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Erica Hamilton April 18, 2017

A Qualitative Evaluation of the Power Up for 30 Initiative in the Georgia Elementary School System

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Abstract

A Qualitative Evaluation of the Power Up for 30 Initiative in the Georgia Elementary School System

By Erica Hamilton

The prevalence of childhood obesity is increasing at an alarming rate. One in three children in the United States is considered overweight or obese (Ogden et al., 2014). Obesity can lead to numerous health consequences, including cardiovascular disease, diabetes, cancers and more (World Health Organization, 2016). Physical activity (PA) can combat childhood obesity, yet nearly 75% of children are not meeting the PA recommendations for their age group (American Psychological Association, 2016). Most children in the United States receive their education from public schools and spend eight hours a day at school, making it is an ideal setting for PA interventions.

Power Up for 30 (PU30) is a state-wide initiative in Georgia that encourages 30 minutes of PA outside of physical education (PE), each day among elementary school students. The purpose of this evaluation was to assess the barriers and facilitators to uptake and implementation of PU30 and PA opportunities within schools, by conducting qualitative interviews with PE teachers, classroom teachers and administrators in metro-Atlanta, Georgia.

Nineteen participants from seven elementary schools were interviewed, consisting of seven administrators, six classroom teachers and six PE teachers. Five of the participating schools were PU30-trained and two were untrained schools. Data was transcribed, coded and analyzed using thematic analysis.

Several barriers to uptake and implementation of PU30 were identified including: disconnect between different positions at trained schools, teacher and administrator turnover, limited time to attend PU30 training and space. The most prevalent facilitator to uptake and implementation of PU30 was school-wide effort to increase PA. Several barriers to PA opportunities at school were also identified including: misbehavior and classroom management, limited time and overburdened teachers, transportation and the disconnect between different school personnel. The most commonly discussed facilitators include: PE teachers, administrative support, students' enjoyment of PA, helpful resources and teacher and parent volunteers.

Several recommendations were generated to address barriers and facilitators to uptake and implementation of PU30 and PA opportunities at school including: dissemination of more PA resources and centralized access to those resources, additional support through liaison relationships with PU30-trained schools, school-wide trainings and booster sessions. There is also a need for additional research to further understand the differences in barriers and facilitators between trained and untrained schools and more exploration of the specific factors that influence uptake and implementation of school-based health initiatives.

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Chapter I: Introduction

Problem Definition

The prevalence of childhood obesity has doubled in the last 30 years (Ogden, Carroll, Kit & Flegal, 2014; U.S. Department of Health & Human Services, 2012). As of 2012, more than one in three children and adolescents in the United States were considered overweight or obese (Ogden et al., 2014). Childhood obesity leads to numerous health problems in childhood and later in life, including cardiovascular disease, diabetes, certain cancers and musculoskeletal disease (World Health Organization, 2016). The health consequences of these chronic diseases are difficult to alter and resolve. With the prevalence of childhood obesity so high and the consequences so great, work needs to be done to reduce the prevalence of this epidemic.

Physical activity (PA) is one of many ways to combat childhood obesity. With elementary school students spending increasingly more time behind screens, nearly 75% of children are not meeting the PA recommendations for their age group, contributing to the high prevalence of childhood obesity (American Psychological Association, 2016; Center for Disease Control, 2012). Recently, PA initiatives have become increasingly common in the school setting, to address this major public health concern. Considering that elementary school students spend nearly half of their waking hours at school, it is an ideal setting to educate students on health and establish healthy lifestyle habits, such as healthful eating and regular PA (NASPE & AHA, 2016).

Explanation of Program

Power Up for 30 (PU30) is a state-wide initiative based on collaborative efforts through the Georgia Department of Public Health (DPH) and Department of Education (DOE) to encourage 30 minutes of PA, outside of physical education (PE) each day among elementary

school students. This initiative is based on the Centers for Disease Control and Prevention (CDC) Comprehensive School Physical Activity Program (CSPAP). The CDC recommends 60 minutes of moderate-to-vigorous PA for children in kindergarten through 12th grade and suggests 30 minutes of activity should occur at school (CDC, 2015). The CSPAP model provides a framework on how to incorporate 60 minutes of PA in children's daily lives by incorporating five components including: PE; PA before-, during and after-school; staff involvement; and family and community engagement (CDC, 2015). Figure 1 depicts the CSPAP framework (CDC, 2015).

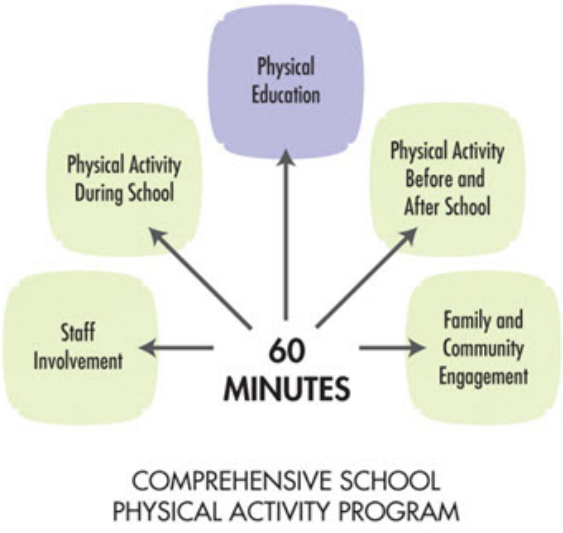

Figure 1. CDC and SHAPE America CSPAP model (CDC, 2015).

