4%), *playing different activates daily* (54.9%), *like the choices offered* (50.2%/56.7%), and think supervisors and staff are friendly (62.4%/76.9%).



Note: From 337 surveys the *Neutral*, *Disagree*, and *Strongly Disagree* response were not included on the graph. Results are shown in percentage by combining the *Agree* and *Strongly Agree* categories.

Figure 15. *Mean Percentage of Youth And Teen Participants Who "Agree"/"Strongly Agree" with Statements Regarding the ASP.*

Discussion

It is common for many students to enjoy spending time with their friends inside and outside of school; the same occurred for attending the ASP, they too enjoyed being at the program and socializing with friends. Using a social-ecological framework where people are part of a larger community whereby behaviors and decisions are influenced by

and within their community this was an investigation on behaviors of teens and youth attending the ASP, their perceived PA participation level over a typical week, and the perceptions of the ASP.

Physical Activity. The importance and benefits of increasing PA levels for youth has been the focus of many studies (e.g., Beets et al., 2009; Beets et al., 2012; Trost et al., 2008, & Vizcaino et al., 2008) while also trying to understand current trends in ASP experiences among young people. A goal of the study was to get a representation of activity that occurred during the past week of the participant using self-reporting. There were results that the researcher would not have predicted. With young people running around before, during, and afterschool it was surprising that almost a fourth of youth (24.3%) had not participated in activity that made them sweat the previous day. A third of youth (33.5%) and 43.9% of teens did not practice or play a sport team of any kind. This is similar to research by Washington (2005) and Strong et al. (2005), where authors reported inactivity was found to be a strong indicator of weight gain and adverse health effects.

As with most youth and teens, feeling and looking good is an important part of their being, thus being physically active is essential, and this activity gives them a high rate of self-identity (Strong et al., 2005). A high number of youth 32.4% and 23.9% of teen strongly agreed that being active was an important component of the ASP. Looking at these data, it can explain why many teens came to the ASP immediately after school to play in the gym and as soon as youth arrived they went home, even with ASPs providing opportunities and experiences some would not otherwise have (Vandell et al., 2005).

They wanted to play in a setting, not outside, where they could have competitive games with quality equipment provided. The researcher first did not notice this data as teens arrived early before data collection for PA was collected for the previous chapter.

The School Day. From the study the most alarming results were the hours of sedentary behaviors in front of televisions and computers on a school day. As technology decreases in price more and more families can afford to purchase technology thus many times homework has to be completed on a computer. It seemed unconceivable that 19.4% of youth had the time to watch four or more hours of television, while 14% of teens watched zero television on a typical day. Almost 20 percent of both youth (19.7%) and teens (18.9%) who attended the ASP played four or more hours of computer games in a typical school night, which is average for the minimum numbers of hours watched (4.5 hours) in a day (Rideout, Foehr, & Roberts, 2010). Robinson (1999) also found similar results for sedentary behaviors of youth over the course of a school week with video games, computer games, and television viewing which has shown an increase risk of 45% to being overweight (Braithwaite et al., 2013). In the future follow-up questions could ask participants the reasons for the hours watched television and what enables them to play so many hours of computer games; the lack of homework or the due diligence of completing homework in a timely manner?

Transportation to and from school shows that the majority of participants were driven in some type of motor vehicle. The researcher interpreted the results as that either parents do not live close the ASP or they did not feel it is safe for their child to walk themselves to the program. Similarly, McDonald (2007) focusing on how youth

transported to school. McDonald found many youth lived further away from school increasing the number who rode with parents in motorized vehicles while only 12.9% of students walked to school. In this study 16.5% percentage of teens walked to school and 6.4% of youths walked, while a greater number rode in motorized vehicles. Though communication with staff and the director of the ASP it was hard to gather an approximation of where youth and teens resided. Personal information of youth was sometimes not up to date.

The After School Program. Shernoff and Vandell (2007) conducted a study focusing on the experience of ASPs from the perspective of the participants. With many programs, the staff and employees there have an impact on those attending. ASP Results Shernoff and Vandell (2007) align with the current study with the majority of youth (44.5%) agreeing that staff were friendly and nice, while teens agreed at 60.4% of the time. This was also seen during observations of activity; when staff were active there were more boys and girls involved.

Within the structure of the research using a limited survey, a strength of the study was the information that staff and program directors can use the information to make changes to the programs' environment at the ASP and to the rest of the programs, including motivational strategies. This gives youth the opportunity to learn strategies on how to be utilize gyms, local parks, and activity centers while outside of their home, school, and ASP while also limiting their sedentary behaviors.

All research projects have their limitations, and the main limitations for this study were not being able to track and categorize youth and teens who completed the survey. In

addition there were no demographics for sex, grade level, or age for those taking the survey. When conducting this study in the future there are modifications that would increase the quality of the information. Including a gender and age question would allow the comparison between and across specific ages and genders. In addition having students keep a log of their activity over the past seven days would allow researchers to gather richer data that could further explain the youth and teen responses. Also, tracking students' responses by assigning a specific code would allow the research to track their change in attitude and participation levels over time. When conducting this study there was no way to record or assign ID numbers to participants so it was impossible to track changes over time so we do not know PA patterns for individuals, therefore when analyzing the data, researchers could only look at percentage of those in attendance. Furthermore, if given the opportunity, having a full school year for a study would allow the participants to take the survey multiple times and tracking how their attitude and activity levels change with the seasons and climate. This would bring an extra component to the study and would allow for a more detailed analysis.

