The Effectiveness of the Missoula Active 6 Afterschool Program on Participation and Health Outcomes

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THE EFFECTIVENESS OF THE MISSOULA ACTIVE 6 AFTERSCHOOL PROGRAM
ON PARTICIPATION AND HEALTH OUTCOMES

BY

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Bachelor of Arts, University of San Francisco, San Francisco, CA 2011

Thesis

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The Effectiveness of the Active 6 Afterschool Program on Participation and Health Outcomes

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The afterschool environment has arisen as one of the main settings for physical activity programs that aim to prevent childhood obesity and increase physical activity (Beets et al., 2009). The YMCA Active 6 program was created in 2010 in reaction to the obesity and physical activity trends in Montana’s youth. The program aims to increase physical activity in sixth grade participants and to educate them on different components that contribute to a healthy lifestyle.

The purpose of the study was to assess the Active 6 program’s impact on sixth grade students in Missoula, MT. by increasing physical activity, decreasing sedentary behavior, increasing perceived self-efficacy, and improving health perceptions and knowledge. The study also determined if there was a relationship between rate of participation and program impact. In addition, the study assessed the program impact between specific groups, gender (male, female) and SES (low, high). The study also aimed to understand the parent’s perceptions of the program.

Matching pre-and post-surveys were given to all participating sixth graders. Qualitative data was collected from conducting phone interviews with parents of sixth graders who were registered but not participating in the program, and parents of students who regularly participate in the program.

Results showed that sixth grade participants had a significant increase in health perceptions and knowledge, daily minutes of physical activity, and physical activity self-efficacy from pre-to post assessment. In addition, the results showed that the program did not have a significant impact on gender (male, female) nor socioeconomic status (low, high). The study revealed that participation rate was not a significant predictor of program impact. The qualitative interview data results revealed that transportation was the biggest barrier to participation in the Active 6 program. The parents of students who were registered but not participating communicated an adequate understanding of the program. Parents of students who regularly participated felt the program impacted their child by increasing their activity level, improving their mood, and teaching them new skills. The findings from this study will be used by the Missoula, YMCA to develop, improve, & refine the Active 6 program strategies.
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CHAPTER ONE

Over the past two decades, the rate of overweight and obese citizens in the United States has increased immensely (Hedley et al., 2004). This is especially prevalent in the lower socio-economic status groups, as they have the highest rate of overweight and obesity (Wang, 2001). Furthermore, the prevalence of childhood obesity has continued to rise over the past three decades (Han, Lawlor, & Kim, 2010). Childhood obesity has become a national health concern, as it is associated with a number of health consequences such as hypertension, diabetes, increased adult mortality, and cardiovascular disease (Han et al., 2010). As obesity rates have risen in children, their activity levels have decreased. It has been found in past research that activity levels decline from elementary school to middle school, and again from middle school to high school (Trost et al., 2002). Aaron, Storti, Robinson, Kriska, & LaPorte (2002) reported a 26% decrease in activity levels in study participants across a four-year period from age 12 to 15. Organizations need to target children in middle school to initiate participation in specific activities to maintain adolescent’s participation in physical activities into high school (Aaron et al., 2002). The drop in activity levels from childhood to adolescence, and the health consequences associated with childhood obesity has pushed to country to take action to combat these problems in children and youth (Han et al., 2010).

Montana is currently faced with the challenge of decreasing the rates of childhood obesity. According to the Centers for Disease Control and Prevention (CDC) among Montana children aged 2-5, 15.9% were overweight and 12.2% were obese (CDC, 2012). In 2011, the Youth Risk Behavior Survey (YRBS) reported that 12.9% of 9th to 12th graders in Montana were overweight and 8.5% were obese (CDC YRBS, 2011).
In response to this national health concern, more programs have emerged that increase energy expenditure (Han et al., 2010). The afterschool environment has arisen as one of the main settings for physical activity programs that aim to prevent childhood obesity and increase physical activity (Beets et al., 2009). One of the key challenges of afterschool programs is to reach the at-risk children from the lower SES families (Weisman & Gottfredson, 2001). In reaction to the obesity and physical activity trends in Montana’s youth, the Missoula YMCA created the Active 6 afterschool program in an effort to increase activity in all Missoula sixth graders especially those from the low SES families.

The Active 6 Program was initiated in 2010 and is supported by the YMCA, Missoula County Public Schools, The County Health Department, Community Medical Center, Mountain Line, University of Montana, Parks and Recreation of Missoula, and Flagship. All sixth graders from the greater Missoula valley are eligible to sign up for the program. By offering the program free of charge, Active 6 hopes to reach all students, especially those who could not afford such a program otherwise. As part of the Active 6 program, the sixth grader receives a free one-year YMCA membership, a free one-year bus pass, and free admission to all Griz and Lady Griz home games. In addition to the free passes, the Active 6 program offers structured programming four days a week. The structured program offers a wide range of physical activities that is lead by the Active 6 coordinator with the help of trained University of Montana undergraduate students from the Health and Human Performance Department (YMCA “Youth Health and Wellness,” n.d.).

As Active 6 entered its third year, the program funders expressed an increased interest in a program evaluation to assess whether Active 6 is achieving its purpose of increasing physical activity, decreasing sedentary behavior, increasing self-efficacy, and improving health
perceptions and knowledge in sixth grade participants. Baxter (2011) conducted a formative evaluation of the program in the first year of Active 6. During the study it was reported that a total of 2-5 females showed up to the program on a regular basis and that the majority of participants were male (Baxter, 2011). A total of 13 students were present to take the survey the program uses to evaluate the overall effectiveness of Active 6 (Baxter, 2011). During the spring program session in 2012, 25 students took the pre-and post-survey showing an improvement in participation from year one, but still below the program’s participation goals (YMCA, 2011).

In past years, attempts have been made to evaluate the program. However, due to low participation firm conclusions could not be made from the results. In an effort to overcome the low participation, Reamer (2012) conducted focus groups with parents and children from low and high socioeconomic status groups to identify the barriers to their child’s participation. Results indicated that the major barriers to participation included lack of information about the program, transportation, and parents were concerned with bus safety, and a desire for more nutritional education within the program (Reamer, 2012). In response to these results, program modifications informed by the socio-ecological model were made in order to increase participation and improve program effectiveness in the third year of Active 6. The socio-ecological model proposes that in order to successfully improve the health of vulnerable populations, interventions need to be designed that integrate multiple levels of influence on health behavior: intrapersonal, interpersonal, organizational, community, and public policy (Robinson, 2008). As a result of program refinement and modification, the Active 6 steering committee requested that a comprehensive impact evaluation be conducted during 2012-2013.
Purpose of the Study

The purpose of the study was to assess the Active 6 program’s impact on sixth grade students by increasing physical activity, decreasing sedentary behavior, increasing perceived self-efficacy, and improving health perceptions and knowledge. The study also looked to determine if there was a relationship between rate of participation and program impact. In addition, the study assessed the program impact between specific groups, gender (male, female) and SES (low, high). The study also sought to determine if there was a relationship between participant’s social influences on physical activity and their reported daily minutes of physical activity and physical activity self-efficacy. Lastly, the study aimed to understand the parent’s perceptions of the Active 6 program.

Statement of the Problem

Despite having a large number of sixth graders registered for Active 6, the structured program had low participation rates in both year one and year two. In addition, the Active 6 program struggled to reach the low SES sixth grade students in Missoula and the female sixth grade students. As the Active 6 program entered its third year (2012), it was still unknown whether the program was having an impact on the sixth grade students by increasing their physical activity, decreasing sedentary time, increasing self-efficacy, and improving health perceptions and knowledge.

Research Questions

1. Is the Active 6 program having an impact on sixth grade participants by increasing physical activity, decreasing sedentary behavior, increasing perceived self-efficacy, and improving health perceptions and knowledge?
a. What is the relationship between rate of participation and degree of program impact in sixth grade participants who show low and high participation rates?

b. Is the Active 6 program having an impact on low SES participants?

c. Is the Active 6 program having an impact on female participants?

d. Is the Active 6 program having an impact on male participants?

2. What is the relationship between participant’s social influence on physical activity and their daily minutes of physical activity and physical activity self-efficacy?

3. What is the rate of participation for Active 6 program’s target populations?

   a. What is the rate of participation for low SES children?
   
   b. What is the rate of participation for the female participants?

4. What are the perceptions of parents on the efficacy of the Active 6 program?

   a. What are the perceptions of parents whose children are registered but do not participate in the structured afterschool program?
   
   b. What are the perceptions of parents whose children regularly participate in the structured afterschool program?

**Significance of the Study**

Study results have enhanced the afterschool activity program field of research. Specifically, it has provided information on the effectiveness of interventions that promote physical activity and healthy lifestyles in sixth graders. Activity levels decrease immensely when students leave elementary school and enter sixth grade in middle school, new information on how to combat this issue is crucial (Trost et al., 2001). In addition, study results determined the strengths and weaknesses of the Active 6 Program, which could help the program continue to grow, improve, and better meet the needs of the participants. The study determined if the Active
6 program was serving and impacting the children from the low socio-economic status (SES) families, which is a major objective of the program. The study also provided information on the relationship between rate of participation and program impact in the sixth grade students. The participation data indicated whether or not a specific amount of participation is needed for the program to have an impact. The findings of this study can guide other programs in the development and/or improvement of participation rates and program curriculum.

Limitations

1. Data collected was limited to self-report from participants.
2. Although confidentiality was ensured some participants may have given socially desirable responses.
3. Data analysis might have been subject to researcher’s bias.
4. Individuals voluntarily participated in the study.

Delimitations

1. The study was delimited to sixth grade students who live in the greater Missoula valley.
2. Study participants were volunteers and could withdraw from the study at any point.
3. The study was delimited to information collected on a survey.
4. Participation rates were delimited to data collected by the Active 6 Program.
Definition of Terms

For the purpose of this study, the following terms were defined.

**Accelerometer.** Accelerometer devices measure acceleration in one or more planes. They measure motion in uni, bi, or tripolar motion. Newer devices can store activity patterns on an on-board memory systems based on acceleration so that they can later be downloaded for analysis (Kohl et al., 2000).

**Adolescent.** Adolescents can loosely be defined as the years of transition from childhood to adulthood. Generally, these years are from age 13 to age 19 and sometimes include ages 9 to 12 as well (CDC, 2011).

**Afterschool Programs.** Structured environment for children to be in afterschool during the hours between 2 p.m. and 8 p.m. (Weisman & Gottfredson, 2001).

**Attrition Rate.** The rate of decline in overall number of participants from start to finish (Weisman & Gottfredson, 2001).

**Body Mass Index (BMI).** BMI is a measure of body weight adjusted for stature. It is their weight in kilograms divided by their height in meters squared (Kg/m$^2$) (Lowry et al., 2009).

**Childhood obesity.** Child obesity is defined as having a body mass index (BMI) at or above the 95th percentile of the sex-specific BMI growth charts. These charts and criteria are based on the 2000 Centers for Disease Control and Prevention (CDC) BMI-for-age-growth charts for the United States (Ogden et al., 2010).

**Impact evaluation.** Impact evaluation “assesses the immediate effect the program (or some aspect of it) has on target behaviors and their predisposing, enabling, and reinforcing antecedents or on influential environmental factors” (Green and Kreuter, 2010, p. 139).
**Low participation.** For the purpose of this study low participation is classified as attending less than 40% of the time (Beets et al., 2009).

**Low Socioeconomic Status.** For the purpose of this study any student who receives free or reduced lunch through the National School Lunch Program (NSLP) at school is in the low SES group (USDA, 2012).

**Maximum Heart Rate.** Maximum heart rate is based on a person’s age and is the number of times one’s heart beats in a minute. It can be calculated by subtracting the person’s age from 220 (CDC, 2011).

**Moderate-Intensity Physical Activity.** Moderate intensity activity is when a person’s target heart rate is between 50 to 70% of their maximum heart rate (CDC, 2011).

**Overweight.** Overweight is defined as having a BMI at or above the 85th percentile of the sex-specific BMI growth charts. These charts and criteria are based on the 2000 Centers for Disease Control and Prevention (CDC) BMI-for-age-growth charts for the United States (Ogden et al., 2010).

**Reliability.** Reliability is the consistency of a measure, and the extent to which an observer measure or test is repeatable (Kohl et al., 2000).

**Sedentary Behavior.** Activities that mainly involve sitting. In regards to energy expenditure sedentary behavior is a minor increase in overall expenditure above resting metabolic rate but below the expenditure classified as light physical activity. Common sedentary behaviors include: sitting at a desk for extended periods, watching television, or sitting at a computer (Pate et al., 2011).

**Self-Efficacy.** Self-efficacy is an individual’s belief in their ability to perform a specific action to achieve a desired outcome (Ryan & Dzewaltowski, 2002).
**Socioeconomic Status.** “A social ranking which combines various dimensions of stratification, particularly prestige and wealth. It takes into account a number of factors that determine a person’s social status: income, type of occupation, level of education attained and place of residence, among others” (Media Miser, 2012).

**Validity.** Validity is the extent to which a tool or measurement measures what it is suppose to measure (Kohl et al., 2000).

**Vigorous-Intensity Physical Activity:** Vigorous intensity activity is when a person’s target heart rate is between 70 to 85% of their maximum heart rate (CDC, 2011).
CHAPTER TWO

Review of Literature

The childhood obesity epidemic has attracted an immense amount of attention in the United States, as the overall rates have remained consistent or risen from year to year. As a result, the number of programs promoting a healthy active lifestyle in children has vastly increased. As an effort to combat this problem, the schools and the community have taken a primary role in providing afterschool physical activity programs for children and youth. As more money is invested into afterschool programs there is a desire to have evaluations reporting the effectiveness of the program. This review will set the framework for this study by covering research on childhood obesity, physical activity rates in children and adolescents, afterschool programs and the barriers these programs face, components of successful afterschool programs, and then move specifically into afterschool physical activity programs, including the Active 6 program in Missoula, MT.

Childhood Obesity

Childhood obesity continues to be a worldwide health concern, as rates have continued to increase over the past three decades (Han et al., 2010). The National Health and Nutrition Examination Survey (NHANES) have been used to monitor the rate of overweight and obese individuals in the United States since 1960. According to the 2007-2008 NHANES, 16.9% of children and adolescents aged 2-19 were obese (Ogden & Carroll, 2010). The rate of childhood obesity in children aged 6-11 nearly tripled from 7% in 1980, to 20% in 2008. During the same time period the prevalence of obesity rose in adolescents aged 12-19 5.0% to 18.1% (Ogden & Carroll, 2010). In almost every age and racial/ethnic group assessed by the NHANES the prevalence of overweight or obese individuals exceeded 50% (Hedley et al., 2004). According
to the YRBS in 2011 15.2% of surveyed youth in 9th to 12th grade were overweight and 13.0% were obese (CDC YRBS, 2011). There was no difference between genders for prevalence of overweight individuals, however obesity rates in males was 15.3%, almost double than the 8.3% of females (CDC YRBS, 2011).

As compared to other states in the 2011 YRBS, the rate of overweight and obese students in 9th to 12th grade in Montana was less than the national average (CDC YRBS, 2011). The YRBS data found that in Montana 12.9% of students were overweight and 8.5% were obese (CDC YRBS, 2011). In Missoula, Montana, the city/county health department (MCHD) gathered data on a sample of 801 third graders and found that 27% were overweight or obese and 12% were obese (McCourt, 2009).

Childhood obesity is a serious nationwide health concern as it has both immediate and long-term effects on health and well being (CDC, 2011). Childhood obesity can have a negative impact on nearly every organ system leading to serious health issues such as: hypertension, insulin resistance/diabetes, liver disease, as well as numerous psychosocial issues (Han et al., 2010). Body mass index (BMI) in childhood and adolescence is associated with a higher risk of coronary heart disease in adulthood (Baker, Olson, & Sorensen, 2007). According to the CDC obese children and adolescents are more likely to be obese adults. Childhood obesity is also associated with a greater risk for numerous types of cancer in adulthood (CDC, 2011).

In addition to the physical consequences associated with childhood obesity, it also leads to immense psychosocial stress (Dietz, 1998). Middle childhood is period in the development of self-esteem and body image (Must & Strauss, 1999). In a culture preoccupied with weight, childhood obesity can have a significant impact on a child’s emotional development (Must &
Strauss, 1999). The CDC states that obese children are at a greater risk for discrimination, stigmatization, and developing poor self esteem and self image (CDC, 2011).

In an effort to address the national health concern, and combat the rise in childhood obesity, prevention efforts need to target children and youth at all levels of society (Han et al., 2010). According to the CDC, the lifestyle choices of children and adolescents can be influenced by: family, peers, community organizations, churches, the media, medical care providers, and government agencies (CDC, 2011).

Physical Activity and Youth

Despite the immense benefits associated with being physically active, and the numerous nation wide efforts to promote activity, many Americans including children and adolescents fail to meet the national recommendations (Aaron et al., 2002). The overall decline in physical activity is one of the main contributing factors to the childhood obesity epidemic (Pate, Mitchell, Byun & Downda, 2011). Treuth et al. (2005) used data from 229 students in elementary, middle, and high school to track activity levels. The students wore an Actiwatch accelerometer for 6 days, and Treuth et al. (2005) analyzed the data by age group for boys and girls. Consistent with past research, Treuth et al. (2005) found that activity levels continued to decrease from elementary school to middle school and from middle school to high school. There was nearly a 2-hour/day increase in sedentary time across the three age groups. In addition, they also found that boys across all age groups had higher activity levels than the girls (Treuth et al., 2005). In a similar study conducted by Mathews et al. (2008) 6,329 participants 6 years of age or older wore accelerometers to track activity levels. It was found that the least sedentary group in the United States was children aged 6-11. Males spent (6.0 hours/day) and females spent (6.1 hours/day) in sedentary time. However, by age 16-19 sedentary time increased immensely by about 2-
hour/day, males were sedentary (7.9 hours/day) and females (8.1 hours/day). According to the 2011 YRBS only 50.5% of high school students in the United States were meeting the 60-minute a day recommendation for physical activity. In Montana 45.3% of high school students were meeting the recommendation (CDC YRBS, 2011).

The rise in time spent in sedentary behaviors is independently associated with lower rates of physical activity and a higher risk of weight gain (Mathews et al., 2008). Sedentary activities often take away from physical activity time (Strong et al., 2009). The ongoing technological advancements in developed countries have led to a reduced demand for physical activity. Entertainment is easily accessible electronically through games, the internet, and television, which can lead to a decline in active play (Pate et al., 2011). Transportation advancements have reduced the need for physically active forms of transportation (Pate et al., 2011). As a result, children and adults are less active today then they were a generation ago (Luepker, 1999).

A higher rate of physical activity has been shown to be associated with lower weight and body fat (Erlichman, Kerbey, & James, 2002). In adolescents, regular moderate to vigorous physical activity could have an impact on body composition (Kim et al., 2011). According to Strong et al. (2009), there are many beneficial effects of physical activity on components of cardiovascular health, musculoskeletal health, aerobic fitness, and mental health. Children and youth should spend 60 minutes a day in moderate to vigorous activity (Strong et al., 2009).

An effort by family, the school system, and the community to promote physical activity and decrease sedentary time in children and youth has the potential to be successful (Lowry, Lee, Fulton & Kann, 2009). The after-school environment has been identified as a place that can have a significant impact on student activity levels because of the overall time students spend at school each week (Pate & O’Neill, 2008).
Self-Efficacy and Physical Activity in Youth

An important component of physical activity level in youth is the individual’s perceived self-efficacy towards physical activity (Ryan & Dzewaltowski, 2002). Self-efficacy is a term that emerged from Bandura’s 1977 Social Cognitive Theory. Self-efficacy is an individual’s belief in their ability to perform a specific action to achieve a desired outcome (Ryan & Dzewaltowski, 2002). This relates to physical activity because a large predictor of participation in active pursuits is the individual’s belief in performing the specific task (Allison, Dwyer, & Makin, 1999). Allison et al. (1999) conducted a study with 1,041 9th and 11th grade students to better understand the relationship between physical activity self-efficacy and participation in vigorous activity. The researchers found that physical activity self-efficacy was related to physical activity participation in high school students, even when the students reported having to overcome external barriers (Alison et al., 1999). Ryan & Dzewaltowski (2002) also reported a relationship between physical activity self-efficacy and children’s rate of physical activity. Their study targeted sixth and seventh grade students and compared different types of self-efficacy with physical activity. The study found that the strongest predictor of physical activity was the environmental change self-efficacy. This represents the child’s belief in their ability to find and create environments that foster physical activity (Ryan & Dzewaltowski, 2002). These studies both suggest that health practitioners, community programs, and schools should work towards building physical activity self-efficacy in children and youth (Ryan & Dzewaltowski, 2002; Alison et al., 1999).

