

FACTORS INFLUENCING THE IMPLEMENTATION OF 30 MINUTES
STRUCTURED PHYSICAL ACTIVITY IN AFTER-SCHOOL PROGRAMS

by

TANIS J. HASTMANN

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College of Arts And Sciences

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Approved by:

Major Professor
David A Dzewaltowski, PhD

Abstract

After-school programs are considered to have great potential to provide opportunities for increasing physical activity. One factor that may influence the success of a physical activity intervention is program implementation. The purpose of this study is to understand factors that influence implementation of a 30 minutes structured physical activity session in an after-school program.

After-school staff (organizational leaders, site program managers and fourth grade group leaders), from four after-school sites attended three trainings over the academic year and were given the goal to implement 30 minutes of daily structured after-school physical activity to fourth grade children following CATCH guidelines. At the end of the year two organizational leaders (mean age = 55.0), four program managers (mean age = 27.3), and 13 group leaders (mean age = 21.3) were interviewed (N = 19) and completed a survey. Interviews were recorded, transcribed and analyzed using QSR NVivo software.

Several factors influencing implementation were revealed. First, program managers and group leaders believed that they were successful in leading structured physical activity. However, their definition of success was less than the evidence-based protocol that required structured physical activity five days a week for 30 minutes. Staff believed that increasing the amount of unstructured activity offered and offering structured physical activity three days a week met the standard. Second, structured physical activity was not implemented as intended due to several organizational and staff barriers. The organizational barriers included: prioritizing physical activity, lack school administration support, lack program manager support, high group leader turnover, and low training attendance. The staff barriers included: low group leader motivation, and providing children with enjoyable CATCH games. Third, implementation of structured physical activity was facilitated by several organizational and staff variables. These facilitators included equipment/gym space, training, scheduling structured physical

activity, support from the organizational leaders, and program manager and group leader self-efficacy. The final factor influencing program implementation was the use of individual strategies by program managers and group leaders. These individual strategies included restructuring the after-school program, obtaining physical education teacher support, and participating with the children in structured physical activity.

Findings from this study suggest that the success of the after-school intervention is dependent on many factors, including several organizational system variables, as well as several staff variables. Program managers and group leaders negotiated these organizational and staff barriers and believed that they were successful in leading structured physical activity. However, their definition of success was less than the evidence-based protocol that required structured physical activity five days a week for 30 minutes. They defined successful implementation as increasing the amount of structured and unstructured physical activity daily. Future research should examine if targeting the organizational and staff variables identified in this study leads to greater program implementation.

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Dedication

For Grandma and Grandpa Heinrichs

CHAPTER 1 - Introduction

Childhood obesity increased over the past 30 years. The percent of overweight children and adolescents aged 6 to 19 years has tripled since 1980 (Taubes, 1998; Ogden et al., 2006). According to the National Health and Nutrition Examination Survey (NHANES), rates of overweight for 6 to 11 year olds increased from 12% in 1988-1994 to 19% in 2003-2004. Children who participate in regular physical activity and eat a healthy diet are less likely to be obese and may be more likely to perform these healthy behaviors as adults (Lytle, Seifert, Greenstein, & McGovern, 2000; Nelson, Gordon-Larsen, North, & Adair 2006). Recent recommendations suggest that youth participate in 60 minutes or more of moderate-to-vigorous physical activity per day (Strong et al., 2005). Yet, very few youth are actually meeting the physical activity recommendations and overweight children are more likely to become overweight adults (Serdula et al., 1993).

Schools are ideal settings for the promotion of physical activity. However, policy maker's focus on basic academic areas of English, math, and science dominates the school day at the expense of physical education (Pate & Hohn, 1994). The after-school time period represents one of the largest blocks of discretionary time in a child's typical day. As a result, after-school programs are considered to have great potential to provide opportunities for increasing physical activity. However, implementing physical activity programs effectively appear to be a major barrier to the success of any physical activity promotion program. Factors that may influence program implementation include characteristics of after-school organizational environment and staff. A need exists to understand the characteristics of after-school organizational environment and staff and how these factors play a role in the success of physical activity promotion program implementation.

Statement of the Problem

The purpose of this study is to understand factors that influence the implementation of 30 minutes structured physical activity in an after-school program.

Successful implementation is defined as offering 30 minutes of daily structured physical activity that engaged all students in moderate-to-vigorous physical activity for at least 50% of class time following the CATCH guidelines.

Research Questions

1. Did the Program Managers/Group Leaders/Organizational Leaders perceive that they implemented the physical activity promotion program as intended?
2. What were the organizational and staff characteristics that were a barrier to program implementation?
3. What were the organizational and staff characteristics that were a facilitator to program implementation?
4. What strategies did the Program Manager and Group Leader staff use to successfully implement 30 minutes structured physical activity

Assumptions

1. Participants will respond openly and honestly during the interview.
2. Participants will respond honestly to the questionnaire.
3. Researcher will not lead the participant during the interview.

Delimitations

1. Participants were limited to program manager and group leader staff of after-school programs in Lawrence, Kansas.
2. Group leaders were included if they lead structured physical activity at least once a week.

Limitations

1. After-school programs were limited to after-school programs located on elementary school sites.
2. Program managers and group leaders from the four sites may not be representative of other sites.

Significance

After-school programs are becoming more and more popular due to the growth of single parent or two working parent families. These programs are a great opportunity for children to get help with homework, eat a healthy snack, and be physically active in a safe and structured environment. One major challenge to delivering physical activity after-school is the quality of program implementation by after-school staff. Staff plays a critical role in the success of the program. Many after-school leaders have little education or experience leading physical activity sessions with children, but they are still expected to be able to engage the children in games, free play, and structured physical activity. Without formal trainings on how to lead a physical activity or “recreation” session many kids may be left standing around doing little activity. For this study, after-school staff members were trained on how to engage their students in 30 minutes of moderate-to-vigorous daily physical activity. The proposed study will provide valuable information on how to improve the quality of after-school programs to engage the students in 30 minutes of daily structured physical activity.

CHAPTER 2 - Review of the Literature

Overview

The prevalence of childhood obesity in the United States has tripled since 1980 (Taubes, 1998; Ogden, Flegal, Carroll, & Johnson, 2002). According to the National Health and Nutrition Examination Survey (NHANES), rates of overweight for 6 to 11 year olds increased from 12% in 1988-1994 to 19% in 2003-2004 (Ogden et al., 2006). One way to prevent obesity is to increase caloric expenditure and maintain or decrease caloric intake. Because a child is in school throughout the school day, the after-school period represents one of the largest blocks of discretionary time in a child's typical day to increase caloric expenditure. The prevalence of after-school programs due to single parent and two working parent families is increasing. As a result, after-school programs are considered to have great potential to provide physical activity and increased caloric expenditure.

Background on Child Physical Inactivity

Child PA Guidelines

An expert panel recommended that school-age youth participate in 60 minutes or more of moderate-to-vigorous physical activity on most, if not all days of the week (Strong et al., 2005). However, the majority of children and adolescents in the United States are not meeting this recommendation. Accelerometer data from NHANES found that only 42% of children aged 6-11 years, and 8% of 12-15 year olds are meeting the physical activity recommendation (Troiano et al., 2008). Regular physical activity has multiple health benefits, including children that are physically active are healthier than children that are not physically active (Biddle, Gorely, & Strensell, 2004). In addition, regular physical activity has been shown to have a significant role in the prevention of overweight in children (Steinbeck, 2001), and is associated with a decreased BMI. (Sulemana, Smolensky, & Lai, 2006). Research also indicates that overweight youth have an increased risk for adult obesity (Whitaker, Wright, Pepe, Seidel, & Dietz, 1997).

Regular participation in physical activity is related to decreased levels of anxiety, stress, and depression, and increased self-esteem (Strong et al., 2005).

Overweight and Obesity Trends

The prevalence of overweight children is increasing (Hedley et al., 2004). Overweight and obesity can be measured using body mass index (BMI) to estimate weight status. Children are defined as overweight with a BMI at the 85th percentile and obese at the 95th percentile (Barlow, 2007). Weight status was calculated based percentile rank using CDC growth charts for BMI age and sex norms. There are four weight status categories for children: underweight, normal weight, overweight, and obese. Longitudinal data has shown an increase in the percentage of children that are overweight and obese. The National Health and Nutrition Examination Survey (NHANES) indicate over the past thirty years, child obesity has more than tripled. In 1963-65, only 4% of children aged 6 to 11 were obese, compared to 16% in 1999-2002 (Hedley et al., 2004). Continuing the same trend, a study looking at child obesity trends between 1999-2000 and 2003-2004 found a substantial increase in overweight and obese children. From 1999-2000 to 2003-2004, the percentage of obese children and adolescent females increased from 13.8% to 16.0%. At the same time, the percentage of obese child and adolescent males increased from 14.0% to 18.2% (Ogden et al., 2006).

Physical Activity Participation Across Development

Physical activity has also been shown to gradually decrease from childhood to adolescents. One study found that girls at age 18 to 19 were 83% less active than when they were 9 to 10 years old (Kimm et al., 2002). And, the level of physical activity in childhood predicts physical activity later in life. A study conducted by Telama et al. (2005) found a high level of physical activity at ages 9 to 18, especially when continuous, significantly predicted a high level of adult physical activity. Adolescents who fail to achieve at least five sessions of moderate physical activity per week do not meet this standard in adulthood (Gordon-Larsen, Nelson, & Popkin, 2004). Furthermore, children at age 14 who participated in sports after-school twice a week were less likely to be inactive at 31 years compared to those who were less active at age 14 (Tammelin, Nayha,

Hills, & Jarvelin, 2003). Therefore, promoting physical activity during childhood is critical to being physically active in adulthood.

After-school as Outlets for Physical Activity

One setting to promote physical activity and prevent obesity during childhood is during after-school programs. Self-report data from the CDC reported that 61.5% of children aged 9 to 13 years of age do not engage in any organized physical activity outside of school time, and 22.6% do not engage in any free time physical activity (CDC, 2002). The amount of physical activity achieved after-school in adolescents is inversely proportional to BMI (Sulemana et al., 2006). Meaning, the more physically active an adolescent is, the lower their BMI. For example, providing children more opportunities to be physically active has significant effects on physical activity and sedentary behavior. For example, providing a safe schoolyard for children increased their physical activity level and decreased screen time compared to children without a safe schoolyard to play (Farley et al., 2007). Another study illustrated that children participating in after-school physical activity were more likely to have a lower BMI in middle and high school (Feldman, Barnett, Shrier, Rossignol, & Abenham, 2003). Not only are after-school programs able to provide physical activity, children not participating in after-school programs are more likely to be less active and watch more television (Hager et al., 2006). Increased television watching has been hypothesized as contributing to the increase in sedentary behavior and decrease in physical activity (Hill & Peters, 1998).

However, there is some evidence to suggest that the after-school program must be designed to increase physical activity. One study comparing the effects of unsupervised versus supervised time after-school found that adolescent girls were more physically active when they were unsupervised; this was credited to dancing and listening to music (Rushovich et al., 2006). However, unsupervised girls spent less time doing homework, less time riding in a car or bus, talked on the phone more, and watched more television compared to supervised girls. Another study found that children in after-school programs were more active during recess compared to structured physical activity, however, group leaders were untrained (Troost, Rosenkranz, & Dzewaltowski, 2008). This research

illustrates the need for training after-school personnel in leading physically active games so that children in supervised after-school programs will be more active.

After-school program quality can be improved to increase physical activity if staff members are adequately trained. After-school group leaders are typically minimally trained college or high school students with little to no physical activity background. Training group leaders in structured physical activity games has been found to decrease unstructured free play and increase structured game time (Kelder et al., 2005). Increasing structured game time in after-school has been found to significantly increase moderate-to-vigorous physical activity in elementary children with training.

Program Implementation Definition and Theory

“Improving and sustaining successful public health interventions relies increasingly on the ability to identify the key components of an intervention that are effective, to identify for whom the intervention is effective, and to identify under what conditions the intervention is effective” (Steckler & Linnan, 2002). The RE-AIM framework, which consists of five dimensions: reach, efficacy, adoption, implementation, and maintenance, provides a model to examine the public health impact of an intervention (Glasgow, Vogt, & Boles, 1999). RE-AIM was developed with a focus on translating research projects into public health intervention practice (Dzewaltowski, Estabrooks, & Glasgow, 2004). One key element of the RE-AIM framework is implementation.

There are many key issues to consider when examining implementation. There are two areas of measuring implementation of interventions: the individual and setting level. Individual level implementation refers to the participant adherence to the intervention, and the setting level refers to the extent to which a program is delivered as intended (Glasgow et al., 1999). Both are important in understanding the completeness (fidelity) of implementation.

Process evaluation is vital in understanding if the intervention was implemented as intended, and evaluating why was the intervention successful or not. As previously discussed, the RE-AIM framework defines implementation as the extent to which a

program is delivered as intended. Conversely in the process evaluation literature, fidelity is defined as the extent to which the intervention was delivered as planned or intended (ie. quality of the implementation of an intervention), and implementation is the composite score that indicates the extent to which the intervention has been implemented and received by the intended audience (Steckler & Linnan, 2002). Measuring fidelity is difficult because oftentimes the quality of implementation is subjective. Studies have indicated many ways of assessing fidelity, such as checklists of core intervention components (Baranowski & Stables, 2000). In addition, a less expensive method is to have program implementation staff members fill out some type of survey or questionnaire to assess how an intervention was implemented. However, the problem with self-reporting implementation fidelity is the possibility of biased response or recall (Steckler & Linnan, 2002).

According to the process evaluation literature, program implementation is a combination of four components: reach (who participated), dose (what the program delivered), dose received (what participants received), and fidelity (the quality of the intervention delivered) (Steckler & Linnan, 2002). Due to the complex nature of implementation, it is often difficult to calculate. To determine the final implementing score, the four components must be accurately measured, and then given a weighting factor. Rather than having a weighting factor, you could equally weigh the four components, and thus average the four to assess implementation. Another difficulty of assessing implementation is understanding what an acceptable “score” of implementation is. Perhaps if the intervention staff members have a realistic implementation score to aim for, they are in a much better position to achieve the objectives (Steckler & Linnan, 2002).