Over the duration of the study some youth and teens took the survey multiple times. Ideally, the best results would come with all members of the ASP being required to take the survey monthly. This would allow the staff and researchers to understand the effectiveness of their program, by reflecting on current data from those attending.

Conclusion

In this study assessing students views of the ASP and their daily PA during the past week provided valuable feedback the program did not have previously. Both youth

and teens enjoyed their interaction with staff and other friends while attending the program, with more than half wanting to come daily, if given the opportunity. When attending the ASP, being with friends and being active inside the gymnasium/playing basketball was an important aspect for both youth and teens (see figures 12 and 13). Supervisors and staff at this ASP should understand their role and influence is bigger than they may have first imaged. This includes, influencing sedentary behaviors of youth and teens, especially when they engage in four or more hours of screen time with TV, computer games, or video games (see table 4 and figure 9). Both youth and teens want to interact frequently with their friends both inside and outside of school. The ASP allows for youth and teens to be with their friends while also providing a safe environment with supervision. Similarly to Huberty, Beets, Beighle, and McKenzie (2013), the ASP employees in this study should try to use the information to fully recognize the influence they have on the youth and teens attending, ensuring they positively influence activity and reduce and the hours of sedentary behaviors exhibited inside the ASP, while also promoting ways to incorporate acidity in their built environments.

References

Ainsworth, B.E., Sternfeld, B., Bensfield, J., & Cisco, S. (1996). Evaluation of the health plan activity survey. Medicine and Science in Sport and Exercise *(28)*S34.

Baecke, J.A., Burema, J., & Fritjers, J.E.R. (1982). A short questionnaire for the measurement of habitual physical activity in epidemiological studies. *The American Journal of Clinical Nutrition, 36,* 936-942.

Baranowski, T. (1998). Validity and reliability of self-report physical activity: An information processing perspective. *Research Quarterly for Exercise and Sport, 59,* 436-457.

Barbosa, N., Sanchez, C.E., Vera, J.A., Perez, W., Thalabard, J.C., & Rieu, M. (2007). A physical activity questionnaire: Reproducibility and validity. *Journal of Sports Science and Medicine, 6,* 505-518.

Barr-Anderson, D.J., Young, D.R., Sallis, J. F., Neumark-Sztainer, D.R., Gittelsohn, J., Webber, L., Saunder, R., Cohen, S., & Jobe, J.B. (2007). Structured physical activity and psychosocial correlates in middle-school girls. *Preventive medicine, 44,* 404-409.

Braithwaite, I., Stewart, A.W., Hancox, R.J., Beasley, R., Murphy, R., & Mitchell, E.A. (2013). The worldwide association between television viewing and obesity in children and adolescents: cross sectional study. *Plos One, 8,* 1-8.

Brener, N.D., Kann, L., McManus, T., Kinchen, S.A., Sundberg, E.C., & Ross, J.G. (2002). Reliability of the 1999 youth risk behavior survey questionnaire. *Journal of Adolescent Health, 31,* 336-342.

Bronfenbrenner, U. (1994). *Ecological models of human development*. (2nd ed., Vol. 3, pp. 37-43). Oxford: Elsevier.

Bruening, J.E., Dover, K.M., & Clark, B.S. (2009). Preadolescent female development through sport and physical activity: A case study of an urban after-school program. *Research Quarterly for Exercise and Sport, 80,* 87-101.

Centers for Disease Control and Prevention (1998). Youth Risk Behavior Survey Retrieved from www.cc.gov/yrbs

Chaumeton, N., Duncan, S.C., Duncan, T.E., & Strycker, L.A. (2011). A measurement model of youth physical activity using pedometer and self, parent, and peer reports. *International Journal of Behavioral Medicine, 18,* 209-215.

Chinapaw, M.J.M., Mokkink, L.B., van Poppel, M.N.M., van Mechelen, W., & Terwee., C.B. (2010). Physical activity questionnaires for youth. A systematic review of measurement properties. *The American Journal of Sports Medicine, 40,* 539-563.

Colchico, K., Zybert, P., & Basch, C.E. (2000). Effects of after-school physical activity on fitness, fatness, and cognitive self-perceptions: A pilot study among urban, minority adolescent girls. *American Journal of Public Health, 90,* 977-978.

Common Core of Data [CCD] (2012). *CCD Public school district data for the 2010-2011, 2011-2012 school years.* Retrieved from http://nces.ed.gov/ccd/districtsearch/district_detail.asp?Search=1&InstName=roosevelt&City=phoenix&DistrictType=1&DistrictType=2&DistrictType=3&DistrictType=4&DistrictType=5&DistrictType=6&DistrictType=7&NumOfStudentsRange=more&NumOfSchoolsRange=more&ID2=0407080&details=5

DuRant, R.H., Baranowki, T., Puhl, J., Rhodes, T., Davis, H., Greaves, K.A., & Thompson, W.O. (1993). Evaluation of the children's activity rating scale (CARS) in young children. *Medicine and Science in Sports and Exercise 25,* 1415-1421.

Eccles, J.S., & Templeton, J. (2002). Extracurricular and other after-school activities for youth. *Review of research in education, 26,*113-180.

Ekelund, U., Neovius, M., Linne, Y., Brage, S., Wareham, N.J., Rossner, S. (2005). Associations between physical activity and fat mass in adolescents: The Stockholm weight development study. *American Journal of Clinical Nutrition, 81,* 355-360.