Social Influences on Physical Activity

Another important predictor of physical activity in youth is peer support and parental activity and support (Saunders et al., 1997). Parents and peers have been found to have a major
influence over the health behaviors of youth (Beets, Vogel, Forlaw, Pitetti, & Cardinal, 2006). Jago et al., (2009) conducted focus groups with 113 10-11 year old children in order to examine the influence friends have on the initiation and maintenance of physical activity. One of the primary ways friends influenced participant’s physical activity levels was by offering to participate with them, or through verbal support and encouragement. The participant’s maintenance of physical activity had to do with their enjoyment of the activity. The presence of friends was reported to increase the enjoyment of partaking in active pursuits (Jago et al., 2009). This is consistent with the findings of Beets et al., (2006). In their study with 363 5th, 6th, and 7th graders, peer support emerged as a significant predictor of activity levels in the youth participants. As with peers, parents can have a large influence on the activity levels of their children (Davison, Cutting & Birch, 2003). In a study conducted by Davison et al., (2003) with 180 9-year old girls and their parents, parents were found to have a positive influence on the physical activity of their daughters. Parent’s influence was broken into two factors, logistic support, registering daughters and providing transportation to and from, or explicit modeling, modeling healthy behavior. Mothers reported higher levels of logistic support and fathers reported higher levels of explicit modeling. Despite the different methods of support for mothers and fathers, both were associated with higher physical activity levels in the girl participants (Davison et al., 2003). It is evident from the above studies that social influences from both peers and parents can positively contribute to overall physical activity levels.

**Effective Afterschool Programs**

Afterschool programs were initially created as an effort to positively influence youth’s social and personal development through the guidance of adult supervised activities (Durlak, Weissberg & Pachan, 2010). Today programs have a more direct focus attempting to create
specific outcomes through the development of a variety of life skills (Quinn, 1999). According to the Afterschool Alliance, 8.4 million children participate in afterschool programs and 15.1 million children are left without supervision afterschool (Afterschool Alliance, 2011). When surveyed, parents of another 18.5 million children reported that their child would be interested in afterschool programs if they were available (Afterschool Alliance, 2011). There are a wide variety of programs offered to children and youth that differ in structure and purpose but share the common goal of enhancing the development of this population (Quinn, 1999). Afterschool programs provide a positive environment for children and youth to spend their time in the afternoon and evenings. It has been found that majority of juvenile crimes occur between 3-6pm (Afterschool Alliance, 2011). Teenagers who are not part of afterschool programs are three times more likely to take part in risky behaviors such as drugs, alcohol, and sexual activity as compared to their peers who attend programs (Afterschool Alliance, 2011). It has also been found that the amount of time children spent unsupervised was associated with children’s antisocial behavior (Posner & Vandill, 1994). Despite best efforts of programs to target the children and youth left unsupervised, majority of afterschool programs serve children who would otherwise be directly supervised (Walker & Arbreton, 2005).

In a meta-analysis on the effectiveness of afterschool programs, Durlak et al. (2010) found that, “ASPs [afterschool programs] had an overall positive statistically significant impact on participating youth. Desirable changes occurred in three areas: feelings and attitudes, indicators of behavioral adjustment, and school performance” (Durlak et al., 2010, p. 302). Despite these findings, Durlak et al. (2010) stated that of the 69 programs they evaluated, not all programs were effective. The authors concluded that the afterschool environment could be a
positive contributor to youth development, but the efforts to improve afterschool programs needs to continue, as many programs do not achieve positive results (Durlak et al., 2010).

The overall value of afterschool programs as an important preventative effort to decrease youth risk behaviors continues to increase, and as a result programs are attracting more funding (Catalano et al., 2004). The increase in financial investments in afterschool programs has led to a need to have outcome measures and evaluations reporting the effectiveness of the program (Scott-Little, Hamman & Jurs, 2002).

Nation et al., (2003) reviewed 35 articles to determine the main themes of effective prevention programs for children and youth. Nation et al., (2003) determined that effective prevention programs had the following six characteristics:

1. Use a research-based risk and protective factor framework that involves families, peers, schools, and communities as partners to target multiple outcomes
2. Is long term, age specific, and culturally appropriate.
3. Fosters development of individuals who are healthy and fully engaged through teaching them to apply social-emotional skills and ethical values in daily life.
4. Aims to establish policies, institutional practices, and environmental supports that nurture optimal development.
5. Selects, trains, and supports interpersonally skilled staff to implement programming effectively.
6. Incorporates and adapts evidence-based programming to meet local community needs through strategic planning, ongoing evaluation, and continuous improvement (Nation et al., 2003 as cited in Weissberg, Kumpfer, & Seligman, 2003).
In addition to the above characteristics Catalano et al. (2004) found through their assessment of positive youth development programs that effective programs shared common themes. They stated that effective youth development programs: “Strengthen social, emotional, and behavioral cognitive and moral competencies; build self efficacy; shape messages from family and community about clear standards for youth behavior; increase healthy bonding with adults, peers, and younger children; provide structure and consistency in program delivery; and intervene with youth for at least nine months or longer (Catalano et al., 2004).”

**Barriers to Afterschool Programs**

Even the most organized and well-designed environments face barriers to providing an effective program for children and youth (Quinn, 1999). After reviewing various programs that offer services for children and youth, Quinn (1999) identified five implementation challenges that programs commonly face. The following key issues were noted: participation, access, funding, program effectiveness, and coordination with other youth services (Quinn, 1999). Lockwood (2003) conducted a review of afterschool programs in order to understand why some administrators chose to not implement programs in their school district despite agreeing that they are a good idea. The following barriers were identified:

- A significant lack of coordination between the afterschool director (if one exists), site coordinators and principals. In programs without an afterschool director, site coordinators and principals can experience tense relationships.
- A perception that afterschool programs are too much work for an already burdened principal, particularly in high-needs schools.
- The view there's little connection between the instructional program of the school and the
afterschool program's goals.

• The lack of clear reporting lines between site coordinators, district management and building principals.

• Perceived lack of district support and adversarial feelings about the central office (Lockwood, 2003 p. 34)

In their evaluation of attendance of after-school programs for youth, Weisman & Gottfredson (2001) found that students who were the most at-risk and from lower income families participated the least in the program and had the highest drop out rates. The majority of children in the programs did not have prior behavior or delinquency problems (Weisman & Gottfredson, 2001). Similarly, Walker and Arbreton (2005) found that the majority of the children participating in afterschool programs would be under supervision if they were not at the program. The afterschool programs were failing to serve the children they wanted, those left unsupervised during the afterschool hours (Walker & Arbreton, 2005). This suggests that a barrier to afterschool programs is reaching the target population and effectively serving the at-risk children (Weisman & Gottfredson, 2001).

Afterschool Physical Activity Programs

In response to the rising rates of childhood obesity, increased attention has been placed on the schools to take a more active role in promoting physical activity in youth (Pate et al., 2006). Historically, schools have always provided physical activity to American children through required PE classes. However, the School Health Policies and Programs study revealed that only 8% of elementary schools, 6.4% of middle schools, and 5.8% of high schools provided daily PE that met the recommended weekly minutes of physical activity level for their age group.
Afterschool physical activity programs have emerged as useful ways to promote physical activity in youth (Beets, Beighle, Erwin, & Huberty, 2009).

The afterschool period represents one of the largest spans of free time in a child’s day. Afterschool physical activity programs have great potential to encourage physical activity during a key point in the day when children are often drawn to sedentary activities (Pate et al., 2006). Afterschool physical activity programs include club sports teams, recreation and intermural sports, classes, outdoor recreation, and community programs (Pate et al., 2006). These programs have been developed in order to provide the children with an environment that encourages physical activity while discouraging sedentary behavior (Yin et al., 2005).

**Effective Afterschool Physical Activity Programs**

Research conducted on specific afterschool physical activity programs has produced mixed results. Douyon et al. (2010) implemented a program in two public housing developments for adolescent girls that promoted regular organized physical activity. Assessments were completed at the baseline and at the end of the three-year program. Participants reported increased health knowledge, confidence, and physical activity levels at program completion. Despite the positive results, the authors hesitate to make firm conclusions because participation was so low (Doyoun et al., 2010). According to Pate et al. (2006), studies have shown that vigorous physical activity in obese children in afterschool programs resulted in improvements in some of the physiological risk factors. However, because of limited research done in this area, the specific components that make afterschool physical activity programs successful is not clear. In another study Pate et al. (2003) implemented a community-based physical activity intervention in two rural communities in South Carolina. The study included 436 fifth grade students who participated in afterschool, summer, and community physical
activity interventions over an 18-month period. The researchers found no significant differences in physical activity variables at the end of the program when comparing pre-and post-assessments (Pate et al., 2003).

In their meta-analyses on afterschool physical activity programs Beets et al. (2009) concluded that the afterschool setting could impact children and youth’s health behaviors and knowledge and increase physical activity rates. With that being said, they noted that it is hard to pinpoint specific components that make up successful physical activity programs with each intervention being so unique. However, Beets et al. (2009) noted a few common themes in the successful programs. The authors stated that high attendance rates are a major contributor to program success (Beets et al., 2009). Beets et al. (2009) claimed from their review that a dose-response relationship exists between attendance level and program effectiveness. Children who attended at least 40% of the time showed the most improvements in physical fitness outcome measures (Beets et al., 2009). Quinn (1999) found that in the afterschool programs she reviewed, those that experienced the most success were attractive to the children and responsive to their needs. This is a key factor because afterschool programs are attended on a voluntary basis, therefore they need to grasp the attention of the target population and then maintain that initial interest (Quinn, 1999). Beets et al. (2009) stated that enjoyment of the physical activity that the program offered was an important component to overall program success.

**Barriers to Effective Afterschool Physical Activity Programs**

Afterschool physical activity programs must overcome a number of barriers to be successful. As with other afterschool programs, participation is one of the main barriers physical activity programs face (Beets et al., 2009). It has been consistently found in past research that children and youth must attend programs regularly in order to benefit, and those who attend the
most and for longer periods of time gain much more from the program than their peers who’s attendance is sporadic (Fiester, Simpkins, & Bouffard, 2005). Past research has shown that poor participation and attrition rates are the highest in the children most vulnerable to at-risk behavior, as well as those from lower income families (Weisman & Gottfredson, 2001). These are the children the program needs to target because past research has shown lower-SES groups in the United States had a higher prevalence of overweight and obesity (Wang, 2001).

Another challenge that afterschool physical activity programs face is recruitment (Doyoun et al., 2010). It is common for afterschool physical activity programs to attract already active children, rather than the overweight and obese youth the program was created to serve. The target population can be hesitant to join physical activity programs because they are afraid of the competitive environment and worried about keeping up (Lamberg & McKenna, 2011). In the GirlStars Program Doyoun et al. (2010) struggled to maintain interest from the girls in the physical activity portion of the program. This is consistent with past findings that adolescent girls often associate physical activity with hard exercise such as running and competitive sports (Doyoun et al., 2010).

Training and maintaining quality staff members to run the physical activity program can present another obstacle to program success (Doyoun et al., 2010; Lamberg & McKenna, 2010). The Girlstar program struggled to retain staff members at both housing developments where it was implemented. The constant turnover compromised program stability and staff familiarity for the girls (Doyoun et al., 2010). Doyoun et al. (2010) suggested that future programs include a program specific advisory board. They concluded that a board with a representative from all groups involved in the program could add to overall success. They believe that this could
combat the participation, recruitment, and staffing barriers their program faced, and facilitate successful activity programs in the future (Doyoun et al., 2010).

In their meta-analyses on afterschool physical activity programs Beets et al. (2009) concluded that more research and improved methodologies are needed in order to better understand the effectiveness of afterschool interventions to combat obesity. The authors suggest outcome measures that look at activity levels both in and outside of the structured program hours (Beets et al., 2009).

**Outcome Measures of Physical Activity Programs**

As more money, time, and effort is invested into afterschool programs to promote physical activity it is critical to have outcome measure and evaluations reporting the effectiveness of the program (Scott-Little, Hamman & Jurs, 2002). A thorough program evaluation provides data that can help improve the program by identifying its current strengths and weaknesses (McGraw et al., 2000). Measurement of program effectiveness has become a key component for growth and future success (McGraw et al., 2000).

There are a number of different techniques used to measure physical activity among children (Kohl, Fulton, & Caspersen, 2000). Subjective measures and objective measures are the two main methods commonly employed. Subjective methods are those based on and influenced by personal feelings such as questionnaires, interviews, diaries and direct observations. Objective measures on the other hand focus on physiological and biomechanical parameters and are not influenced by personal feelings and opinions (Corder et al., 2008). Self-report instruments are the most common physical activity measure used (Corder et al., 2008). The major pull towards using this measure is its low cost, convenience of administration, and ability to collect a variety of data (Sallis, 1991). However, data from self-report measures falls short of
the laboratory measures in overall precision due to factors such as individual interpretation and accuracy of recall (Kohl et al., 2000). A relationship exists between the degree of burden for completing the measure and the accuracy of the measure. This needs to be taken into consideration when administering self-report measures to children because the overall burden of completing the measure would be higher for children than adults (Sallis, 1991). A limitation of objective measures is the cost per observation; because of the high cost for laboratory measures it is difficult to utilize these measures in large populations (Kohl et al., 2000).

Kohl et al. (2000) reviewed more than 50 papers in order to understand the reliability and validity of different physical activity assessment techniques in children and adolescents. They concluded that measurement techniques that showed moderate to high reliability included direct observation and monitoring. Direct observation is when physical activity behavior is recorded first hand. Monitoring includes: heart rate monitors, mechanical motion sensors and accelerometers. For younger children self-report did not prove to be reliable, however this method showed better results in older children and adolescents (Kohl et al., 2000).

The authors noted that the interpretation of the validity data in their review was challenging because there is not one known validation criteria that can be used to compare all test methods (Kohl et al., 2000). The authors found that many studies used indirect measures as validation criteria. These consisted of looking at body composition, aerobic capacity, and physical fitness. The limitation of using the above factors is genetic and environment influences, which reduces their success when being used as validation criteria. Kohl et al. (2000) found that self-report and monitoring measures of physical activity have low to moderate validity. The authors suggest that self-report measures that require recall of physical activity only be used with
children 10 years and older. They noted that children under the age of 10 do not have sufficient cognitive development to accurately recall physical activity behavior (Kohl et al., 2000).

Research has shown that successful physical activity programs not only promote vigorous activity during the program, but also encourage participants to increase physical activity outside of the structured program (Strong et al., 2005). In their meta-analysis on physical activity after school programs Beets et al. (2009) encourage future programs to measure the program’s influence on physical activity both inside and outside of structured program hours. By doing so, the program can find out if participants are using skills developed in the program outside of the structured setting. Beets et al. (2009) believe that majority of the programs they reviewed would have benefited from a more extensive ongoing qualitative assessment to determine if the program is being implemented as originally intended.

**Missoula Active 6 Program**

The Missoula Active 6 Program is an afterschool physical activity program for sixth grade students. The program was developed in 2010 with the goal of combating the decline in physical activity from middle school to high school (YMCA “Youth Health and Wellness,” n.d.). The program also promotes a healthy lifestyle in children by providing them with basic nutritional knowledge, social skills, and health information to guide positive physical and emotional development. The Active 6 program is supported by: the YMCA, Missoula County Public Schools, The County Health Department, Community Medical Center, Mountain Line, University of Montana, Parks and Recreation of Missoula, and Flagship. All sixth graders from Missoula are eligible to sign up for the program. By registering for Active 6, the student receives a free membership to the YMCA, a Mountain Line bus pass, and free admission to all Griz and Lady Griz basketball home games (YMCA, “Active 6,” n.d.). By offering the program
free of charge, Active 6 hopes to reach all students especially those who could not afford such a program otherwise. The program provides after-school physical activities that are offered two times a week at the YMCA, one day a week at Washington Middle School, and one day at CS Porter Middle School. The Active 6 program activities follow a specific theme for each day. The main themes implemented are: physical activity, self-efficacy, health perceptions and knowledge, and teamwork. The activities and lessons coincide with the day’s theme and are organized and implemented by trained undergraduate student mentors from the University of Montana Health and Human Performance department and the YMCA Active 6 coordinator (Shanna Nickerson Active 6 Coordinator, personal communication, July, 10, 2012).

During 2010-2011, Baxter (2011) conducted a formative evaluation on the Active 6 program. She found that majority of the children participating in the program were male. In the spring session, a total of 3-5 females attended on a regular basis. She attributed this finding to the types of activities that were typically offered during the program. Baxter concluded that the majority of the Active 6 activities were competitive in nature, and the girls tended to shy away from them. In her formative evaluation she also noted that low participation was a barrier to program success. At total of 13 children took the Active 6 survey, which is used to assess program effectiveness. Baxter (2011) reported that in the spring program, the Active 6 coordinator struggled to fulfill all her job requirements due to the pressure to get the surveys completed. Weekly themes were often pushed aside as a result.

During the 2011-2012-program year, 312 children signed up for the Active 6 program and 102 of those students attended the structured program hours. The main barrier the program faced during this time was lack of participation. In an effort to increase participation rates, Reamer (2012) conducted focus groups to determine the major barriers to participation for the
low and high socio-economic families. The focus groups were conducted to help understand the participants and their families’ thoughts and perceptions about the program and barriers to their participation. Reamer (2012) reported the main barrier to participation for both the low and high SES groups was that they lacked information on the program. This inhibited them from utilizing all that the program had to offer. The parents also stated a desire to have more nutritional education provided to the children, and the sixth graders expressed wanting to have a snack time during the structured program.

The low SES families reported numerous other barriers to their child’s participation in the program. Transportation and child safety issues were a common theme in the low SES group’s discussions. Parents were unable to drive their child to the YMCA and were not comfortable with their sixth grader riding the bus alone. In addition, the parents were apprehensive about sending their child to the YMCA. Without having much information on the program, they were unsure about what their child was doing when they were there. Within the low SES group’s informal community networks negative statements about the program had spread which resulted in the parent’s having a poor image of the program in their mind (Reamer, 2012).

Subsequently, Reamer (2012) utilized the socio-ecological model (SEM) to guide the development of strategies to decrease the barriers to participation in the Active 6 program. The SEM recognizes that there are multiple factors that influence the health behavior of an individual. The SEM provides a broader perspective on health choices by integrating five levels of influence on health behavior: intrapersonal, interpersonal, organizational, community, and public policy.
• Intrapersonal: individual characteristics that influence behavior such as knowledge, attitudes, beliefs, and motivation.

• Interpersonal: interpersonal processes, and primary groups including family, friends, peers, that provide social identity, support and role definition.

• Organizational: rules, regulation, policies, and informal structures, which may constrain or promote recommended behaviors.

• Community: social networks and norms or standards which exist as formal or informal among individuals, groups, and organizations.

• Public policy: local, state, federal policies and laws that regulate or support healthy actions and practices for disease prevention, early detection, control, and management (Robinson, 2008).

In order to successfully improve the health of vulnerable populations, interventions need to be designed that target these many levels of social and environmental influence (Robinson, 2008).

After reviewing the two previous years of evaluation research, the Active 6 program has addressed the main findings and developed and refined program strategies to implement in 2012-2013-program year. The interventions/modifications to the program target two separate areas: participation and program impact. Strategies have been developed based on the SEM to increase participation and increase program effectiveness. Specifically, program strategies such as: open houses at the middle schools, new program curriculum, family week, and a Active 6 kick off are going to be implemented in order to influence desired program outcomes.

One prominent barrier to participation in the Active 6 Program was the lack of information about the program (Reamer, 2012). During the past two years information on the Active 6 program was available primarily at the YMCA and on the YMCA website. However,
parents were not coming to the YMCA or utilizing the website to learn more about the program. In response to this barrier, a strategy was redeveloped to target the organizational and interpersonal level of influence in the SEM. The Active 6 program has arranged to set up a booth at all the middle school open houses in Missoula. By doing so, the Active 6 representatives will remove the barrier of having to drive to the YMCA, or have access to a computer in order to gain program information. Implementing this strategy makes the program information more accessible to everyone. In addition, participating in the open houses allows the program to provide information and answer parents and sixth graders questions. The open houses also give parents the opportunity to fill out the form then and there, removing the barrier of having to go to the YMCA to register. Due to complaints on the complexity of the registration process, the YMCA has consolidated the previous multiple page form into a shorter and simplified version.