Developing a process evaluation plan is considered a six-step process (Saunders, Evans, & Joshi, 2005). First, the program must be described fully, including its purpose, underlying theory, objectives, strategies, and the expected impacts and outcomes of the intervention. Second, acceptable delivery of the program must be described in great detail. Third, develop a list of potential process-evaluation questions. It is best to organize the questions according to each intervention component you are targeting. Fourth, determine the methods for process evaluation. In step three, questions were

developed, and in step four, it is critical to consider the methods that will be used to answer each question. Fifth, consider program resources and program characteristics and context. For example, it is important to consider the availability of qualified staff to develop and implement all aspects of the process evaluation as well as the time needed for planning, pilot-testing instruments and protocols, data collection, entry, analysis, and reporting. Feasibility of process data collection must be considered. Lastly, the process evaluation plan is finalized (Saunders et al., 2005).

Influences on Implementation in School Health Promotion Programs

Studies have shown that teachers that felt they were well trained are more likely to implement the intervention as intended (Dunn et al., 2006; Lytle, Ward, Nader, Pedersen, & Williston, 2003; Buston, Wight, Hart, & Scott, 2002; Ahmed et al., 2006; Han & Weiss, 2005; Hunter, Elias, & Norris, 2001; Dusenbury, Brannigan, Falco, & Hansen, 2003). When participants at the trainings believed that the trainers were knowledgeable and enthusiastic they were more likely to have higher implementation success (Fagon, & Mihalic, 2003). Oftentimes trainings are not attended by staff and are given handout and print materials to compensate for missing the training. However, when staff members fail to attend training and are trained by a fellow employee or supervisor, they are more likely to implement the intervention than simply receiving a handout (Basen-Engquist, 1994). Occasionally, a teacher will be identified that would like to participate in leading an intervention at their school, and in this scenario, the implementation of the intervention is typically high (Goldberg Lillehoj, Griffin, & Spoth, 2004). However, this is not the typical situation. Oftentimes, teachers or staff members do not want to lead the intervention and have little vested interest in it; in this case, the implementation is low.

Motivation of the teachers or staff members implementing an intervention has a large effect on their willingness to deliver the program. Many studies have found that teachers with high motivation, high self-efficacy, and believed strongly in the intervention had higher implementation rates (Story et al., 2000; Ahmed et al., 2006; Mathews, Boon, Flisher, & Schaalma, 2006; Han, & Weiss, 2005; Rohrbach, Graham, & Hansen, 1993; Fagan, & Mihalic, 2003; St. Pierre, & Kaltreider, 2001). In parallel,

teachers that were burnt out, lacked enthusiasm and commitment were less likely to implement the intervention at its full potential. For interventions where the teacher has a vested interest, the implementation increased. This was shown in a physical activity intervention where teachers that were physically active were more likely to have higher implementation rates (Estabrooks, Bradshaw, Fox, Berg, & Dzewaltowski, 2004).

As opposed to training a staff member to implement the intervention, many times a university staff member or an outside person will be hired to conduct the intervention (Austin, Fung, Cohen-Bearak, Wardle, & Cheung, 2006; Lubans, & Sylva, 2006). Although the results are quite clear that this is the most successful type of intervention, the sustainability of the intervention is quite small. For many groups, the costs associated with hiring a specialist to conduct the curriculum or intervention is not feasible. The majority of research is geared toward training the school teachers or after-school staff to implement the curriculum or intervention because it is much more realistic. Although the implementation success is lower with this situation, the practicality and dissemination is much greater.

Perceived support from the research team or intervention team is imperative for high implementation as well. One study paid particular attention to the availability of the main researcher for help and to answer any questions the teachers implementing the curriculum may have. When teachers were able to call or email the researcher at any time and would get quick responses, the implementation success increased (Singh et al., 2006). In addition, many studies have found that having a highly supportive principal who frequently asks about the intervention and participates him or herself will increase the implementation (Lytle et al., 2003; Gittelsohn et al., 2003; Parcel, Simons-Morton, & Kolbe, 1988; Han & Weiss, 2005; Shortt, Fealty, & Toumourou, 2006; McCormick, Steckler, & McLeroy, 1995; Desimon, Payne, Fedoravicius, Henrich, & Finn-Stevenson, 2004; Dusenbury et al., 2003; Klingner, Ahwee, Pilonieta, & Menendez, 2003; Fagon & Mihalic, 2003; St. Pierre & Kaltreider, 2001). Financial support has also been found to significantly impact implementation. When teachers get paid a lot of money to participate in an intervention or training the success is greater (Cunningham & Henggeler, 2001). One study in particular paid teachers \$1000 to participate in the training & collect parental consent forms (Rohrbach, Dent, Skara, Sun, & Sussman,

2007). Not surprisingly, 100% of the teachers participated in the training and all the consent forms were collected because of the monetary award. Although the results of the study improve with financial incentives, the carryover from research to real life is not great and the results are not disseminable. Rather than using financial incentives, one study comprised recommendations for their invention to support school staff that delivers the program. First, develop more than one program advocate to avoid burnout. Second, provide ongoing support. Third, use volunteers or interns as appropriate, and lastly, provide recognition and incentives (Kramer, Laumann, & Brunson, 2000).

Implementation is always greatly affected by the perceived barriers staff members and teachers have towards an intervention. The most cited barrier is time. Time can be interpreted many ways, but for the purpose of this study, *time* most often meant the teachers did not think there was enough time to plan for the intervention (Lytle et al., 2003; Gittelsohn et al., 2003; Sahota et al., 2001; Ahmed et al. 2006; Han & Weiss, 2005; Gingiss, Roberts-Gray, & Boerm, 2006; Dusenbury, Brannigan, Hansen, Walsh, & Falco, 2005; Dusenbury et al., 2003; Klingner et al., 2003; Vernberg & Gamm, 2003; Kramer et al., 2000). Time also makes it difficult for staff and teachers to work together on the intervention (Ward et al., 2006). Lastly, regarding the implementation of a quality lunch and nutrition education program, teachers felt that lunch time was not a long enough period to implement the intervention (Cho & Nadow, 2004; Bauer, Yang, & Austin, 2004). Since time is an obvious barrier to implementation, it is important to teach staff ways to overcome those barriers and to understand that time is just a small part of the intervention.

Not surprisingly, many teachers and staff report modifying interventions: add/delete content, reduce the number of classes, condense the time frame, and integrate the lessons. Expressed in qualitative interviews in the literature, the teachers and staff members that modify the interventions think it is no big deal and think by changing the curriculum, they are making it better. Unfortunately, the curriculum and/or intervention were developed based on theory and the literature, and any changes could drastically affect the outcome. Teachers that were more likely to modify the curriculum and/or intervention were less confident in their abilities to implement the intervention the way it was designed (St. Pierre & Kaltreider, 2004; Ringwalt et al., 2003; Martens, van Assema,

Paulussen, Schaalma, & Brug, 2006; Hill, Maucione, & Hood, 2007). Furthermore, one study assessed program fidelity and found three reasons adaptations were made to interventions by teachers and or/staff: adding material to clarify concepts, deleting concepts due to time, forgetting material, disagreement with content, changing material due to clarification; or lack of time to cover material as needed (Hill et al., 2007).

Child preference for physical activity may also contribute to the success of intervention implementation. A study by McCarthy and Jones (2007) found that enjoyment for physical activity was higher with social recognition of competence, encouragement, excitement, and challenge in children 11 to 12 years of age. Based on these findings, children would prefer elimination games to non-elimination games due to the winning and competence aspect of the games. Also, elimination games typically have more challenge and excitement than non-elimination games.

CATCH Physical Activity

Coordinated Approach to Child Health (CATCH) originally named “Child and Adolescent Trial for Cardiovascular Health,” was a multi-site randomized controlled field trial designed to assess the effects of a school and family based intervention to reduce cardiovascular disease risk factors among third, fourth and fifth grade elementary school students. The goal of CATCH physical education was to involve students in moderate-to-vigorous physical activity at least 40% of class time during a minimum of three physical education classes per week, for 30 to 40 minutes per class (Luepker et al., 1996; McKenzie et al., 1996). A total of 56 intervention and 40 control elementary schools in four states participated in the CATCH program. Results found the intensity of physical activity in physical education classes in CATCH schools was significantly higher than control. Daily vigorous physical activity was significantly higher in intervention (58.6 min) versus controls (46.5 min). Process evaluation was utilized for the CATCH program to assess dose, fidelity, program context, and factors mediating the impact on study outcomes. Very high attendance (90%) of physical education specialists took part in the training sessions. Physical education dose was assessed and intervention schools received approximately the same amount of minutes of physical education per week (100 min). However, fidelity was higher in intervention schools, measured as the mean

percentage of minutes of physical education spent in moderate-to-vigorous physical activity (51.8% intervention vs. 44.3% control) (Edmundson et al., 1994; McGraw et al., 1994; McKenzie et al., 1994; Lytle et al., 1994).

The El Paso Coordinated Approach to Child Health (El Paso CATCH) intervention assessed the impact on children's health of translating an evidence-based national intervention trial (CATCH) to low-income elementary schools with primarily Hispanic students (Coleman et al., 2005). A total of four El Paso CATCH intervention schools and four control schools in El Paso, Texas participated in the study for a total of 896 third-grade children (473 control and 423 El Paso CATCH), most were low-income students. Results found girls in control schools had significant increases in the percentage of overweight or obese from third (26%) to fifth (39%) grades, as well as girls in El Paso CATCH schools (30 to 32%); however the rate of increase was significantly lower for El Paso CATCH girls (2%) compared to control girls (13%). A similar pattern was seen in boys, with a significantly lower increase for boys in El Paso CATCH schools of 1% (40% to 41%), versus a 9% increase for control boys (40% to 49%). Process evaluation was designed and utilized to understand the implementation and fidelity of the El Paso CATCH study, however results have not yet been published.

Summary

This review illustrated that multiple factors influence the successful implementation of school health promotion programs. Implementation was defined as the extent to which a program was delivered as intended. There are several key factors that affect program implementation: teacher motivation and self-efficacy, perception of training, having an outside facilitator to implement program, perceived support from research and/or intervention team, financial incentives, ongoing support/training, and time. Time can be interpreted as time for the teacher to plan the intervention, to implement, or for the staff to work together for the intervention. Understanding factors that affect the implementation of the intervention are critical to increase the likelihood of a successful outcome.

CHAPTER 3 - Methods

Design of Study

After-school staff working at four sites participated in qualitative interviews and responded to survey questions to determine the factors that influence implementation of 30 minutes of structured physical activity daily. The interviews and survey were completed after staff had delivered the Healthy Opportunities for Physical Activity and Nutrition (HOP’N) program over the past year. This study is part of a larger school randomized trial examining the effectiveness of the HOP’N after-school program to prevent obesity in fourth grade children.

The present study examined four after-school sites that were randomized to receive the HOP’N program for two years. The four HOP’N program sites varied in terms of socio-economic status, ethnic diversity, and number of children enrolled in the after-school program. Two of the four sites had low ethnic diversity and high socio-economic status. School A had 4% of students receiving free-reduced lunch and 83% were white; School B had 16% on free-reduced lunch and 84% were white. The other two intervention schools had higher diversity and lower socio-economic status. School C had 76% of the students qualify for free-reduced lunch and 47% were ethnically diverse; School D had 69% of the students qualify for free-reduced lunch and 28% were ethnically diverse. Furthermore, the two lower socio-economic schools were funded by 21st Century Grants.

The HOP’N program included four quality elements: continuous staff training, weekly nutrition and physical activity education experience (HOP’N Club), daily healthy snack and daily structured physical activity. The focus of the present study was to understand factors that influenced the implementation of 30 minutes daily structured physical activity in the HOP’N after-school sites. Implementation was defined as offering 30 minutes daily structured physical activity that engaged all students in moderate-to-vigorous physical activity (MVPA) for at least 50% of class time. To

achieve this goal, each site's after-school staff participated in three trainings throughout the school year, received the CATCH Kids Club Activity Curriculum Box, and received equipment for physical activity games. The trainings targeted building the capacity of staff to deliver 30 minutes of structured CATCH (Coordinated Approach to Child Health) physical activity and delivery of the other HOPN quality elements.

Structured CATCH physical activity was defined as following the CATCH structured physical activity guidelines. To meet the goal of 30 minutes daily structured physical activity, staff members were not limited to only CATCH activity box games. After-school staff's goal included implementing non-CATCH games, provided the games met the guidelines of CATCH structured physical activity.

The CATCH guidelines included the "BASICS" principle. BASICS is an acronym for boundaries and routines (rules), activity from the beginning to the end, stop and start signal, involvement by all, and clear instructions. Sites were also given the goal to follow CATCH rules. The rules included of participants not standing in line, every participant or every other participant receiving a piece of equipment, game rules do not eliminate participants (if participants are out, then they have to do another activity or they get to come back in right away, e.g. after 10 jumping jacks), game rules do not allow one participant to be the star athlete (ex. participants must pass the ball to all persons on the team before scoring), and the goal is participation and fun rather than winning, competition may be a part of the game, but not the only part. Therefore, structured physical activity was not considered as being implemented as intended when 50% of the students were not engaged in moderate-to-vigorous physical activity (e.g. dodgeball; elimination games) and the games did not fit the CATCH guidelines. Training on physical activity included instruction on implementing the evidence-based physical activity curriculum focused on providing children many opportunities to participate and practice (CATCH Kids Club Activity Box), using appropriate and effective class management and instructional methods; encouraging children to participate in physical activities during and outside of HOP'N physical activity session; and adopting healthful personal behaviors to provide an active, enthusiastic role model for students.

Participants

Participants interviewed and surveyed were organizational leaders (n = 2) of the HOP’N after-school program, after-school site program managers (n = 4) who were responsible for each school’s program, and group leaders (n = 13) who were responsible for supervising a group of approximately 15 students. The organizational leaders included the Executive Director of Boys & Girls Club and the Executive Director of Planning and Program Improvement for the school district. The director of the Boys & Girls Club was responsible for two of the after-school programs, and the director of the school district was responsible for the other two sites. The program managers included the coordinator who supervised the after-school staff at each school site. Group leaders were included if they were in charge of the fourth grade students, or if they lead 30 minutes of CATCH physical activity at least once a week to the fourth grade students.