Florida Department of Health. (2013, October 18). *Middle school health behavior survey*. Retrieved from http://www.floridahealth.gov/reports-and-data/survey-data/youth-risk-surveys/middle-school-health-behavior-survey/index.html

Golden, S.D., & Earp, J.L. (2012). Social ecological approaches to individuals and their contexts: Twenty years of health education & behavior health promotion interventions. *Heath Education Behavior, 39,* 364-372.

Hellison, D. (2000). Physical activity patterns for underserved youth. *Journal of Science and Medicine in Sport, 3,* 238-242.

Hellison, D., & Wright, P. (2003). Retention in an urban extended day program: A process-based assessment. *Journal of Teaching in Physical Education, 22,* 369-381.

Huberty, J.L, Beets, M.W., Beighle, A., & McKenzie, T.L. (2013). Association of staff behaviors and afterschool program features to physical activity: Findings from movin' after school. *Journal of Physical Activity and Health, 10,* 423-429.

Kohl III, H.W., Fulton, J.E., & Caspersen, C.J. (2000). Assessment of physical activity among children and adolescents: a review and synthesis. *Preventive Medicine, 31,* S54-S76.

Lobstein, T., Baur, L., & Uauy, R. (2004). Obesity in children and young people: A crisis in pubic health. *The International Association of The Study of Obesity. Obesity Reviews, 5,* 4-85.

McDonald, N.C., (2007). Active transportation to school. Trends among U.S. schoolchildren, 1969-2001. *American Journal of Preventive Medicine, 31,* 509-516.

McKenzie, T.L., Marshall, S.J., Sallis, J. F., & Conway, T.L. (2000). Leisure-time physical activity in school environments: An observational study using SOPLAY. *Preventive Medicine, 30,* 70-77.

Metzler, M.W., McKenzie, T.L., van der Mars, H., Barrett-Williams, S., & Ellis, R. (2013). Health optimizing physical education (HOPE). A new curriculum for school programs. Part 1: Establishing the need and describing the model. *Journal of Physical Education Recreation and Dance, 84,* 41-47.

Ogden, C., Carroll, M., Kit, B., & Flegal, K.M. (2012). Prevalence of childhood and adult obesity in the United States, 2011-2012. *The Journal of the American Medical Association, 311,* 806-814.

Pierce, K.M., Hamm, J.V., & Vandell, D.L. (1999). Experiences in after-school programs and children's adjustment in first-grade classrooms. *Child Development, 70,* 756-767.

Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y., & Podsakoff, N.P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of applied psychology, 88,* 879.

Raustorp, A., Stahle, A., Gudasic, H., Kinnunen, A., & Mattsson, E. (2005). Physical activity and self-perception in school children assessed with the children and youth-physical self-perception profile. *Scandinavian Journal of Medicine & Science in Sports, 15,* 126-134.

Rideout, V.J., Foehr, U.G., & Roberts, D.F. (2010). Generation of M2: Media in the lives of 8-to 18-year-olds. *Henry J. Kaiser Family Foundation Study*.

Robinson, T.N., (1999). Reducing children's television viewing to prevent obesity. A randomized controlled trial. *American Medical Association, 282,* 1561-1567.

Sallis, J.F., Saelens, B.E. (2000). Assessment of physical activity by self-report: Status, limitations, and future directions. *Research Quarterly for Exercise and Sport, 71,* 1-14.

Sternfeld, B., Ainsworth, B.E., & Quesenberry, C.P. (1999). Physical activity patterns in a diverse population of women. *Preventative Medicine, 28,* 313-323.

Strong, W.B., Malina, R.M., Blimkie, C.J., Daniels, S.R., Dishman, R.K., Gutin, B., Hergenroeder, A.C., Must, A., Nixon, P.A., Pivarnik, J.M., Rowland, T., Trost, S., & Trudeau, F. (2005). Evidence based physical activity for school-age youth. *The Journal of pediatrics, 146,* 732-737.

Tappe, K.A., Glanz, K., Sallis, J.F., Zhou, C., & Saelens, B.E. (2013). Children's physical activity and parents' perception of the neighborhood environment: Neighborhood impact on kids study. *International Journal of Behavioral Nutrition and Physical Activity, 10,* 1479-5868.

U.S. Census Bureau (2010). *Demographics in the United States*. Retrieved from http://www.zip-codes.com/zip-code/85250/zip-code-85250.asp

Vandell, D.L., Shernoff, D.J., Pierce, K.M., Bolt, D.M., Dadisman, K., & Brown, B.B. (2005). Activities, engagement, and emotion in after-school programs (and elsewhere). *New Directions for Youth Development, 105,* 121–129.

Vizcaino, V.M., Aguilar, F.S., Gutierrez, R.F., Martinez, M.S., Lopez, M.S., Martinez, S. S., Garcia, E.L., & Artalejo, F.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.

Washington, R.L. (2005). Does increasing physical activity really make a difference? Show me the evidence. *The Journal of Pediatrics,* 146, A2.

Weir, L.A., Etelson, D., & Brand, D.A. (2006). Parents' perceptions of neighborhood safety and children's physical activity. *Preventive Medicine, 43,* 212-217.