PU30 involves a voluntary commitment by the elementary school to increase PA at school to 30 minutes or more per day, outside of PE. The training occurs during the school day and is based on the results of a needs assessment. It includes two webinars, electronic resources, including DVDs and monthly newsletters, and technical support (Georgia Shape, n.d.). HealthMPowers, the nonprofit organization that helps implement PU30, provides support and training for schools who volunteer to participate in the initiative. HealthMPowers and DPH

suggest an administrator, PE teachers and classroom teacher from each school participate in the training, to create a team of stakeholders at each school that is responsible for disseminating the information from the PU30 training to the rest of the school staff and leading the implementation of PA opportunities at their school. The trainees work with the PU30 trainers to develop an action plan, which includes ways to incorporate more PA opportunities at their school, such as extending recess, developing a before- or after-school program or including more brain breaks each day. HealthMPowers provides a slide deck for the trainees to disseminate the information they learned from the training and their action plan with the rest of the school. Since the PU30 initiative began in 2013, 67% of the elementary schools in Georgia have taken the pledge to provide 30 minutes or more of PA each day outside of PE and of those, 55% have attended the PU30 training, leaving 45% of elementary schools in Georgia untrained (Georgia Shape, n.d.).

Theoretical Framework

The Diffusion of Innovation Theory is used to understand the process of adopting a new behavior or innovation by an individual, community or organization. The theory considers various factors that influence adoption. Dr. Everett Rogers popularized the theory in the 1940's and it has been used to understand the acceptance of innovation, particularly within the technology sector. The theory is based on the concept that an idea or new technology spreads at different rates within a community until the idea, behavior or product is accepted or saturated (Rogers, 2003). Rogers (2003) explains that at first, early adopters are accepting of the idea, while the majority of the population is either unaware of the recent idea, behavior or product or too ambivalent to participate in its uptake. Information about the innovation spreads via the early adopteres, until a "critical mass" of adopters has been convinced to participate in or adopt the new behavior, technology or practice (Rogers, 2003). Rogers (2003) defined "diffusion" as the

process of an innovation spreading through the channels of a community or social system over time. Rogers explained that there are five categories of adopters including: innovators, early adopters, early majority, late majority and laggards, as displayed in Figure 2 (2003). Innovators are the earliest to adopt and laggards are the last to adopt (Rogers, 2003).

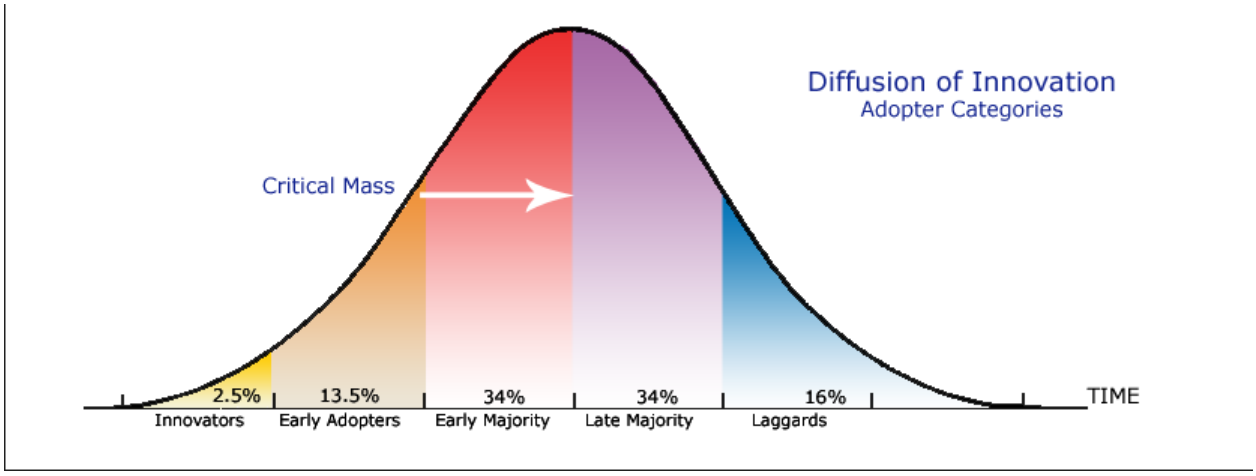

Figure 2. Diffusion of Innovation Adopter Categories. (Kaminski, 2011).

The Diffusion of Innovation Theory was used as the framework for this research to understand the uptake and implementation of the PU30 initiative in the Georgia elementary school system. The Diffusion of Innovation Theory consists of four main elements including: the innovation, communication channels, time and the social system. For the purpose of this research, the innovation adopted was the PU30 initiative and the adopters were the individual elementary schools who were recruited for this evaluation. The communication channels included communication within the individual schools and school districts, as well as communication to and from the organizations that support and implement the initiative, including HealthMPowers, DPH and DOE. The amount of time for PU30 adoption, including innovation-decision process and rate of adoption (i.e. when the school found out about the PU30 initiative and when they decided to participate or not participate in the initiative) was taken into account. The social

system that could influence uptake and implementation was also taken into account including: (1) PE teachers, classroom teachers and administrators at the individual schools; (2) district level participants, such as Health and PE coordinators; and (3) state level participants, including Health and PE Program Specialists and Managers at DPH and DOE. This evaluation of the PU30 initiative was guided by the Diffusion of Innovation Theory to better understand the uptake and implementation of the initiative.