Procedures

Interviews were conducted by a trained interview facilitator (Lead Author) at the end of the first school year of implementing HOP’N. The goal of the semi-structured interviews was to understand factors that influence the implementation of 30 minutes structured physical activity in an after-school setting. The one-on-one interviews were conducted in private locations including their office, teacher’s lounge, an empty classroom, or in one instance a coffee shop. The interviews lasted between 30 and 90 minutes and each participant was paid their hourly wage for the duration of the interview. It was clear that the information was for a research study and their participation was completely voluntary.

Prior to the start of each interview, each participant reviewed and provided informed consent. Subsequently, the researcher reviewed the rules of the interview. First, the participants would not be identified by name. Secondly, there were no wrong or right answers. Lastly, the participants were asked to answer the questions based on their thoughts and opinions. Prior to starting the interview, the researcher asked participants whether or not they felt comfortable having the interview audio taped. No participant declined for the interview to be recorded.

Each interview followed a semi-structured interview guide designed for the Program Managers (Appendix A), Group Leaders (Appendix B) and the Executive Director of the School District and Boys & Girls Club (Appendix C). After each interview, the interview facilitator made notes about the interview regarding any nonverbal signs or any other important information.

The qualitative interview questions were based on a thorough review of the literature and from anecdotal evidence throughout the baseline year of the study. Interview questions were straightforward, open-ended, and were designed to not lead the interviewee. Each question was developed with probes to ensure consistency between interviews. The interview was organized into broad categories to assist in the flow of the interview. The categories were background information, HOP’N training, general HOP’N questions, recreation and free play, 30 minutes of structured physical activity (CATCH), HOP’N Club, healthy snack, perceptions of supervision, and concluding questions.

Following the semi-structured interview, each participant completed a brief survey. Program managers and group leaders (Appendix D) received a different survey than organizational leaders. Both surveys consisted of questions regarding demographics, moderate and vigorous physical activity participation, and self-reported height and weight. Group leaders and program managers were asked questions regarding their previous and future jobs, length of time worked at the after-school program, current position at the after-school program, hours worked in a typical week, and their self-efficacy to implement the HOP’N quality elements.

Survey Measures

Demographics

To capture the demographic information, the Behavioral Risk Factor Surveillance System (BRFSS) questionnaire was formatted into a paper survey. These questions included sex, age, ethnicity, education, time worked at the after-school program, job position, previous and future job plans, and height and weight. Research has found the

BRFSS to have adequate reliability and validity when accessing self-report height and weight (BMI), and demographic variables (Nelson et al., 2001).

Physical Activity

Staff physical activity was measured using questions from the Behavioral Risk Factors Surveillance Survey (BRFSS) formatted into a paper survey. First, participants were asked “How many days per week do you do moderate activities?” Moderate activities were described as brisk walking, bicycling, vacuuming, gardening or anything else that causes some increase in breathing or heart rate for at least 10 minutes (not physical activity done for work). Following the previous question participants were asked, “On days when you do moderate activities for at least 10 minutes at a time, how much total time per day do you spend doing these activities?” The same questions were asked for vigorous activity, which was defined as running, aerobics, heavy yard work or anything else that causes large increases in breathing or heart rate for at least 10 minutes. In addition, sedentary behavior was assessed by asking, “How many hours each day do you typically spend sitting down while doing things like visiting friends, driving, reading, watching television, or working at a desk or computer” was asked (CDC, 2005). The BRFSS physical activity questions were scored by calculating if physical activity recommendations were met. Participants were categorized as meeting the American Heart Association and American College of Sports Medicine recommendations for physical activity or not. Physical activity recommendations to promote and maintain health are for all healthy adults to achieve moderate-intensity aerobic physical activity for a minimum of 30 minutes on five days each week or a minimum of 20 minutes of vigorous-intensity physical activity three days a week (Haskell et al., 2007).

Self-Efficacy

Lastly, group leaders and program managers were asked three questions on their self-efficacy to implement the quality elements of HOP’N. Self-efficacy is defined as a belief that one can perform a specific behavior leading to a desired outcome (Bandura, 1977). Questions included how confident they were to plan and provide HOP’N CATCH 30 minutes of daily structured physical activity, and follow the HOP’N CATCH daily routine. A 100 point scale was used with 10 point intervals from 0 being not confident,

50 unsure, and 100 very confident (Bandura, 1977). Following social cognitive theory guidelines, the questions were targeted to understand the relationship between implementation and self-efficacy. Self-efficacy was evaluated using a Cronbach's alpha coefficient. The self-efficacy alpha level was 0.796 for CATCH implementation; an alpha level above 0.80 suggests high internal consistency.

Data Analysis

The lead author transcribed all interviews and checked for errors. Throughout the process the lead author was able to familiarize herself with the data and identify general ideas and concepts throughout this process. To assist in organizing and managing the data, the transcribed data were imported to a qualitative data analysis software package, Qualitative Solutions and Research (QSR) NVivo. The lead author categorized themes from the transcripts and created an initial coding guide that went through multiple revisions. The coding guide was developed based on knowledge (from transcribing the interviews) and the interview guide. The lead author trained one independent coder and following in-depth discussions, and initial practice sessions, both the researcher and independent coder coded five interviews separately. Following the individual coding based on the coding guide, the two coders compared codes and discussed minor discrepancies until an agreement was reached. In a few instances, open codes were added to the coding guide during the coding process by both the lead author and independent coder. The open codes were necessary when the data did not conform to any codes in the coding guide and allowed the data to stay true. Initially, the inter-coder reliability was approximately 70%, but after reviewing the data and discussion, increased to approximately 100%. After this process, the researcher coded the remaining 14 interviews herself. After coding the 14 interviews, the lead author reviewed each transcript with codes to check for accuracy.

CHAPTER 4 - Results

A total of 19 interviews were conducted with organizational leaders, program managers, and group leaders. Each interview averaged 41 minutes and 57 seconds. Interviews were conducted at the end of the school year prior to staff leaving for summer vacation. The two organizational leaders were white females with a mean age of 55, one held a Master's degree, and the other a PhD. Of the two organizational leaders, one was regularly physically active and the other reported no activity. Of the four program managers, two were male and two female. Their ages ranged from 25-31 (mean = 27.3, SD = 2.6), with two holding a bachelor's degree and two pursuing a bachelor's. Three were white, with one being of mixed ethnicity. All four of the program managers worked in the after-school program for greater than three years and worked over 40 hours a week. Three of the four program managers met physical activity guidelines; while the other was insufficiently active.

Thirteen group leaders were identified as meeting the inclusion criteria, and all 13 individuals participated in this study. Four male and nine female group leaders were interviewed (n = 13). The group leader ages ranged from 19 to 23 with an average age being 21.3 (SD = 1.1). Ten described themselves as White, one was Hispanic, one Black, and one other. One group leader completed her bachelor's degree, and the remaining 12 were working towards their bachelor's degree. The average length of time worked at the after-school program was 6 to 12 months, the mean hours worked per week was 11.5 (range = 6-18 hours), and the mean days worked per work was 3.76 (range = 2-5 days). The mean self-reported BMI was 23.7 (SD = 3.5), with eight normal weight and five overweight group leaders. One group leader refused to answer. Only two group leaders reported not participating in regular physical activity, while 11 did participate in regular physical activity. The participant characteristics are illustrated in Table 4-1.

Program managers and group leaders perceived they were successful in implementing 30 minutes of daily structured physical activity. However, throughout the

interviews, participants were asked to describe scenarios when the students did not receive 30 minutes structured physical activity. During the interviews, barriers and facilitators that influenced implementation were discussed. Table 4-2 summarizes the frequency of barriers and facilitators discussed by interviewee's. In addition, group leader and program manager individual strategies for successful implementation of 30 minutes structured physical activity were also discussed

Table 4-1: Interview Participant Demographic Information

Variables	Organizational Leaders	Program Managers	Group Leaders
N	2	4	13
Gender: %			
Male	0%	50%	30.8%
Female	100%	50%	69.2%
Age	55 (SD = 12.7 Range = 46-64)	27.3 (SD = 2.6 Range = 25-31)	21.3 (SD = 1.1 Range = 19-23)
Ethnicity:%			
White	100%	75%	76.9%
Other	0%	25%	23.1%
Education: %			
In College	0%	50%	92.3%
Bachelor's	0%	50%	7.6%
Master's +	100%	0%	0%
BMI			
% Normal Wt	50%	25%	52.8%
% Overweight	50%	25%	38.5%
% Obese	0%	50%	0%
% Meeting PA Guidelines	50%	50%	84.6%

Did the Program Managers/Group Leaders/Organizational Leaders Perceive they Implemented the HOP’N Program as Intended?

Program managers and group leaders believed that they were successful in implementing 30 minutes of daily structured physical activity. However, their definition of success was less than the evidence-based protocol. *“We’re fairly good at doing that (implementing 30 minutes daily structured physical activity), I mean, we are required to try to get 30 minutes of physical activity everyday. Sometimes it is difficult to do that.... But we usually get our 30 minutes.”* Another group leader said, *“The kids that stay for the whole length of the program will get a minimum of 45 minutes of running around. We do at least 30 minutes of recreation (structured PA) and 15 minutes of recess everyday.”* However, further questioning revealed situations where children did not receive daily structured physical activity in all four after-school programs. *“Well, Fridays are Free-Day Friday. They can go to the gym and have free time and a lot of kids do that, but no we don’t have structured (PA) on Fridays.”* Each school reported that they have Free-day Fridays and don’t offer structured physical activity on Fridays. As part of the HOP’N program, children participate in a one-hour weekly nutrition education curriculum (HOP’N Club). On HOP’N Club days, the children do not receive structured physical activity at any of the after-school programs. *“One thing I noticed is the actual day that we have HOP’N Club, she has an hour worth of activity (curriculum), and it’s always during gym time. So before, all the other kids were playing with the HOP’N equipment and the kids not in HOP’N don’t get their exercise. But I think she does a good presentation, but it’s kind of funny that on the HOP’N day they don’t get their exercise.”* Another group leader reported the same thing, *“We don’t get recreation (structured PA) on days when HOP’N Club is here. We still go outside, and they get their free play, but we don’t do structured.”* Although group leaders and program managers perceived they implemented HOP’N five days a week, they believed that increasing the amount of unstructured physical activity daily and offering a maximum of three days a week of structured physical activity met the evidence-based protocol.

Table 4-2: Summary of Organizational Barriers and Facilitators Frequency

Topic	Program Managers (n=4)	Group Leaders (n=13)
Believe Implemented HOP'N as Intended:	3	10
Barriers		
Organizational Barriers		
Prioritizing physical activity	3	11
Lack school administration support	3	7
Lack program manager support	1	9
High group leader employee turnover	N/A	8
Low Training Attendance	0	8
Staff Barriers		
Low group leader motivation	3	11
Providing children with enjoyable CATCH games	3	11
Facilitators		
Organizational Facilitator		
Equipment/Gym Space	4	12
Training after-school staff	4	8
Scheduling structured physical activity	4	13
Support from Organizational Leaders	2	N/A
Staff Facilitators		
High self-efficacy	3	10

What were the Barriers that Influenced Implementation?

Several themes emerged as barriers to the implementation of 30 minutes daily structured physical activity. Barriers were categorized into two groups: organizational and staff barriers. Organizational barriers included: prioritizing physical activity, lack of school administration support, lack of program manager support, high group leader employee turnover, and low training attendance. Staff barriers included: low group leader motivation, and providing children with enjoyable CATCH games.

Organizational Barriers

Prioritizing Physical Activity

Physical activity is somewhat of a priority of the after-school programs, however the majority of program managers and group leaders believed that academics, and getting help with homework were the most important components of the after-school program. An example is, *“They may miss the recreation or enrichment if they have a lot of homework, but again, homework is the priority.”* Staff reported that parents get upset when their children do not complete their homework during the after-school program, as mentioned by one of the group leaders, *“It is important (to do homework) because the parents get really mad if the kids have been playing in after-school and they have 2 hours of homework when they get home.”* A survey given to the parents by the after-school program reported that children completing their homework during the after-school program is most important, an example, *“almost all parents said power hour is most important because it allows them to get help with homework and get it finished, and then when they go home to the parents, they can spend more quality time with the children, as opposed as having to work on homework for 2 to 3 hours.”*

In addition to academics and homework, after-school staff believed that having a safe place for the students to go is important. One group leader mentioned, *“I think that it’s important that the kids have somewhere to go that’s safe after-school, and that they’re not involved with violence or drugs, or whatever they could be exposed to during that time period when maybe their parents aren’t home. They’re not going home by themselves to sit and watch TV, and expose themselves to violent television or something,*

we provide a safe environment.” Group leaders and program managers also believed building relationships with the kids was important, *“Honestly, the most important aspect of the after-school program doesn’t have anything to do with academics, enrichment or recreation. It has to do with building relationships. The most important thing is to make the kids feel special, make them feel like they belong here, and make them feel like they are loved. And then, once they have that feeling, they can then do the learning, and the playing and the activities.”* Lastly, after-school staff believed that physical activity was important, however, it was not one of the most important components of the after-school program, as stated by one of the group leaders, *“recreation is really important, especially with the obesity problem going on.”* Another group leader stated, *“I do think that it is really important (to have recreation), because a lot of the kids would go home and sit on the couch and watch TV, being lazy until mom and dad got home.”* Although, group leaders and program managers believed that physical activity was important, it was not a high priority, *“I found a game that I thought the kids will like (at the training), but you know you find that things are far too hectic to try to do something like that, then you’ll say we’ll do it another day and it just keeps getting pushed further and further back on your list of priorities and then you end up not implementing the game that you learned at the training.”*

Lack School Administration Support

After-school programs need the support of school administrators, principals, and teachers to ensure access to the gymnasium and other areas of the school building. In this study, after-school staff reported not feeling supported by the school teachers and administrators. Teachers did not let the after-school programs use their classrooms, and the communication between teachers and after-school staff was low. As mentioned by one of the program managers, *“they don’t really understand the goals of the after-school program, and there is tension between the teachers and my staff.”* In addition, many times the principal scheduled outside groups to use the gymnasium leaving the after-school programs without an area to be physically active, particularly in the winter, when children are unable to go outside. Each school provided examples of when outside groups occupied the gym, as stated by one of the program managers, *“During the winter when it was really cold outside, our gym teacher had fitness camp for like two weeks and*

we couldn't go in the gym at all, and we couldn't go outside because it was freezing.”