Chapter 5: Summary

More than 30 years ago the children and adolescents being overweight or obese was uncommon, but since then obesity has risen 34% and childhood obesity has tripled (Hedley et al., 2004; Trost, Rosenkraz, & Dzewaltowski, 2008). This observational study focused on physical activity (PA) rates of boys and girls attending an ASP and the promotion of activity by staff members along with participants' views of the ASP. Results from the first study showed the ASP provided youth and adolescents accessibly, usability, supervision, and equipment in activity areas close to 50% of the time if not more. This was similar to other studies researching activity rates while attending ASPs and the structure of those programs (Beets et al., 2014; Beighle et al., 2010; & Trost, Rosenkraz, and Dzewaltowski, 2008). An important part of getting youths and adolescents moving is providing them opportunities in a safe and structured environment. Our study provided first time information to site coordinators with how their ASP utilizes activity areas, promotes activity, and their staff and student interactions.

The ASP provided a variety of learning environments, activity areas, supervision and times the program was held, and were consistent with other studies on ASPs (e.g., Beighle & Moore, 2012; Harplen, 1999; Sallis et al., 2012). The total number of observed boys and girls engaged in moderate to vigorous physical activity (MVPA) were highest in designated areas for activity (gym, blacktop, and fields), with boys being more active across all observations than girls, consistent with other research using similar protocols (e.g., McKenzie et al., 2000). In addition the percentage of boys engaged in MVPA was higher than girls (85.72%) throughout the study.

Before the initiation of this study, the ASP personnel received an email from their administrators wanting them to emphasize and focus on the importance of PA. They did not follow or set standards for employees but emphasized staff should ensure students are engaged in PA at their programs. Boys and girls attending the program did not meet recommended ASP standards of at least 30 minutes a day of PA (Wiecha, Hall, Gannett, & Roth, 2011). Other ASP based studies found boys and girls have found similar results (e.g., Beets et al., 2012; Beets et al., 2014; Beighle, Morgan, Masurier, & Pangrazi, 2006). This study had a higher proportion of boys engaged in MVPA than girls, in all activity areas except one. Although the importance of modeling PA, and the promotion of PA has been emphasized in previous studies focused in ASPs (Beets, 2012; Beighle et al., 2010) this study's results were similar to Trost, Rosenkranz, and Dzewaltowski (2008) showing a need from ASPs directors to communicate the importance of movement and staff influence (promotion) on boys and girls PA. Although during one observation the *teen director* closed all the doors and made all teens go outside for thirty minutes.

The second manuscript results focused on perceptions of boys and girls attending an ASP and their activity over the past week. Bronfenbrenner's social-ecological framework (1994) illustrating how individuals are apart of a larger intertwined, layered system, that influences behaviors throughout a lifetime was seen in the data. Both youths (k-12) and teens (13-18) had similar answers within their own specific age groups. Over a third of both groups were not actively playing or practicing as a part of a team. Similar to other studies (e.g., Charles et al., 2008; Strong et al., 2005;), both boys and girls increased their days of sedentary behavior as they became older; teens almost doubled the days of sedentary behavior compared to their younger peers. When not in school, over

half of teens and youth were active at least twice a day, with even more going to skateparks or fields to play.

Having friends, being with friends, and playing with friends were one of the two highest favorite parts of the ASP by youth and teens. While clubs and having fun were high on the youth list it was not for the teens. Staff was the second highest favorite part of the ASP for teens. While observing, researchers noticed the constant interaction of teens and staff engaged in videogames, music, and conversation. From the many observations it appeared that some of the teens looked up to the staff in a mentor/older sibling way, which is why it is even more important to ensure, staff are promoting being active in a positive environment (Baker & Witt, 1996), which was not mentioned more than three percent of the time in all of the observations.

Youth and teens were given a Likert type scale referencing their routines and attitudes about the ASP. Over half of the youth and teen attending at least once a week, would like to come daily, and enjoyed being at the ASP. These results are consistent with previous published research where participants had a choice in their activity and positive experiences at ASPs (Dobbins, Husson, Decorby, & LaRocca, 2013; Vandell et al., 2005). In addition both group identified sports and activity as the most important parts of the ASP, which is consistent with prior research where sports were identified as the most popular activity at ASPs (e.g., Shernoff & Vandell, 2007; Vandell et al., 2005). The data informed the researchers youth and teens liked the choices the program had to offer, the variety with activity, and the interaction with staff. Overall youth and teens enjoyed their total experiences at the ASP.

References

Baker, D., & Witt, P.A. (1996). Evaluation of the impact of two after-school programs. *Journal of Park and Recreation Administration, 14*, 60-81.

Beets, M.W. (2012). Active Living Research: Research Brief May 2012. Policies and standards for promoting physical activity in after-school programs. Retrieved from http://www.activelivingresearch.org/afterschool

Beets, M.W., Beighle, A., Bottai, M., Rooney, L., & Tilley, F. (2012). Pedometer-determined step-count guidelines for afterschool programs. *Journal of Physical Activity & Health, 9*, 71-77.

Beets, M.W., Weaver, R., Moore, J., Turner-McGrievy, G., Pate, R., Webster, C., & Aaron, B. (2014). From policy to practice: Strategies to meet physical activity standards in YMCA afterschool programs. *American Journal of Preventive Medicine, 46*, 281-288.

Beighle, A., Beets, M.W., Erwin, H.E., Huberty, J., Moore, J.B., & Stellino, M. (2010). Promoting physical activity in afterschool programs. *Afterschool Matters, 11*, 24-32.

Beighle, A., & Moore, M. (2012). Physical activity before and after school. *Journal of Physical Education Recreation and Dance, 83*, 25-28.

Beighle, A., Morgan, C.F., Le Masurier, G., & Pangrazi, R. (2006). Children's physical activity during recess and outside of school. *Journal of School Health, 76*, 516-520.