Justification

Considering the prevalence of childhood obesity and the magnitude of the health consequences of being obese, this public health concern needs more attention. Furthermore, since PA initiatives are becoming a common approach to prevent and reduce the prevalence of childhood obesity, it is important to evaluate the uptake and implementation of such initiatives. Since PA initiatives are dependent on school staff to implement, it is critical to understand why some schools are participating in PU30 and why others are not, as well as the barriers and facilitators to implementation. Informing improvements to PA initiatives, like PU30, could be a fundamental step in efforts to reduce childhood obesity through increasing PA opportunities at school. Additionally, there is limited literature on the barriers and facilitators to uptake and implementation of CSPAP-based programs (Fu, Brusseau, Hannon, & Burns, 2017). Identifying these barriers and facilitators could improve our knowledge of evidence-based school programs and improve the participation, implementation and sustainability of school-based PA programs.

Purpose and Research Questions

The purpose of this evaluation is to assess the barriers and facilitators of uptake and implementation of the PU30 initiative in the Georgia elementary school system and understand why some Georgia elementary schools volunteered to participate in the initiative and others have

not. Identifying these barriers and facilitators will lead to improvements of the PU30 initiative and lead to a better understanding of how to incorporate PA in the school day.

This evaluation sought to answer the following questions:

1. What are the barriers and facilitators to PU30 uptake and implementation?
2. What are the general barriers to PA opportunities at school?
3. What programmatic changes could be made to overcome barriers to uptake and implementation?

Chapter II: Literature Review

Prevalence of Obesity

According to the World Health Organization (2016), childhood obesity is one of today's most critical public health issues and is increasing at a disconcerting rate. Obesity has doubled among children and quadrupled among adolescents in the last 30 years (Ogden et al., 2014; U.S. Department of Health & Human Services, 2012). Seventeen percent of children and adolescents between the ages of two and nineteen are considered obese, which constitutes 17 million children and teens in the United States. Obesity rates vary per racial group, but are prominent across all races (Ogden et al., 2014). Obesity rates do not vary drastically by gender, but boys are slightly more likely to be obese than girls (Ogden et al., 2014). Additionally, prevalence of obesity tends to increase with age (Centers for Disease Control and Prevention (CDC), 2015). As of 2014, 9% of preschool-aged children, 17% of school aged children (ages 6-11) and 20% of adolescent children (ages 12-19) were considered obese (CDC, 2015). Furthermore, obesity rates among adults are the highest among the population, at 36% (CDC, 2015).

Measurement of Body Mass Index

Obesity is measured through the Body Mass Index (BMI), calculated by dividing weight in kilograms by height squared in centimeters and used to classify individuals into four categories: underweight, normal/healthy weight, overweight and obese (CDC, 2015). A high BMI is usually indicative of high amounts of fat in the body (CDC, 2015). Children falling into the 95th percentile for children with the same age and sex are considered obese. Children between the 85th and 95th percentile are considered overweight, while children between fifth and 85th percentile are considered normal/healthy. Those below the fifth percentile are considered

underweight. National survey data collected by the CDC informed the development of the growth charts and established BMI percentiles for children and teenagers (CDC, 2015).

Health Consequences of Childhood Obesity

Since one out of every five American children are obese and childhood obesity can perpetuate into adolescence and adulthood, it is important to understand the health consequences of childhood obesity (Rooney, Mathiason, & Schauberger, 2010).

Obesity and Mental Health Concerns

Obese children tend to experience social stigmatization. One study found that obese children are viewed as less desirable as friends, as well as lazy and sloppy (Richardson Goodman, Hastorf, & Dornsfusch, 1961; Staffieri & Robert, 1967). Studies have found that children as young as three years old attribute negative characteristics to overweight or obese individuals and positive characteristics to thin people (Lowes & Tiggemann, 2003). In another study, preschool children were more likely to choose a thin playmate than an overweight playmate (Frankova & Chudobova, 2000). This differential treatment seems to continue into adolescence, as overweight teenagers report being treated differently than their peers who are considered a "normal" weight (Haines, Neumark-Sztainer, Eisenberg, & Hannan, 2006). The same study found that overweight and obese teenagers are at a higher risk for teasing and bullying due to their weight, which can lead to poor body image, eating disorders, depression and suicidal thoughts (Haines et al., 2006; Neumark-Sztainer, Paxton, Hannon, Hains, & Story, 2006; Menzel et al., 2010; Stunkard, & Burt, 1967). Researchers have found that even parents and teachers treat obese children differently, compared to other children who have a lower weight (Puhl & Latner, 2007; Lissau, 1994). Additionally, there is an increased prevalence of behavioral problems and learning disabilities among obese children (Mellbin and Vuille, 1989).

Obese children tend to develop a negative body image in childhood and adolescence that continues into adulthood (Stunkart, 1967). Studies have found that overweight and obese children may develop a negative body image as early as preschool, which can lead to problems associated with disordered eating, including laxative use, binge eating, meal skipping, forced vomiting and extreme dieting (Smolak, 2004; Neumark- Sztainer et al., 2006). A negative body image can also contribute to other psychological problems, including depression and low self-esteem. Furthermore, obese children tend to enter puberty earlier than their normal weight peers and precocious puberty can lead to lower self-esteem (Heinberg & Thompson, 2009; Wardle & Cook, 2005; Brooks-Gunn, 1988). The relationship between depression and obesity may be complex and bi-directional, as researchers have found that obesity may lead to depression and others have found that depression may lead to obesity (Heinberg & Thompson, 2009; Wardle & Cook, 2005).