Another program manager mentioned, *“The basketball team has practice and they get the whole gym from 3:30 -5:00 twice a week, so we don't have anywhere to take them.”*

Lack Program Manager Support

In addition to school administrative support, group leaders require the support of their boss (program managers) to implement 30 minutes of daily structured physical activity. However, group leaders discussed how HOP'N and CATCH games were rarely if ever discussed during the after-school staff meetings. For example, one group leader said, *“we talk about behavior issues, about certain kids, but we don't really talk about HOP'N.”* When program managers do discuss HOP'N with their staff, it is primarily about the upcoming HOP'N trainings, and not about the implementation of CATCH games. For example, *“she'll tell us when we have trainings to go to, but we don't talk about the games or anything like that.”* In addition to the limited discussion about the HOP'N program and CATCH games, the majority of group leaders did not perceive that it was required of them to implement structured physical activity, due to the lack of discussion about CATCH and the HOP'N program. In fact, one of the program managers admitted to not enforcing her staff to implement CATCH games, *“I think the program managers need to follow through because we aren't making sure that it is happening (structured physical activity). I don't always see what's going on during recreation because it is the last place I go if I'm wondering around the building checking on groups... the program managers need to stay on top of it, and make sure that (structured physical activity) is what the kids are doing when they go to recreation.”*

High Group Leader Employee Turnover

As previously discussed, employment by the program managers in the after-school program is somewhat lengthy at more than three years. Conversely, employment by group leaders in the after-school program is relatively brief, as illustrated in Table 4-3. Of the 13 group leaders interviewed, three have been employed at the after-school program for less than 6 months, six have been employed for 6 to 12 months, and four have been employed for more than one year at the after-school program.

Table 4-3: Length of Employment

Variables	Group Leaders
N	13
Length of Employment:	
< 6 months	23.1%
6-12 months	46.2%
> 12 months	30.7%

As a result of having a high employee turnover rate, group leaders have a tendency to change the age-group of children they are responsible for. Of the thirteen group leaders interviewed, only five stayed with the fourth grade group of children across the academic year. The remaining six either started the year with the fourth grade group, and switched at semester break to a different grade (e.g. 2nd grade), or started the year with a group other than the fourth grade, and switched to the fourth grade group at semester break.

Low Training Attendance

Table 4-4 summarizes the attendance of after-school staff at the three trainings offered. Group leaders, program managers and organizational leaders were encouraged to attend three ongoing trainings throughout the school year. Trainings were designed to teach the staff how to implement the CATCH games in their after-school programs.

Table 4-4: Training Attendance of After-School Staff Interviewed

<i># of Trainings Attended</i>	<i>Organizational Leaders (n=2)</i>	<i>Program Managers (n=4)</i>	<i>Group Leaders (n=13)</i>
3	50%	50%	23.1%
2	0%	50%	23.1%
1	50%	0%	23.1%
0	0%	0%	30.8%

Attendance at the trainings was required for the fourth grade group leaders, but also encouraged by the rest of the staff in the after-school program. However, as previously discussed, group leaders have a tendency to change the group of children they work with throughout the year; and three of the 13 group leaders were hired in the middle of the fall semester. Considering the group leader changes, it is important to examine the fourth grade group leaders attendance rates based on the group of children they worked with during the fall and spring semesters. As illustrated in Table 4-5, of the group leaders who were responsible for fourth graders the entire year (n = 5), 80% attended two or more trainings. During the fall semester there were two HOP’N trainings offered, and during the spring there was one HOP’N training. Of the two group leaders that lead the fourth graders only in the fall, one attended all three trainings, while the other one attended none of the trainings. Of the six group leader leaders that only lead fourth graders during the spring, 16.7% attended two or more trainings, and 83.3% attended zero or one training. In the spring semester only half of the group leaders attended the one training offered, and the other half didn’t attend any.

Table 4-5: Training Attendance of the Group Leaders (n = 13)

<i># of Trainings Attended</i>	<i>4th Grade Group Leaders - only Fall (n=2)</i>	<i>4th Grade Group Leaders – only Spring (n=6)</i>	<i>4th Grade Group Leaders – Fall & Spring (n=5)</i>
3	50.0%	0%	40.0%
2	0%	16.7%	40.0%
1	0%	33.3%	20%
0	50%	50%	0%

Staff Barriers

Low Group Leader Motivation

The majority of group leaders reported that they prefer to let the children have recess or free play rather than structured physical activity. This was said by one group leader, “*I prefer recess because there is no planning and it is easier.*” One of the

program managers had this to say about his staff, *“I’m sure they prefer recess because it is time they get to go out and play and they don’t have to plan something, they can just sit and watch. That’s the way I was when I was a group leader, so I think it would be the same for them.”* Although group leaders and program managers believe that free play is easier, they also believe that there are more behavioral problems during free play, *“Of course we prefer recess...but where are the behavioral problems? They are during recess, we normally don’t have any behavioral problems during recreation (structured physical activity) unless someone gets hurt. I’m sure group leaders are going to pick recess over recreation any day.”* In addition, the weather tends to be a factor in the children’s physical activity levels. During the warm weather months, children are able to go outside to be physically active. However, only group leaders (n = 2) at one of the four after-school programs lead structured physical activity outside. The three other schools participate in only recess and free play outside. Therefore, the majority of structured physical activity is played during the colder months, when children are unable to go outside. When discussing free play versus structured physical activity, one of the group leaders commented that, *“well, lately it has been nice outside so we’ve been going outside for our rec time, but when it’s colder, I try to do more rec (structured physical activity).”*

Program managers did not make the group leaders accountable for implementing or planning 30 minutes daily structured physical activity. One program manager said in the interview, *“I mean if the group leaders want it to be (their priority) and play the game then yes, but it isn’t a strict requirement.”* Unfortunately, the program managers have structured each of the after-school programs so that the group leader is responsible for ensuring their students receive 30 minutes structured physical activity, and due to the lack of motivation by group leaders, structured physical activity may not have been implemented. This was mentioned by one of the program managers during the interview, *“I think I can safely say... this is not their priority (physical activity). There is a huge box, the CATCH box is over there, with all the activities in it, but do they sit and look through that box? I doubt it.”* Group leaders admitted to rarely, if ever looking in the CATCH box to plan their structured physical activity, however group leaders did implement the games they learned at the training. When that happens, they will typically

try a game only once, and if it fails they won't try that game again, *"Like we did it (played a game), and then I don't know, everything just fell apart, there was no organization and kids just ended up running around, and it just wasn't going anywhere I guess."* On the other hand, when group leaders try to find a game in the CATCH box they were unable to understand some games, *"Some of the cards, you know, I'll read it on paper and I won't know how its supposed to work, so I'll try to find another card that makes more sense. Sometimes there is a game you want to play, but it seems really confusing. I'm like, how, if I don't get this, how are the kids going to get this."*

Although the group leaders are required to turn in weekly planning sheets, the program managers admitted the group leaders were not following their plan. One program manager had this to say about her staff planning, *"My staff, they have to plan their recreation activities 5 days a week. They get 2 hours of planning a week, paid. They may not use it, but they get it."* Another program manager had this to say about his staff planning, *"I think they spend about 20 minutes a week planning, or 5 minutes before everyday. And that is one of the points, I think they need to do more planning."* Since group leaders are not utilizing their paid planning time, they are not very successful leading the structured physical activity games. One group leader discussed a typical structured physical activity session, *"It's been a challenge to get them (children) moving for 30 minutes, because they come into the gym, you know, getting them quiet, sitting them down, telling them the rules of the game, telling them how to play the game, and then getting them up and getting them started. They probably are only getting 10 or 15 minutes of actual motion time. But they are always active in recess, but I don't know about the recreation block."*

Although the group leaders received training on how to implement 30 minutes of structured physical activity, that was not enough, *"The games we played (at the training) were CATCH games, and they gave us the CATCH box, but I forget about it sometimes.... But if there was someone here who (implemented games), sometimes those cards are tough, but I need to see it played sometimes, so if there was a person that knew everything that was in there, then I could easier look, and they could show me how to do a card."*

Providing Children with Enjoyable CATCH Games

Group leaders and program managers believed that the children did not enjoy the CATCH games and that made structured physical activity more difficult to implement. For example, one group leader said, *“Sometimes the kids don’t want to play the game you have planned, and then you have to come up with something else for them to do.”* Another group leader agreed, *“Like, we’ll be playing a game that we found and the kids will hate it, so we ask them what they want to do, and all they want to do is kickball. But then kickball won’t work, so when that happens it sucks. But, when they like the game it is great.”* In addition, after-school staff believed that children preferred free play to structured physical activity, as mentioned by multiple staff members, *“we get more complaints during recreation (structured physical activity), compared to free play.”* Another group leader mentioned, *“They prefer recess, I mean, they would have it all day if they could.”* Lastly, a group leader had this to say, *“I think the kids preference is free play because some of the kids are not willing to change the activities that they play, like some of them just want to kick a ball around, and they can entertain themselves for a good 30 minutes.”*

What were the Facilitators that Influenced Implementation?

Program managers and group leaders believe that child obesity is a problem and that after-school time is a great opportunity for children to be active. *“I think they (after-school) can play a huge role (in obesity prevention), just keeping the kids active, teaching them about healthy eating habits. During the school day there isn’t time to teach that sort of thing, and in after-school we’re teaching it by doing it, as opposed to telling them when they are sitting in class during the day at their desk.”* However, there were organizational and staff facilitators that influenced implementation of 30 minutes daily structured physical activity. Organizational facilitators included equipment/gym space, trainings, scheduling structured physical activity, and support from organizational leaders. Staff facilitators included program manager and group leader self-efficacy to implement.

Organizational Facilitators

Equipment/Gym Space/Outdoor Space

Fortunately, each of the four after-school programs have large gymnasiums and plenty of open outdoor space where structured physical activity can take place. In addition, the four after-school programs received CATCH equipment and the CATCH box at the start of the year to facilitate implementation. Program managers and group leaders were very appreciative of the equipment they received, *“I can’t think of a single playground piece of equipment that we don’t have. I think we have everything we could possibly need, so that’s cool because we don’t have to play basketball or dodgeball everyday. We’ll throw a hula hoop in there, or some bean bags, play a little flag football, mix it up a little bit.”* Another group leader mentioned, *“The equipment is definitely effective, we are definitely using it and it has definitely expanded our program at our site. And more equipment gives us more ability as to what we can do. It was nice, that was the biggest thing, we really appreciated all the equipment.”* Each of the after-school programs also received money to purchase other equipment or materials that could be used to implement HOP’N. *“I purchased other equipment from HOP’N money too. Its called Geo Fitness, we bought these mats that have number on them, and I bought a whole bunch of DVD’s and then it is basically just teaching kids how to dance, and do a bunch of things using these mats.”*

Training After-School Staff

Although training attendance was lower than anticipated, the training was beneficial for the after-school staff that participated. The group leaders expressed that playing the games at the training was helpful in implementing the games at their after-school program, *“I liked the game that if you got out you had to do 10 jumping jacks and then come back in. I like those because you’re out and you have to do something because you got out, but you aren’t sitting on the side watching until someone else gets out.”* In the HOP’N trainings, the after-school staff were taught and played four new games that they would be able to bring back to their after-school program. The group leaders and program managers enjoyed playing these games, *“I don’t really like picking up a game that we don’t really know and have them play it, so those games that we learn at HOP’N*

training we usually play those.” The group leaders and program managers discussed how prior to HOP’N the children had a lot of recess but not a lot of structured physical activity, “I like it (CATCH games). Before HOP’N we didn’t really do that many games because we just did free time all day long. I think its good you know, all the kids are participating and they talk to people that they normally don’t talk to and it has a kind of a community feeling.”

Scheduling Structured Physical Activity

The program managers are responsible for giving the group leaders daily and weekly schedules so the group leaders are able to plan their time. The program managers have done a great job of providing the group leaders with schedules and ensuring that all groups of children have the gym scheduled for recreation almost daily (not on Fridays and HOP’N Club days). The staff at each of the four schools discussed how their days are scheduled for them to ensure they get the gym daily, for example, *“They get 15 minutes of recess, 15 minutes of snack, 30 minutes of rec, 30 minutes of enrichment, and 30 minutes of academic.”* In fact, at many schools more than one group of children will use the gym at the same time to make playing structured physical activity easier, as said by one of the group leaders, *“She (program manager) schedules the gym so we have two groups that come together and do rec together so that there is more kids and it is easier to play games with more kids.”* One of the program managers discussed how he splits up his group, *“my program is small so I divide them up and the 4th, 5th, and 6th grade groups are together, it makes it easier to play the games.”* However, although the after-school programs are relatively structured in terms of scheduling the groups of children, the schedules are only loosely followed by many of the group leaders. For example, *“sometimes we’ll be doing homework and I’ll forget to take them to recess or whatever the next activity is.”*

Support from Organizational Leaders

The organizational leaders perceived that their role was to ensure that the after-school programs are implementing the essential elements of HOP’N, particularly CATCH physical activity. Two of the four program managers believed that the organizational leaders, strictly the director of the school district was supportive of them

and the HOP’N program. In addition, the director of the school district attended all three of the HOP’N trainings. One program manager said, “*She’ll (director) tell us when we have trainings, or one time she was the one that told us to use the HOP’N money to buy geo-mats, so yeah, she’s very supportive.*” Another program manager discussed the support for specifically implementing CATCH games, “*She’ll ask us about CATCH, and if we are getting them to walk the perimeter (following CATCH guidelines). She tries to make sure we are doing CATCH for the grant because she tells us how important it is to do what we said we would do.*” However, program managers of the Boys & Girls club after-school programs (n = 2) did not feel supported. In particular, the director of the Boys & Girls Club attended only the first training, and left halfway through the training. One of the program managers discussed the lack of support he felt, “*she doesn’t talk about HOP’N, other than to tell us about the trainings.*” The other program manager agreed and said, “*We have a good relationship and we speak daily, but she never asks about HOP’N or the CATCH games.*”

Staff Facilitators

Program Manager and Group Leader Self-Efficacy

Group leaders and program managers indicated high self-efficacy for the overall implementation of HOP’N. Interestingly, program managers expressed higher self-efficacy than group leaders in the implementation of CATCH structured physical activity. Self-efficacy was calculated based on the responses to the first three questions on the self-efficacy questionnaire. How confident are you that you can: plan activities using HOP’N CATCH thirty minutes of daily structured physical activity, provide 30 minutes of daily structured physical activity, and follow the HOP’N CATCH daily routine. The program managers were not directly implementing structured physical activity but had higher self-efficacy than group leaders, who were directly leading structured physical activity. Table 4-6 summarizes self-efficacy for implementation, with 100 meaning high and 0 meaning low self-efficacy.