Bronfenbrenner, U. (1994). *Ecological models of human development*. (2nd ed., Vol. 3, pp. 37-43). Oxford: Elsevier.

Dobbins, M., Husson, H., DeCorby, K., & LaRocca, R.L. (2013). School-based physical activity programs for promoting physical activity and fitness in children and adolescents aged 6 to 18. *Cochrane Database Syst Rev, 2*.

Hedley, A.A., Ogden, C.L., Johnson, C.L., Carroll, M.D., Curin , L.R., & Flegal, K.M. (2004). Prevalence of overweight and obesity among us children, adolescents, and adults, 1999-2002. *Journal of the American Medical Association, 291*, 2847-2850.

Matthews, C. E., Chen, K. Y., Freedson, P. S., Buchowski, M. S., Beech, B. M., Pate, R. R., & Troiano, R. P. (2008). Amount of time spent in sedentary behaviors in the United States, 2003–2004. *American journal of epidemiology, 167*, 875-881.

McKenzie, T.L., Marshall, S.J., Sallis, J.F., & Conway, T.L. (2000). Leisure-time physical activity in school environments: An observational study using SOPLAY. *Preventive Medicine*, *30,* 70-77.

Trost, S.G., Rosenkranz, R.R., & Dzewaltowski, D. (2008). Physical activity levels among children attending after-school programs. *Medicine & science in sports & exercise, 40,* 622-629.

Sallis, J.F., Carlson, J.A., Mignano, A.M., Lemes, A., & Wagner, N. (2012). Trends in presentations of environmental and policy studies related to physical activity, nutrition, and obesity at society of behavioral medicine, 1995-2010: A commentary to accompany the active living research supplement to Annals of Behavioral Medicine. *Annals of Behavioral Medicine, 45,* S14-S17.

Shernoff, D.F., & Vandell, D.L., (2007). Engagement in after-school program activities: Quality of experience from the perspective of participants. *Journal of Youth Adolescence, 36,* 891-903.

Strong, W.B., Malina, R.M., Blimkie, C.J., Daniels, S.R., Dishman, R.K., Gutin, B., Hergenroeder, A.C., Must, A., Nixon, P.A., Pivarnik, J.M., Rowland, T., Trost, S., & Trudeau, F. (2005). Evidence based physical activity for school-age youth. *The Journal of pediatrics*, *146*(6), 732-737.

Vandell, D.L., Shernoff, D.J., Pierce, K.M., Bolt, D.M., Dadisman, K., & Brown, B.B. (2005). Activities, engagement, and emotion in after-school programs (and elsewhere). *New Directions for Youth Development, 105,* 121–129.

Wiecha, J.L., Hall, G., Gannett, E., & Roth, B., (2011). National AfterSchool Association for Healthy Eating and Physical Activity. Retrieved from http://www.niost.org/Standards-and-Guidelines/national-afterschool-association-standards-for-healthy-eating-and-physical-activity-in-out-of-school-time-programs

APPENDIX A

IRB APPROVAL AND ADDENDUM

ASU Knowledge Enterprise Development

Office of Research Integrity and Assurance

To:	Hans Van Der Mars Santa Cata
From:	for Mark Roosa, Chair DM Soc Beh IRB
Date:	08/02/2013
Committee Action:	**Expedited Approval**
Approval Date:	08/02/2013
Review Type:	Expedited F7
IRB Protocol #:	1306009337
Study Title:	After school program in a lower-income community: What is happening?
Expiration Date:	08/01/2014

The above-referenced protocol was approved following expedited review by the Institutional Review Board.

It is the Principal Investigator's responsibility to obtain review and continued approval before the expiration date. You may not continue any research activity beyond the expiration date without approval by the Institutional Review Board.

Adverse Reactions: If any untoward incidents or severe reactions should develop as a result of this study, you are required to notify the Soc Beh IRB immediately. If necessary a member of the IRB will be assigned to look into the matter. If the problem is serious, approval may be withdrawn pending IRB review.

Amendments: If you wish to change any aspect of this study, such as the procedures, the consent forms, or the investigators, please communicate your requested changes to the Soc Beh IRB. The new procedure is not to be initiated until the IRB approval has been given.

Please retain a copy of this letter with your approved protocol.

ASU Knowledge Enterprise Development

Office of Research Integrity and Assurance

To:	Hans Van Der Mars Santa Cata
From:	Mark Roosa, Chair Soc Beh IRB
Date:	08/20/2013
Committee Action:	**Amendment to Approved Protocol**
Approval Date:	08/20/2013
Review Type:	Expedited F12
IRB Protocol #:	1306009337
Study Title:	Physical Activity Patterns and Stakeholders Perceptions of After School Programs
Expiration Date:	08/01/2014

The amendment to the above-referenced protocol has been APPROVED following Expedited Review by the Institutional Review Board. This approval does not replace any departmental or other approvals that may be required. It is the Principal Investigator's responsibility to obtain review and continued approval of ongoing research before the expiration noted above. Please allow sufficient time for reapproval. Research activity of any sort may not continue beyond the expiration date without committee approval. Failure to receive approval for continuation before the expiration date will result in the automatic suspension of the approval of this protocol on the expiration date. Information collected following suspension is unapproved research and cannot be reported or published as research data. If you do not wish continued approval, please notify the Committee of the study termination.

This approval by the Soc Beh IRB does not replace or supersede any departmental or oversight committee review that may be required by institutional policy.