Reamer (2012) also found that after parents registered their child they never received any follow up information on the program. This led to confusion as to when and where it was offered, as well as what goes on at the program after they drop off their child. The interpersonal level in the SEM emphasizes the importance of connecting with family and maintaining close contact because they have a strong influence on an individual’s health behavior (Robinson, 2008). This is especially important when targeting health behavior change in children because parents have a strong influence on their child’s beliefs, behaviors, and activities. The interpersonal level of influence guided the development of specific strategies for the 2012-2013 year that involve and engage the parents of the sixth graders. The program is holding an open house on the second day of Active 6 for all interested and registered sixth graders and their families to come and learn more about the program and meet the volunteers and program staff.
The program is also going to send out a monthly newsletter to all parents letting them know about activities coming up and program news. The program is incorporating a “family week” into the upcoming year. During the week of September 27th to October 5th the parents and siblings of the sixth graders are invited to come to the YMCA and see what the facility and Active 6 have to offer. By targeting the parents in the kick off of the program and keeping them involved throughout the year, the parents will be more likely to encourage their sixth grader to come to Active 6.

The target population for the Active 6 program is the sixth grade students from the low SES families in Missoula. Reamer (2012) stated that a barrier for participation in this population was transportation issues. The SEM guided the development of strategies to help reduce this barrier by looking at the intrapersonal, interpersonal, and organizational factors that contribute to the transportation barrier. The Active 6 program realized that giving the students a free bus pass was not enough to get them on the bus. The program decided to involve a community partner in the development of a strategy to increase bus use. In order to decrease the transportation barrier for the low SES families, on Thursday, a University of Montana volunteer will be at Meadow Hill middle school at the end of the day to ride the bus with the sixth grade students to the YMCA for the Active 6 program. This modification to the program addresses numerous child safety concerns identified by parents in the focus groups (Reamer, 2012). Parents reported that they were uncomfortable with their children riding the bus alone, they didn’t think their child would feel confident in riding the bus, and majority of the sixth grade students stated that they had never rode the Mountain Line before (Reamer, 2012). Having a volunteer to ride the bus with the sixth graders will limit the apprehension and anxiety for the sixth grader, and also address the parent’s discomfort of their child riding the bus alone.
In addition to being at the YMCA on Tuesday and Thursday, the Active 6 program is offered at C.S Porter Middle School on Monday after school, and at Washington Middle School on Wednesday after school. Sixth grade students at these two schools have the opportunity to participate in the program immediately after school. The Active 6 coordinator and University of Montana student volunteers will be at the middle schools on those days to run the program. By offering the program at the schools, this promotes participation for the students who are unable to get the YMCA on Tuesday and Thursday. In the SEM, this is classified as an organizational level of influence by working in the physical environment to make the program more accessible to participants. In addition, the program involves many different partners from the community to support and encourage participation in the Active 6 program. Mountain line encourages participation by offering a free bus pass, the University of Montana student volunteers help run daily activities, the Flagship program includes Active 6 as one of the weekly after school programs offered, Orange Street Food Farm provides a healthy snack for each program day. These are a few of the many community partners that contribute to the success of Active 6.

In addition to the interventions designed to increase participation, the 2012-2013 Active 6 program curriculum utilized the SEM to improve program effectiveness. In the past two years, Active 6 has run as an “open” program. The sixth graders had the option to take part in structured activities or go hang out in the YMCA as they pleased. This led to many students signing in and then going off on their own or in groups for the entire two hours of the program. Thus, it wasn’t clear if participants were engaging in physical activity and/or at what level. The intrapersonal level of influence in the SEM highlights the role that individual characteristics play in health behavior. An individual’s beliefs, knowledge, values, and motivation are a major determining factor in their behavior (Robinson, 2008). Without a mandatory education
component in the daily activities, the program was not able to educate students on desired health outcomes and have any influence on their health knowledge and beliefs. Guided by the organizational level of influence in the SEM this aspect of Active 6 for the 2012-2013-program year has been changed. The organizational level of influence looks at how the regulations, rules, and informal structures promote or constrain behavior. The program will now be broken up into two one-hour blocks. The first hour will be spent doing mandatory group structured activities based on the daily theme including: community building, warm-up, an active game, and “snacktivity.” After the first hour the sixth graders will then have the option to choose an activity. Activity options will include: climbing, teen center, group activity, or group sport. By changing the structure of the Active 6 program, the staff can have a greater influence on participants by engaging them in planned lessons.

The purpose of the Active 6 program is to increase physical activity, decrease sedentary behavior, increase perceived self-efficacy, and increase health perceptions and knowledge. The program curriculum for the 2012-2013 year has been designed to influence the intrapersonal level of influence of the SEM through specific activities and lessons that target the beliefs, attitudes, and values of the students. The Active 6 coordinator will implement a daily theme and objective each program session. The activities and lessons that day will coincide with the chosen theme. For example, the theme is: “what does a healthy lifestyle look like?” The objective is: “help participants recognize the role physical activity plays in a healthy lifestyle and how much activity they should get a day.” This will give the program the opportunity to educate students and impact the participants through the intrapersonal level on influence by targeting their attitudes, beliefs, and knowledge on specific health outcomes. Throughout the program the
themes and objectives will rotate and include activities and lessons centered on: physical activity, self-efficacy, health perceptions and knowledge, and teamwork (see Appendix B).

On top of daily themes and objectives centered on the programs desired outcomes, a few more specific interventions have been added in response to evaluation results. Reamer (2012) found that parents wanted more nutrition education in the program and the sixth graders expressed a desire for a snack to be offered during the program. The focus group research showcased the immense impact that parent’s thoughts about the Active 6 program had on their child’s participation in the program (Reamer, 2012). According to the SEM, by offering a program that fulfills parents’ needs, the parents would then be more likely to positively influence their child’s participation (Welk, 1999). In order to meet this request, a “snacktivity” has been added to the daily program. This particular program intervention was developed to target the intrapersonal, community, and interpersonal levels of influence in the SEM. “Snacktivity” will last 30-minutes and includes a healthy snack and a lesson on smart food choices and other components that make up a healthy lifestyle. To make the “snacktivity” intervention possible, the YMCA partnered with community grocers Orange Street Food Farm. Orange Street Food Farm will be providing the Active 6 program with healthy food each week.

Another barrier to participation amongst the sixth grade students was that the children were most likely to stop coming to Active 6 when their friends stopped (Reamer, 2012). Guided by the SEM, the Active 6 program has developed a strategy to create a community within the sixth grade participants and student mentors that targets the interpersonal level of influence. The Active 6 coordinator has included a 30-minute time block for community building. During this time block students will get to know more about each other and participate in activities as a big group. The hope is that this will help the sixth graders make new friends so that they are
encouraged to come regularly. Connecting with the other sixth grade participants and the student mentors contributes to the interpersonal level of influence on an individual’s behavior. The more included and connected the participant feels within the program can have a major influence on their desire to participate. In response to the findings of Baxter (2011), girl only activities will be offered throughout the program to give them the choice to participate with the group or in a female only environment.

Past attempts at collecting evaluation data of the Active 6 program were challenging due to the low number of participants. The goal of the current study was to gather more inclusive and complete data, and thus, determine the impact of the Active 6 program on the sixth grade participants on specific health outcomes, determine if there was a relationship between participation and program impact, and assess if the program was serving the low SES and female sixth grades students.
CHAPTER THREE
Methodology

Research Design

The Active 6 program curriculum was designed to educate and engage students in the following four areas: physical activity, sedentary behavior, health perceptions and knowledge, and self-efficacy. This study used a pretest-posttest quasi-experimental design to measure the degree of change in participants as a result of their participation in the Active 6 program. In this design, groups or subjects are not randomly assigned (Creswell, 2009). All participants in this study were registered in the Active 6 program. The students registered in the program were asked if they would like to participate in the study. A pre- and-post survey (Appendix A, p.109) was administered to measure the overall impact the Active 6 program has on participants. This study evaluated self-report survey data on specific outcome variables including physical activity, sedentary behavior, self-efficacy, and health perceptions and knowledge.

Sample

The study sample was made up of self-selected sixth grade students and their parents from the greater Missoula Valley areas. Participants were female and male students ranging in age from 10-12 years old. The study sample also included parents of the sixth grade participants who agreed to participate in a short 5-minute phone interview.

Protection of Human Subjects

The human subject application material, consent, permission and ascent forms were completed in accordance with the University of Montana Institutional Review Board (IRB).
Data Collection- Active 6 Survey

Recruitment

- Recruitment for the Active 6 program was done through newspaper ads, television commercials, booths at middle school open houses, and an Active 6 open house. The booths had registration packets, information pamphlets, and Active 6 staff available to answer questions and promote the program to the sixth grade students and their parents.
- All sixth grade students registered in the Active 6 program with parent consent were asked to complete the pre- and post-program survey.

Instrument

The Active 6 survey was developed from the QAPACE survey and modified by Dr. Gaskill of the University of Montana and the Missoula County YMCA. The QAPACE questionnaire has been found to be a valid and reliable measure for assessing the routine physical activity patterns in children and adolescents (Barbosa et al., 2007). Questions have been added to the survey to collect data on the specific outcome variables and demographic information including: gender, age, socioeconomic status and school. The Physical Activity Self-Efficacy Scale was added in order to assess the student’s physical activity self-efficacy pre-intervention and post-intervention (Wu., Robbins., & Hsieh, 2011). The Social Influences Scale was added in order to gather information on the psychosocial influences on youth’s physical activity (Saunders et al., 1997). In addition, the survey gathers descriptive information for YMCA purposes (see Appendix A, p.109).

Data Collection

Participants were given an identical pre-and post-survey. The pre-survey was administered during the first three weeks of the program in the fall. The post-survey was
administered during the last three weeks of the program in the fall. All participants who took the pre-survey but were not at the program during the post-survey period were contacted and surveyed by phone. Surveys were completed upon arrival during the first ten minutes of the program. In the spring, the pre-survey was only given to all new participants who did not participate in the fall program, allowing for a lengthier pre-post assessment. The post-survey was administered during the last three weeks of spring programming to all students in the program. The fall program and spring program were twelve weeks long. The survey was scored in accordance with the survey-scoring rubric (See Appendix A, p.109).

**Survey Administration.**

<table>
<thead>
<tr>
<th>Program session</th>
<th>Pre-survey</th>
<th>Post-survey</th>
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<tbody>
<tr>
<td>Fall 2012</td>
<td>September</td>
<td>December</td>
</tr>
<tr>
<td>Spring 2013</td>
<td>February</td>
<td>May</td>
</tr>
<tr>
<td>Fall and Spring 2012-2013</td>
<td>September</td>
<td>December and May</td>
</tr>
</tbody>
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**Data Collection-Parent Interviews**

**Recruitment**

All parents of sixth grade students who had registered in Active 6 by the start of the fall program were contacted and asked if they would like to participate in a phone interview. Before the parents were contacted they were placed into one of two groups. One group consisted of parents of sixth graders who were registered in the Active 6 program but had not participated in the structured afterschool program. After the first month of the fall program, all parents of sixth graders who had not participated in the afterschool program were contacted by phone. The second group consisted of parents of sixth graders who had participated in the Active 6 program.
During the last month of the fall program the parents of sixth graders who had participated in the afterschool program at least four times were contacted by phone.

**Instrument**

The parent perception interviews contained a minimal number of questions in order to increase the likelihood of participation. The questions were developed to build upon the research conducted by Reamer (2012) in year 2 on the barriers to participation in the Active 6 program. One of the barriers to participation identified by the parents in the focus groups was that they did not feel included in the program. The interpersonal level in the SEM emphasizes the importance of connecting with family and maintaining close contact because they have a strong influence on the child’s health behavior (Robinson, 2008). In the focus groups in year 2, the parents stated that after they registered their child for Active 6 they were never contacted or given any follow up information from the YMCA (Reamer, 2012). To address this barrier, parent interviews were conducted in order to involve and engage the parents of sixth grade participants. The interviews provided the program with parent feedback, and could also increase the parent’s overall investment in the program.

Parents of sixth grade participants who were registered but did not participate in the afterschool program were asked the following structured questions: “How did you hear about the Active 6 Program?” followed by “do you have a good idea of what the program offers to your child?” If not, “In what way could the YMCA improve this?” Next they were asked, “How often does your child participate in Active 6?” followed by “what are the reasons your child does not regularly participate in Active 6?” and “what are your overall thoughts on the Active 6 program?” and lastly, “is there anything you feel could improve the program?” The University of Montana Institutional Review Board approved the above questions.
Parents of sixth graders who regularly participate were asked the following structured questions: “How often does your child participate in Active 6?” If often, “what keeps them coming back?” If not often, “what prevents them from participating?” Followed by, “what is your favorite part of the Active 6 program?” Next came, “what changes have you noticed in your child as a result of participating in Active 6?” They were then asked, “in your opinion what would make the program better?” And lastly, “would you recommend this program to other families?” The University of Montana Institutional Review Board approved the above questions.

**Data Collection**

Parents of sixth grade students who had registered in Active 6 by the start of the fall program were contacted and asked if they would like to participate in a phone interview. The researcher read the informed consent script to the parent, which outlined the purpose of the interview as well as the potential risks (see Appendix C, p.127). The researcher informed the parent that the interview consisted of five questions and would take about five minutes to conduct. If the parent agreed to participate, the researcher wrote the individual’s name in the space at the bottom of the telephone informed consent form and signed it to indicate that the elements of the informed consent were administered.

Parents of the sixth graders who had not participated in the afterschool program were contacted after the first month of the fall program. Parents of the sixth graders who had participated in the afterschool program were contacted during the last month of the fall program and also over the break between fall and spring program sessions.
Data Analysis-Active 6 Survey

A dependent samples $t$-test was used to evaluate mean differences in the health outcomes between the pre-and post-survey assessments. A mixed between-within subjects analysis of variance (ANOVA) was used to further analyze the data. For this type of analysis there are two independent variables: one between subjects and the other within subjects, and one continuous dependent variable. This allows researchers to study the impact of an intervention on specific groups within the population being studied (Pallant, 2010).

For this study, 2x2 (time [pre-post] x between subjects group [see list below]) ANOVAs were used to compare pre-post survey results between groups in specific participants in the Active 6. The between subjects groups were gender (male and female), participation rate (low and high), and SES (low and high). The within subjects independent variable was time of the survey, time 1 (pre-survey) and time 2 (post-survey). The continuous dependent variable was the scores on the Active 6 survey measured at each time period. For the participants in the all-year group a 3x2 (time [pre-post-post] x between subjects group) were used to compare survey results. The between groups were same as above and the within subjects variable was time of the survey, time 1 (pre-survey), time 2 (post-survey), and time 3 (post-survey). The data were analyzed in SPSS. The level of statistical significance was achieved at $p < 0.05$. A simple linear regression was used to assess if student’s social influence on physical activity was a predictor of their daily minutes of physical activity and their physical activity self-efficacy.

Null Hypotheses

$H_{01}$: There will be no difference in health outcomes from pre-to post-assessments between students with a low participation rate and a high participation rate.
H₀₂: There will be no difference in health outcomes from pre-to post-assessment between the male and female participants.

H₀₃: There will be no difference in health outcomes from pre-to post-assessment between the low SES group and the high SES group.

**Data Analysis Parent Interviews**

The parent interviews were analyzed qualitatively by conducting a content analysis and followed a five-step method outlined by Ulin, Robinson, and Tolley (2005). The analysis took an inductive approach, moving from specific data to general data so that they could be combined into a larger whole or general statement (Elo & Kyngas, 2008). The five steps that guided the analysis were reading, coding, displaying, reducing, and interpreting (Ulin et al., 2005). The five steps are both structured and flexible. Structured, in that they follow one another sequentially, and flexible as researchers often revisit previous steps during the process (Ulin et al., 2005).

The first step of the qualitative analysis process was reading, which is described as, “reading and rereading each set of notes or transcripts until you are intimately familiar with the content” (Ulin et al., 2005, p. 145). During this step, the researcher became immersed in the data. As the researcher became more familiar with the data, tentative themes were identified. As more interviews were conducted, the researcher reviewed the transcripts as a set in order to identify important patterns among them.

The second step in the process is coding the data by identifying emerging themes (Ulin et al., 2005). “In qualitative analysis using words or parts of words to flag ideas you discover in the transcript can make analysis of a large data file easier and more accurate” (Ulin et al., 2005, p. 147). In this step, the researcher read through the transcriptions and created a list of common
themes. The researcher then followed the inductive process, and reduced the number of detail specific themes by creating general labels.

The third step of the qualitative analysis is displaying data (Ulin et al., 2005). “Displaying data means laying out or taking an inventory of what you know related to a theme; capturing the variation or richness, and noting differences between individuals or subgroups” (Ulin et al., 2005, p.157). The researcher focused on a specific theme and identified any subthemes that emerged from the data. Upon identifying the subthemes, the researcher then referred back to the data to analyze the evidence that supports each subtheme.

The fourth step of the process is data reduction (Ulin et al., 2005). The authors describe this as, “the process of distilling the information to make visible the most essential concepts and relationships” (Ulin et al., 2005, p.160). At this point of the analysis, the researcher looked at the data from a wider perspective, and identified overall central themes from the data. The researcher confined the data by identifying what is important and not important.

The fifth and final step of the qualitative analysis process is interpretation, which is defined as, “the act of identifying and explaining the data’s core meaning.” The researcher weaved the data together by looking for relationships between themes. The quantitative results from the surveys were also integrated into the interpretation process to further analyze the results.

Subjectivity can have a negative impact on the validity and reliability in a qualitative content analysis (Ulin et al., 2005). In order to reduce researcher bias in this study, the qualitative analysis process implemented investigator triangulation. Investigator triangulation is the use of more than one researcher in the analysis process (Guion, Diehl, & McDonald, 2002). For the purpose of this study three researchers separately analyzed the qualitative data and then
compared findings to gain a deeper understanding of the data (Guion et al., 2002). By reducing researcher bias, the overall credibility of the study increased and had a positive impact on the validity and reliability of the analysis.
CHAPTER FOUR

Results

The purpose of the study was to assess the Active 6 program’s impact on sixth grade students by improving health perceptions and knowledge, increasing physical activity, decreasing sedentary behavior, and increasing perceived self-efficacy. In addition to examining overall health changes, the study was designed to assess the impact of the program between specific groups of participants, gender (male, female), participation rate (low, high), and SES (low, high). This study used a pretest-posttest quasi-experimental design to measure the degree of change in participants as a result of their participation in the Active 6 program. Participants were given an identical pre-and post-survey. The pre-survey was administered during the first three weeks of the program in the fall. The post-survey was administered during the last three weeks of the program in the fall. In the spring, the pre-survey was only given to new participants who did not participate in the fall program, allowing for a lengthier pre-post assessment. The post-survey was administered during the last three weeks of spring programming to all students in the program. The survey data was broken up into three groups: fall, spring, and all year. The participants self selected into groups based on their level of participation in the program.

The study was also designed to build upon previous research on barriers to participation in the program by assessing the parent’s perceptions of the Active 6 program. Phone interviews (N = 40) were conducted with parents of sixth graders who were registered in the Active 6 program but had not attended. An additional 40 interviews were conducted with parents of sixth graders who regularly participated in the Active 6 afterschool program. The results of the study are discussed below, beginning with the survey data, followed by the parent interviews.
Fall Survey Results

Demographics. Sixty-one students registered in the Active 6 program took the pre-and post-survey assessment. Of the 61 participants, 21 were male and 40 were female. Twenty-one of the survey participants were identified as low SES, 37 were high SES, and 3 individuals did not provide SES information. Thirty-seven of the participants had a low participation rate and 24 participants had a high participation rate, attending at least 40% of the time.

Health Perceptions and Knowledge

A paired samples one-tailed $t$-test was conducted to evaluate the impact of the intervention on students’ scores on health perceptions and knowledge (HP). There was a statistically significant increase in HP scores from pre = $3.48 \pm 0.96$ to post = $3.79 \pm 0.95$, $p = 0.013$. The mean increase in HP score was 0.31.

A mixed between-within subjects analysis of variance was conducted to assess the impact of the Active 6 program on participants HP score across two time periods (pre-intervention, post-intervention) between gender (male, female), participation rate (low, high) and socioeconomic status (low, high). For the purpose of this study low participation was defined as attending less than 40% of the program sessions. High participation was classified as attending at least 40% of the program. For the purpose of this study any student who received free or reduced lunch through the National School Lunch Program (NSLP) at school was in the low socioeconomic status (SES) group. Therefore, all students who did not qualify for free or reduced lunch were categorized as high SES.