Table 4-6: Means (SD) for Program Manager and Group Leader Self-Efficacy for Implementation

	Alpha	Program Managers (n=4)	Group Leaders (n=14)
CATCH Implementation	.796	94.2 (11.7)	77.5 (24.8)
Site 1		80.0 (17.3)	46.7 (31.4)
Site 2		100.0 (0)	84.5 (12.4)
Site 3		96.7 (5.8)	100.0 (0)
Site 4		80.0 (0)	79.3 (23.0)

*Note: Self-efficacy scale ranges from 0-100

What strategies did the Program Managers and Group Leaders Individually do to Implement 30 Minutes Structured Physical Activity?

There are obvious individual differences among program managers and group leaders that affected the implementation of 30 minutes structured physical activity. In particular, one program manager restructured her after-school program to have all the children rotate through stations. This ensured that each group would receive structured physical activity on most days of the week. Another group leader received help from her mother who is a physical education teacher in the school district. At a different school, the group leader made a conscious effort to participate in all the games rather than watch from the sidelines.

Restructured After-School Program

At the first after-school program, the program manager made positive changes to the structure of her program to facilitate the implementation of structured physical activity. All the students received snack and 30 minutes of homework, then for the duration of after-school (90 minutes) the children rotated between three stations:

enrichment, computers and structured physical activity. The group leaders were divided into these three areas and were “champions” of each area. For example, there was an enrichment champion, a computer champion and a CATCH champion. This allowed the group leaders to focus on one main area and make planning easier. One group leader had this to say about the new stations, *“We are doing a lot better now that we are having stations. Before stations, if we got to it (physical activity), we got to it, but if we didn’t have time, we didn’t have time. We definitely would have unstructured physical activity everyday for sure, but now that we have the recreation station we have structured physical activity for 30 minutes everyday.”* In addition, this type of scheduling forces all group leaders to follow the schedule that the program managers created, unlike at the other three schools. Group leaders and the program manager at this school discussed how stations have helped them to stay on schedule, *“Like before stations if we got to something (like enrichment, PA), we got to it, but if we didn’t have time, we didn’t have time. But now we stick with the schedule because we have to do it that way.”* To help the ‘CATCH champion’ group leaders effectively implement structured physical activity, the program manager trained them. *“I took two of my CATCH champions and taught them how to do the CATCH program. I mean they caught on pretty quick and I told them, take the cards in there and play games with them, walk the perimeter, I mean they have a routine now.”* The CATCH station has been implemented into the entire after-school program, and all grades have been playing CATCH games. The program manager expressed how having stations has been helpful to implement structured physical activity daily. *“Their job is CATCH (CATCH champions), they don’t have to worry about lining their kids up in the computer lab and thinking of an enrichment activity and a CATCH activity. And now the kids, once they walk in they are walking the perimeter, they are getting ready to go. The two CATCH champions still have to plan their week, but now they only have to focus on planning structured physical activity for all grades.”* The CATCH champions have taken the initiative and created their own binder of games to play, *“If we see something, like on the internet then we will print it off and put it in there (binder), and we have it organized by grades, K thru 6th. So we have a lot, and it just adds to the CATCH stuff. Not only has changing the schedule of the after-school improved the amount of structured physical activity the children receive it has also had*

other benefits, we were having a lot of behavioral problems with different kids, with kids getting in fights, but all of it has decreased. There's not as much bickering, less fighting, less kids getting in trouble with after-school teachers, less kids not doing their homework, and kids don't get in trouble at school. I'm pretty sure that the reason is because we have everything scheduled out." For the most part, group leaders prefer having stations versus having their own group and doing all the activities with the same group of children. As stated by one of the group leaders, *"I do like the stations because it minimizes the behavior problems, you get to see all the kids, and for me it is good practice because I have the chance to think of an activity that's geared toward the upper elementary grades, and then think of ways that I can gear it down and make it work for the younger kids."*

Obtaining Physical Education Teacher Support

One of the group leaders at school one is fortunate to have a mother that is a physical education teacher. Having someone that the group leaders are able to ask questions about structured physical activity and get ideas for games has been found to be helpful in implementing CATCH. *"Well, my mom is a PE teacher so I get a lot of games from her. I'll ask her about a game and she'll give me tips on how to play it. Like she helps me get the kids' attention and how to separate them into teams, she is really helpful."* Her mom has also been helpful in coming up with games to play based on the equipment that the after-school program has, *"we use the equipment a lot, even if we aren't doing a CATCH game. I ask my mom what kind of games I can play with balls, Frisbees and the other equipment we have and she helps me. It makes it a lot easier having all that equipment and my mom to help."*

Participating With Children in Structured Physical Activity

Another group leader views structured physical activity as his exercise for the day and actively participates in the games. He also understands the importance of the children being physically active. By having the group leader participate in the games he is able to engage all the children in activity, particularly the children that normally are less active or who don't like to play games. *"I mean, it's hard to make them (non-elimination games) as fun when nobody gets eliminated. They like a game when there's a*

point and when they get points for doing stuff. And they like when somebody wins. All-run kickball is a great game because you score points, you get a winner, and teamwork is important. Plus, they're all running around. Like those are the ones that go the best, and hospital tag goes well cause that's fun, but a lot of those tag games to keep them going I have to run around a lot and scream at them to keep running all the time. If we just told them to play hospital tag, and miss Britney and I were on the sidelines talking they would just be walking around and messing around, but if we play with them it is just easier. Plus, I like playing the games because that's my exercise for the day."

CHAPTER 5 - Discussion

The results of this study provide evidence that several factors influence the implementation of 30 minutes structured physical activity in an after-school program. Successful implementation was defined as offering 30 minutes of daily structured physical activity that engaged all students in moderate-to-vigorous physical activity for at least 50% of class time and followed CATCH structured physical activity guidelines. Four research questions provided a framework to discuss the factors that influenced implementation.

The first research question asked after-school staff if they perceived that they implemented the physical activity promotion program as intended. Although staff believed they were successful in implementing 30 minutes of daily structured physical activity their definition of success was less than the evidence-based protocol. Staff believed they were implementing the protocol as intended by increasing the amount of unstructured physical activity daily and by increasing structured physical activity to a maximum of three days a week. The staff's definition of successful implementation may have been in response to multiple organizational and staff barriers that impeded implementation.

The second research question asked what were the organizational and staff characteristics that were a barrier to program implementation. There were several organizational barriers that impeded implementation: prioritizing physical activity, lack of school administration support, lack of program manager support, high group leader employee turnover, and low training attendance. The program managers were responsible for ensuring that every group of children had access to the gym daily and typically scheduled all groups to have access to the gym three to four days a week. However, all program managers did not make group leaders accountable for implementing structured physical activity and therefore it was often not viewed as a high priority by the after-school staff. When group leaders decided to skip out on recess, structured physical activity, enrichment, and other activities they were able to do so

because the schedule was not strictly followed or enforced. Rather, after-school staff placed greater priority on homework and academic help. It may be that program priorities were determined by funding (Department of Education 21st Century Grants, United Way, User Fees) or parent needs. Interest in after-school programs have been rapidly increasing due to the idea that after-school programs can boost a child's success in school (MARS Report, 2005). This increase has led to significantly increased grant funding by the federal government through the 21st Century Community Learning Centers program (James-Budumy et al., 2005). However, the 21st Century grants are primarily focused on academic achievement and not improving the quality or quantity of after-school physical activity. The Massachusetts After-school Research Study (MARS) examined 78 after-school programs and found that physical activity and a reduction in sedentary behavior were not among the top 10 goals of these programs. Research also indicates that interventions that lack teacher interest and are a low priority for teachers are less likely to be implemented (Lytle et al., 2003). The majority of after-school staff also believed that the role of after-school programs was to create a safe place and to build relationships with the children. Therefore, if the group leaders did not want to implement structured physical activity they chose not to. This is consistent with the implementation literature that suggests that teachers that do not embrace the intervention and are uncomfortable implementing are less likely to implement (Hunter et al., 2001). Interestingly, most program leaders did not make group leaders accountable for implementing the intervention so staff did not perceive that implementing 30 minutes of daily physical activity was mandatory. Due to the fact that organizational leaders and program managers did not ensure that group leaders implemented structured physical activity daily, they were able to use the gym for free time, non-CATCH structured physical activity or go outside and have recess when weather permitted.

Unfortunately, a lack of support for the after-school program by the school and school administrators made implementing daily structured physical activity difficult. Throughout the school year, outside groups were approved by the school administrators to use the gym for basketball practice, fitness camps, and other non-after-school programming. Therefore, during the cold weather months, the children were unable to go outside or use the gym, and therefore they participated in no structured physical activity.

Consistent with our study, Gittelsohn and colleagues (2003) found that scheduling gym time was difficult because physical activity is often not a high priority. After-school programs were not a priority in the intervention schools and outside groups may be utilizing the gym, making it difficult for program managers to schedule gym time for all groups. Furthermore, the program managers were not supportive of the group leaders implementing structured physical activity. The majority of the group leaders discussed the lack of discussion about HOP'N and CATCH games, and one program manager admitted to not following through with her staff to ensure that structured physical activity was being implemented. Our findings are similar to the study by Lytle et al. (2003) that found a lack of support from administrators, and a low priority for physical education was a barrier for implementing CATCH physical activity.

After-school programs in this study had a high turnover rate of group leaders, making implementing structured physical activity difficult. Due to the high turnover rate, group leaders are constantly changing groups, and group leaders that started in the fourth grade in the beginning of the year often would be in a different group by the end of the year. Therefore, to implement structured physical activity in an after-school program it is necessary to have multiple trainings throughout the school year. The HOP'N protocol included three trainings on Saturdays when the after-school program wasn't in session. Although having the fourth grade group leaders attend all HOP'N trainings proved difficult, the program did expose more leaders to the intervention than a one time training or more intensive training at the beginning of the school year would have accomplished. Rather than requiring only fourth grade group leaders to attend, requiring all group leaders in the after-school program may have improved the implementation of structured physical activity because the non-fourth grade group leaders in the fall that moved to the fourth grade in the spring, did not have to participate in the fall trainings. Higher training attendance may have led to increased fidelity as the trainings allowed group leaders to practice leading CATCH games and the trainings were designed to increase their self-efficacy for implementation. Greater attendance at the HOP'N trainings may have lead to better implementation of structured physical activity. Past studies suggest that staff implementing interventions required ongoing training or coaching to be successful (Gingiss et al., 2006). Improved implementation is likely to occur after a subsequent year

of HOP'N training where staff who have been in the program for the full two years will have the opportunity to attend an additional three more trainings in year 2. Additionally, findings from this study are consistent with the implementation literature of school-based interventions that to ensure implementation success, teachers must be trained properly (Kealey et al., 2000).

In addition to organizational barriers, there are obvious staff barriers that prohibited the implementation of daily structured physical activity. These include: low group leader motivation, and providing children with enjoyable CATCH games. The majority of group leaders preferred free play to structured physical activity because it was easier to implement and involved no planning. They did not perceive this as a problem because the children were still engaged in physical activity. Although research suggests that moderate-to-vigorous physical activity levels are higher when children are engaged in free play versus structured physical activity (Trost, Rosenkranz, & Dzewaltowski, 2007), the goal of the intervention was to provide opportunities for daily structured physical activity. More importantly, in the study by Trost et al. (2007), the after-school staff were not specifically trained to lead structured physical activity, and had they received training, results could have been improved. On the contrary, an in-school physical education study found that children were more active during structured physical activity compared to unstructured with training (Kelder et al., 2005). Interestingly, the CATCH-ON study (McKenzie et al., 2003) found that classroom teachers are likely to need more training and support than physical education teachers. In this study, classroom teachers would be similar to after-school staff, with their limited experience leading structured physical activity.

The majority of group leaders commented that the children do not like the physically active games, and in particular the CATCH games, making implementation difficult. Furthermore, staff may have not implemented structured physical activity because they perceived that the children did not like the games. The literature suggests that teachers that do not think that their students will like a particular lesson from an intervention curriculum do not teach it (Martens et al., 2006). Participants recalled that children prefer elimination games, more specifically games with a winner and a loser. The downside to CATCH games as illustrated by the program managers and group

leaders, was that the children get very tired with the CATCH games, are unable to play the games for a long period of time, and dislike the games. One study to support this claim was by Bruggeman et al. (2008) and found that children increased in enjoyment after playing modified CATCH games that eliminated participants whereas they decreased in enjoyment playing CATCH games. This finding could be explained by the lack of exposure the children have to non-elimination games (e.g. CATCH games), and the high exposure to elimination games (e.g. dodgeball).

The third research question examined the organizational and staff characteristics that facilitated program implementation. The facilitators included: equipment/gym space, training after-school staff, scheduling structured physical activity, and support from the organizational leaders. Each school received equipment and the CATCH box (curriculum) and CATCH equipment to facilitate the implementation of structured physical activity. After-school programs do not have the funds to purchase equipment and are unable to conduct structured physical activity, resulting in strictly recess or free time. Along with equipment and gym space, training the after-school staff appeared to be an important facilitator for implementation. Research indicates that when staff members felt they were well trained they are more likely to implement the intervention as intended (Dunn et al., 2006; Lytle et al., 2003; Buston et al., 2002; Ahmed et al., 2006; Han & Weiss, 2005; Hunter et al., 2001; Dusenbury et al., 2003). In addition, in this study, the fourth grade group leaders were the ones implementing 30 minutes of daily structured physical activity, however, when staff members volunteer or want to lead an intervention the implementation is typically higher (Goldberg-Lillehoj et al., 2004).