Adverse Reactions: If any untoward incidents or severe reactions should develop as a result of this study, you are required to notify the Soc Beh IRB immediately. If necessary a member of the IRB will be assigned to look into the matter. If the problem is serious, approval may be withdrawn pending IRB review.

Amendments: If you wish to change any aspect of this study, such as the procedures, the consent forms, or the investigators, please communicate your requested changes to the Soc Beh IRB. The new procedure is not to be initiated until the IRB approval has been given.

Please retain a copy of this letter with your approved protocol.

APPENDIX B

SOPLAY AND SOFIT OBSERVATION INSTRUMENTS

School ID: BGCS R L Date: / / D8 D9 D10 D11

Sheet ___ of ___ .

SOPLAY (System for Observing Play and Leisure Activity in Youth)

Obs. ID #: ___ ___ Reliability: 0. No 1. Yes Temp: ___ ___F Period: 1. BS / 2. L1s1 L1s2 / 3. L2s1 L2s2 / 4. L3s1 L3s2 / 5. AS1 6. AS2 7. AS3

START TIME	AREA		CONDITION					GIRLS				BOYS			
											Tot. Area				Tot. Area
		T. Pract Game/Clu/Class	Access?	Usable?	Supery?	Organi?	Equip 2	S	W	V	Act.	S	W	V	Act.
__ __ : __ __ *Teen Outside*	1	0. N 1 Ypr 2 Ygu 3 Yclu 4 Ycla	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst								
__ __ : __ __ *Teen Center (Game)*	2	0. N 1 Ypr 2 Ygu 3 Yclu 4 Ycla	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst								
__ __ : __ __ *Teen Center (Kitchen)*	3	0. N 1 Ypr 2 Ygu 3 Yclu 4 Ycla	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst								
__ __ : __ __ *Learning Center*	4	0. N 1 Ypr 2 Ygu 3 Yclu 4 Ycla	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst								
__ __ : __ __ *Game Room*	5	0. N 1 Ypr 2 Ygu 3 Yclu 4 Ycla	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst								
__ __ : __ __ *Gym (& Stage)*	6	0. N 1 Ypr 2 Ygu 3 Yclu 4 Ycla	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst								
__ __ : __ __ *Blacktop / Basketball*	7	0. N 1 Ypr 2 Ygu 3 Yclu 4 Ycla	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst								
__ __ : __ __ *Four Square*	8	0. N 1 Ypr 2 Ygu 3 Yclu 4 Ycla	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst								
__ __ : __ __ *Field East*	9	0. N 1 Ypr 2 Ygu 3 Yclu 4 Ycla	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst								
__ __ : __ __ *Field West*	10	0. N 1 Ypr 2 Ygu 3 Yclu 4 Ycla	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst	0.N 1.Y 2.Yut 3.Yst								

Comments:

1	2	3	4	5	6	7	8	9	10

Activity Codes: 0=No identifiable activity 1=Aerobics 2=Baseball/Softball 3=Basketball 4=Dance 5=Football 6=Gymnastics 7=Combative/Martial Arts 8=Racquet sports 9=Soccer 10=Swimming 11=Volleyball 12=Weight Training 13=Other rec. games 14=Track & Field 15=Jogging 16=None of the above

SOPLAY Recording Form 10/26/14

SOFIT RECORDING FORM

Date _____ School _____ Grade __ Teacher _____ Tchr Gen: M F
Time start _____ Observer _____ Rel obs ____ No girls ____ boys ____ Location: O I
Time end _____ Lesson Length _____ No of obs. ____ Page 1 2 3 4 of __

	Interval	Student Activity	Lesson Context	Interactions	NOTES
	1	1 2 3 4 5	M K F S G O	I O N	
	2	1 2 3 4 5	M K F S G O	I O N	
	3	1 2 3 4 5	M K F S G O	I O N	
o	4	1 2 3 4 5	M K F S G O	I O N	
n	5	1 2 3 4 5	M K F S G O	I O N	
e	6	1 2 3 4 5	M K F S G O	I O N	
	7	1 2 3 4 5	M K F S G O	I O N	
m/f	8	1 2 3 4 5	M K F S G O	I O N	
	9	1 2 3 4 5	M K F S G O	I O N	
	10	1 2 3 4 5	M K F S G O	I O N	
	11	1 2 3 4 5	M K F S G O	I O N	
	12	1 2 3 4 5	M K F S G O	I O N	
	13	1 2 3 4 5	M K F S G O	I O N	
	14	1 2 3 4 5	M K F S G O	I O N	
	15	1 2 3 4 5	M K F S G O	I O N	
t	16	1 2 3 4 5	M K F S G O	I O N	
w	17	1 2 3 4 5	M K F S G O	I O N	
o	18	1 2 3 4 5	M K F S G O	I O N	
	19	1 2 3 4 5	M K F S G O	I O N	
	20	1 2 3 4 5	M K F S G O	I O N	
m/f	21	1 2 3 4 5	M K F S G O	I O N	
	22	1 2 3 4 5	M K F S G O	I O N	
	23	1 2 3 4 5	M K F S G O	I O N	
	24	1 2 3 4 5	M K F S G O	I O N	
	25	1 2 3 4 5	M K F S G O	I O N	
	26	1 2 3 4 5	M K F S G O	I O N	
	27	1 2 3 4 5	M K F S G O	I O N	
t	28	1 2 3 4 5	M K F S G O	I O N	
h	29	1 2 3 4 5	M K F S G O	I O N	
r	30	1 2 3 4 5	M K F S G O	I O N	
e	31	1 2 3 4 5	M K F S G O	I O N	
e	32	1 2 3 4 5	M K F S G O	I O N	
	33	1 2 3 4 5	M K F S G O	I O N	
m/f	34	1 2 3 4 5	M K F S G O	I O N	
	35	1 2 3 4 5	M K F S G O	I O N	
	36	1 2 3 4 5	M K F S G O	I O N	
	37	1 2 3 4 5	M K F S G O	I O N	
	38	1 2 3 4 5	M K F S G O	I O N	
	39	1 2 3 4 5	M K F S G O	I O N	
f	40	1 2 3 4 5	M K F S G O	I O N	
o	41	1 2 3 4 5	M K F S G O	I O N	
u	42	1 2 3 4 5	M K F S G O	I O N	
r	43	1 2 3 4 5	M K F S G O	I O N	
	44	1 2 3 4 5	M K F S G O	I O N	
	45	1 2 3 4 5	M K F S G O	I O N	
m/f	46	1 2 3 4 5	M K F S G O	I O N	
	47	1 2 3 4 5	M K F S G O	I O N	
	48	1 2 3 4 5	M K F S G O	I O N	