Gender. There was no significant interaction between gender and time. There was a substantial main effect for time, Wilks’ Lambda = 0.92, $F (1, 59) = 5.5$, $p = 0.02$, partial eta squared = 0.085 with both groups showing an increase in HP score across the two time periods.
(see figure 1). The main effect comparing gender was not significant suggesting no difference in HP score between male and female participants.

![Figure 1. Health Perceptions and Knowledge Score by Gender Significant main effect for time: * p =0.02.](image)

**Participation Rate.** There was no significant interaction between participation rate and time. There was a substantial main effect for time, Wilks’ Lambda = 0.91, F (1, 59) = 6.1, p = 0.017, partial eta squared = 0.093, with both groups showing an increase in HP score across the two time periods. There was a main effect for participation rate, F (1, 59) = 4.6, p = 0.036, partial eta squared = 0.07 suggesting increased program impact on health perceptions and knowledge score for those with high participation compared to low participation (see figure 2).
Socioeconomic Status. There was no significant interaction between SES and time. There was a significant main effect for time, Wilks’ Lambda = 0.93, F (1, 55) = 4.3, p = 0.04, partial eta squared = 0.07, with both groups showing an increase in HP score across the two time periods (see figure 3). The main effect comparing SES was not significant suggesting no difference in health perceptions and knowledge score for low SES and high SES participants.
Physical Activity

A paired samples one-tailed $t$-test was conducted to evaluate the impact of the intervention on student’s daily minutes of physical activity (PA). There was a statistically significant increase in daily minutes of PA from pre = 150.8 ± 71.7, post = 171.3 ± 64.0, $p = 0.018$. The mean increase in daily minutes of PA the program was 20.49 minutes.

A mixed between-within subjects analysis of variance was conducted to assess the impact of the Active 6 program on participants daily minutes of physical activity across two time periods (pre-intervention, post-intervention) between gender (male, female), participation rate (low, high) and SES (low, high).

**Gender.** There was no significant interaction between gender and time. There was a substantial main effect for time, Wilks’ Lambda = 0.9, $F (1, 59) = 6.5$, $p = 0.01$, partial eta squared = 0.099, with both groups showing an increase in PA across the two time periods (see figure 4). The main effect comparing gender was not significant suggesting no difference in program impact on daily minutes of PA between male and female participants.

Figure 4. Daily Minutes of Physical Activity by Gender
Significant main effect for time; * $p = 0.01$
**Participation Rate.** For the purpose of this study physical activity is defined as the student’s total daily minutes of PA. Low participation is defined as attending less than 40% of the program, and high participation rate is attending at least 40% of the program sessions. There was no significant interaction between participation rate and time. There was a main effect for time, Wilks’ Lambda = 0.93, F (1, 59) = 4.5, p = 0.04, partial eta squared = 0.07, with both groups showing an increase in PA across the two time periods (see figure 5). The main effect comparing participation rates was not significant suggesting no difference in program impact on daily minutes of PA between those who have a low participation rate and a high participation rate.

![Figure 5. Daily Minutes of Physical Activity by Participation Rate](image)

*Significant main effect for time: * p = 0.04

**Socioeconomic Status.** There was no significant interaction between SES and time. There was a main effect for time, Wilks’ Lambda = 0.91, F (1, 55) = 5.4, p = 0.024, partial eta squared = 0.89, with both groups showing an increase in PA across the two time periods (see figure 6). The main effect comparing SES was not significant suggesting no difference in program impact on daily minutes of PA between low SES and high SES participants.
Figure 6. Daily Minutes of Physical Activity by Socioeconomic Status
Significant main effect for time: * p = 0.024

Sedentary Behavior

A paired samples one-tailed t-test was conducted to evaluate the impact of the intervention on student’s daily hours of sedentary behavior. There was no significant difference in the participant’s total daily hours of sedentary behavior from pre-to post-assessment.

A mixed between-within subjects analysis of variance was conducted to assess the impact of the Active 6 program on participants daily hours of sedentary behavior across two time periods (pre-intervention, post-intervention) between gender (male, female), participation rate (low, high) and SES (low, high).

Gender. There was no significant interaction between gender and time. There was no main effect for time. The main effect comparing gender was not significant suggesting no difference in program impact on sedentary behavior between males and females.

Participation Rate. There was no significant interaction between participation rate and time. There was no main effect for time. The main effect comparing participation rate was not
significant suggesting no difference in program impact on sedentary behavior between those who have a low participation rate and a high participation rate.

*Socioeconomic Status.* There was no significant interaction between participation rate and time. There was no main effect for time. The main effect SES was not significant suggesting no difference in program impact on sedentary behavior between low SES and high SES participants.

**Physical Activity Self-Efficacy**

A paired samples one-tailed *t*-test was conducted to evaluate the impact of the intervention on student’s physical activity self-efficacy (PASE). There was a statistically significant increase in PASE from pre $M = 4.05 \pm 2.843$, to post $M = 6.00 \pm 2.576$, $p< .0005$. The mean increase in PASE score was 1.95.

A mixed between-within subjects analysis of variance was conducted to assess the impact of the Active 6 program on participants physical activity self-efficacy score across two time periods (pre-intervention, post-intervention) between gender (male, female), participation rate (low, high) and SES (low, high).

*Gender.* There was no significant interaction between gender and time. There was a substantial main effect for time. Wilks Lambda = 0.78, $F (1, 59) = 16.5$, $p< .0005$, partial eta squared = 0.22, with both groups showing an increase in PASE across the two time periods (see figure 7). The main effect comparing gender was not significant suggesting no difference in program impact on PASE between males and females.
Participation Rate. There was no significant interaction between participation rate and time. There was a main effect for time, Wilks’ Lambda = 0.72, F (1, 59) = 23.1, p<.0005, partial eta squared 0.28, with both groups showing an increase in PASE across the two time periods. The main effect comparing the individuals with a low participation and a high participation was significant, F (1, 59) = 7.308, p = 0.009, partial eta squared = 0.110, suggesting increased program impact on PASE for participants with high participation compared to low participation (see figure 8).
There was no significant interaction between socioeconomic status and time. There was a main effect for time, Wilk’s Lambda = 0.75, F (1, 55) = 18.6, p< .0005, partial eta squared 0.25, with both groups showing an increase in PASE across the two time periods (see figure 9). The main effect comparing SES was not significant suggesting no difference in program impact on PASE between low SES and high SES participants.
Self-Efficacy

A paired samples one-tailed *t*-test was conducted to evaluate the impact of the intervention on student’s general self-efficacy (SE). There was no significant difference in participants SE score from pre-to post-assessment.

A mixed between-within subjects analysis of variance was conducted to assess the impact of the Active 6 program on participants general self-efficacy score across two time periods (pre-intervention, post-intervention) between gender (male, female), participation rate (low, high) and SES (low, high).

**Gender.** There was no significant interaction between gender and time. There was no main effect for time. The main effect comparing gender was not significant suggesting no difference in program impact on SE between males and females

**Participation Rate.** There was no significant interaction between participation rate and time. There was no main effect for time. The main effect comparing participation rate was not significant suggesting no difference in program impact on SE between those who have a low participation rate and a high participation rate.

**Socioeconomic Status.** There was no significant interaction between participation rate and time. There was no main effect for time. The main effect comparing participation rate was not significant suggesting no difference in program impact on SE between low SES and high SES participants.

**Spring Survey Results**

**Demographics.** Seventeen new students to the Active 6 program took the pre-and post-survey assessment in the spring session. Of the 17 participants, 11 were male and 6 were female. Ten participants were identified as low SES, 5 were high SES, and 2 individuals did not provide
that information. Ten participants had a low participation rate and 7 participants had a high participation rate, attending at least 40% of the time.

**Health Perceptions and Knowledge**

A paired samples one-tailed *t*-test was conducted to evaluate the impact of the intervention on student’s scores on the HP section of the survey. There was no significant difference in students HP scores from pre-to post-assessment.

A mixed between-within subjects analysis of variance was conducted to assess the impact of the Active 6 program on participants HP score across two time periods (pre-intervention, post-intervention) between gender (male, female), participation rate (low, high) and SES (low, high).

**Gender.** There was no significant interaction between gender and time. There was no main effect for time. The main effect comparing gender was not significant suggesting no difference in program impact on HP score between males and females.

**Participation Rate.** There was no significant interaction between participation rate and time. There was no main effect for time. The main effect comparing participation rate was not significant suggesting no difference in program impact on HP score between those who have a low participation rate and a high participation rate.

**Socioeconomic Status.** There was no significant interaction between SES and time. There was no main effect for time. The main effect comparing participation rate was not significant suggesting no difference in program impact on HP score between low SES and high SES participants.

**Physical Activity**

A paired samples one-tailed *t*-test was conducted to evaluate the impact of the intervention on student’s daily minutes of physical activity (PA). There was a statistically
significant increase in daily minutes of PA from pre = 183.7 ± 76.8, post = 213.5 ± 66.1, p = 0.04. The mean increase in daily minutes of PA was 30.1 minutes.

A mixed between-within subjects analysis of variance was conducted to assess the impact of the Active 6 program on participants daily minutes of physical activity across two time periods (pre-intervention, post-intervention) between gender (male, female), participation rate (low, high) and SES (low, high).

**Gender.** There was no significant interaction between gender and time. There was no main effect for time. The main effect comparing gender was not significant suggesting no difference in program impact on daily minutes of PA between males and females.

**Participation Rate.** There was no significant interaction between participation rate and time. There was no main effect for time. The main effect comparing participation rate was not significant suggesting no difference in program impact on daily minutes of PA between those who have a low participation rate and a high participation rate.

**Socioeconomic Status.** There was no significant interaction between SES and time. There was no main effect for time. The main effect comparing SES was not significant suggesting no difference in program impact on daily minutes of PA between low SES and high SES participants.

**Sedentary Behavior**

A paired one-tailed t-test was conducted to evaluate the impact of the intervention on student’s daily hours of sedentary behavior (SB). There was a statistically significant decrease in daily hours of SB from pre = 7.88 ± 6.5, post = 5 ± 3.2, p = 0.02. The mean decrease in daily hours of SB was 2.88 hours.
A mixed between-within subjects analysis of variance was conducted to assess the impact of the Active 6 program on participants daily hours of sedentary behavior across two time periods (pre-intervention, post-intervention) between gender (male, female), participation rate (low, high) and SES (low, high).

**Gender.** There was no significant interaction between gender and time. There was no main effect for time. The main effect comparing gender was not significant suggesting no difference in program impact on SB between males and females

**Participation Rate.** There was no significant interaction between participation rate and time. There was no main effect for time. The main effect comparing participation rate was not significant suggesting no difference in program impact on SB between those who have a low participation rate and a high participation rate.

**Socioeconomic Status.** There was no significant interaction between SES and time. There was no main effect for time. The main effect comparing SES and time was not significant suggesting no difference in program impact on SB between low SES and high SES participants.

**Physical Activity Self-Efficacy**

A paired samples one-tailed t-test was conducted to evaluate the impact of the intervention on student’s PASE. There was no significant difference in students PASE scores from pre-to post-assessment.

A mixed between-within subjects analysis of variance was conducted to assess the impact of the Active 6 program on participants PASE across two time periods (pre-intervention, post-intervention) between gender (male, female), participation rate (low, high) and SES (low, high).
**Gender.** There was no significant interaction between gender and time. There was no main effect for time. The main effect comparing gender was not significant suggesting no difference in program impact on PASE between males and females

**Participation Rate.** There was no significant interaction between participation rate and time. There was no main effect for time. The main effect comparing participation rate was not significant suggesting no difference in program impact on PASE between those who have a low participation rate and a high participation rate.

**Socioeconomic Status.** There was no significant interaction between SES and time. There was no main effect for time. The main effect comparing SES was not significant suggesting no difference in program impact on PASE between low SES and high SES participants.

**Self-Efficacy**

A paired samples one-tailed t-test was conducted to evaluate the impact of the intervention on student’s general self-efficacy (SE). There was no significant difference in participants SE score from pre-to post-assessment.

A mixed between-within subjects analysis of variance was conducted to assess the impact of the Active 6 program on participants general self-efficacy score across two time periods (pre-intervention, post-intervention) between gender (male, female), participation rate (low, high) and SES (low, high).

**Gender.** There was no significant interaction between gender and time. There was no main effect for time. The main effect comparing gender was not significant suggesting no difference in program impact on SE between males and females
**Participation Rate.** There was no significant interaction between participation rate and time. There was no main effect for time. The main effect comparing the individuals with a low participation and a high participation was significant, \( F(1, 15) = 28.62, p = 0.0005 \), partial eta squared = 0.656, suggesting difference in SE between participants with low participation and high participation (see figure 10).

![Figure 10. Physical Activity Self-Efficacy by Participation Rate](image)

**Socioeconomic Status.** There was no significant interaction between SES and time. There was no main effect for time. The main effect comparing SES was not significant suggesting no difference in program impact on SE between low SES and high SES participants.

**Social Influence on Physical Activity**

A simple linear regression was conducted in order to assess if participant’s social influence on physical activity score was a predictor of their reported daily minutes of physical activity and physical activity self-efficacy. Participant’s social influence on physical activity score was not a significant predictor of their daily minutes of physical activity \( R^2 = 0.055 \), Beta =
0.235 n.s. Participants social influence score was not a significant predictor of their physical activity self-efficacy $R^2 = 0.119$, Beta = 0.345 n.s.

**All-Year Survey Results**

**Demographics.** Twenty-three students who participated in both the fall and spring program sessions took the pre-and post-assessment in the fall and another post-assessment in the spring. Of the 23 participants, 4 were male and 19 were female. Eight participants were identified as low SES, 14 were high SES, and 1 individual did not provide that information. Twelve participants had a low participation rate and 11 had a high participation rate attending at least 40% of the time.

**Health Perceptions and Knowledge**

A paired samples one-tailed $t$-test was conducted to evaluate the impact of the intervention on student’s scores on the HP section of the survey from time 2 (fall-post survey) to time 3 (spring-post survey). There was no significant difference in students HP scores from fall-post to spring-post assessment.

A paired samples one-tail $t$-test was conducted to evaluate the impact of the intervention on student’s scores on the HP section of the survey from time 1 (fall pre-survey) to time 3 (spring post-survey). There was no significant increase in HP score from fall-pre to spring-post assessment.

A mixed between-within subjects analysis of variance was conducted to assess the impact of the Active 6 program on participants HP score across three time periods (pre-intervention, post-fall, post-spring) between gender (male, female), participation rate (low, high) and SES (low, high).
**Gender.** There was no significant interaction between gender and time. There was no main effect for time. The main effect comparing gender was not significant suggesting no difference in program impact on HP score between males and females.

**Participation Rate.** There was no significant interaction between participation rate and time. There was no main effect for time. The main effect comparing participation rate was not significant suggesting no difference in program impact on HP score between individuals with a low participation or a high participation.

**Socioeconomic Status.** There was no significant interaction between SES and time. There was no main effect for time. The main effect comparing SES was significant, $F (1, 20) = 5.14, p = 0.035$, partial eta squared = 0.205, suggesting difference in program impact on HP score between low and high SES participants (see figure 11).

![Figure 11. Health Perceptions and Knowledge Score by Socioeconomic Status](image)

**Physical Activity**

A paired samples one-tailed $t$-test was conducted to evaluate the impact of the intervention on student’s daily minutes of PA from time 2 (fall-post survey) to time 3 (spring-
There was a statistically significant increase in daily minutes of PA from fall-post = 167.83 ± 62.3, spring-post = 199.43 ± 69.6, p = 0.03. The mean increase in daily minutes of PA was 31.6 minutes.

A paired samples one-tail t-test was conducted to evaluate the impact of the intervention on student’s daily minutes of PA time 1 (fall pre-survey) to time 3 (spring post-survey). There was a statistically significant increase in daily minutes of PA from fall-pre = 156.74 ± 72.3, spring-post = 199.43 ± 69.6, p = 0.02. The mean increase in daily minutes of PA was 42.7 minutes.

A mixed between-within subjects analysis of variance was conducted to assess the impact of the Active 6 program on participants daily minutes of PA across three time periods (pre-fall, post-fall, post-spring) between gender (male, female), participation rate (low, high) and SES (low, high).

**Gender.** There was no significant interaction between gender and time. There was no main effect for time. The main effect comparing gender was not significant suggesting no difference in program impact on daily minutes of PA between males and females.

**Participation Rate.** There was no significant interaction between participation rate and time. There was no main effect for time. The main effect comparing the individuals with a low participation and a high participation was significant, F (1, 21) = 4.75, p = 0.04, partial eta squared = 0.185, suggesting difference in daily minutes of PA between participants with low PR and high PR (see figure 12).
Figure 12. Daily Minutes of Physical Activity by Participation Rate
Significant main effect between groups: *p = 0.04

Socioeconomic Status. There was no significant interaction between SES and time.
There was no main effect for time. The main effect comparing SES was not significant
suggesting no difference in program impact on daily minutes of PA between low SES and high
SES participants.

Sedentary Behavior

A paired samples one-tailed t-test was conducted to evaluate the impact of the
intervention on student’s daily hours of sedentary behavior from time 2 (fall-post survey) to time
3 (spring-post survey). There was no significant difference in students daily hours of sedentary
behavior from fall-post to spring-post assessment.

A paired samples one-tail t-test was conducted to evaluate the impact of the intervention
on student’s daily hours of sedentary behavior from time 1 (fall pre-survey) to time 3 (spring
post-survey). There was no significant decrease in daily hours of SB from fall-pre to spring-post
assessment.
A mixed between-within subjects analysis of variance was conducted to assess the impact of the Active 6 program on participants daily hours of SB across three time periods (pre-fall, post-fall, post-spring) between gender (male, female), participation rate (low, high) and SES (low, high).

**Gender.** There was no significant interaction between gender and time. There was no main effect for time. The main effect comparing gender was not significant suggesting no difference in program impact on daily hours of sedentary behavior between males and females.

**Socioeconomic Status.** There was no significant interaction between SES and time. There was no main effect for time. The main effect comparing SES was significant, $F(1, 20) = 5.1, p = 0.04$, partial eta squared $= 0.2$, suggesting difference in program impact on daily hours of sedentary behavior between low and high SES participants (see figure 13).

![Figure 13. Sedentary Behavior by Socioeconomic Status](image)

**Participation Rate.** There was no significant interaction between participation rate and time. There was no main effect for time. The main effect comparing participation rate was not
significant suggesting no difference in program impact on daily hours of sedentary behavior between individuals with a low participation rate or a high participation rate.

**Physical Activity Self-Efficacy**

A paired samples one-tailed $t$-test was conducted to evaluate the impact of the intervention on student’s PASE from time 2 (fall-post survey) to time 3 (spring-post survey). There was a statistically significant increase in PASE from fall-post = 6.91 ± 2, spring-post = 7.61 ± 2.3, $p<0.0005$. The mean increase in PASE was 0.7.

A paired samples one-tail $t$-test was conducted to evaluate the impact of the intervention on student’s PASE time 1 (fall pre-survey) to time 3 (spring post-survey). There was a statistically significant increase in PASE from fall-pre = 4.17 ± 3, spring-post = 7.61 ± 2.3, $p<0.0005$. The mean increase in PASE was 3.44.

A mixed between-within subjects analysis of variance was conducted to assess the impact of the Active 6 program on participants PASE across three time periods (pre-fall, post-fall, post-spring) between gender (male, female), participation rate (low, high) and SES (low, high).

**Gender.** There was no significant interaction between gender and time. There was a main effect for time. Wilks Lambda = 0.73, $F (1, 21) = 3.7$, $p = 0.04$, partial eta squared = 0.27, with both groups showing an increase in PASE across the two time periods (see figure 14). The main effect comparing gender was not significant suggesting no difference in program impact on PASE between males and females.
Participation Rate. There was no significant interaction between participation rate and time. There was a main effect for time. Wilks Lambda = 0.47, F (1, 21) = 11.5, p<0.0005, partial eta squared = 0.53, with both groups showing an increase in PASE across the two time periods (see figure 15). The main effect comparing participation rate was not significant suggesting no difference in program impact on PASE between low participation and high participation.

Figure 14. Physical Activity Self-Efficacy by Gender
Significant main effect for time: * p =0.004

Figure 15. Physical Activity Self-Efficacy by Participation Rate
Significant main effect for time: * p <0.0005
**Socioeconomic Status.** There was no significant interaction between SES and time.

There was a main effect for time, Wilks’ Lambda = 0.52, F (1, 20) = 8.67, p = 0.002, partial eta squared 0.48, with both groups showing an increase in PASE across the two time periods. The main effect comparing the low SES and high SES individuals was significant, F (1, 20) = 5.6, p = 0.03, partial eta squared = 0.22, suggesting increased program impact on PASE for high SES participants compared to low SES participants (see figure 16).