Scheduling by the program managers was a central issue in determining whether or not structured physical activity would be implemented. Program managers did an excellent job ensuring that all groups had access to the gym three days per week, however, the group leaders may not have used the gym for structured physical activity. The Pathways study found that a lack of scheduling was a barrier to the implementation of physical activity (Gittelsohn et al., 2003), however in this study, the program managers were able to overcome that barrier, and provide schedules to the group leaders.

Support from administration to the staff members has been shown to be an important factor in determining the success of implementation (Lytle et al., 2003; Gittelsohn et al., 2003; Parcel et al., 1988; Han & Weiss, 2005; Shortt et al., 2006; McCormick et al., 1995; Desimon et al., 2004; Dusenbury et al., 2003; Klingner et al., 2003; Fagon & Mihalic, 2003; St. Pierre & Kaltreider, 2001). In this study, half the program managers believed that the organizational leaders were highly supportive of implementing daily structured physical activity, and in fact, organizational leaders frequently asked about the implementation. However, the other two program managers did not believe that the organizational leaders were supportive of them, which may have influenced the lack of implementation of structured physical activity.

In addition to organizational facilitators, self-efficacy was found to be a staff facilitator to implementation. Although 30 minutes of daily structured physical activity was not implemented as intended, group leaders and program managers had high self-efficacy for implementation. This could suggest that given more time and opportunities to implement the structured physical activity, they could improve. Interestingly, over 80% of group leaders implementing structured physical activity met the CDC's guidelines for physical activity, which previous literature has suggested that they are more likely to adopt a physical activity program for implementation (Estabrooks et al., 2004). However, it appears that although group leaders were physically active, their limited experience implementing meant they could be uncomfortable leading physically active games. This is consistent with a study by Ahmed et al. (2006) that found that a teachers' limited experience implementing an intervention decreased overall implementation.

The final research question of the study was to identify individual strategies designed to improve implementation. First, to help facilitate the implementation of structured physical activity, one school chose to restructure their after-school program around 30 minutes of structured physical activity. This allowed every child in the after-school program to participate rather than just the fourth grade group. In addition, group leaders volunteered to be the physical activity "CHAMPS," improving the likelihood of implementation, consistent with interventions where the teacher volunteers or has a high desire to implement are more likely to be successful (Kealey et al., 2000; Goldberg

Lillehoj et al., 2004). By allowing group leaders to volunteer for specific areas in the after-school program (ie. enrichment, recreation, academic, etc), they were able to develop a sense of pride and accomplishment for their job. This also made planning for group leaders easier because they only had to focus on one type of activity whether it was enrichment, recreation, etc. Second, obtaining physical education teacher support was an individual facilitator where one group leader discussed games and potential management techniques with her mother, who was a physical education teacher. This allowed the group leader to learn new games, discuss strategies to improve the games, and learn how to minimize management time during the structured physical activity. Although the staff received ongoing training, having a physical education teacher to specifically ask questions about the games throughout the year showed to be beneficial. Lastly, having the group leader participate in the structured physical activity games with the children has been shown to increase the games with the children. By having the group leader participate, he/she is able to engage the children that typically are not as active or who do not like the games. For example, having the group leader play tag games with the children, he/she is able to tag children that may not typically participate or not tag children that are always “it”. By having the group leader participate in the games he/she is promoting physical activity in most, if not all of the children.

Strengths

This study provides insight on the barriers and facilitators that affect implementation of structured physical activity in an after-school program. The strengths include having the lead author conduct and transcribe all the interviews herself. This allowed her to truly immerse herself in the data. Second, four intervention after-school environments were explored, allowing for a wider range of events to be researched (e.g. individual facilitators), and thus increasing the implications of the research. Lastly, the organizational structure was in place prior to the HOP’N program intervention, and the intervention did not change the organizational structure, examining “real-life” after-school programs.

Limitations

Although this study offers insight into the implementation of structured physical activity in after-school settings, a number of limitations exist. First, this study has limited generalizability due to the selectivity of the sample and limited number of participants. The small sample size was due to the inclusion criteria of program managers, fourth grade group leaders, group leaders that attended at least one of the HOP’N trainings, and group leaders implementing CATCH at least one day per week. In addition, due to the small sample size, saturation, or the point at which no new information or themes are observed in the data (Guest, Brunce, & Johnson, 2006), may not have been reached. Second, after-school programs were limited to after-school programs located on elementary school sites. Characteristics of staff members in this study may differ from staff members at after-school programs not located on school sites. Third, program managers and group leaders from the four sites may not be representative of other cities, limiting generalizability. All group leaders are in their early 20’s and currently enrolled in a four-year university, which may vary from other cities. Fourth, all interviews were conducted at the end of the school year and therefore, staff members leaving throughout the school year or at semester break were not included in this study. Lastly, bias could have been incurred with the interviewing technique and/or data analysis. The author interviewed all participants, transcribed the data herself, and coded the majority of the interviews herself. Furthermore, bias may have been reduced had participants read their interview transcripts to ensure accuracy.

Significance and Recommendations

The decline in regular physical activity in elementary aged children is a growing public health problem and interventions are necessary to understand effective strategies to decrease this decline. After-school programs provide a setting to reach children to provide an opportunity for structure physical activity. However, there are several organizational and staff barriers that must be overcome in the efforts to implement structured physical activity in after-school programs. The findings of this study suggest several recommendations.

First, the implementation of structured physical activity requires continuous staff training. One-time staff trainings in the Fall prior to program implementation are not likely to have a strong impact on program implementation because of high staff turnover and shifting program responsibilities. HOP'N offered three trainings throughout the academic year on a Saturday that provided staff with different levels of exposure to the intervention. From this study we cannot determine if offering more trainings would have led to greater implementation. It may be that three trainings is an adequate number and that better implementation would be obtained if the three trainings were continued over multiple years. This is the first year of the HOPN study, it is likely that a second year of exposure to three trainings per year would result in more exposure of the intervention to the staff and result in better implementation.

Second, after-school programs may need to prioritize the implementation of daily physical activity and be funded for its implementation. Although administrators and program managers agreed to require daily physical activity, 30 minutes of homework and a snack were the only “mandatory” components of after-school programs perceived by staff in this study. It may be that administrators did not adequately enforce the importance of implementing physical activity or it may be that more than one year of required implementation is necessary for the 30 minutes of structured physical activity to be perceived as mandatory.

Third, after-school programs may need to develop physical activity specialists that are responsible for delivering activity to all the after-school age groups. One site in our study developed stations where one group leader's entire job was to implement structured physical activity. This group leader position would act similarly as a physical education teacher in school, ensuring daily structured physical activity in the after-school program is delivered with high quality.

Finally, after-school programs need to offer physical activity daily, whether structured or unstructured, to increase caloric expenditure and prevent obesity in children. Although the goal of this study was to understand factors that influenced the implementation of 30 minutes daily structured physical activity, the after-school programs' response to this goal appeared to be to increase the amount of structured or

unstructured physical activity they offered. Findings from another investigation of the HOP’N program revealed that children attending HOP’N after-school sites of this study participated in significantly more minutes of recreation (both structured and unstructured physical activity) than after-school sites randomized to a control group (35.9 vs. 20.6 minutes) (D.A. Dzewaltowski, Personal Communication, April 23rd, 2008). The findings from the other HOP’N study provide evidence that the intervention was successful in providing the children more opportunities to be physically active. While the goal was to increase structured physical activity, in reality after-school staff were providing the children more opportunities to engage in any type of physical activity. It may be that given the challenges of promoting structured physical activity in after-school time, after-school staff adapted the intervention to meet these challenges and their personal definition of successful implementation was any large increase in the amount of physical activity offered to children. These findings reflect the results of the El Paso CATCH study, which was an effectiveness trial to decrease overweight in children (Coleman et al., 2005). Unlike the national CATCH study that emphasized intervention fidelity and research control, El Paso CATCH encouraged schools to change the program to fit their specific needs, and thus much of the original program was not implemented as intended. However, El Paso CATCH was successful at influencing the overweight increase in children.

Conclusion

Findings from this study suggest that the success of the after-school intervention is dependent on many factors, including several organizational system variables, as well as several staff variables. Program and group leaders negotiated these organizational and staff barriers and believed that they were successful in leading structured physical activity. However, their definition of success was less than the evidence-based protocol that required structured physical activity five days a week for 30 minutes. They defined successful implementation as increasing the amount of structured and unstructured physical activity daily.

Future research should examine if interventions that target the organizational and staff variables identified by this study are more successful in program implementation.

For example, the intervention targeted influencing the organization by obtaining a commitment from organizational leaders, offering a three time yearly training, and meeting with project managers monthly. But, the intervention did not completely restructure the after-school organization to facilitate implementation of structured physical activity. Rather, the intervention targeted building the capacity of staff to implement the intervention. Future research should focus on systemic changes in the after-school environment to increase the priority of daily structured physical activity as a mandatory component of after-school programs. This would include policy changes and funding at the federal, state and county level to mandate that children in after-school programs receive 30 minutes of daily structured physical activity. Furthermore, targeting staff by offering three trainings may be more effective at influencing implementation if these trainings are offered for several years. This study only examined the impact of the trainings over one year. Future investigations should examine if three time yearly trainings over a two, three or four year period impact the priorities of the after-school organizational leaders and staff and develop their skills to successfully implement structured physical activity daily to prevent obesity.

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Appendix A - Moderator Guide Program Managers

PROGRAM MANAGERS:

Code: _____

Start time of interview:

Date:

Place:

Interviewee:

School:

1. Review & Sign the Informed Consent

2. Go over rules

- a. You will not be identified by name
- b. There are no wrong or right answers
- c. I just want to know what you think
- d. Please be honest. You won't hurt my feelings or affect me in any way.
- e. Is it alright if I tape record this? No one will listen to the tape recording but me.

A. Background

1. Tell me a little about yourself and how you came into the role as a project manager. (**Probes:** *qualifications required, education level*)

a. Tell me about continuing education or professional development training that are required for this job? (**Probes:** *Conferences, workshops*) Tell me about your professional goals in life.

2. Tell me about a typical day at the after-school program? (**Probes:** *roles/duties; what do you prefer; where most time is spent, group leader structure – activity specialist or just one leader with group*)

a. On average, how much time is spent in each area: Homework, Recreation, Enrichment?

3. In your opinion, what part of the after-school program is most important? Least? (Homework, PA, safe environment) Why that component?

a. What role, if any do you think after-school programs can play in obesity prevention?

4. What do you like best about your job? Least?

B. HOP'N Training

5. Generally speaking, what are your thoughts about the HOP'N training? (**Probes:** *CATCH, snack, useful/not useful, liked/disliked, collaborating with other schools, time, day, length*)

a. How did or didn't the training prepare you to deliver HOP'N?

b. What would you do to improve the training? (**Probes:** *materials added or removed, content*)

6. How did you learn about the training? (**Probes:** *pressure felt by Janet/Sandee*)
What are your thoughts about having to attend a HOP'N Training?

a. How would you recommend we advertise the trainings?

7. What was the general consensus of the group leaders about the HOP'N training?
(**Probes:** *Specific example, comments from GL's*)

C. General HOP'N Questions

8. What are your general impressions about HOP'N being at your school this past year? (**Probes:** *Likes/dislikes, effective/not effective, benefits/drawbacks*)
-Give me an example of a time when...

9. How much time do you spend planning for HOP'N each week? (**Probes:** *CATCH, snack, HOP'N club, scheduling*) Where does HOP'N rank on your list of priorities? Why is that your priority?

10. Describe the effect HOP'N has had on your students, if any? (success of HOP'N)
(**Probes:** *activity level, knowledge, positives/negatives, opportunities to be physically active*)

11. Since you've implemented HOP'N, what changes if any, have occurred at your school? (**Probes:** *more/less active, school environment, snack*)

D. Recreation/Free Play

12. Describe a typical recreation period. (**Probes:** *where, structured/unstructured, how long, kids behavior, group leaders, children excitement/PA level, GL & PM roles*)

13. Compare and contrast the differences between free play and structured PA.
(**Probes:** *Kid Preference, staff preference, why?*)

E. 30 Minutes Structured Physical Activity and CATCH

14. As you know the goal of HOP'N is 30 minutes of CATCH structured physical activity, how successful have you been at meeting that goal? (**Probes:** *4th grade group, entire school, how often: days/week*)

a. How well do you feel you and your staff are implementing CATCH games?
(**Probes:** *Is CATCH working, CATCH box, equipment, non-elimination*)

b. The goal of CATCH games is to have all the kids be physically active and not be eliminated from the game. Can you describe the structured games that are played at your school. (**Probes:** *CATCH, elimination games*)

15. What are the barriers to implementing 30 minutes of CATCH structured physical activity? What are the facilitators to implementing 30 minutes of CATCH structured PA? (**Probes:** *Time, enjoyment level, like/dislike CATCH, group leaders*)

a. When you use CATCH structured physical activity does it replace free play or is it in addition to it? (*Examples*) (**Probes:** *can you tell me a little bit more about that*)

b. What do you feel are the most important elements of CATCH? (**Probes:** *CATCH box, training, success & enjoyment, equipment*) Least Important?

c. Describe the differences, if any between the CATCH structured physical activity games in the beginning of the year compared to now? (**Probes:** *success/failure, enjoyment level*)

F. HOP'N Club

16. What do you like/dislike about HOP'N Club? (**Probes:** *planning time, Carrie doing activity*)

17. What are the differences between implementing HOP'N Club and implementing CATCH PA?

18. Describe how your typical routine changes when Carrie comes for HOP'N Club? (**Probes:** *rec time, activities*) Describe any change.