APPENDIX C

PHYSICAL ACTIVITY SURVEY

Think about all the activities you did during the past 7 days, and then answer the questions below						
#	Question	0 Days	1 Day	2-3 Days	4-5 Days	6-7 Days
1	Practice or play a team sport, even if you were practicing by yourself	☐	☐	☐	☐	☐
2	Play other games like kickball, handball, tetherball, wall ball, etc.	☐	☐	☐	☐	☐
3	Play other active games like capture the flag	☐	☐	☐	☐	☐
4	Walk quickly (for more than 10 minutes at a time)	☐	☐	☐	☐	☐
5	Run (for more than 10 minutes at a time)	☐	☐	☐	☐	☐
6	Practice martial arts, wrestling, kickboxing, MMA, or similar sport	☐	☐	☐	☐	☐
7	Do any kind of dance or gymnastics (dance class, aerobics, etc.)	☐	☐	☐	☐	☐
8	Skate, skateboard, or ride a scooter (non motorized)	☐	☐	☐	☐	☐
9	Swim	☐	☐	☐	☐	☐
10	Ride a bicycle outdoors	☐	☐	☐	☐	☐
11	Lift weights, sit ups, push-ups or activities to build muscles	☐	☐	☐	☐	☐
12	Work out on exercise equipment like treadmill or rock climbing wall	☐	☐	☐	☐	☐
When not in school how many days in the past week did you do the following						
#	Question	0 Days	1 Day	2-3 Days	4-5 Days	6-7 Days
13	Go to a park outdoor skatepark, sports field, or ball court, where you were physically active outside not during school	☐	☐	☐	☐	☐
14	Go to an After school program, indoor skate park, ball court or places where you were physically active indoors not during school	☐	☐	☐	☐	☐
15	Biking, walking, or jogging trail, or track not during school	☐	☐	☐	☐	☐
16	Do any physical activity in the streets or yards of your neighborhood	☐	☐	☐	☐	☐
17	Play on a sports team of any kind	☐	☐	☐	☐	☐
18	Do physical activity at your school but not during school hours	☐	☐	☐	☐	☐
Think about the activities you did yesterday, both in school and outside of school						
#	Question	0 – 10 minutes	10 – 20 minutes	20 – 30 minutes	30 – 60 minutes	More than 60 minutes
19	Exercising or doing a physical activity that made you sweat or breathe hard? (basketball,	☐	☐	☐	☐	☐

	soccer, running, etc.)					
20	Participating in a physical activity that did not make you sweat or breathe hard?	☐	☐	☐	☐	☐

21. **On an average school day, how many hours do you watch TV? (Circle check one)**

___None at all ___Less than1 hour per day ___1 – 2 hours per day
___2 – 3 hours per day ___3 – 4 hours per day ___4 or more hours per day

22. **On an average school day, how many hours do you play video or computer games or watch DVDs or use a computer for something that is not schoolwork? (Include activities such as Nintendo, Game Boy, PlayStation, Xbox, computer games, and the Internet). (Circle check one)**

___None at all ___Less than1 hour per day ___1 – 2 hours per day
___2 – 3 hours per day ___3 – 4 hours per day ___4 or more hours per day

23. **How did you get to school yesterday?**

Walked I rode a bike, skateboard, skates, or scooter (non motorized) I rode in a car
I rode the bus Other_____

24. **How did you get home from school yesterday?**

Walked I rode a bike, skateboard, skates, or scooter (non motorized) I rode in a car
I rode the bus Other_____

For each of the following statements, select the number that best describes your level of agreement:

1 = Strongly Disagree (SD)
2 = Disagree (D)
3 = Neither Satisfied nor Dissatisfied / Neutral (N)
4 = Agree (A)
5 = Strongly Agree (SA)

Statement	1 (SD)	2 (D)	3 (N)	4 (A)	5 (SA)
25. I enjoy coming to this after school program.					
26. I come to this program at least once each week.					
27. I feel more awake / alert when I leave this program than I felt when I arrived.					
28. I would like to be able to attend this program each day of the school week.					
29. I prefer to just talk with my friends here at this program instead of outside the program.					
30. I attend this program because I enjoy interacting with both staff and peers (friends) of all ages.					
31. Being able to be active is the most important part of THIS after school program.					
32. I prefer to play different activities each time I attend.					
33. I like the available activity choices I have here at the after school program					
34. The program supervisors and staff are friendly and helpful.					