![Figure 16. Physical Activity Self-Efficacy by Socioeconomic Status](image)

**Self-Efficacy**

A paired samples one-tailed t-test was conducted to evaluate the impact of the intervention on student’s SE from time 2 (fall-post survey) to time 3 (spring-post survey). There was a statistically significant increase in SE from fall-post = 11.4 ± 2.1, spring-post = 12.9 ± 2.5, p = 0.002. The mean increase in SE was 1.52.

A paired samples one-tail t-test was conducted to evaluate the impact of the intervention on student’s SE time 1 (fall pre-survey) to time 3 (spring post-survey). There was a statistically
significant increase in SE from fall-pre = 11.3 ± 1.8, spring-post = 12.9 ± 2.5, p<0.0005. The mean increase in SE was 1.6.

A mixed between-within subjects analysis of variance was conducted to assess the impact of the Active 6 program on participants SE across three time periods (pre-fall, post-fall, post-spring) between gender (male, female), participation rate (low, high) and SES (low, high).

**Gender.** There was no significant interaction between gender and time. There was a main effect for time. Wilks Lambda = 0.65, F (1, 21) = 5.4, p = 0.01, partial eta squared = 0.35, with both groups showing an increase in SE across the two time periods (see figure 17). The main effect comparing gender was not significant suggesting no difference in program impact on SE between males and females.

![Figure 17. Self-Efficacy by Gender](image)

**Significant main effect for time: *p = 0.01**

**Participation Rate.** There was no significant interaction between participation rate and time. There was a main effect for time. Wilks Lambda = 0.55, F (1, 21) = 8.3, p = 0.002, partial eta squared = 0.46, with both groups showing an increase in SE across the two time periods (see figure 17). The main effect comparing the low participation rate and high participation rate
individuals was significant, $F(1, 21) = 10.4$, $p = 0.004$, partial eta squared = 0.3, suggesting increased program impact on SE for participants with high participation compared to low participation (see figure 18).

Figure 18. Self-Efficacy by Participation Rate
Significant main effect for time: *$p = 0.002$
Significant main effect between groups: $p = 0.004$

**Socioeconomic Status.** There was no significant interaction between SES and time. There was a main effect for time, Wilks’ Lambda = 0.58, $F(1, 20) = 7$, $p = 0.005$, partial eta squared 0.43, with both groups showing an increase in SE across the two time periods (see figure 19). The main effect comparing the low SES and high SES individuals was not significant suggesting no difference in program impact on SE between low SES and high SES participants.
Social Influence on Physical Activity

A simple linear regression was conducted in order to assess if participant’s social influence on physical activity score was a predictor of their reported daily minutes of physical activity and physical activity self-efficacy. Participant’s social influence on physical activity score was not a significant predictor of their daily minutes of physical activity $R^2 = 0.002$, Beta = 0.049 n.s. Participants social influence score was not a significant predictor of their physical activity self-efficacy $R^2 = 0.031$, Beta = 0.177 n.s.
Parent Interviews

In order to build on previous research addressing the barriers to participation in the Active 6 program, 80 phone interviews were conducted with parents of students registered in the Active 6 program. The purpose of these interviews was to further involve and engage parents, and to understand their perceptions of the Active 6 program. The questions were designed to identify any existing barriers to participation, perceived benefits of the program, and potential program improvements. The 80 parents were divided into two groups. The first parent group included 40 phone interviews with parents of students who were registered in Active 6 but did not participate in the structured afterschool program. The second parent group included 40 phone interviews with parents of sixth graders who had participated in the structured afterschool program at least four times.

The phone interviews ranged in duration from five-to ten-minutes and were all transcribed. After conducting the two groups of 80 interviews, the principal investigator followed the five-step qualitative analysis process outlined by Ulin et al., (2005). The five steps followed were: reading, coding, displaying, reducing, and interpreting. The two groups of transcriptions were read through three times in order to become intimately familiar with the data. The two groups of interviews were then analyzed for potential coding themes by three researchers. This process took place independently in order to minimize bias. The researchers then compared coding schemes for both parent groups, and reached a consensus on a common coding guide for each group prior to coding the transcribed interviews. In addition, each research assistant who was involved in the qualitative analysis provided a brief description of their thoughts and perceptions from each group of parent interviews. This was done in order to ensure that
Results: Parent Group 1
Parents of Students who were Registered but did not Participate

A number of themes related to participation in the Active 6 program emerged in this group of interviews. The themes were organized into four sections: 1) program outreach; 2) barriers to participation; 3) program benefits; and 4) suggestions for improvement. Included with each theme are quotes from the interviews that best represent the theme.

Section 1: Program Outreach

Theme 1: Middle School Open House. The middle school open houses emerged as one of the prominent ways that parents heard about the Active 6 program. Parents communicated that the program had tabled at both the school wide open houses and the sixth grade open houses at the beginning of the school year. Most of the parents had mentioned first learning about the program and picking up registration packets at these events.

“We got all the information and the registration packet at the CS Porter open house”

“I believe that my wife and son heard about it at the open house for the middle school. They got a lot of information there and he was really excited about joining the program.”

“We heard about the program through the schools. At the sixth grade open house the YMCA was handing out registration packets.”

“We heard about it through orientation, they had a YMCA representative there with registration stuff and information.”

Theme 2: YMCA Member. Another primary way that parents heard about the Active 6 program was from being connected to the YMCA. This included working at the YMCA, being a
member, or having their kids participate in other YMCA programs. The parents who had access to the YMCA in the past were well aware of the program once their child entered sixth grade.

“Well I have been going to the YMCA for a long time. We have had a family membership for years so that’s how we heard about the program. We got the registration form and signed him up there.”

“My mother in law she heard about it when she took my daughter to the YMCA for swim classes. I think we did get some information from the school as well.”

“I work at the YMCA so I knew about the program and signed her up”

“My daughter wen the afterschool program at the YMCA through most of elementary so that is how we heard about Active 6.”

Theme 3: Adequate Understanding of Program. The majority of the parents reported having a good understanding of what the program offered. They were able to communicate the different aspects of the program from the free passes to the structured activities. A big barrier to participation in previous years was a general lack of information about the program (Reamer, 2012).

“I think the YMCA did a good job of letting everyone know what the program was all about. If you got the registration packet everything was in there.”

“I think they do a pretty good job with giving you enough information in the registration packet.”

“Yeah the registration packet had a lot of brochures with all the information. Those helped us make sense of everything the program offered.”

“Yeah the free passes, afterschool program, shirts, free Griz games. I also heard about it on the radio. I think you guys are doing a great job at getting information out there.”

Section 2: Barriers to Participation

Theme 1: Conflicting Activities. The most prominent barrier to participation that was identified by parents was their child’s conflicting activities. The activities ranged in nature, but they all overlapped with the structured programming time on Tuesdays and Thursdays. Despite
not being able to attend the structured afterschool program, parents often reported that their child still engaged in the program by utilizing their YMCA pass.

“She is in Flagship afterschool at CS Porter. The time of the flagship program conflicts with the afterschool stuff at the YMCA.”

“He is busy afterschool playing football. He is playing football with Missoula Youth Football. So as long as football is going on he will not be at Active 6. He has used his YMCA pass outside of the afterschool program hours”

“He has another sport on Tuesday afterschool and on Thursdays he has piano lessons. So right now with the time conflicts he can’t make the program but he still likes to use his pass.”

“He has a time conflict we basketball. He does use his YMCA pass sometimes to go to open gym to basketball.”

**Theme 2: Transportation.** Transportation issues surfaced as another major barrier to participation in the Active 6 program. The parents reported two primary difficulties in regards to transportation. The first being conflicts with their own schedule, which left them unable to drive their child to the YMCA. The second issue was that parents felt their child was not prepared to use the bus system on their own.

“The biggest reason she doesn’t go is transportation. I know they give bus passes but she hasn’t got on the bus yet and I think she needs someone to show her how first. If we could figure out the transportation piece it would be awesome with all the stuff they offer afterschool.”

“The school bus system does not go directly to the YMCA and on the city bus he would have to transfer a few times to get there. I would have to change my work schedule for him to attend more often.”

“The biggest reason she doesn’t go is transportation. I do not have a way of getting her there to participate in the afterschool program. She comes sometimes and uses her YMCA pass.”

“I cannot drive her there and I know they get a bus pass but she is 11. I don’t want her getting on the bus by herself.”
Section 3: Program Benefits

**Theme 1: Free Program.** In regards to their overall thoughts on the program, a number of parents expressed a major benefit was that it is offered for free. The parents consistently discussed how they liked that the program was accessible to all sixth graders. The open inclusion surfaced as one of the main advantages of the Active 6 program.

“You know I think that it is really awesome that it is offered to all sixth graders and everything is free.”

“I think that it is an amazing thing for kids at this age and it is so great that it is accessible to everyone.”

“I think that it is great that the YMCA offers it. Especially for families that cannot afford it, it gives their kids a place to go and something to be a part of.”

“I think it is a great program especially for families who otherwise wouldn’t be able to afford the YMCA.”

**Theme 2: Involves kids who otherwise do not participate in programs.** Another theme that surfaced from the interviews was that Active 6 gives the kids who are not involved in other sports or activities something to be a part of. This perception was common among this set of parents. They appreciated that the program provided a place for the students who don’t have anywhere else to go afterschool.

“I think the program is great. My son is already active in sports but for the kids who are not in sports or other programs it gives them something to be a part of.”

“I think the program is wonderful. Definitely needed for kids at this age. Especially for those who are not involved in other sports its great.”

“We love the idea. He will probably use his membership most of all because he is already really involved in sports but it is great for the kids who are not part of sports and stuff.”

Section 4: Suggestions for Improvement

**Theme 1: Increased online information.** Increased online communication was mentioned on multiple occasions as a suggested improvement to the program. It became evident
that the parents desired a way to obtain information other than going to the YMCA. The suggestions on how to achieve this varied, but they consistently involved using online resources.

“One idea I have is you could put a notice up on the website for the sixth grade class. Each sixth grade class usually has a website with announcements and such. I constantly am checking the website and am sure other parents are to. So to post reminders about Active 6 would be great.”

“I think the YMCA could do a better job at getting the information out through the media like Facebook, Missoulian, or on TV.”

“It could be helpful to have updates throughout the year about activities and such. I know we lost all those brochures and don’t always remember to pick up a schedule from the YMCA. Maybe through email or a website or something.”

**Theme 2: Bus from the schools.** A common suggestion brought forth by parents was for the YMCA to provide transportation from the middle schools to the YMCA. This was consistently identified as a desired improvement to the Active 6 program.

“The one thing I would suggest is maybe a YMCA bus can pick the kids up at school. That would help a lot.”

“I wish there was a bus going everyday to the YMCA from the middle schools. I think this would be a great way to get more kids to come to the Y. One early out days there is no way for me to get to the middle school and drive him to the YMCA.”

“Maybe the YMCA could set something up like the afterschool program where a bus picks the kids up afterschool and drives them to the YMCA.”

The research assistants that helped with the content analysis provided the following feedback on the first group of parent interviews:

“It seemed like parents generally had very positive perceptions of the program and appreciated the potential outcomes of attending the program. Parents were generally familiar with the program or felt confident that information could be easily obtained. Outreach at the middle school open house was well received and succeeded in raising awareness about the program. The concern or challenge that I perceived as significant to parents was transportation to the program. There was an overarching concern with having kids utilize the bus system and work schedules often conflicted with transporting kids to the Y. This concern seemed to me to be the biggest barrier to student attendance.”
“My impression of group 1 was that there were a couple of major barriers to fully participating in the after school program. Transportation was a big one, and so was participation in other programs like Little Grizzly Football. However, several parents also mentioned that they hadn’t been informed of aspects like the after school program or they felt as if no one reached out to them to keep them informed or remind them. They all appreciated the incentives offered by Active 6 like the free YMCA membership and the football games. Several parents emphasized that they appreciated the program because it advocates a healthy lifestyle and provides a safe environment for their children. “

Results: Parent Group 2

*Parents of Students who Participate in the Active 6 Program*

A number of themes related to participation in the Active 6 program emerged in this group of interviews. The themes were organized into four sections: 1) program enhancers: perceived by students; 2) program enhancers: perceived by parents; 3) impact of Active 6; and 4) suggestions for improvement. Included with each theme are quotes from the interviews that best represent the theme.

**Section 1: Program Enhancers Perceived by Students**

**Theme 1: Friends participate.** In response to a question on why their child continues to participate in the Active 6 program, the parents regularly reported that a big reason was that their child’s friends participate. The presence of the children’s friends at the program surfaced as a major motivator for the students to continue attending Active 6.

“She really likes going because a few of her friends who go to different schools participate so she is able to see them every week.”

“He goes once a week. He has a good group of friends that go on Thursdays so that is a big motivator.”

“One thing that keeps her coming back every week is that her friends go.”

“He goes twice a week. He enjoys it and goes with all his buddies. I think having all his friends there is why he likes it so much.”

**Theme 2: Enjoy the activities.** Another commonly reported reason for participating in Active 6 was that their child enjoyed the activities. A number of the parents identified rock
climbing and swimming as their sixth graders favorite activity at the program. The fun activities surfaced as another motivator for the sixth graders to continue to attend Active 6.

“She really likes the swimming and the rock climbing. I would say those are her two main motivators to participate.”

“She goes almost every week. She has a lot of fun at Active 6 and really likes the games they play.”

“What he really enjoys at the program is the climbing wall and the swimming.”

Section 2: Program Enhancers Perceived by Parents

Theme 1: Something active to do afterschool. In response to a question on what they like most about the program, two themes emerged consistently. The parents liked that Active 6 gave their child a place to go afterschool, and that the program promotes physical activity. These two benefits were identified on a number of occasions by the parents. It became evident that the parents appreciated that the program kept their kids busy and active during the afterschool hours.

“I like that it gets her out and she does something active other than coming home and watching TV.”

“It gives him something to do afterschool. It is exactly that it is active. It is not just coming home and watching TV.”

“It is nice to have programs so the kids have things to do afterschool especially for working parents. I like that it promotes activity and gives the kids active things to do.”

“I like that it is something to help keep them active and healthy. Especially in the winter months when it is cold and they cannot go outside to play, it gives them a place to go and be active.”

Theme 2: Safe environment. Another commonly mentioned benefit to the program was that it provides a safe environment for children afterschool. It was clearly communicated that a major reason the parents value the Active 6 program is because it keeps their child safe afterschool.

“I like that it provides a safe place for my kid to go afterschool.”
“Well I like that there is someplace for my kids to be in the afternoon when I am working that is safe.”

“I like that is afterschool and there is something for them to do that is active. And the YMCA is a safe place for them to go.”

“I like that it gives the kids a safe place to go hang out afterschool.”

Section 3: Impact of the Active 6 Program

**Theme 1: Increased physical activity.** Increased physical activity surfaced as a theme in regards to the overall impact the program has on participants. Many of the parents discussed how Active 6 has encouraged their sixth grader to be more active.

“He is definitely more active outside of the program than he was before. He used to spend a lot of time playing video games afterschool.”

“This program has helped keep her active throughout the entire school year by giving her something active to do during the breaks between sports.”

“He isn’t coming home and playing video games as much. That is why this program has been so good for him.”

**Theme 2: Learn new activities and skills.** In reference to their perceptions on any changes that resulted in their child from participating in the program, learning new skills and activities surfaced as another main theme for the overall impact of the Active 6 program on participants.

“*She has learned a lot of new sports and games from the program that she really enjoys.*”

“*She has learned new activities from participating in the program. Now she is always wanting to go rock climbing.*”

“*He has learned new skills and activities like climbing. It is nice that the kids get exposed to activities that they don’t do at school.*”

“*She has learned more about sports and games that she hadn’t been exposed to in school. She is also more interested in sports than she had been before which we are happy about.*”
Theme 3: Improved mood and attitude. Another way the program was reported to impact the sixth grade participants was by improving their mood and attitude. This theme was mentioned by a number of the parents as they reflected on the ways the program had influenced their child.

“When she gets home from Active 6 she is more positive and excited then if she sits around afterschool.”

“She is having lots of fun and is very positive after Active 6.”

“I think he is happier when I get home from work. He is less likely to be bored sitting around watching TV. It puts him in a better mood for the rest of the day.”

“He is more positive. I think he has gained a good attitude from it.”

Theme 4: Already Active. A number of parents reported that they hadn’t noticed any changes in their child as a result of their participation in the Active 6 program because they were already active to begin with.

“Hard to say. He is already a very active and athletic kids as is.”

“I am not sure. She has always been an active kid. I just like how this program keeps her active throughout the entire school year between sports and stuff.”

“Uh no because of the type of person she is she is already pretty outgoing and active to begin with. But she is always in a good mood after Active 6.”

“I haven’t she is active to begin with.”

Section 4: Suggestions for Improvement

Theme 1: Transportation. Assistance with transportation was a common theme that emerged for potential program improvements. The parents commonly reported having difficulty getting their child to Active 6. Suggestions varied from bussing the kids to the YMCA to having a volunteer walk with them. Despite the ranges of ideas, they all reflected a desire for improved assistance with transportation.
“Being a working parent transportation to get the kids from the schools to the Y would be very helpful. If there were some kind of organized transportation she would probably go two time a week instead of just once.”

“The only thing I have a problem with is transportation. It is hard trying to get them to the YMCA sometimes. But that is the only thing otherwise the program is great.”

“It would be great if they had a way to get the kids from the school to the program. She just goes to Washington so it is not far enough away to take the bus. It would be good if someone would walk a group of them from the school to the Y.”

“If you could make it easier for some sixth graders to get there. I know it is hard to ride the Mountain Line from Meadow Hill. Maybe the YMCA bus could pick them up or something like that. I am able to pick my daughter up but I know some families can’t do this.”

**Theme 2: Offer more programming.** The parents also commonly communicated a desire for more programming. This suggested improvement came up in regards to the current Active 6 program as well as the potential of extending it for the children once they are out of sixth grade. Overall the parents desired to have more access to the program now, and in the future.

“Maybe have it more than twice a week.”

“I think the boys would like a longer time. That is the only thing he ever complains about is that he wished it lasted longer.”

“You know I am wondering about next year, what are they going to do for seventh graders? It would be nice if they could somehow offer the program to the kids then.”

“Even though it is Active 6 it would be nice if they kept it going throughout middle school. They could graduate into the next level or something.”

The research assistants that helped with the content analysis provided the following insight on the second group of parent interviews:

“Based on comments by this group of parents, I sensed a very high degree of satisfaction with the program by both parents and attending students. It seems that students appreciate the activities at the Y that are otherwise less accessible. Along with this, an additional opportunity to socialize with friends further motivates students to attend the
program. I also sense that parents particularly appreciate the security and supervision provided to attending students, along with an outlet that naturally encourages healthier choices and behavior. The overarching concern that’s perceived by parents pertains to transportation to the program. Work schedules often conflict with transportation to the Y and there exists a general concern regarding the lack of supervision or guidance in using the public bus system.”

“The parents in group 2 emphasized that one of the main reasons their kids participate in the Active 6 after school program is that they enjoy it. They get to make friends, see friends from other schools, and they have fun doing the activities, specifically rock climbing and swimming. Many parents also reported that a key benefit to participation is that the kids have become more active and outgoing socially, and spend less time playing video games and watching TV at home. Receiving free benefits like the membership and the Griz tickets were very much appreciated. However, the barriers of transportation and time conflicts with other after school programs like Little Grizzly Football were still a topic of discussion.”
CHAPTER 5

Discussion

The purpose of this research study was to assess the impact of the Active 6 afterschool physical activity program on sixth grade students, to determine if a relationship exists between participation and program impact, and to build upon previous research conducted on the barriers to participation in the Active 6 program. The following discussion is a synthesis of the data collected from primary and secondary sources. The discussion will explore the significant changes in certain health outcomes in sixth grade participants, the differences in specific health outcomes between groups of interest, the role of participation on program impact, factors that influenced the increase in program participation, as well as recommendations for future programming.

Overall Program Impact on Health Outcomes

The purpose of the Active 6 program is to increase physical activity, decrease sedentary behavior, increase perceived self-efficacy, and increase health perceptions and knowledge in sixth grade participants. The Active 6 survey was used to assess overall changes pre-to post in the above health outcomes. Measurement of program effectiveness has become a key component for growth and future success of afterschool programs (McGraw et al., 2000).