19. Describe the reaction the children have to Carrie coming & doing HOP'N Club? (**Probes:** *likes/dislikes, excited/bored*)

G. Healthy Snack

20. Describe the changes, if any to the snack since HOP'N was implemented? (**Probes:** *F & V, healthy/unhealthy*)

21. What are the barriers to increasing the fruits & vegetables of the snack? What are the facilitators to increasing the fruit & vegetables of the snack? (**Probes:** *control over snack, kids likes/dislikes*)

22. Describe the level of support food service employees have toward making healthy changes to the snack? How can we get the food service employees to buy into the HOP'N Program? (**Probes:** *any ideas to increase the support from food service?*)

H. Perceptions of Supervision

23. Who's your direct supervisor? (**Probes:** *B&G Club, Sandee/Janet, Administrators, principals*) Describe your professional relationship with this person.

a. Describe the level of support you receive to implement HOP'N by your supervisors? Administrators? K-State? Carrie (Examples)

24. Describe how HOP'N is discussed at staff meetings, if at all.

I. Concluding Questions

25. Since being a part of the HOP'N Program, have you changed any of your own behaviors? Examples. (**Probes:** *PA, eating habits, healthier lifestyle*)

26. Fast-forward to when K-State is no longer implementing & evaluating HOP'N. How sustainable to you think the HOP'N Program will be? (**Probes:** *CATCH games, healthy snack*)

27. To what extent do you feel your participation in HOP'N was “worth your time and effort?”

28. Here's one idea that was generated by one of the Program Managers at one of the other sites. They brought up the idea of instead of having kids rotate through different areas with their group leader, is to have the group leaders stay in one area throughout the after-school program and have the kids rotate. For example, then you would have 2 or 3 staff trained as the CATCH specialist.

- a. How would that work?
- b. Barriers? Facilitators?
- c. Positives? Negatives?

29. Is there anything else you would like to add, or discuss? Thank you for your time and allowing me to interview you. If you think of anything you would like add please feel free to call or email me.

Appendix B - Moderator Guide Group Leaders

GROUP LEADERS:

Code: _____

Start time of interview:

Date:

Place:

Interviewee:

School:

1. Review & Sign the Informed Consent

2. Go over rules

- a. You will not be identified by name
- b. There are no wrong or right answers
- c. I just want to know what you think
- d. Please be honest. You won't hurt my feelings or affect me in any way.
- e. Is it alright if I tape record this? No one will listen to the tape recording but me.

A. Background

1. Tell me a little about yourself and how you came into your role as group leader.
(**Probes:** *qualifications required, education level*)

- a. Tell me about continuing education or professional development training that is required for your job? (**Probes:** *Conferences, workshop*) Tell me about your professional goals in life.

2. Tell me about a typical day at the after-school program? (**Probes:** *roles/duties; what do you prefer; where most time is spent, group leader structure – activity specialist or just one leader with group*)

- a. On average, how much time is spent in each area: Homework, Recreation, Enrichment

3. In your opinion, what part of the after-school program is most important? Least (Homework, PA, safe environment) Why that component?

- a. What role, if any do you think after-school programs can play in obesity prevention?

4. What do you like best about your job? Least?

B. HOP'N Training

5. Generally speaking, what are your thoughts about the HOP'N Training? (**Probes:** *CATCH, snack, useful/not useful, liked/disliked, collaborating with other schools, time, day, length*)

- a. How did or didn't the training prepare you to deliver HOP'N?
- b. What would you do to improve the training? (**Probes:** *materials added or removed, content*)

6. How did you learn about the training? (**Probes:** *pressure felt by Janet/Sandee, PM*) What are your thoughts about having to attend a HOP'N Training?

a. How would you recommend we advertise the trainings?

C. General HOP'N Questions

7. What are your general impressions about HOP'N being at your school this past year? (**Probes:** *Likes/dislikes, effective/not effective, benefits/drawbacks*)

- Give me an example of a time when...

8. How much time do you spend planning for HOP'N each week? (**Probes:** *CATCH, snack, HOP'N club, scheduling, planning*) Where does HOP'N rank on your list of priorities? Why is that your priority?

9. Describe the effect HOP'N has had on your students, if any? (success of HOP'N) (**Probes:** *activity level, knowledge, opportunities to be physically active, positive/negative*)

10. Since you've implemented HOP'N, what changes if any, have occurred at your school? (**Probes:** *more/less active, school environment, snack*)

D. Recreation/Free Play

11. Describe a typical recreation period. (**Probes:** *where, structured/unstructured, how long, kids behavior, group leaders, children excitement/PA level*)

12. Compare and contrast the differences between free play and structured PA. (**Probes:** *Kid Preference, staff preference, why?*)

E. 30 Minutes Structured Physical Activity and CATCH

13. As you know the goal of HOP'N is 30 minutes of CATCH structured physical activity, how successful have you been at meeting that goal? (**Probes:** *4th grade group, entire school, how often: days/week*)

a. How well do you feel you and your staff are implementing CATCH games? (**Probes:** *Is CATCH working, CATCH box, equipment, non-elimination*)

b. The goal of CATCH games is to have all the kids be physically active and not be eliminated from the game. Can you describe the structured games that are played at your school. (**Probes:** *CATCH, elimination games*)

14. What are the barriers to implementing 30 minutes of CATCH structured physical activity? What are the facilitators to implementing 30 minutes of CATCH structured PA? (**Probes:** *Time, enjoyment level, like/dislike CATCH, group leaders*)

- a. When you use CATCH structured physical activity does it replace free play or is it in addition to it? (Examples) (**Probes:** *can you tell me a little bit more about that*)
- b. What do you feel are the most important elements of CATCH? (**Probes:** *CATCH box, training, success & enjoyment, equipment*) Least important.
- c. Describe the differences, if any between the CATCH structured physical activity games in the beginning of the year compared to now? (**Probes:** *success/failure, enjoyment level*)

F. HOP'N Club

- 15. What do you like/dislike about HOP'N Club? (**Probes:** *planning time, Carrie doing activity*)
- 16. What are the differences between implementing HOP'N Club and implementing CATCH PA?
- 17. Describe how does your typical routine changes when Carrie comes for HOP'N Club? (**Probes:** *rec time, activities*) Describe any change.
- 18. Describe the reaction the kids have to Carrie coming in & doing HOP'N Club. (**Probes:** *likes/dislikes, excited/bored*)

G. Healthy Snack

- 19. Describe the changes, if any to the snack since HOP'N was implemented? (**Probes:** *F & V, healthy, unhealthy*)
- 20. What are the barriers to increasing the fruits & vegetables of the snack? What are the facilitators to increasing the fruit & vegetables of the snack? (**Probes:** *control over snack, kids likes/dislikes*)
- 21. Describe the level of support food service employees have toward making healthy changes to the snack? How can we get the food service employees to buy into the HOP'N Program? (**Probes:** *any ideas to increase the support from food service?*)

H. Perceptions of Supervision

- 22. Who's your direct supervisor? (**Probes:** *B&G Club, Sandee/Janet, Administrators, Principals*) Describe your professional relationship with this person.
 - a. Describe the level of support you receive to implement HOP'N by your supervisors? Administrators? PM? K-State? Carrie (Examples)

23. Describe your professional relationship with your Project Manager. (**Probes:** *friends, hang out outside of work, serious/friendly environment*) How does your relationship help or hinder your job, if at all?

24. Describe how HOP'N is discussed at staff meetings, if at all.

I. Concluding Questions

25. Since being a part of the HOP'N Program, have you changed any of your own behaviors? Examples. (**Probes:** *PA, eating habits, healthier lifestyle*)

26. Fast-forward to when K-State is no longer implementing & evaluating HOP'N. How sustainable do you think the HOP'N Program will be? (**Probes:** *CATCH games, healthy snack*)

27. To what extent do you feel your participation in HOP'N was “worth your time and effort?”

28. Here's one idea that was generated by one of the Program Managers at one of the other sites. They brought up the idea of instead of having kids rotate through different areas with their group leader, is to have the group leaders stay in one area throughout the after-school program and have the kids rotate. For example, then you would have 2 or 3 staff trained as the CATCH specialist.

- a. How would that work?
- b. Barriers? Facilitators?
- c. Positives? Negatives?

29. Is there anything else you would like to add, discuss? Thank you for your time and allowing me to interview you. If you think of anything you would like to add please feel free to call or email me.

**Appendix C - Moderator Guide Executive Directors of B&G
Club and School District**

Start time of interview:

Date:

Place:

Interviewee:

School:

1. Review & Sign the Informed Consent

2. Go over rules

- a. You will not be identified by name
- b. There are no wrong or right answers
- c. I just want to know what you think
- d. Please be honest. You won't hurt my feelings or affect me in any way.
- e. Is it alright if I tape record this? No one will listen to the tape recording but me.

A. Background

1. Tell me a little about yourself and a little about your educational background.
(**Probes:** *education level*)
2. Tell me about what a typical day for you in regards to the after-school program?
(**Probes:** *roles/duties, what do you prefer; where most time is spent*)
3. What do you like best about the after-school program? Least?

B. HOP'N Training

4. Generally speaking, what are your thoughts about the HOP'N training? (**Probes:** *CATCH, snack, useful/not useful, liked/disliked, collaboration with schools, time, day, length*)
5. What would you do to improve the training? (**Probes:** *add/remove information, content*)
 - a. Do you know the dates for the training next year? Are you going to be able to attend those for the whole time? (important for your staff)

C. General HOP'N Questions

6. What are your general impressions about the HOP'N After-school program?
(**Probes:** *Likes/dislikes, effective/not effective, benefits/drawbacks*)
7. In general, what is your role in the HOP'N after-school program? (**Probes:** *Snack, liaison between research and schools, get staff to do HOP'N*) (*grant*)
8. How has the after-school program changed since HOP'N was implemented, if at all?
 - a. Is HOP'N what you expected? Why or why not.

9. What are some barriers to HOP'N being implemented? (**Probes:** *CATCH, Snack*)
Enabling Factors?

a. Do you receive feedback about HOP'N from your staff? (Examples)

b. How often is HOP'N discussed between you and your staff?

D. HOP'N Club

10. What do you know about the HOP'N Club? What have you heard? (**Probes:** *Carrie, curriculum, PM's, likes/dislikes*)

11. What are some things that can be done to improve the HOP'N Club? (**Probes:** *entire class, different schools, curriculum*)

E. Healthy Snack

12. What have you heard about the snack in regards to HOP'N? (**Probes:** *changes, F&V*)

13. Describe the changes, if any to the snack since HOP'N was implemented. (**Probes:** *F&V, healthy, unhealthy*)

a. Whose responsibility is it to change the snacks?

b. Explain how you think the school food service is or is not being pressured to change the snacks (**Probes:** *who is pressuring, how*)

14. During observation trips to Lawrence, we notice that the same snacks aren't being served to each school, even though they all have the same menu. Why do you think this is? Who is responsible for making sure the school snack meets the requirements?

15. What are the barriers to increasing the fruit & vegetables of the snack? What are the facilitators? (**Probes:** *control over snack, kids likes/dislikes*)

F. 30 Minutes of Structured Physical Activity & CATCH

16. Generally speaking, what are your thoughts about CATCH games (**Probes:** *likes/dislikes, effective/not effective*)

17. What are barriers to getting the schools to engage the students in 30 minutes of CATCH games daily? What are the facilitators to 30 minutes of CATCH?

18. What do you view as your role regarding physical activity in the after-school programs? (**Probes:** *support, level of importance*)

G. Providing Support

19. Generally speaking, how do you support HOP'N being implemented in the schools? (**Probes:** *PM's, talk about/don't talk about*) Examples.

20. How do you make program managers accountable for implementing HOP'N? (**Probes:** *Meetings, talk about/don't talk about*)

a. What kind of feedback do you receive from the PM'S?

b. What expectations do you have of your PM's? How do you make the PM's aware of your expectations for the grant? (**Probes:** *attend training, teach staff CATCH, HOP'N*)

H. Concluding Questions

21. Fast-forward to when K-State is no longer implementing and evaluating HOP'N. How sustainable do you think the HOP'N program will be? (**Probes:** *CATCH, HOP'N Club, healthy snack*)

22. To what extent do you feel your participation in HOP'N was "worth your time and effort"?

23. Is there anything else you would like to add, or discuss? Thank you for your time and allowing me to interview you. If you think of anything you would like to add, please feel free to call or email me.

Appendix D - Program Manager and Group Leader Survey

1. What is your sex?

Code: _____

- Male
- Female

2. What is your age?

3. Are you Hispanic or Latino?

- Yes
- No

4. What is your race? (Select one or more responses)

- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White
- Other: _____

5. Indicate the highest level of education completed:

- Less than high school
- High school
- Some college or associates degree
- Graduated college
- Master's degree or above

6. Indicate the highest level of education you will complete in the future:

- Associate's Degree
- Bachelor's Degree
- Master's Degree or above
- Not applicable

7. List your last job held.

8. List your future job plans.

9. Did you participate in an after-school program as a child?

- Yes
- No

10. How long have you worked with the after-school program?

- Less than 6 months
- 6 months – 1 year
- 1-3 years
- More than 3 years

11. What is your current job position with the after-school program?

- Project Manager
- Group Leader
- Other: _____

12. What school do you work at?

- Langston Hughes
- Deerfield
- Kennedy
- Woodlawn

13. On a typical week, how many hours do you work?

_____ Hours

14. On a typical week, how many hours do you spend working at the elementary school (Includes all time spent at school: morning, lunch, after school, etc)

_____ Hours

15. How often do you go to the HOP’N Website?

- 1 or more times a week
- 1 or more times a month
- I haven’t gone to the HOP’N Website

Instructions: For **questions 16 – 19** we are interested in two types of physical activity – vigorous and moderate. Vigorous activities cause large increases in breathing or heart rate, while moderate activities cause small increases in breathing or heart rate. Please think about the physical activities each member of your household does in a typical week.

16. How many days per week do you do MODERATE ACTIVITIES, such as brisk walking, bicycling, vacuuming, gardening or anything else that causes some increase in breathing or heart rate for at least 10 minutes? Do not include physical activity done for work.

_____ Days per week

*** If 0 (zero) days per week, skip to Question 18

17. On days when you do MODERATE ACTIVITIES for at least 10 minutes at a time, how much total time per day do you spend doing these activities

_____ Hours _____ Minutes

18. How many days per week do you do VIGOROUS ACTIVITIES such as running, aerobics, heavy yard work or anything else that causes large increases in breathing or heart rate for at least 10 minutes.

_____ Days per week

*** If 0 (zero) days per week, skip to Question 20

19. On days when you do VIGOROUS ACTIVITIES for at least 10 minutes at a time, how much total time per day do you spend doing these activities.