Complete the following sentence:
"My favorite part of the after school program is . . . _____

_____."

PLEASE RETURN THE COMPLETED QUESTIONNAIRE
TO THE PERSON WHO GAVE IT TO YOU.
THANK YOU AND HAVE A GREAT DAY!

APPENDIX D

AFTER SCHOOL PROGRAM NEW EMPLOYEE TRAINING AND ORIENTATION CHECKCLIST

NEW EMPLOYEE BRANCH ORIENTATION CHECKLIST

Employee Name: _____

Start Date:

Branch Staff: Use this checklist as a tool for ensuring that necessary items / areas have been covered during the orientation period. Initial next to each item when after it has been covered thoroughly.

General Information

- ☐ Welcome new staff member
- ☐ Introduction to fellow Branch/Dept. Staff
- ☐ Give employee a complete tour of facility
- ☐ Show location of restrooms, fire extinguishers, cleaning equipment, first-aid kits, break areas, etc.
- ☐ Show labor law bulletin board
- ☐ Discuss how job fits into department
- ☐ Discuss how job fits into Club operation
- ☐ Discuss Branch expectations
- ☐ Values of the organization
- ☐ Leadership University
- ☐ www.mypaychexonline.com
- ☐ www.bgca.net

Work Rules & Requirements

- ☐ Explain work hours
- ☐ Training Requirements
- ☐ Clocking in/out for lunch breaks
- ☐ Absence & tardiness reporting rules
- ☐ Vacation hours & requests
- ☐ Sick Time and when doctor's notes are required
- ☐ Performance reviews: 90-Day and Annual
- ☐ Who to contact in the event of an emergency
- ☐ Safety Procedures and Accident Forms
- ☐ Use of telephones, voice, email, website & intranet
- ☐ Building Keys and Alarm Codes (if applicable)
- ☐ Use of electronic equipment (copies, computers, fax, etc.)
- ☐ Training Requirements

Club Information, Additional Form Review, and Driver Information (as applicable)

- ☐ Explain area procedures and program requirements
- ☐ Weekly Facility Maintenance Report
- ☐ Facility Use Agreement
- ☐ Field Trip Guidelines
- ☐ Field Trip Permission Forms
- ☐ Out of County/State Field Trip Forms
- ☐ Administration of Medication Form
- ☐ Check Requests / Purchase Orders
- ☐ Purchasing Supplies
- ☐ Fire Drill/ Risk Management
- ☐ Right to report – child abuse
- ☐ Working with Volunteers
- ☐ Volunteer Applications and Process
- ☐ Van Driver Policy
- ☐ Mileage Reimbursement
- ☐ Gas Cards
- ☐ Purchase Policy
- ☐ Vehicle Accident Form
- ☐ Insurance Indemnification Policy
- ☐ Operations Procedures
- ☐ Club-wide forms
- ☐ Additional resources
- ☐ Branch Buddy
- ☐ Member injury/illness
- ☐ Emergency response / Risk Management
- ☐ Vehicle Maintenance Form

New hire training includes expectations on how staff will act as role models for the youth. This is done by staff working together with fellow employees, in a spirit of cooperation, mutual respect, and teamwork while also performing duties with honesty, integrity and professionalism. Staff understanding the importance of detail in the service they provide to both youth and parents. They will also show initiative in carrying out

duties. In addition they will be receptive to the concerns of members and parents alike. Finally staff are expected to show up on time ready and prepared for the day.

Safety and supervision training informed staff regarding how to perform active supervision and maintain a safe environment for the youth in the ASP's as the number one priority. Staff will up moving consistently and constantly monitoring the program for safety hazards. It is understood staff will never leave their designated area, if the staff need to leave the area, it will be locked when not in use. The interactions with youth and parents will be appropriate and respectful. If discipline concerns arise, staff will speak with the ASP director to ensure proper youth growth and development. Staff will know age appropriate activities for each group and know when not to mix youth of different ages.

Quality training covered how classes are planned and have specific goals and outcomes. Lesson plans are not provided in this ASP, but concepts and goals for each class are covered. Monthly calendars were provided by staff to the Branch Manager that are creative, innovative, and designate the proper allotment of time for the development of the youth within classes. A variety of activities were offered to the youth to choose from, they included: Glee club, baseball, Fact or Fiction, kitchen (baking arts), music/technology, Green thumb, Beanzine (magazine for the ASP), cooking sessions, book art, Funky Junk, Rock Hounds, Buds, First Lego League, Comic book club, Mixed media, Multicultural arts classes, Torch club, and the Hardy Brain Camp. Staff will constantly be interacting with youth, not simply observing them.

Customer service training was covered on how each staff member will greet all youth by name with a smile. Positive feedback will be given to youth and parents daily. Staff members need to be constantly monitoring and evaluating youth. In addition, staff need to acknowledge all parents and use please and thank you for all in the ASP and have accurate information to give to all people about the program.

Organized and professional training informed staff how their calendars will be turned in on a monthly basis. Staff were taught how to properly set-up there area for youth. Dress code was coved emphasizing the importance of always wearing closed toed shoes, staff shirts and the necessary staff badges. Staff members were informed about policy regarding sitting on tables, counters, walls, and only playing music if it corresponds for the program area purpose

After training was completed and the program began, facilitators met weekly to discuss and review what occurred at the ASP that week. Facilitators were instructed to have open dialog with the university director to what successes they had and any issues that arose. This was also the setting where questions can be asked and suggestions made to better tailor the ASP.