In the fall program group, participants showed a statistically significant increase in their health perceptions and knowledge score, daily minutes of physical activity, and physical activity self-efficacy; in the spring participants showed a statistically significant increase in their daily minutes of physical activity and a significant decrease in daily hours of sedentary behavior. In addition, parents of sixth graders who regularly participated commonly reported that Active 6 had resulted in positive outcomes. The main changes parents noted were: an increase in their
child’s rate of physical activity, improved overall mood and attitude, and acquiring new skills and activities. In the past two years, Active 6 has been run as an “open” program. The sixth graders had the option to take part in structured activities or go hang out in the YMCA as they pleased. This led to many students signing in and then going off on their own or in groups for the entire two hours of the program. Thus, it wasn’t clear if participants were engaging in physical activity and/or at what level. Without a mandatory education component in the daily activities, the program was not able to educate students on desired health outcomes and have any influence on their health knowledge and beliefs. Guided by the organizational level of influence in the socio-ecological model (SEM) this aspect of Active 6 for the 2012-2013-program year was changed. The program was broken up into two one-hour blocks. The first hour was spent doing mandatory group structured activities based on the daily theme including: community building, warm-up, an active game, and “snacktivity.” Based on the study results, it appears that restructuring the program and including an hour of mandatory educational group activities contributed to greater program impact.

In the fall group, students showed a statistically significant increase in health perceptions and knowledge. In year 2 of the program, participant’s health perceptions and knowledge score did not change significantly from pre-to post-assessment. This suggests that the educational activities and themes that were added to the program in year 3 could have contributed to the increase in student’s health perceptions and knowledge from pre-to post-assessment. When the results were broken down by group, gender (male, female), SES (low, high), and participation rate (low, high) all showed a significant increase in their health perceptions and knowledge score from pre-to post-assessment in the fall. The themes and activities implemented in the first hour of Active 6 in year 3 targeted participant’s beliefs, attitudes, and values. For example,
“snactivity” was added to the program. “Snactivity” lasted 30-minutes and included a healthy snack and a lesson on smart food choices and other components that make up a healthy lifestyle.

The sixth graders in the spring session and the participants who stayed in the program all-year did not show a statistically significant increase in their health perceptions and knowledge score from pre-to post-assessment. This may have been attributed to the low participation in the afterschool program in the spring. Throughout the spring program session, average participation continued to decrease. Some days the program had more UM volunteers present than Active 6 participants. As a result, the Active 6 coordinator placed less emphasis on daily themes and educational activities. The 30-minute “snactivity” lesson, which educates students on different aspects of a healthy lifestyle while enjoying a healthy snack, began to simply consist of a snack. In addition to limited participation, the Active 6 coordinator faced the challenge of fitting in time for designing activities and lessons, while also managing the demands of the YMCA Riverbank Run. The Riverbank Run is the YMCA’s primary fundraiser and requires a large time commitment from all YMCA staff. As a result, the Active 6 coordinator struggled to create themes and educational activities during the spring program session. Therefore, it makes sense that health perceptions and knowledge did not significantly increase for participants who started the program in the spring. Also, for those who continued all year, their health perceptions and knowledge score significantly increased from pre-to post in the fall and then remained the same on the spring post-survey assessment.

Sixth graders in the fall session had a significant increase in physical activity self-efficacy from pre-to post-assessment, as did sixth graders who participated all year. When the results were analyzed by group, gender (male, female), SES (low, high), and participation rate (low, high) all showed a significant increase in physical activity self-efficacy. Sixth graders in
the spring program session did not show a significant increase in perceived physical activity self-efficacy. As a result of low participation in the spring, less time was spent in structured group games and skill building activities. This may have contributed to the lack of significant change in physical activity self-efficacy from pre-to post assessment. Research has consistently shown that an important component of physical activity in youth is an individual’s perceived self-efficacy towards physical activity (Ryan & Dzewaltowski, 2002). In an effort to increase student’s self-efficacy for physical activity, the Active 6 program introduces and teaches participant’s new skills, games, and sports in hopes that they integrate these behaviors into their life outside of the program. By restructuring the program and spending the first hour doing mandatory group activities, the Active 6 staff were able to actively engage and teach students new skills and activities. The current study’s results suggest that the program could be contributing to an increase in student’s physical activity self-efficacy.

Research has found that self-efficacy relates to physical activity because a large predictor of participation in active pursuits is the individual’s belief in preforming the specific task (Allison, Dwyer, & Makin, 1999). This finding is consistent with the results of the present study as participants also had a significant increase in their daily minutes of physical activity from pre-to post-assessment in the fall, spring, and all-year survey assessments. In addition, parents of students who regularly participated in the program perceived that Active 6 had led to an increase in their child’s rate of physical activity.

The Active 6 program did not appear to have a significant impact on decreasing daily hours spent engaged in sedentary behavior. There was not a significant decrease in sedentary behavior in the fall program group, or the all-year program group. The Active 6 program focuses primarily on educating students on the importance of physical activity, and teaching participants
new games, activities, and skills. Less emphasis and time is spent educating sixth graders on the negative effects of engaging in sedentary behavior. Despite this, there was a significant decrease in daily hours of sedentary behavior in the spring group. This could be a result of the nicer weather, which provides more opportunity for children to go play outside. Sedentary activities often take away from physical activity time (Strong et al., 2009). The decrease in sedentary behavior in the spring group could have been associated with the significant increase in their daily minutes of physical activity from pre-to post-assessment.

Another important predictor of physical activity in youth is peer support and parental activity and support (Saunders et al., 1997). Parents and peers have been found to have a major influence over the health behaviors of youth (Beets et al., 2006). The present study aimed to determine if participant’s social influences on physical activity predicted their rate of physical activity and perceived physical activity self-efficacy. Despite the plethora of research supporting the relationship between social influences and physical activity, social influence score was not a significant predictor of the Active 6 participant’s daily minutes of physical activity or physical activity self-efficacy. Although social influences was not found to be a significant predictor of activity on the Active 6 survey, peers did emerge as a theme in regards to why students continue to participate in the program. In the interviews with parents of students who regularly participate in the program, parents consistently named friends as the major motivator to their child’s participation in Active 6. The presence of the children’s friends at the program appears to be a contributing factor of whether or not the sixth grader attends.

**Program Impact on Health Outcomes Between Groups**

In addition to measuring overall changes pre-to-post, the study also sought to determine if there was a difference in degree of program impact between specific groups of participants.
More specifically, the study wanted to measure the impact of the program between gender (male, female) and between SES (low, high).

Past research has shown that poor participation and attrition rates are the highest in the children most vulnerable to at-risk behavior, as well as those from lower income families (Weisman & Gottfredson, 2001). These are the children programs need to target because past research has shown lower-SES groups in the United States had a higher prevalence of overweight and obesity (Wang, 2001). The results of the present study provides further support for afterschool programs to place more effort toward attracting participants from low SES families. Based on the study results, the participant’s SES did not appear to make a difference on the overall impact the program had on their health outcomes. However, there was often a significant main effect between the low SES and high SES group’s scores on the surveys. In the all-year group, there was a significant difference in low SES and high SES participant’s scores across four of the five health outcomes measured: health perceptions and knowledge, sedentary behavior, physical activity self-efficacy, and self-efficacy. In each health outcome, the low SES participants scored significantly lower on the pre-survey assessment and despite improving to a similar degree as the high SES participants, they still had a much lower score by the post survey assessment. This finding further supports past research that encourages programs to target the low SES children as they have a greater need for health education and programming then the high SES children.

Female participation increased immensely in year 3, surpassing the number of males signed up in the program. When comparing program impact between genders, the Active 6 program appeared to have a similar impact on both male and female participants. There was no significant difference between the two groups for any of the health outcomes measured. The
majority of participants in year 1 and year 2 of the Active 6 program were males. Many of the activities offered at Active 6 are competitive in nature, such as dodgeball and basketball. Boys often enjoy these types of activities, as girls prefer less competitive, lower intensity, individual activities (Hovell, et. al, 1999). It is common for programs to struggle to maintain interest from the girls in the physical activity portion of the program (Doyoun et al., 2010). Baxter (2011) found in her formative evaluation on the Active 6 program that in the more aggressive or competitive activities such as dodgeball, male program leaders and male 6th graders intimidated and caused anxiety in the female participants. In order to combat this problem and increase female attendance rates, girl only activities were offered throughout the program in year 3. The girl only activities included: Zumba, Oula, and Cheerleading. Research has consistently shown that enjoyment of the physical activity program is a vital component to program success since programs are attended on a voluntary basis (Quinn, 1999; Beets et al., 2009). The girl-only activities were very popular and well attended. The results suggest that the girl-only activities could have helped maintain female participation in the Active 6 program.

**Participation and Program Impact on Health Outcomes**

In addition to increasing overall participation in the program, the study also sought to determine if a relationship exists between participation rate and program impact. Previous research has found that high attendance rates are a major contributor to program success (Beets et al., 2009). Beets et al. (2009) claimed from their review that a dose-response relationship exists between attendance level and program effectiveness. Children who attended at least 40% of the time showed the most improvements in physical fitness outcome measures (Beets et al., 2009). In the present study, participation rate did not appear to be a significant predictor of program impact for majority of the measured health outcomes. In the fall, spring,
and all-year groups, individuals with a low participate rate, attending less than 40% of the time, and a high participation rate, attending at least 40% of the time, showed similar changes from pre-to post assessment. While this could be attributed to many factors, the tendency to attract already active students stands out the most. In the parent perception interviews, parents commonly stated that a major benefit of Active 6 program was that it gave their child a place to go in-between sport seasons. Another major theme that emerged from the interviews with the parents of children who regularly participate was that their child was already active before joining the Active 6 program. It is evident that this program attracts a lot of already active sixth graders. Therefore, some of the participants with the lower attendance rates could be the sixth graders that are very active in sports and other activities outside of the program. As a result, participation rate is not a strong predictor of overall changes pre-to post in the Active 6 program.

Self-efficacy and physical activity self-efficacy were the only health outcomes significantly impacted by participation rate. In the fall group, individuals with a high participation rate had a significantly greater increase in perceived physical activity self-efficacy than those with a low participation rate. In the all year group, individuals with a high participation rate had a significantly greater increase in their perceived self-efficacy than those with a low participation rate. Previous research has shown that a strong predictor of physical activity in youth is environmental change self-efficacy. This represents the child’s belief in their ability to find and create environments that foster physical activity, even when faced by external barriers (Ryan & Dzewaltowski, 2002). The themes and activities implemented in the first-hour of Active 6 are focused on teaching participants the different components of a healthy lifestyle. Active 6 aims to instill in participants the skills, knowledge, and confidence to lead a healthy lifestyle outside of the program and for years to come. The study results suggest that Active 6
could be contributing to an increase in participant’s perceived self-efficacy, and those who participate more often have a significantly greater increase in self-efficacy than those with a low participation rate.

Lastly, the study wanted to compare overall program impact between those who participated during only the fall or spring session with the sixth graders who stayed in the program all year. Individuals who participated for the entire year were given a pre-test at the start of the program in the fall, a post-test at the end of fall programming, and another post-test at the end of spring programming. Overall, participants who stayed in the program all year improved significantly from fall-pre to fall-post, and then again from fall-post to spring-post in the following health outcomes: physical activity, self-efficacy, and physical activity self-efficacy. The study results suggest that participating in Active 6 all-year could contribute to greater increases in daily minutes of physical activity, self-efficacy, and physical activity self-efficacy than the sixth grades that participate for only the fall or spring session. Based on this finding, the YMCA Active 6 program should promote continued participation in the spring in order to have a greater impact on the participants.

**Program Participation**

Afterschool physical activity programs must overcome a number of barriers to be successful. One of the main barriers of afterschool physical activity programs is participation (Beets et al., 2009). Since its inception, the Active 6 program has struggled to reach sixth grade students. In year 1 and year 2 of the program, low participation was a major barrier to program success (Baxter, 2011; Reamer, 2012).

In the parent perception interviews conducted in year 3, transportation surfaced as one of the main barriers to participation named by the parents of students who do not participate in the
program. In the interviews with parents of students who regularly participate, transportation was identified as one of the primary suggested program improvements. Although this group of parents was able to get their child to Active 6, they still felt assistance with transportation would greatly improve the program. This is consistent with findings from the research conducted by Reamer (2012) in year 2 that identified transportation as a barrier to participation for the low SES participants (Reamer, 2012). The reemergence of the transportation barrier reflects the lack of success of the transportation strategy implemented at the start of year 3. In order to decrease the transportation barrier for the low SES families, a University of Montana volunteer was at Meadow Hill middle school at the end of the day to ride the bus with the sixth grade students to the YMCA for the Active 6 program. This strategy was implemented at the start of the program in year 3, however, it did not continue past the first month. Numerous issues led to the demise of this strategy. First, the Mountain Line bus does not have a direct route from Meadow Hill to the YMCA. Participants and volunteers had to ride to South Gate Mall and then transfer onto another bus to take them to the YMCA. Second, due to bus schedules and delays, students would not arrive at the YMCA until 30-45 minutes after the program started. Third, this strategy only targeted one of the middle schools in Missoula. As a result, transportation continued to be a barrier to participation in year 3.

In addition to transportation, conflicting activities was the second major barrier to participation identified in year 3 by the parents of sixth graders who were registered but not participating in the afterschool program. Most conflicting activities named were sports, with a few parents mentioning flagship or other afterschool programs. Despite being involved in other activities during Active 6 program time, a number of parents reported that their child still utilized their YMCA pass. This is an important finding because it shows that program participation
extends beyond the structured afterschool times on Tuesday and Thursday and also includes usage of their YMCA membership. As a free program, a lot of parents reported signing their kids up for Active 6 in addition to their fall and spring sports because it gave their kids a safe and healthy place to go in-between sports seasons. As a result, program participation varies immensely depending on the time of year. For the past 3 years participation has been highest in the fall and over the winter months and then by spring decreases immensely, especially during the months of April and May when track season starts. In year 3, average participation during the fall program session was 28 students, and average participation dropped to 15 students in the spring.

A common theme that emerged among parents of students not participating in the afterschool program was that they had an adequate understanding of the program. Most parents reported that they had received their information from the middle school open houses. In addition, lack of information was not commonly stated as a barrier to participation in the program. This was the number one barrier named by parents in the research conducted in year 2 (Reamer, 2012). During the past two years information on the Active 6 program was available primarily at the YMCA and on the YMCA website. However, parents were not coming to the YMCA or utilizing the website to learn more about the program. In response to this barrier, a strategy was developed in year 3 to target the organizational and interpersonal level of influence in the SEM. The Active 6 program set up a booth at all the middle school open houses during the beginning of the fall semester. The program’s participation in the open houses allowed the Active 6 representatives to provide information and answer parents and sixth graders questions. Parents were also given the opportunity to register their sixth grader for the program there. Additional strategies implemented to reduce the lack of information barrier to participation
included monthly newsletters, parent emails, and an Active 6 open house at the YMCA. Consequently average participation increased from 12 in year 2, to 22 students in year 3. Therefore, these results suggest that the open houses helped reduce the lack of information barrier to participation.

Another challenge that afterschool physical activity programs face is recruiting the target population (Doyoun et al., 2010). The target population for the Active 6 program is the sixth grade students from the low SES families in Missoula. For the purpose of this study any student who receives free or reduced lunch through the National School Lunch Program (NSLP) at school is in the low SES group (USDA, 2012). High SES was defined as any student who does not receive free or reduced lunch. Based on registration data, 33% of participants received free or reduced lunch, 58% of participants did not receive free or reduced lunch, and 9% of participants did not provide that information. A key challenge for afterschool programs is to reach the at-risk children from the lower SES families, since low SES children tend to have increased rates of obesity and lower rates of physical activity (Weisman & Gottfredson, 2001).

The Active 6 program was designed to engage students who otherwise wouldn’t be involved in physical activity during the afterschool hours. It is apparent from the participation data and the phone interviews that majority of the participants in the Active 6 program were the already active sixth graders. In the interviews with parents of students who regularly participate in Active 6, a common response when asked if they had noticed any changes in their child as a result of their participation in the program was, “no they were already active to begin with.” In the spring when track season started, (the only sport sixth graders can participate at in middle school), participation decreased immensely. Numbers at the afterschool program dropped from around 15-20 to about 5 students. It is common for afterschool physical activity programs to
attract already active children, rather than the overweight and obese youth the program was created to serve (Weisman & Gottfredson, 2001).

**Recommendations**

Based on the study results and past research, the following recommendations are suggested to increase participation and impact of the Active 6 program. Most of the recommendations are very individualized to the Missoula population and the Active 6 program while general recommendations for future research are also noted.

Difficulty with transportation was brought forth in both groups of parent interviews. The parents of students who were registered but had not participated in the structured afterschool program named transportation as one of the main barriers to participation. In the interviews with parents of students who regularly participate, assistance with transportation was named as the primary suggested improvement. The YMCA does not provide transportation from the middle schools to Active 6, as it is too much of a liability. It is recommended that the YMCA work with program partner Mountain Line to offer a direct bus route from the schools to the YMCA. Mountain Line offers free bus passes to all Active 6 participants, however these rarely are utilized, as students have to transfer busses to get to the YMCA.

Another suggestion for the closer schools like Washington Middle School would be to start a walking bus program. Volunteers could meet students at Washington on Tuesday and Thursday afterschool and walk with the sixth graders to the YMCA. This is an active alternative, and could encourage more students to attend the program. In the focus groups in year 2, and the interviews in year 3, parents commonly communicated that they were uncomfortable with their sixth grader riding the bus alone (Reamer, 2012). The walking bus could help combat this
barrier, as volunteers would supervise the sixth graders on their way to the YMCA. The above two suggestions could help decrease the transportation barrier.

It is common for afterschool activity programs to attract the already active kids, rather than the children the program was created for (Doyoun et al., 2010). Active 6 struggles with this challenge. Majority of Active 6 participants were from high SES families and were already active kids. It is suggested that the program reassess its goals and objectives in order to determine if Active 6 is currently designed to reach the target population, the low SES sixth graders in Missoula. Future research could focus more specifically on the low SES families and sixth graders, in order to determine how to make the program more accessible and attractive to this group. The study results suggest that the low SES group has the highest need for health programming as they scored lower than the high SES group on all the health outcomes measured.

Over the past three years the Active 6 program has struggled to maintain participation in the spring. As a result of decreased participation, the daily themes and health activities get pushed aside. The low numbers give the Active 6 coordinator less option in regards to activities and games. In addition, when participation drops it is common to have more university students than sixth graders at the program, which appeared to decrease overall enjoyment for both groups. Having the Active 6 coordinator and volunteers promote the program in the spring could help increase excitement about Active 6. It is suggested that Active 6 staff visit the 6th grade classrooms after winter break to further promote and advertise the program.

The Active 6 survey has been used for the past three years to evaluate the program. The nature of the Active 6 program makes this process very difficult and time consuming. As an open program, participants come and go as they please. Therefore it is very difficult to get both pre- and post-surveys from participants. If sixth graders do not show up during the post-survey week,
researchers must try to track them down for a phone-survey. If the Active 6 program wants to continue assessing it’s overall impact on sixth grade participants it is suggested they look into another method of evaluation. The Active 6 coordinator does not have the time needed to devote to the surveys, as a lot of effort goes into this process in order to get a large enough sample to draw conclusions. It is suggested that the program focus research efforts on gaining more feedback from the sixth graders. The last two years have focused primarily on the parent’s thoughts and perceptions. As a program created for sixth graders it is crucial to focus further efforts on gaining their feedback. By doing so, Active 6 can be shaped by their needs with the goal of attracting and maintaining their interest.

Based on the study results, it is recommended that future research conducted on the Active 6 program focus on the following areas. It is suggested that future researchers interview sixth grade participants individually in order to gain their feedback. In this age group, focus groups are not ideal as majority of participants are influenced by their peers and tend to give socially desirable responses. In order to better understand the participant’s perspective of the program they need to be interviewed, or administered a survey with open ended qualitative questions. This could help the Active 6 coordinator create a program based entirely off their needs and not off the program partner’s perceptions of their needs.

In addition, future researchers could build upon the findings of Reamer (2012) on the barriers to participation by interviewing the low SES sixth grade families in Missoula. The questions could focus specifically on barriers to participation and their suggestions for overcoming the identified barriers. As the target population for the program, research needs to uncover ways to make Active 6 more accessible for this group. It is recommended that
researchers look extensively at how successful afterschool physical activity programs overcome similar recruitment barriers.