_____ Hours _____ Minutes

20. How many hours each day do you typically spend sitting down while doing things like visiting friends, driving, reading, watching television, or working at a desk or computer?

_____ Hours sitting each day

21. How tall are you without shoes? If unsure, please state your best guess.

_____ Feet _____ Inches

22. How much do you weigh without clothes or shoes? If unsure, please state your best guess.

_____ Pounds

23. On a typical day, how many servings of fruit do you eat? A serving of fruit is equal to: 1 medium piece of fresh fruit, ½ (4 oz.) cup of fruit salad, ¼ cup of raisins, apricots or other dried fruit, 6 oz. of 100% orange, apple or grape juice. Do not count fruit punch, lemonade, Gatorade, Sunny Delight or fruit drink.

- 0 None
- 1 Serving
- 2 Servings
- 3 Servings
- 4 Servings or more

24. On a typical day, how many servings of vegetables do you eat? A serving of vegetables is: 1 medium carrot or other fresh vegetable, 1 small bowl of green salad, ½ cup (4 oz.) of fresh or cooked vegetables, ¾ cup (6 oz) of vegetable soup. Do not count french fries, onion rings, potato chips or fried okra.

- 0 None
- 1 Serving
- 2 Servings
- 3 Servings
- 4 Servings or more

25. On a typical day, how many servings of soda pop (non-diet soft drink) do you drink? Serving sizes of soda pop: A can of soda (12 oz.) is one serving, a bottle of soda (20 oz.) is about two servings, a liter bottle of soda (34 oz.)

- 0 None
- 1 Serving
- 2 Servings
- 3 Servings
- 4 Servings or more

*****For the following questions, I want you to think about how CONFIDENT you are that you can:**

(Scale: 0 = Not Confident; 100 = Very Confident) Please CIRCLE your answer.

	Not Confident		Low		Unsure		Somewhat		Very Confident		
	0	10	20	30	40	50	60	70	80	90	100
26. Plan activities using HOP’N CATCH thirty minutes of daily structured physical activity?											
27. Provide 30 minutes of daily structured physical activity?											
28. Follow the HOP’N CATCH daily routine?											
29. Promote in class physical activity?											
30. Promote out-of-class physical activity?											
31. Promote in class healthy eating?											
32. Promote out-of-class healthy eating?											

Appendix E - Qualitative Data Codebook

NUD*IST Code	Label/Definition
(1)	/Demographic
(1 1)	/Demographic/Gender
(1 1 1)	/Demographic/Gender/Female
(1 1 2)	/Demographic/Gender/Male
(1 2)	/Demographic/Position
(1 2 1)	/Demographic/Position/Group Leader
(1 2 2)	/Demographic/Position/Program Manager
(1 2 3)	/Demographic Position/Organizational Leader
(1 3)	/Demographic/Job Location
(1 3 1)	/Demographic /Job Location/School District
(1 3 1 1)	/Demographic/Job Location/School District/USD 497
(1 3 1 2)	/Demographic/Job Location/School District/Woodlawn
(1 3 1 3)	/Demographic/Job Location/School District/Kennedy
(1 3 2)	/Demographic/Job Location/B&G Club
(1 3 2 1)	/Demographic/Job Location/B&G Club/Administration
(1 3 2 2)	/Demographic/Job Location/B&G Club/Langston Hughes
(1 3 2 3)	/Demographic/Job Location/B&G Club/Deerfield
(1 4)	/Demographic/Education
(1 4 1)	/Demographic/Education/Bachelors
(1 4 2)	/Demographic/Education/In College
(1 4 3)	/Demographic/Education/Master's or Doctorate
(1 4 4)	/Demographic/Education/High School
(1 5)	/Demographic/Reasons for Job in ASP
(1 5 1)	/Demographic/Reasons for Job in ASP/Like Kids
(1 5 2)	/Demographic/Reasons for Job in ASP/Just a Job
(1 5 3)	/Demographic/Reasons for Job in ASP/Experience to be a Teacher
(1 5 4)	/Demographic/Reasons for Job in ASP/Freedom-laid back environment
(1 5 5)	/Demographic/Reasons for Job in ASP/Other

NUD*IST Code	Label/Definition
(2)	/Background
(2 1)	/Background/Typical Day
(2 1 1)	/Background/Typical Day/Time spent in Homework
(2 1 2)	/Background/Typical Day/Time spent in Recreation
(2 1 3)	/Background/Typical Day/Time spent in Enrichment
(2 1 4)	/Background/Typical Day/Time spent in Snack
(2 1 5)	/Background/Typical Day/Program Managers
(2 1 5 1)	/Background/Typical Day/PM/Paperwork
(2 1 5 2)	/Background/Typical Day/PM/Planning
(2 1 6)	/Background/Typical Day/Group Leaders
(2 1 6 1)	/Background/Typical Day/GL/Planning
(2 1 7)	/Background/Typical Day/Organizational Leaders
(2 2)	/Background/ASP role in Obesity Prevention
(2 3)	/Background/Most important in ASP
(2 3 1)	/Background/Most important in ASP/Academic
(2 3 2)	/Background/Most important in ASP/Safe Place
(2 3 3)	/Background/Most important in ASP/Getting Kids Active
(2 3 4)	/Background/Most important in ASP/Building relationship w/ kid
(2 3 5)	/Background/Most important in ASP/Other
(2 4)	/Background/Number of Kids in ASP
(2 5)	/Background/Part of Job
(2 5 1)	/Background/Part of Job/Best
(2 5 2)	/Background/Part of Job/Worst
(2 6)	Trainings in General

NUD*IST Code	Label/Definition
(3)	HOP’N Training
(3 1)	HOP’N Training/Thoughts
(3 1 1)	HOP’N Training/Thoughts/Good
(3 1 2)	HOP’N Training/Thoughts/Bad
(3 2)	HOP’N Training/Prepare to deliver HOP’N
(3 2 1)	HOP’N Training/Prepare to deliver HOP’N/Helped
(3 2 1 1)	HOP’N Training/Prepare to deliver HOP’N/Helped/CATCH
(3 2 1 2)	HOP’N Training/Prepare to deliver HOP’N/Helped/Nutrition
(3 2 2)	HOP’N Training/Prepare to deliver HOP’N/Didn’t Help
(3 2 2 1)	HOP’N Training/Prepare to deliver HOP’N/Didn’t Help/CATCH
(3 2 2 2)	HOP’N Training/Prepare to deliver HOP’N/Didn’t Help/Nutrition
(3 3)	HOP’N Training/Improve
(3 3 1)	HOP’N Training/Improve/More PA
(3 3 2)	HOP’N Training/Improve/Less Lecture
(3 3 3)	HOP’N Training/Improve/Take away snack discussion
(3 3 4)	HOP’N Training/Improve/Other
(3 4)	HOP’N Training/Attendance
(3 4 1)	HOP’N Training/Attendance/Encouraged
(3 4 2)	HOP’N Training/Attendance/Not Encouraged
(3 4 3)	HOP’N Training/Attendance/Not Informed

NUD*IST Code	Label/Definition
(4)	General HOP’N Questions
(4 1)	General HOP’N/Impressions of HOP’N
(4 1 1)	General HOP’N/Impressions of HOP’N/Likes
(4 1 2)	General HOP’N/Impressions of HOP’N/Dislikes
(4 2)	General HOP’N/ Time spent planning for HOP’N
(4 3)	General HOP’N/Effect on Students
(4 3 1)	General HOP’N/Effect on Students/Nutrition Info
(4 3 2)	General HOP’N/Effect on Students/More PA
(4 3 3)	General HOP’N/Effect on Students/Less PA
(4 3 4)	General HOP’N/Effect on Students/Other

NUD*IST Code	Label/Definition
(5)	Recreation
(5 1)	Recreation/Staff's Role
(5 2)	Recreation/Types of Activities
(5 3)	Recreation/Staff Preference
(5 3 1)	Recreation/Staff Preference/Free Play
(5 3 2)	Recreation/Staff Preference/Structured PA
(5 4)	Recreation/Free play vs. Structured
(5 4 1)	Recreation/Free play vs. Structured/Structured more kids active
(5 4 2)	Recreation/Free play vs. Structured/Structured less kids active
(5 4 3)	Recreation/Free play vs. Structured/Kid Preference
(5 4 3 1)	Recreation/Free play vs. Structured/Kid Preference/Structured
(5 4 3 1)	Recreation/Free play vs. Structured/Kid Preference/Free Play

NUD*IST Code	Label/Definition
(6)	CATCH
(6 1)	CATCH/Frequency
(6 2)	CATCH/Duration
(6 3)	CATCH/Type of Games
(6 3 1)	CATCH/Type of Games/Elimination
(6 3 2)	CATCH/Type of Games/Non-Elimination
(6 4)	CATCH/Barriers
(6 4 1)	CATCH/Barriers/Time
(6 4 2)	CATCH/Barriers/Kids don't like games
(6 4 3)	CATCH/Barriers/Not PE Teachers
(6 4 4)	CATCH/Barriers/Parents Unsupportive
(6 4 5)	CATCH/Barriers/Kids get Tired
(6 4 6)	CATCH/Barriers/Other
(6 4 7)	CATCH/Barriers/HOP'N Club
(6 4 8)	CATCH/Barriers/Scheduling
(6 4 9)	CATCH/Barriers/Not a Priority
(6 4 10)	CATCH/Barriers/No Planning
(6 5)	CATCH/Facilitators
(6 5 1)	CATCH/Facilitators/Equipment
(6 5 2)	CATCH/Facilitators/Training
(6 5 3)	CATCH/Facilitators/PM Trained GL
(6 5 4)	CATCH/Facilitators/Scheduling
(6 5 5)	CATCH/Facilitators/Other
(6 6)	CATCH/Elements
(6 6 1)	CATCH/Elements/Equipment
(6 6 2)	CATCH/Elements/CATCH box
(6 6 3)	CATCH/Elements/Training
(6 6 4)	CATCH/Elements/Everyone is Active
(6 6 5)	CATCH/Elements/No child is left out
(6 6 6)	CATCH/Elements/Other
(6 7)	CATCH/Planning
(6 7 1)	CATCH/Planning/Weekly
(6 7 2)	CATCH/Planning/Just before CATCH
(6 7 3)	CATCH/Planning/No Planning
(6 8)	CATCH/Implementing

NUD*IST Code	Label/Definition
(7)	HOP’N Club
(7 1)	HOP’N Club/Likes
(7 2)	HOP’N Club/Dislikes
(7 3)	HOP’N Club/Implementation
(7 4)	HOP’N Club/Routine Changes
(7 5)	HOP’N Club/Kids Discuss
(7 5 1)	HOP’N Club/Kids Discuss/Yes
(7 5 2)	HOP’N Club/Kids Discuss/No
(7 6)	HOP’N Club/Other

NUD*IST Code	Label/Definition
(8)	Healthy Snack
(8 1)	Healthy Snack/Changes
(8 1 1)	Healthy Snack/Changes/No Changes
(8 1 2)	Healthy Snack/Changes/More FV
(8 1 3)	Healthy Snack/Changes/No more donuts
(8 1 4)	Healthy Snack/Changes/More Healthy Snacks
(8 1 5)	Healthy Snack/Changes/Other
(8 2)	Healthy Snack/Barriers
(8 2 1)	Healthy Snack/Barriers/Money
(8 2 2)	Healthy Snack/Barriers/Cafeteria Personnel
(8 2 3)	Healthy Snack/Barriers/Keep FV Fresh
(8 2 4)	Healthy Snack/Barriers/Not enough ASP staff
(8 2 5)	Healthy Snack/Barriers/No control over snack
(8 2 6)	Healthy Snack/Barriers/Other
(8 3)	Healthy Snack/Facilitators
(8 3 1)	Healthy Snack/Facilitators/Relationship with Café Staff
(8 3 1 1)	Healthy Snack/Facilitators/Relationship with Café Staff/Good
(8 3 1 2)	Healthy Snack/Facilitators/Relationship with Café Staff/No relationship
(8 3 2)	Healthy Snack/Facilitators/Other
(8 4)	Healthy Snack/Staff perception
(8 4 1)	Healthy Snack/Staff perception/Don't need to change snack
(8 4 2)	Healthy Snack/Staff perception/Other

NUD*IST Code	Label/Definition
(9)	Perceptions of Supervision
(9 1)	Perceptions of Supervision/Prof. Relationship w/ Boss
(9 1 1)	Perceptions of Supervision/Prof. Relationship w/ Boss/Good
(9 1 2)	Perceptions of Supervision/Prof. Relationship w/ Boss/Bad
(9 2)	Perceptions of Supervision/Staff Meetings
(9 2 1)	Perceptions of Supervision/Staff Meetings/HOP’N never discussed
(9 2 2)	Perceptions of Supervision/Staff Meetings/HOP’N sometimes discussed
(10)	Concluding Questions
(10 1)	Concluding Questions/Changed Behavior
(10 1 1)	Concluding Questions/Changed Behavior/PA
(10 1 2)	Concluding Questions/Changed Behavior/Nutrition
(10 1 3)	Concluding Questions/Changed Behavior/None
(10 2)	Concluding Questions/Sustainability
(10 2 1)	Concluding Questions/Sustainability/CATCH
(10 2 1 1)	Concluding Questions/Sustainability/CATCH/Not Sustainable
(10 2 1 2)	Concluding Questions/Sustainability/CATCH/Sustainable
(10 2 2)	Concluding Questions/Sustainability/Healthy Snack
(10 2 2 1)	Concluding Questions/Sustainability/Healthy Snack/Not Sustainable
(10 2 2 2)	Concluding Questions/Sustainability/Healthy Snack/Sustainable
(10 2 3)	Concluding Questions/Sustainability/HOP’N Club
(10 2 3 1)	Concluding Questions/Sustainability/HOP’N Club/Not Sustainable
(10 2 3 2)	Concluding Questions/Sustainability/HOP’N Club/Sustainable
(10 4)	Concluding Questions/Stations

NUD*IST Code	Label/Definition
(11)	Good Quotes
(12)	Barriers in General
(13)	Facilitators in General
(14)	Support from School
(14 1)	Support from School/Good
(14 2)	Support from School/Bad
(15)	Promoting Fruits & Vegetables and Physical Activity