Obesity and Physical Health Concerns

Obesity in childhood can lead to countless physical health problems, including yet not limited to: hypertension, high cholesterol, cardiovascular disease, insulin resistance, type II diabetes, metabolic syndrome, asthma, sleep apnea, orthopedic problems, impaired balance, retinal and renal problems, polycystic ovarian syndrome, infertility problems, menstrual abnormalities, early onset of puberty, skin conditions, pulmonary and liver diseases and different types of cancer including breast, colon, prostate, gallbladder and uterine (Reilly et al., 2003; Daniels, 2009; Pulgaron, 2013; Reilly & Kelly, 2011; Delamater et al., 2013; Daniels et al., 2005, Sahoo, et al., 2015). Childhood obesity can lead to gallbladder disease, altered lipid metabolism and composition and abnormal glucose tolerance and muskuloskeltal disorders (Saha, Sarkar, & Chatterjee, 2011; Dietz, 1998; Sahoo et al., 2015). Obesity can lead to bone and joint disease,

osteoarthritis, as well as overall body pain and limited physical functioning (CDC, 2015). Obese children are at risk of developing co-morbidities later in life and dying prematurely in adulthood (Reilly & Kelly, 2011; Hofmanns**,** Kromhout, de Lezanne-Coulander, 1988). Many health consequences of obesity persist through adulthood, especially if the individual does not reach and maintain a healthy weight (Sahoo et al., 2015).

Contributors to Childhood Obesity

Obesity is a result of a long-term imbalance between calories consumed and calories burned, yet there are dozens of potential contributors to obesity (Pulgaron, 2013). Several modifiable factors contribute to obesity including: calorie consumption and dietary intake, activity levels, sleep patterns, media exposure and certain medications (Allison, Matz, Pietrobelli, Zannolli, & Faith, 2001; Kubik, Lytle, & Story, 2005; Miller, Gold, & Silverstein, 2003; Must & Strauss, 1999). Non-modifiable factors contributing to obesity include: hereditary and genetic makeup, metabolism, school and home environment, socioeconomic status, self-regulation and cultural factors (Delamater, Pulgaron, & Daigre, 2013; Allison et al., 2001; Kubik, Lytle, & Story, 2005). For the purpose of this evaluation, one main behavioral determinants related to the research questions will be addressed: PA levels.

Prevalence of Physical Activity and Sedentariness

Studies have found that activity levels among youth in the United States have declined over the last few decades and children are spending increasingly more time participating in sedentary behaviors (Pratt, Macera, & Blanton, 1999; U.S. Department of Health & Human Services, 2008; Pate, Mitchell, Byun, & Dowda, 2011). The majority of youth in the United States do not meet the 60 or more minutes of PA each day recommended by the CDC (CDC, 2015; Berrigan, Dodd, Masse, Tilert, & McDowell, 2008; US Department of Health and Human

Services, 2008). Furthermore, children become less active as their age increases, sustaining their risk of becoming overweight and obese and developing the problems associated with overweight and obesity as they get older (Caspersen, Pereira, & Curran, 2000; Spadano, Bandini, Must, Dallal, & Dietz, 2005). Several studies have found that overweight children have lower activity levels compared to children who were not considered overweight (Bullen, Mayer & Reed, 1964; Trost, Sirard, Dowda, Pfeiffer, & Pate, 2003). Additionally, sedentary time among youth is increasing as access to electronic devices increases (Burton, Khan, Brown, & Turrell, 2012).

Impact of Sedentariness

Although there is limited literature on the effects of sedentariness, studies have found a relationship between sedentariness and poor health outcomes. In replacement of PA, children are spending increased time behind screens, which is the dominant sedentary behavior among children (Santaliestra-Pasías, Rey-López, & Moreno Aznar, 2013; Burton, et al., 2012). Elementary school students are watching more TV now than ever before (Santaliestra-Pasías, et al., 2013). Children between the ages of two and seven are spending two and a half hours each day watching television or playing video games and children between the ages of eight and 18 are spending nearly five hours each day watching television and playing video games. As children are replacing PA with sedentary activity, nearly 75% of children are not meeting the PA recommendations for their age group (CDC, 2012). One study found that each additional hour that children spent playing video games doubled their risk for developing obesity (Caspersen, Pereira, & Curran, 2000). Other studies have found a relationship between watching television and increased body fat (Santaliestra-Pasías, et al., 2013). Children who spent more than four hours a day watching television were two times more likely to be categorized as obese (Locard et

al.,1992; Ribeiro, Taddei & Colugnatti, 2003). Evidence is clear that sedentariness in children is a lifestyle habit that can contribute to childhood obesity.

Benefits of Physical Activity

PA can protect against many of the aforementioned health consequences of childhood obesity. It can improve academic achievement and performance, focus and cognitive ability (Fedewa & Ahn, 2011; Lees, and Hopkins, 2013). Children who are physically active experience improved well-being, increased social engagement, improved self-esteem and confidence, increased strength and endurance, improved concentration, and reduction in feelings of stress and frustration (O'dea, 2003). Additionally, PA helps build stronger bones and muscles, reduces symptoms related to anxiety and depression, reduces the risk of developing diabetes, cardiovascular disease and certain types of cancer (CDC, 2015). PA protects against many of the risk factors that sedentariness and obesity can lead to.