Overall, future research on afterschool physical activity programs should focus on discovering how to get the low SES and sedentary youth to the programs. This is recommended because majority of afterschool programs face the challenge of recruiting the kids the program was created for, rather than the already active and involved kids that often times participate. As more funding and time is being put into afterschool programs, it is imperative to attract and serve the youth who need them the most.

**Limitations**

A limitation to this study was that there was no comparison group. All sixth graders who took the survey had participated in the Active 6 program. Therefore, the results cannot be directly attributed to the Active 6 program. The condition under which the sixth graders took the survey was also a limitation. Surveys are administered during the first 15-minutes of the program as the students arrive. The participants could have rushed through the survey without thinking through the questions so that they could get back to playing. In addition, some post-surveys were conducted with sixth graders over the phone. This could have resulted in the participants giving socially desirable responses rather than answering the questions truthfully. Another limitation to the study was the small survey sample in the spring. As a result a big decrease in participation only 17 students took the pre-and post-assessment in the spring program session.

Participation in the parent perception interviews was done on a voluntary basis. Therefore, the parents who agreed to be interviewed could have been the one’s with a more positive perception of the program. In addition, parents could have felt compelled to give socially desirable responses to the interview questions.
Conclusions

The results from this study suggest that the strategies implemented at the start of year 3 could have contributed to the increase in participation and overall impact of the Active 6 program. The data collected indicates that Active 6 could be contributing to an increase in sixth grader’s health perceptions and knowledge, daily minutes of physical activity, and perceived self-efficacy. The findings from this study reveal that participation rate is not a significant predictor of program impact for majority of the health outcomes. Sixth graders with a low participation rate and a high participation rate both showed significant improvements from pre-to post-assessment. This can likely be attributed to the open nature of the Active 6 program, with students coming and going based on their sport and activity schedules.

It appears that the Active 6 program is having an equally positive effect on male and female participants, as well as the low and high SES participants. However, the results from the surveys further demonstrate the need for afterschool programs to target the children from the low SES families. Across all health outcomes measured on the survey, the low SES participants scored significantly lower than the high SES participants. This finding reveals that Active 6 struggles to overcome a common challenge faced by afterschool programs, reaching the target population. The majority of Active 6 participants in year 3 were already active sixth graders from high SES families. It is suggested that the Active 6 program direct further efforts in year 4 on recruiting the target population.

Based on the parent perception interviews, lack of information is no longer a significant barrier to participation. Transportation emerged as the primary barrier in year 3 and it is suggested that the Active 6 program work to overcome this barrier in year 4. In addition, parents of students who regularly participate in Active 6 perceived the program was positively impacting
their sixth grader by increasing their activity level, improving their mood and attitude, and
teaching them new skills. Both groups of parents communicated greatly valuing the Active 6
program as it offers a free, safe, and active environment for their child in the critical afterschool
hours.

Overall, the study suggests that afterschool physical activity programs for youth could
help increase daily minutes of physical activity at an age when research shows activity levels
significantly decrease (Treuth et al., 2005). In addition, the study suggests that the afterschool
environment could be a positive contributor to youth development in areas such as self-efficacy
and health knowledge. Therefore, efforts to promote the health of today’s youth should focus on
engaging them during the afterschool hours.
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Matthews, C. E., Chen, K. Y., Freedson, P. S., Buchowski, M. S., Beech, B. M., Pate, R. R.,


APPENDIX A: Active 6 Survey
Active 6 Survey

FIRST NAME: ________________________________
LAST NAME: ________________________________
SCHOOL: ___________________________________
GRADE IN SCHOOL: __________________________
GENDER: ____________________________________
AGE: (Years) __________________________________
WHERE ARE YOU RIGHT NOW? (Circle) Y or School

HAVE YOU PARTICIPATED IN OTHER PHYSICAL ACTIVITY PROGRAMS AS A 6TH GRADER? IF SO PLEASE NAME: __________________________________________

---

**Health perceptions and knowledge**

1. How many average hours do you sleep each night? 
   - O 5
   - O 6
   - O 7
   - O 8
   - O 9
   - O 10+

2. Which of the following options is a healthy snack?
   a. Peanut butter and banana  O
   b. Poptarts  O
   c. White bread and jam  O

3. How many fruits and vegetables do you think that you should eat each day?
   a. 1 ½ cups fruit, 2 ½ cups veggies  O
   b. 3 cups fruit, 5 cups of veggies  O
   c. 1 cup of fruit, 1 cup of veggies  O

4. Here are three of the five food groups on “My Plate”: fruits, vegetables, and grains. What are the two missing food groups?
   a. Cheese and Dessert  O
   b. Dairy and Protein  O
   c. Meats and Beans  O

5. Why is it important to eat breakfast?
   a. For energy, better concentration, and strength  O
   b. To help you wake up in the morning  O
   c. It isn’t important, you should only eat if you are hungry in the morning  O

6. How many times per week should you do something active?
   a. 50 times a week  O
   b. 3-5 times a week  O
   c. Everyday  O

7. Do you plan on going to college?  
   - O Yes
   - O Not sure
   - O No
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Do you think you will be able to go to college?</td>
<td>Yes</td>
</tr>
<tr>
<td>Physical Activity</td>
<td>Walking</td>
</tr>
<tr>
<td>9. How did you get to school most days last week?</td>
<td>Walking</td>
</tr>
<tr>
<td>If you walked or biked to school, how many minutes does it take you?</td>
<td>5</td>
</tr>
<tr>
<td>10. How did you get to Active 6?</td>
<td>Walking</td>
</tr>
<tr>
<td>11. How many recess periods do you have each week?</td>
<td>0</td>
</tr>
<tr>
<td>12. What did you normally do during recess last week?</td>
<td>Sitting</td>
</tr>
<tr>
<td>13. How many minutes a day do you participate in sports either at school or not at school?</td>
<td>(0min)</td>
</tr>
<tr>
<td>14. How many minutes a day do you spend playing outside before or after school that were not sports?</td>
<td>(0min)</td>
</tr>
<tr>
<td>List the main activities you do:</td>
<td>________________________________________________</td>
</tr>
<tr>
<td>15. How many minutes a day do you spend playing inside before or after school that were not sports? This includes things like Wii, dancing, going to the YMCA or other gym for activities other than sports, etc.</td>
<td>(0min)</td>
</tr>
<tr>
<td>List the main activities you do:</td>
<td>________________________________________________</td>
</tr>
<tr>
<td>16. When you come to the Y outside of Active 6 time, what do you do? Teen center, swimming, rock climbing, running etc.</td>
<td>________________________________________________</td>
</tr>
</tbody>
</table>

Computer, TV, cell phones, and electronic games

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>17. How many hours most days do you spend using a computer?</td>
<td>0</td>
</tr>
<tr>
<td>18. How many hours most days do you spend watching television?</td>
<td>0</td>
</tr>
<tr>
<td>19. How many hours most days do you spend on your cell phone or playing electronic games?</td>
<td>0</td>
</tr>
<tr>
<td>20. How many hours most days do you spend doing activities that are not active? (Board games, video games, computer, TV etc....)</td>
<td>0</td>
</tr>
</tbody>
</table>
Beliefs about exercise and activity

PLEASE FILL IN ALL THAT APPLY YOU MAY FILL IN MORE THAN ONE

21. I am sure I can still exercise, be active, or do sports even if...
   - I feel self conscious or concerned with my looks ○
   - I am not motivated or feel lazy ○
   - I am too busy ○
   - I have to exercise alone ○
   - I am afraid to fail ○
   - The weather is bad ○
   - I am tired ○
   - I have a bad day at school ○
   - It is very hard work ○

Beliefs about exercise and activity

<table>
<thead>
<tr>
<th></th>
<th>Not True</th>
<th>Somewhat True</th>
<th>Very True</th>
</tr>
</thead>
<tbody>
<tr>
<td>22. I make friends easily</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>23. I am good at sports</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>24. I have a lot of friends</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>25. In games and sports I would rather play than watch</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>26. I learn games and sports easily</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>27. My parents are physically active</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>28. Physical activity with my friends is fun</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>29. PE at school is fun</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

Social Influences on Physical Activity

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>30. A friend has offered to be physically active with me in the past 2 weeks</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>31. A friend has been physically active with me in the past 2 weeks</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>32. Someone in my family has been physically active with me in the past 2 weeks</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>33. Someone in my family has offered to be physically active with me in the past 2 weeks</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>34. A friend has encouraged me to be physically active in the past 2 weeks</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>35. My friends think I should be physically active</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>36. Someone in my family has encouraged me to be physically active in the past 2 weeks</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>37. My family thinks I should be physically active</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
Survey Scoring

Health perceptions and knowledge will be measured by the responses given in this section.

- Questions 2-6: Sum of correct answers post minus correct answers pre.
  - Data coding: 0=incorrect, 1=correct.
- Questions 1: hours of sleep per night, will be averaged on the pre and post survey.

Daily minutes will be evaluated by summing up minutes spent being active from questions 9, 13, 14, and 15 for total daily minutes of activity

- Question 12, and activities listed in 14-16 will be used to classify activities as moderate or vigorous in order to determine if they are getting the recommended bout of vigorous activity.

Sedentary behavior will be measured by adding up items: 17-20 for total daily hours spent engaged in sedentary activities.

- For the purposes of this study sedentary behavior will be defined as time spent doing non-active activities including watching, TV, playing video games, and using the computer.

Self-efficacy will be measured by adding up total points from self-efficacy section highest possible score will be 23.

- Question 21: 1pt given for each bubble filled. Total of 9 possible points for this section.
- Question 22-26, 28, 29: not true (0), somewhat true (1), true (2)

Social Influences on Physical Activity will be measured by adding up items 30-37 for total score.
• Questions 30-37: Sum answers for final score.
  
  o Data coding: 0=incorrect, 1=correct.
APPENDIX B: Curriculum
**Active 6 Tuesday September 25th 2012 (FIRST DAY)**

<table>
<thead>
<tr>
<th>Theme:</th>
<th>Teamwork/teambuilding (self-efficacy)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objective:</strong></td>
<td>build stronger relationships among participants, increase awareness of what a successful team looks like and how to get there and connect with other students. This builds confidence and <strong>self-efficacy</strong> in their ability to participate in a group setting and meet new people.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Community Building: 4-4:30</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Before we start go over quite sign for group</td>
</tr>
</tbody>
</table>

| Warm up activity 1 (name game): | Gather group in circle every one turns to the person sitting next to them and introduces themselves and shares three things about themselves. What school you go too, your favorite healthy snack, and what you want to be when you grow up. (5min) |

| Activity 2: (icebreaker) | Have everyone stand in a circle. Anyone can begin the game by saying his/her name and demonstrating a [physical] motion to go with it. When the person is done, the entire group repeats the name and the motion. Then, the second person (on either side of the first) introduces him/herself and does a motion. The entire group repeats that name/motion and then the first name/motion. This will continue until each person has given their name and done their motion, and the entire group has repeated everyone's name and motions. (5 min) |

<table>
<thead>
<tr>
<th>Activity 3: (teambuilding) HUMAN SCAVENGER HUNT: (15 min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The paper will have a series of questions on it (in a bingo format - in squares). Participants are required to find another participant who can answer &quot;yes&quot; to a question. They must have that person sign their name within the square. The object is to meet as many people as you can, and fill a &quot;BINGO!&quot; (A complete line either horizontally, vertically, or diagonally) You can only use each participant once. Note: The center circle should be a freebie. Here are some samples:</td>
</tr>
<tr>
<td>Knows their zodiac sign</td>
</tr>
<tr>
<td>From a northern state</td>
</tr>
<tr>
<td>Knows when Martin Luther King's birthday is</td>
</tr>
<tr>
<td>Member of a sorority or fraternity</td>
</tr>
<tr>
<td>Has been a competitive athlete</td>
</tr>
<tr>
<td>Has traveled abroad</td>
</tr>
<tr>
<td>Knows how to polka</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supplies:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bingo sheet pre-made</strong></td>
</tr>
<tr>
<td>Pens</td>
</tr>
<tr>
<td>Music</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Snacktivity: 4:30 to 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gather group talk briefly (5min)</td>
</tr>
<tr>
<td>• YMCA Values</td>
</tr>
<tr>
<td>• Active 6 (program, what they get, what our days look like)</td>
</tr>
<tr>
<td>• Expectations from me for the Active 6 program and group</td>
</tr>
<tr>
<td>• Quiet sign again</td>
</tr>
</tbody>
</table>

See Attached sheet for Snacktivity outline

<table>
<thead>
<tr>
<th>Choose your own Adventure: 5 to 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climbing: DON'T FORGET TO CHECK CLIMBING WAIVERS</td>
</tr>
<tr>
<td>Teen Center: PLEASE HANG OUT WITH KIDS NOT JUST YOURSELVES.</td>
</tr>
<tr>
<td>Group game: Ultimate Frisbee (outside depending on weather)</td>
</tr>
<tr>
<td>Possibility depending on numbers: Game inside big gym (Chaos)</td>
</tr>
</tbody>
</table>
**Snacktivity Theme: Teambuilding/Teamwork**

**Objective:** build stronger relationships among participants, increase awareness of what a successful team looks like and how to get there. This builds confidence and **self-efficacy**

Break into small groups (based on color groups) have group decide on their color

Have small groups come up with the definition of team work. (5 min)

Share the real definition of team work...how do the groups compare?

1. **Cooperative work by group:** a cooperative effort by a group or team
2. **Work produced by group:** work produced by a group or team

Have the small groups come up with 3 qualities of a good team/team mate

One example of what they think is a successful team (5min)

I.e.: Miami Heat

Large group: What can we do to make sure we become an awesome team?

Why do you think a healthy team relationship connects to your health?

**The String Activity**

Gather the group in a circle. The leader will start with a large ball of string or yarn. The leader will say their name and give one positive trait they will bring to the group that will help us work together as a team i.e.: I am Shanna and I will be a great cheerleader for our team. The leaders will then hold on to the string with their finger and throw the whole ball of yarn to someone in the circle who hasn’t gone yet. They say what they will bring to the group. Once everyone has gone we will have made a web of sting that is really strong as long as everyone is holding on and doing what they said they were in supporting the team. If even one person lets go of the string the whole web will fall apart. If one member of the team isn’t doing their best the whole team suffers. Let’s work to make our web strong and support each other. Now everyone is going to cut a piece of string from the web and wrap around their wrist to remind themselves of their commitment to our Active 6 team.

**Give out snack**

**What is your favorite active activity that your family does together?**

Individuals while they are all getting snack go over to the leaf table and

Each leaf will get their picture on it

Their name

Name of the activity they like to do

**Snacktivity Supplies**

- Post it note pages
- Markers
- Leafs
- Pictures
- Snack
- Cool string

Laminate and re-posted large group activity every Active 6
Active 6 Thursday September 27th, 2012

**Theme:** Teamwork/teambuilding *(self-efficacy)*

**Objective:** build stronger relationships among participants, increase awareness of what a successful team looks like and how to get there. This builds confidence and *self-efficacy* in their ability to participate in a group setting and meet new people.

**Choose your own Adventure: 3-4**

**Swimming:** Must check in with life guard and all kids must do swim test every time! *(only takes a min)*

*Please be out of the pool by 2:45*

**Teen Center:** PLEASE HANG OUT WITH KIDS NOT JUST YOURSELVES.

**Group game:** Indian Jones Dodge Ball

**Snacktivity:** 4:00 to 4:30 *(Communication with your team mates)*

Gather group talk briefly about Active 6 *(5min)*

- YMCA Values
- Expectations from me for the Active 6 program and group

See Attached sheet for Snacktivity outline

**Community Building:** 4:30 to 5:00

- Before we start go over quite sign for group

**Warm up activity 1: High-Five Name Toss** *(5 min)*

Here are the common rules:

1) Arrange the group in a circle
2) Go around the circle a quickly introduce yourself
3) One person starts off by saying the name of someone in the circle, and then cross the circle gives that person a high five and take each other’s spots in the circle.
4) That person then says the name of a different person, and high fives someone who has not yet been high fived
5) That continues until everyone in the circle has received a high five

You can time the group to see how fast they can pass high 5’s around the circle

**Activity 2: MOTION NAME GAME: I like people who:** *(10 min)*

Circle the group with the leader standing in the middle. Everyone takes off one shoe to mark their spot except the leader, so there is one more participant than there are spots. The person in the middle begins by saying “I like people who...” and then states a fact about them. Anyone else, who has that fact in common with the leader, runs and switches spots with the other people who have it in common.

- You cannot stay in your own spot
- If only one person moves after the statement is made, then they changes places with the person in the middle
- If no one stands after the statement is made, the person makes another statement
- No speed running
- No pushing
- If middle person can’t make it to a spot they make a new “I like people who” statement
- You can’t switch with the person to your right or left

**Activity 3: (Movement): Honey I love you...** *(5min)*

Everyone sits in a circle with one person who will be in the middle (start with a leader) without touching the person you go up to them face to face and say “Honey I love you won’t you give me a smile?” The person has to reply without smiling or laughing “Honey I love you but I just can’t smile” If the person smiles or laughs while saying this line they must take the spot in the circle, but if they say it without smiling the person in the circle must skip around the circle to someone who hasn’t been picked yet.
<table>
<thead>
<tr>
<th>Snacktivity: Communication with your team mates</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Theme:</strong> Teamwork/teambuilding</td>
</tr>
<tr>
<td><strong>Objective:</strong> build stronger relationships among participants, increase awareness of what a successful team looks like and how to get there. This builds confidence and <strong>self-efficacy</strong></td>
</tr>
<tr>
<td><strong>Stay in large group</strong> (partner groups will be established throughout activity)</td>
</tr>
<tr>
<td><strong>Give out snack</strong></td>
</tr>
<tr>
<td><strong>Communication:</strong></td>
</tr>
<tr>
<td><strong>Why do you think communication is important for building a strong team or group?</strong></td>
</tr>
<tr>
<td><strong>What parts of communication are important?</strong></td>
</tr>
<tr>
<td>• <strong>Listening (how can we listen better?)</strong></td>
</tr>
<tr>
<td>- <strong>Active listening:</strong> eye contact, respond verbally and non-verbally, ask open-ended questions, summarize understanding.</td>
</tr>
<tr>
<td>Split into two person groups: Have groups role-play each active listening trait. Have each pair run through modeling bad behavior first the good behavior second. Only give a few seconds for each group to talk. (some topic ideas are “what’s your favorite active thing to do and why”, “What school was your elementary school and did you like it” “What do you want to do when you graduate from High School” etc. Give a different question for each role play. Check in with each pair after each role-play. Have a group share if they noticed a difference</td>
</tr>
<tr>
<td><strong>Respect:</strong></td>
</tr>
<tr>
<td><strong>What does respecting your teammates look like?</strong></td>
</tr>
<tr>
<td>• <strong>Not gossiping: See game below</strong></td>
</tr>
<tr>
<td>• How would it feel if what we said was about you?</td>
</tr>
<tr>
<td>• How can we as a group make sure this doesn’t happen</td>
</tr>
<tr>
<td>How does communication relate to your health?</td>
</tr>
<tr>
<td>• Poor communication can lead to stress/lack of sleep etc</td>
</tr>
<tr>
<td>• Gossip is a form of bullying</td>
</tr>
</tbody>
</table>

**Supplies:**
- Post it Paper
- Markers
- Snack
### Active 6 Tuesday October 2nd 2012

**Theme:** What does healthy lifestyle look like?

**Objective:** To increase **health perceptions and knowledge** around “what a healthy lifestyle looks like for them and how they can make it happen”

<table>
<thead>
<tr>
<th>Community Building: 4-4:30</th>
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</thead>
<tbody>
<tr>
<td>• Before we start go over quite sign for group</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Warm up activity 1: <strong>(name game/icebreaker)</strong> (10 min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Split group into two smaller groups (each group will get a beach ball)</td>
</tr>
<tr>
<td>You start the group sitting or standing</td>
</tr>
<tr>
<td>The leader will throw the beach ball to someone in the group, the person who catches it has to answer the question touching their left thumb. They then say their name, answer the question and throw it to someone else who has not gotten the ball yet</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Activity 2: <strong>(get-to-know you game) skip this week</strong></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Activity 3: <strong>(active team building game)</strong> (10 min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knight Horse Cavalier Description</td>
</tr>
<tr>
<td>Have the kid’s pair up.</td>
</tr>
</tbody>
</table>

The partners split off to opposite sides of the playing area. One side forms a circle, then their partners stand behind them in an outer circle.

The inner circle rotates clockwise, and the outer circle rotates counterclockwise. The leader yells out either "knight", "horse", or "cavalier".