School-Based Physical Activity Interventions

There are numerous settings appropriate to address children's health, including home, community and school (Sacher et al., 2010; Sharma, 2006; Wang et al., 2013; Gonzalez et al., 2009). Ninety-five percent of American youth, between the ages of 5 and 17 are enrolled in school (Frumkin, Geller, Rubin & Nodvin, 2009). Over 48 million American youth are enrolled at 94,000 public schools across the United States (Frumkin, et al., 2009). Since the majority of children in the United States receive their education from public schools and students spend at least eight hours a day, five days per week at school, it is an ideal setting for PA interventions to prevent and decrease the prevalence of childhood obesity and improve children's overall health (Story, Nanney & Schwartz, 2009; U.S. Department of Health & Human Services, 2001). School is the most impactful institution on a child's first eighteen years of life (Story et al., 2009).

A tremendous amount of the time that children spend at school is spent sedentary, making it an opportune time to incorporate more movement (Frumkin et al., 2009; Story, et al., 2009). Additionally, since health and PA is already a part of many schools' curriculum and overarching mission, it makes sense to incorporate more PA into pre-existing curricula and school culture (Naylor & McKay, 2009; Smedegaard, Christiansen, Lund-Cramer, Bredahl, & Skovgaard, 2016). Schools cannot fully reach their primary mission of education if they do not prioritize their students' health (Story et al., 2009). School-based health interventions also provide the opportunity to educate hundreds of students at once about the importance of establishing healthy habits early in life that can protect against chronic diseases (Sun et al., 2013; Skar, Kirstein, & Kapur, 2015).

Recently, school-based health interventions aimed to increase PA among students have become more common and have proven to be incredibly successful in increasing PA opportunities, improving mental health and decreasing BMI among children (Dobbins, Husson, DeCorby, & LaRocca, 2013; Donnelly et al., 2009; Graf et al, 2008; Kriemler et al., 2010; Kriemler et al., 2011; Sun et al., 2013). School-based PA interventions vary in purpose, length and incorporate varying types of activity. For example, SPARK, a 2-year quasi-experimental intervention based in California focused on fourth and fifth graders, is a leading example of a successful school-based PA intervention. SPARK aimed to increase PA time during PE and outside of school and investigators found that 97% of the students who participated in the program experienced physical or mental benefits (Sallis et al., 1997). Similarly, PAAC, a three-year randomized control trial in Kansas, focused on increasing PA opportunities at school and decreasing overweight and obesity among elementary school students. Students participated in 75 minutes or more of PA at school each week and had lower BMI and higher academic

achievement after the intervention (Donnelly et al., 2009). Additionally, a PA program influenced by "Girls on the Run" in Virginia found that preadolescent girls who participated in the program had increased PA per week, increased feelings of social support and improved self-efficacy (Bean, Miller, Mazzeo, & Fries, 2012). These are just a few of the interventions conducted across the United States that demonstrate the health impacts and success of school-based PA programs.

Researchers have found that taking time from academic subjects and using it for PA does not harm the students' academic performance in those subjects (Trudeau & Shephard, 2008; Gonzalez-Suarez, Worley, Grimmer-Somers, & Dones, 2009). Additionally, Marsh (1992) found that taking time from PA opportunities and adding it to academic curriculum does not enhance students' academic performance. Implementing a program focused on decreasing sedentariness and increasing PA among children at school can lead to a decrease in body fat, BMI and skinfold thickness among students who participate (Kiemler et al., 2010). Targeting childhood obesity and reducing the prevalence of adult obesity will prevent the onset of countless chronic diseases and reduce treatment costs and lulls in productivity due to illness (Dagogo-Jack, 2006).

Federal and State Influence on Physical Activity in Schools

Currently, there is no federal law that requires schools to provide PE to students (NASPE & AHA, 2006). However, there are several nationwide efforts to promote and increase PA opportunities for children at school. There are federal grants available through the Carol M. White Physical Education Program (PEP), which is a part of the No Child Left Behind program. PEP grants can be used to start or improve PE programs for elementary, middle and high schools (NASPE & AHA, 2006). In addition to the CDC CSPAP framework, SHAPE America (Society of Health and Physical Educators) is a national membership organization for PE and health

professionals that provides resources, advocacy and professional development opportunities in efforts to increase research and opportunities for PA and health ("About SHAPE America," n.d.). As the largest national health and PE membership organization, SHAPE American has created several PA initiatives, including "Lets Move!," The Presidential Youth Fitness Program, Jump Rope for Heart and Hoops for Heart ("About SHAPE America," n.d.). The CDC and SHAPE America developed a guide to help schools create and sustain PA programs for their students through PE, PA opportunities before-, during and after-school, family and community engagement and staff involvement (CDC, 2015).

There are also state-wide efforts in Georgia to increase PA opportunities in elementary schools. Georgia Shape was initiated by the Governor to address childhood obesity in Georgia and increase the number of students between kindergarten and twelfth grade who are in the Healthy Fitness Zone, which is determined by BMI (Georgia Shape, n.d.). Additionally, Action for Healthy Kids is another state-wide, collaborative initiative in Georgia that provides resources and information to help schools incorporate more PA throughout the school day and improve the health of their students (Action for Healthy Kids, 2015). Other organizations and agencies are contributing collaborative efforts to address children's health including: Children's Healthcare of Atlanta, Fuel Up for Play 60, Alliance for a Healthier Generation, Georgia Organics, Georgia State University Health Policy Center, Emory University's School of Public Health and School of Medicine, HealthMPowers, Georgia Grown and Atlanta Falcons Youth Foundation (Action for Healthy Kids, 2015; Georgia Shape, n.d.; Association of State and Territorial Health Officials, 2013).

PA and PE requirements vary by state and often depend on local school districts to set PA and PE standards (NASPE and AHA, 2006). The state of Georgia requires PE for all students

between kindergarten and eighth grade (Georgia DOE, 2015). PE teachers are required to cover motor skills, lifetime sports and physical fitness in their curriculum. Georgia schools must follow the Georgia Performance Standards for Physical Education, which are based on the National Physical Education Standards. However, daily recess or any other form of PA are not required for children at any grade in school (Georgia DOE, 2015).

Barriers and Facilitators to Implementation of School-Based Interventions

The idea of school-based health interventions is highly accepted and encouraged (Pommier, Guevel, & Jourdan, 2010; Stewart-Brown, 2006; World Health Organization, 2000). To ensure the success of such initiatives, it is essential to assess the barriers and facilitators to uptake and implementation. Skar and colleagues (2015) found that PA is not properly prioritized because of the limited time in the school day and breadth of academic lessons covered in one day. Studies have found several barriers to properly implementing health initiatives, including poor student behavior, lack of engagement and buy-in from teachers and students, teacher frustration, limited school personnel, competing academic priorities, classroom management, costs associated with the program, limited physical space, large class sizes and lack of equipment (Hall et al., 2014; Skar et al., 2015).

Several facilitators to properly implementing a school-based health intervention have been identified, including student and teacher engagement, administrative support, teacher interest and buy-in, adequate physical space and equipment (Hall et al., 2014). Additionally, creating programs that encourage students to actively participate, instead of listening to a lesson increases adherence to the program (Skar et al., 2015). Physically participating creates a sense of ownership and awareness of the importance of the health-related issue among students and

teachers, however classroom-based lessons are still the most common form of health education in the school-setting (Skar, et al., 2015; Mwanga, Jensen, Magnussen & Aagaard-Hansen, 2007).

One study found that the best way to optimize time for movement at school is to create time slots, even if they are only a few minutes, to incorporate PA into daily lesson plans (Skar et al., 2015). The same study found that improving the physical environment, both in the classroom and outside of the school can increase students' engagement in PA opportunities (Skar et al., 2015). It is important to identify and involve key stakeholders, such as teachers, administrators, parents, district coordinators and policy makers to enhance participation, create and sustain an environment adequate for health promotion and adjust curriculum to include health behaviors, such as PA (Skar et al., 2015). Support and buy-in from adults at the school and in the community is essential to ensure adherence to a school-based health program.

Other research highlights the importance of properly evaluating a school-based health initiative to maintain support from key stakeholders, school administrators and teachers (Pommier et al., 2010; Rootman, Goodstadt, Potvin, & Springett, 2001). School-based health interventions are not properly evaluated for a variety of reasons, including lack of time and funding (Fung et al., 2012; Pommier et al., 2010). Proper evaluation of such programs would yield a clearer understanding of other barriers and facilitators to uptake and implementation, improve our knowledge of school-based health programs and tailor the programs to schools' needs.

Summary

Childhood obesity is a major public health concern that can lead to countless health consequences. There are several contributors to childhood obesity, including PA levels, dietary intake, sleep patterns and genetic makeup. PA is one behavioral modification that can decrease

the prevalence of obesity and protect against numerous chronic diseases that result from being obese. School-based PA initiatives are an opportune approach to increase PA among children, improve children's health and protect against the health outcomes associated with obesity. However, while these PA programs are becoming more common overtime, many elementary school students are still not reaching the PA recommendations for their age group.

Some schools are participating and implementing PA programs, while others are not. To increase participation in health-based programs and better tailor programs for schools' needs, this difference in program uptake is essential to understand. There is limited research examining the uptake of volunteer initiatives in the school-setting. It is important to comprehend the decisional processing behind uptake of PA programs and the factors that contribute to or prevent schools from implementing such programs. Most evaluations on school-based programs only assess schools that have implemented the program; they do not target schools that decided not to participate or are uninformed about the program. To address this gap in the literature, school personnel were recruited from schools who participated in the initiative and from schools who had not participated in the initiative.

Furthermore, there is limited qualitative research on teachers' and administrators' perspectives of school-based health initiatives. The impact of PU30 on PA opportunities at school has been assessed using quantitative surveys, but teachers' and administrators' knowledge, opinions and experiences with PU30 have yet to be explored. The qualitative studies that have been conducted on school-based health initiatives were with only one type of staff member at the school, such as PE teachers or classroom teachers. This evaluation addresses this gap in the literature by examining perspectives and opinions on barriers and facilitators to uptake and implementation from three different roles in the school-setting: PE teachers, classroom teachers

and administrators. Understanding these perspectives and exploring their suggestions for improvement can direct future improvements and programmatic changes of PU30 and similar PA interventions.

Chapter III: Methods

Study Design

This qualitative evaluation was part of a mixed methods study. In the quantitative portion, 79 trained schools and 80 untrained schools participated in a survey to assess how PU30 impacted PA opportunities at school. These 159 schools represented the total population considered for the scope of the evaluation. In order to recruit enough participants in a timely manner, only districts that had a large number of schools participate in the quantitative phase were targeted during the qualitative portion.

Recruitment

Prior to district recruitment, an application was sent to the Emory Institutional Review Board and deemed to be exempt. To conduct research in elementary schools, an application must be submitted to each district's Research Review Board (RRB). RRB applications were originally submitted for seven school districts in the metro-Atlanta area. Research approval was granted from five of the seven districts. Permission was declined from one district's RRB and the other RRB was unresponsive. Therefore, participants were recruited from elementary schools in five districts within 40 miles of Atlanta. Elementary schools were targeted based on their PU30 training status, in hopes of interviewing teachers and administrators employed at both trained and untrained schools.