"Knight" means that one partner gets down on one knee and the other partner sits on his/her exposed knee. "Horse" means that one partner gets down on all fours and the other partner sits on his/her back. "Cavalier" means that one partner picks the other partner up in the style of a groom carrying the bride over the threshold.

When one of these positions is called out, the kids have to scramble to find their partners and assume said position. The last pair to do so is out, and so it goes until there is a winning team. It’s fun to make the kids jump and spin while they are rotating in their circles to make it harder for them to keep track of their partners.

<table>
<thead>
<tr>
<th>Snacktivity: 4:30 to 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gather group talk briefly about Active 6 (5min)</td>
</tr>
<tr>
<td>• YMCA Values</td>
</tr>
<tr>
<td>• Expectations from me for the Active 6 program and group</td>
</tr>
</tbody>
</table>

See Attached sheet for Snacktivity outline

<table>
<thead>
<tr>
<th>Choose your own Adventure: 5 to 6</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Climbing: <strong>DON'T FORGET TO CHECK CLIMBING WAVIERS</strong></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Teen Center: <strong>PLEASE HANG OUT WITH KIDS NOT JUST YOURSELVES.</strong></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Group activity: Rocks <strong>(Capture the flag style game)</strong></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Group Sport: Basketball <strong>(on the blacktops outside behind the fields)</strong></th>
</tr>
</thead>
</table>
Active 6 Thursday October 4th 2012

**Theme:** What does healthy lifestyle look like?

**Objective:** To increase health perceptions and knowledge around “what a healthy lifestyle looks like for them and how they can make it happen”

**Choose your own Adventure: 3 to 4**

**Swimming:** Don’t forget to check in with the Life guard and you MUST do a swim test every time

**Teen Center:** PLEASE HANG OUT WITH KIDS NOT JUST YOURSELVES.

**Group activity:** Kickball (outside)

**Snacktivity: 4:00 to 4:30**

Gather group talk briefly about Active 6 (5min)

- YMCA Values
- Expectations from me for the Active 6 program and group

See Attached sheet for Snacktivity outline

**Community Building: 4:30 to 5**

Before we start go over quite sign for group

**Warm up activity 1: (name game) (5min)**

Name game

Circle the group everyone thinks of an activity that starts with the first letter of their name. “Soccer Shanna” The person who starts says their name I'm Soccer Shanna, the next person says they are Soccer Shanna and I am... Everyone needs to repeat the names of everyone before them.

**Activity 2: (get-to-know you game) Peek-A-Who Description (10 min)**

Split the group into two teams. Each team sits behind one side of the sheet so that they are out of the view of the other side. One person from each side will sit facing the sheet.

When the sheet is lowered, the team that says the name of the person on the opposite side first gets that player on their team. The game ends when everyone is on the same side.

**Supplies**

A sheet or tarp big enough for half of your group to hide behind.

The group must know each other or be familiar with each other’s names.

**Activity 3: (active team building game) Cooperation Tag Description (10 min)**

One person is it. Be sure to have a designated playing area.

When the game begins, the person who is it, chases people and tries to tag them, a person is safe from being tagged as long as they are holding the object like a rubber chicken.

When a person is tagged without holding the object, they become it. Then the game continues.

**Debrief:**

- Why do you think this is called Cooperation Tag?
- How did you feel when nobody threw you the chicken when you asked?
- How did you feel when they threw the chicken when you didn’t ask?

**Supplies**

Something that can easily passed from one person to another, like a rubber chicken.

**Snacktivity**

**Theme:** What does a healthy life style look like?
**Objective:** To increase **health perceptions and knowledge** around "what a healthy lifestyle looks like for them and how they can make it happen"

**Break group into: large group discussion and then small activity group**

**Give out snack**

- **Individual Healthy lifestyle changes**
  
  Pick top 3 un-healthiest habits
  What can you do to make them healthier
  What are the top 3 healthiest things you do? How can you do them more?

  **Challenge:**
  Do 3 healthy things a day and have your parents sign off on them and get entered in a draw!

  Make your own Month log challenge sheet and plan.

**Supplies:**
- Calendars with spot for writing space
- Pens, pencils, markers
- Post it board for writing
- **SNACK**
Active 6 Tuesday October 9th 2012

**Theme:** Feeling Tired? The importance of sleep – (Health perceptions and knowledge)

**Objective:** To help participants learn the effects of lack of sleep on their overall health (Health Perceptions and Knowledge)

**Community Building: 4-4:30:** Before we start go over quite sign for group

**Warm up activity 1: (name game/icebreaker) (10 min) Bumpity Bump Bump Bump**
Players form a circle; share their first names with the group. Give the group a second to remember the names of players to their left and right. A game leader stands in the middle; they point to a player at random, and say either: Left, Right, You, Me. Within the time it takes the middle person to say Bumpity Bump Bump Bump you must say the name of the person to your right/left/middle/ or your own name. If a player doesn't say the name or names quickly enough, he or she trades places with the leader in the center and then chooses someone who hasn’t gone yet.

Ask the group in what ways, if any, did the game cause stress or anxiety?
Describe other situations when you’ve experienced similar feelings. How did you respond?
What strategies did you use to succeed in this game?

**Activity 2: (get-to-know you game) Quick Team Challenge game: Birthday line up**
Inform that group that they cannot talk from this point forward until you give them permission.
Have the group get in a line.
Tell them they must, in silence, get in order by height.
Once they successfully compete this challenge, you can give the following line up tasks:
- Birthday month
- First name
- Longest hair to shortest hair

How hard was it to get the group doing the task?
Was there a leader? Did someone emerge as a leader did that make it easier?
How would the challenge be easier? (Record their fastest time for height and do the challenge again in a week)

**Activity 3: (active team building game) (10 min) Tap and run**
Circle the group with one person in the middle. Have everyone mark their spot with a base or piece of carpet. There will be a base/carpet in the middle with a foam sword on it. The object is for the middle person to use the sword to tap the ankles of a person in the circle. After you tap that person you must put the sword back and the person you tapped has to steal the sword once you’ve set it down and tap you on the legs before you get their spot in the circle. If you tap them back they stay in the circle but if they make it you’re the new person in the circle who gets to choose someone who hasn’t gone yet.

To make it difficult you can also have people switch bases while this is happening in the middle.

**Supplies:** Carpet Squares. Foam Tapping sword or ½ pool noodle will work

**Snacktivity:** 4:30 to 5 (See Attached sheet for Snacktivity outline)

**Choose your own Adventure:** 5 to 6

**Climbing:** DON'T FORGET TO CHECK CLIMBING WAIVERS

**Teen Center:** PLEASE HANG OUT WITH KIDS NOT JUST YOURSELVES.

**Group activity:** Capture the Flag (Outside)

**Group Sport:** Volleyball (Big Gym)

**Snacktivity**
Gather group talk briefly about Active 6 (5min)
- YMCA Values
- Expectations from me for the Active 6 program and group

**Theme:** Feeling Tired? The importance of sleep Gather your group in a circle to discuss sleep

**Objective:** To help participants learn the effects of lack of sleep on their overall health

**(Health Perceptions and Knowledge)**

- What do you feel like when you don’t get enough sleep?
- What do you feel like when you do get enough sleep?

The effects of not getting enough sleep are more than just feeling cranky and tired they are connected to your overall health such as:

- Not enough sleep
  Weakens your body's immune system, leaving you open to illness.
  Dulle your reflexes your reaction time is slower
  The body is not able to properly grow and repairs itself
  You can experience mood swings and behavior problems
  You can have trouble concentrating
  Impaired decision-making abilities
  It affects your relationships with friends and family in a bad way
  It can impair athletic performance. Increasing the amount of sleep received each night has been shown to significantly improve athletes' abilities to perform.

- Sleep deprivation has been linked to changes in weight, specifically weight gain, the hormone responsible for stimulating appetite increase, and the hormone that regulates fullness drops, which could lead to weight gain.

- Tiredness makes it difficult to focus and to retain information, which will affect how you do in school.

- You need between 10 and 11 hours a night but this could differ from person to person a good way to check is keep a sleep journal. For the rest of the week keep a record of what time you went to bed and what time you got up in the morning and how you felt that day.
  We will look at them on Thursday. If you complete it and bring it back in your name will go in a drawing for a prize.

**Give out snack**

**Supplies:**
20 sleep journals
Snack
<table>
<thead>
<tr>
<th><strong>Active 6 Thursday October 11th 2012</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Theme:</strong> Feeling Tired? The importance of sleep</td>
</tr>
<tr>
<td><strong>Objective:</strong> To help participants learn the effects of lack of sleep on their overall health (Health Perceptions and Knowledge)</td>
</tr>
<tr>
<td><strong>Choose your own Adventure:</strong> 3 to 4</td>
</tr>
<tr>
<td><strong>Swimming:</strong> Don’t forget to check in with the Life guard and you MUST do a swim test every time</td>
</tr>
<tr>
<td><strong>Teen Center:</strong> PLEASE HANG OUT WITH KIDS NOT JUST YOURSELVES.</td>
</tr>
<tr>
<td><strong>Group activity:</strong> Yard activity Rotation (Bean Bag Toss, Bocce ball, croquet game)</td>
</tr>
<tr>
<td><strong>Snacktivity:</strong> 4:00 to 4:30</td>
</tr>
<tr>
<td><strong>Community Building:</strong> 4:30 to 5</td>
</tr>
<tr>
<td><strong>Warm up activity 1:</strong> (name game) (5min)</td>
</tr>
<tr>
<td><strong>Activity 2:</strong> (get-to-know you game) Sorts and Mingle (10 min)</td>
</tr>
<tr>
<td>The speaker calls out various categories and everyone moves toward various parts of the room, finding people with similar tastes as them.</td>
</tr>
<tr>
<td>The first half is the “Sorts” game. The leader calls out two contrasting choices and everyone must move either east or west of the room (for example, “Do you prefer Nature or Cities?”) Then the leader shouts out two more choices and everyone moves north and south of the room. Sorts that work well: dogs vs. cats, books vs. movies, sweet vs. salty, casual vs. dress up, inside vs. outside; on stage performing vs. in the audience watching.</td>
</tr>
<tr>
<td>The second half is “Mingle” game. The leader shouts out a general category and the group is asked to mingle around to find others that have the same answer and they clump up to form a larger group. Between 30 and 60 seconds, the leader asks each group to call out their answer. If a person is unique and is the only one with an answer, that’s okay. Examples of mingles: favorite place on Earth; favorite dessert; favorite animal, if you could have dinner with someone, who would you choose; favorite hobby; if you could be anyone, what would it be? Both halves of this game help people introduce themselves in a fun, interactive format.</td>
</tr>
<tr>
<td><strong>Activity 3:</strong> (active team building game) (10 min)</td>
</tr>
<tr>
<td><strong>Electric Current</strong></td>
</tr>
<tr>
<td><strong>Electric Current Game</strong></td>
</tr>
<tr>
<td>Split group into two teams of equal size. Have each team member face the same direction, and have each team facing each other. Each team holds hands to form two long human chains. At the end of the two lines, place a chair a few feet away with a small object on it. The leader stands at the front. The two players at the front of the line watch the leader. The rest of the team closes eyes and heads down. Everyone must be silent. Leader flips a coin and shows it to the first two players at the front of each team. When the coin shows “Heads,” the two people at the front squeeze the hand of the next person in line as quickly as possible. When that player’s hand gets squeezed they quickly “pass the electric current” to the next person. As the current goes along the line, the goal is to be the first team to grab the object on the chair. The team that grabs the ball wins a point. If a team grabs the ball but heads was not flipped, the point goes to the other team. Have the person at the end become the person at the beginning of the line depending how many players you have.</td>
</tr>
<tr>
<td><strong>Snacktivity</strong></td>
</tr>
<tr>
<td>Gather group talk briefly about Active 6 (5min)</td>
</tr>
</tbody>
</table>
• YMCA Values
Expectations from me for the Active 6 program and group

**Theme:** Feeling Tired? The importance of sleep

**Objective:** To help participants learn the effects of lack of sleep on their overall health

**Break group into:** large group discussion and then small activity group

**Give out snack**
The effects of not getting enough sleep are more than just feeling cranky and tired they are connected to your overall health such as:

- Not enough sleep
  - Weakens your body's immune system, leaving you open to illness.
  - Dulles your reflexes your reaction time is slower
  - The body is not able to properly grow and repairs itself
  - You can experience mood swings and behavior problems
  - You can have trouble concentrating
  - Impaired decision-making abilities
  - It affects your relationships with friends and family in a bad way
  - It can impair athletic performance. Increasing the amount of sleep received each night has been shown to significantly improve athletes' abilities to perform.

- Sleep deprivation has been linked to changes in weight, specifically weight gain, the hormone responsible for stimulating appetite increase, and the hormone that regulates fullness drops, which could lead to weight gain.

- Tiredness makes it difficult to focus and to retain information, which will affect how you do in school.

- You need between 10 and 11 hours a night but this could differ from person to person a good way to check is keep a sleep journal. For the rest of the week keep a record of what time you went to bed and what time you got up in the morning and how you felt that day.
  - We will look at them on Thursday. If you complete it and bring it back in your name will go in a drawing for a prize.

- Look at making a night time sleep routine

**Supplies:**
SNACK
APPENDIX C: IRB Forms
PARENTAL PERMISSION

Title: Active 6 program: An Impact Evaluation

Project Director(s):
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Under the supervision of:
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Special instructions:
This permission form may contain words that are new to you. If you read any words that are not clear to you, please ask the person who gave you this form to explain them to you or contact the project director.

Purpose:
The purpose of this research study is to measure the effectiveness and impact of the Active 6 Program on the sixth grade students participating in the program.

Procedures:
If you agree, your child will complete a short survey at the Y in the first and last week of the program each semester.

Risks/Discomforts:
Your child may be uncomfortable providing their true opinions on the survey. Your child will be encouraged to participate, but their choice to answer any of the questions is completely voluntary. If your child becomes uncomfortable for any reason, they will be free to not answer any or all questions or may choose to leave at any time.

Benefits: Although your child may not benefit from taking part in this study, they will be providing information that will help to improve future programs for kids.

Confidentiality:
Your child’s identity will be kept confidential.
If the results of this study are written in a scientific journal or presented at a scientific meeting, your child’s name will be used.
Your child’s signed assent form, as well as this parental permission form will be stored in a cabinet separate from the data.

Compensation for Injury:
Although we do not foresee any risk in taking part in this study, the following liability statement is required in all University of Montana consent forms:
In the event that your child is injured as a result of this research you should individually seek appropriate medical treatment. If the injury is caused by the negligence of the University or any of its employees, your child may be entitled to reimbursement or compensation pursuant to the Comprehensive State Insurance Plan established by the Department of Administration under the authority of M.C.A., Title 2, Chapter 9. In the event of a claim for such injury,
further information may be obtained from the University’s Claims representative or University Legal Counsel. (Reviewed by University Legal Counsel, July 6, 1993)

**Voluntary Participation/Withdrawal:**
You may refuse to allow your child to take part in or you may withdraw your child from the study at any time without penalty or loss of benefits to which you or your child are normally entitled. Your child may be asked to leave the study for any of the following reasons:

1. Failure to follow the Project Director’s instructions;
2. A serious adverse reaction, which may require evaluation;
3. The Project Director thinks it is in the best interest of your child’s health and welfare; or
4. The study is terminated.

**Questions:**
If you have any questions about the research now or during the study contact: Carly Holman, University of Montana. (406) 274-5527.

If you have any questions regarding your child’s rights as a research subject, you may contact the Chair of the IRB through The University of Montana Research Office at 243-6670.

**Parent’s Statement of Permission:**
I have read the above description of this research study. I have been informed of the risks and benefits involved, and all my questions have been answered to my satisfaction. Furthermore, I have been assured that a member of the research team will also answer any future questions I may have. I voluntarily agree to have my child take part in this study. I understand I will receive a copy of this permission form.

________________________________________
Printed Name of Subject

________________________________________
Signature of Parent or Legally Authorized Representative            Date
Minor’s Assent for Being in a Research Study
University of Montana

Title: Active 6 program: An impact evaluation

Why am I here?
We are asking you to take part in a research study because we are trying to learn more about the Active 6 program. We are inviting you to be in the study because we think that your experience is important for us to know in order to make the program better.

Why are they doing this study?
This study is being done so we can learn about what you and other 6th graders are gaining from the Active 6 program.

What will happen to me?
At the beginning and end of the program you will be asked to sit in a room with other 6th graders and take a survey about your activity level. The survey will take about 10 minutes to complete. At the end of the study, you will get a water bottle as a thank you for your participation.

Will the study hurt?
The study will not hurt. You may not be comfortable answering some questions and that is okay. You can choose to answer, or not answer, any question and nobody will be upset if you do not answer some questions. If you get uncomfortable during the questions, you are free to leave at any time.

Will the study help me?
The study may not help you directly, but you will be helping us make the Active 6 program better for future 6th graders.
What if I have any questions?

You can ask any questions that you have about the study. If you have a question later that you didn’t think of now, you can call me, Carly Holman at (406) 274 5527

Do my parents [guardians] know about this?

This study was explained to your parents [guardians] and they said that you could be in it. You can talk this over with them before you decide.

Do I have to be in the study?

You do not have to be in the study. No one will be upset if you don’t want to do this. If you don’t want to be in this study, you just have to tell me. You can say yes now and change your mind later. It's up to you.

Writing your name on this page means that that you agree to be in the study, and know what will happen to you. If you decide to quit the study all you have to do is tell the person in charge.

_________________________________________                  ___________________
Name of Minor (printed)            Date

_________________________________________                  ___________________
Signature of Minor                  Date

_________________________________________                  ___________________
Signature of Researcher              Date
Sixth Grade Survey Minor Assent Script

Hello, my name is _____ I am calling on behalf of the YMCA Active 6 program. We are calling to ask you to volunteer to take part in a phone survey as part of a research study. We are trying to learn more about the Active 6 program. This phone survey is to help us find out more about what you and other 6th graders are gaining from the Active 6 program. The phone survey will be made up of questions about your activity level. The survey will take approximately 10 minutes of your time. Your participation in this survey is completely voluntary. This means you do not have to participate if you don’t want to. If you agree to participate, you have the right to only answer the questions you choose to answer. You have the right to stop participation at any point during the survey. You can ask any questions you have about the study. If you have further questions you can call me at 406-274-5527. Your parents were explained the study and they have said that you can participate.

“Do you have any questions?”

"Do you agree to voluntarily participate in this survey process?"

[    ] Yes    If Yes.... Continue
[    ] No     If No... Good-bye, thank you very much for your time.
Telephone Minor Assent

VERBAL CONSENT DOCUMENTATION FOR PARTICIPATION.

Subject: The Effectiveness of the Missoula Active 6 Afterschool Physical Activity Program on Participation and Health Outcomes

This consent serves as documentation that the required elements of minor assent have been presented orally to the participant.

Verbal consent to participate in this telephone survey has been obtained by the participant’s willingness to continue with the telephone survey by providing answers to a series of questions related to the Active 6 program.

____________________________________
Participant’s Name (Printed)

____________________________________
Surveyor’s Name (Printed)

____________________________________
Surveyor’s Signature
Telephone Survey Parent Informed Consent Script

Hello, my name is ________ I am calling on behalf of the YMCA Active 6 program. We are calling to ask if you would like to volunteer to take part in a phone interview as part of a research study about the Active 6 program. This phone interview is being conducted to learn about ways to improve the Active 6 program and increase participation. The phone interview will consist of questions about your thoughts on the Active 6 program. The interview will take approximately five minutes of your time. Your participation in this interview is completely voluntary. This means you do not have to participate if you don’t want to. If you agree to participate, you have the right to only answer the questions you choose to answer. The potential risks of this research are minimal and your name will not be linked with your responses so your information will be confidential. You have the right to stop participation at any point during the interview. If you have any further questions or concerns regarding this research, you can contact Carly Holman at 406-274-5527.

“Do you have any questions?”
"Do you agree to voluntarily participate in this interview?"

[    ] Yes   If Yes....Continue
[    ] No    If No...Good-bye, thank you very much for your time.
Telephone Informed Consent

VERBAL CONSENT DOCUMENTATION FOR PARTICIPATION.

Subject: The Effectiveness of the Missoula Active 6 Afterschool Physical Activity Program on Participation and Health Outcomes

This consent serves as documentation that the required elements of informed consent have been presented orally to the participant.

Verbal consent to participate in this telephone interview has been obtained by the participant’s willingness to continue with the telephone interview by providing answers to a series of questions related to the Active 6 program.

____________________________
Participant’s Name (Printed)

____________________________
Surveyor’s Name (Printed)

____________________________
Surveyor’s Signature

____________________________
Date