Once the district RRB granted permission to recruit, emails were sent to principals. A second and third round of emails were sent and phone calls to principals were made if the school principals did not respond to the original recruitment email. Recruitment was difficult from the start, so representatives from HealthMPowers, DPH and DOE connected the investigators with contacts at the schools within the targeted districts.

A PE teacher, grade level chair and administrator were recruited from each participating school to provide different opinions and perspectives of the PU30 initiative from various positions at the school. Grade level chairs, who are the leader of the grade level in which they teach, were recruited because they typically have been employed at the school for a longer period and are usually more knowledgeable of the students' behavior in their grade level. However, when grade level chairs were not available to participate in the interview, classroom teachers were interviewed instead. Administrators could include a principal or assistant principal.

Participants

This evaluation included 19 individual, semi-structured in-depth interviews (IDIs) with PE teachers, classroom teachers and administrators currently employed at Georgia elementary schools in the five metro-Atlanta districts. The participants consisted of seven administrators, six PE teachers and six classroom teachers. Thirteen of the participants were employed at PU30-trained schools and six were employed at untrained schools.

Interview Guides

Two semi-structured interview guides were developed for this project, one for the trained schools and one for the untrained schools (Appendix A and B). The interview guides were developed by the master's candidate with assistance and supervision from the thesis committee and the President of HealthMPowers. The team used the original research questions as a guiding framework to develop an outline of interview topics and then reviewed literature for interview guides that were used in similar evaluations (Story et al., 2000; John, Gunter, Jackson, & Manore, 2016; Haines & Neumark-Sztainer, & Thiel, 2007). The interview guides went through five revisions with the thesis committee and HealthMPowers before they were finalized. Questions were mostly open-ended and probes were used to solicit more information when necessary.

Participants were first asked to discuss the PA that their students get at school and any changes to PA that they have noticed in the last few years. Then the participants were asked to discuss each component of PA at school including recess, PE, before- and after-school PA programs and PA breaks in the classroom, often referred to as brain breaks. The participants were asked about the barriers and facilitators to each component of PA at school. Barriers included anything that prevented or hindered the students from participating in PA at school and facilitators included anything that made it simpler or more feasible to participate in PA opportunities at school.

Participants were then asked about their knowledge of the PU30 initiative and training. If the participant was familiar with PU30, they were then asked about their thoughts and opinions of the initiative, the training, the PU30 resources and how the initiative influenced the PA at their school. They were also asked about barriers and facilitators to implementing the initiative, ways that they thought the initiative could be improved and if the school needed any additional support from DPH or HealthMPowers.

If the participant was not familiar with the PU30 initiative, they were asked more about the general barriers and facilitators to PA at school. Untrained schools were asked about the decisional process to not participate in PU30 and any other PA initiatives that the school participates in. They were also asked which components would be most helpful if they were to participate in a PA initiative, like PU30. Both interview guides ended by asking the participant what else could be done to help their efforts in increasing PA opportunities at school.

Procedures

The master's candidate conducted all 19 IDIs between April 2016 and October 2016, which ranged in length from 10 to 50 minutes. The length of the IDI was often dependent on the

participant's knowledge of the PU30 initiative, their knowledge of the PA opportunities at their school and their general willingness to share and communicate their thoughts and opinions. Each IDI was conducted on a weekday at the school in which the participant was employed. IDIs were conducted in a quiet area of the school, either in an office, classroom or gymnasium. The IDIs were intended to be conversational and flexible. IDIs were recorded using two recording devices and brief, hand-written notes were taken. Participants were compensated with a $50 gift card for participating in the IDI.

Confidentiality

There was little identifying information collected during the IDIs, so there was a limited risk of breach of confidentiality. Names and other identifying information discussed during the IDIs were deleted from the transcripts and were not used during the analysis. There was a master list linking each participant to a randomly generated participant ID. The master list can only be accessed by the master's candidate and stored on a password-protected computer that only the master's candidate can access. Prior to conducting the IDI, informed consent was obtained from each participant using a consent form that was developed using the template provided by Emory University Institutional Review Board (Appendix C). Each participant was informed of the measures taken to protect the confidentiality of their data through the consent process.

Analysis

The IDI recordings were transcribed verbatim using a contractor, Landmark Associates. The transcriptions were doubled checked for accuracy and de-identified by the master's candidate. Transcripts were then coded by the coding team which included the master's candidate and the thesis committee member. MaxQDA, a qualitative analysis software package, was used for the analysis. A deductive coding approach was used since the coding team had a

preliminary understanding of the codes that would be used in the analysis prior to the start of the analysis process. However, inductive coding was also used, since themes and patterns emerged from the data that were not expected.

The data were coded independently by the master's candidate and thesis committee member, then the coding team met to discuss discrepancies in the coding, develop the codebook (available in Appendix D) and refine the code definitions. To address discrepancies, the coding team discussed the differences and came to an agreement. They altered the code definitions and added quotes for each code in the codebook to clarify definitions and support patterns and themes. Several iterative rounds were conducted until the team felt confident in the final codebook, which consisted of eight codes. The remaining transcripts were then coded by the master's candidate. Thematic analysis was used to identify and examine themes that frequently presented in the data. The barriers and facilitators related to PU30 and to general PA opportunities at school were organized into an Excel Spreadsheet with supporting quotes and tallied to determine which were most salient. The barriers and facilitators were then compared across training status and positions at the schools. Data from Georgia DOE was summarized using percentages, means and standard deviations to describe the demographics of the student populations at the trained and untrained schools (Georgia DOE, 2016).

Chapter IV: Results

Study Population

A total of 19 participants from seven different elementary schools were interviewed between April and October 2016, consisting of seven administrators, six classroom teachers and six PE teachers. Participating schools were located in three counties within metro-Atlanta. Five of the participating schools were PU30-trained and two were untrained schools. Thirteen of the 19 participants were employed at trained schools and six were employed at untrained schools. Seventy-seven percent (10) of the participants from trained schools were female and 50% (3) of the participants from untrained schools were female. One hundred percent (13) of the participants from trained schools were white. Eighty-three percent (5) of the participants from untrained schools were white and 17% (1) were black. Table 1 shows the demographic information of the student populations at both trained and untrained schools (Georgia DOE, 2016).

Table 1: *Demographics of Students from Trained and Untrained Schools in 2016.*

Training Status	**Trained Schools (n=5)**	**Untrained Schools (n=2)**
Mean # of Students (SD)	719 (146.1)	934.5 (259.5)
Gender	Male 1855 (52%)	Male 930 (50%)
Race		
Hispanic	1152 (32%)	121 (6%)
Asian	343 (10%)	8 (0%)
Black	495 (14%)	1503 (80%)
White	1441 (40%)	168 (10%)
Multiracial	159 (4%)	69 (4%)
Locale		
Suburb	5 (100%)	1 (50%)
Rural		1 (50%)
Mean Disciplinary Referrals (SD)	38.2 (23.7)	309 (206.5)
% Students of Free/Reduced Meals	41.5%	86.0%

Barriers Specific to PU30 (Trained Schools)

Disconnect Between Different Positions at Trained Schools

Although it is suggested by HealthMPowers and DPH that an administrator, classroom teacher and PE teacher from each school attend the PU30 training to incorporate different stakeholders at the school in the initiative, the number of school personnel who attended the training varied. The five participants who attended the PU30 training were more knowledgeable about the initiative than the eight teachers and administrators who did not attend the training. Often, participants who did not attend the training were familiar with the name and the purpose of the initiative, but that was the extent of their knowledge. Additionally, some of the participants were familiar with the resources, such as Go Noodle -- an online tool that provides videos incorporating PA and learning -- but were not sure if they were introduced to the resources because the school was PU30-trained or if they learned about the resources elsewhere.

Other participants discussed the PU30 Kick Off Day when asked about their knowledge of the initiative. The Kick Off Day was voluntary and encouraged by an administrator or PE teacher at the participating schools. It focused on encouraging all of the students and staff to participate in PA together throughout the day. For example, two schools had an assembly in the gym where the students, teachers and administrators participated in brain breaks together. The PE teachers at the schools who participated in the Kick Off Day had attended the training and implemented elements of the initiative at their school, but the rest of the school staff were never informed of the training or the information gained from the training; their knowledge of the PU30 initiative revolved around the Kick Off Day. When asked, participants at several PU30-trained schools were uncertain if anyone from their school attended a training for the initiative. Some participants did not know that their school was PU30-trained.

Interviewer: Were you aware that your school was Power for 30 trained?

Interviewee: *No. I wasn't.* (Participant 18, School 7)

The school personnel who attended the PU30 training were given a slide deck from HealthMPowers to help facilitate a school-wide presentation about the information presented at the PU30 training. However, if the training attendees did not make the effort to disseminate the information from the training with the other school personnel, then the rest of the school did not receive information or resources. The lack of communication between the individuals who attend the training and those who do not created a disconnect between the different personnel at the school, particularly in respect to their knowledge of the initiative. This could lead to decreased uptake and implementation of the initiative if the school personnel are not equally informed.

Teacher and Administrator Turnover

Turnover among teachers and administrators at the school was another identified barrier to uptake and implementation of PU30. New teachers and administrators at trained schools who were previously employed at untrained schools, had limited knowledge about the initiative. Many participants said they had not been at the school long enough to provide details about the school's participation in the initiative. A new assistant principal at a trained school expressed her lack of knowledge about the initiative. She said,

"Yeah, I don't know much about [the initiative], obviously. I don't think they use it currently. Obviously, somewhere it's fallen to the way side, I don't know why. I'll have to talk to [the principal] about that." (Participant 19, School 7)

Additionally, staff who had been at the school for an extended period of time, explained that newly employed staff often did not know details about the initiative, which could reduce the schools participation in different components of the initiative. Several participants at trained schools discussed how their school could use a booster session to remind the school personnel of the components of the PU30 initiative. One administrator said,

> *"We could use some additional information—obviously for the new teachers. Now there's probably 20% of our staff that's new since we had that training. A follow-up training would be very helpful."* (Participant 14, School 6)

Limited Time to Attend Training

Several participants, especially administrators, discussed how they felt that they did not have the time to attend the PU30 training. Administrators discussed how they had numerous responsibilities and they had to prioritize their time to balance all of their obligations. One principal explained how she did not have time to attend the PU30 training and regrets not going.

> Interviewer: How did you feel about carrying out the initiative after the other teachers went to the training?
>
> Interviewee: *I think that happens to me a lot just because of my position. I can't go to everything. I can't be involved in everything so I have to trust that the information I'm getting from them is, A) necessary and B) inclusive. I did not feel that way. Once I sent out that email to the staff, and I felt that confusion from the staff, I realized I don't know enough about this. I didn't get enough information from them about this day or this initiative to really feel comfortable because, obviously, whatever I presented to the staff*

was confusing. Even sitting here, you asking me these questions, I'm thinking, "I should have gone to that training." (Participant 4, School 2)

PE teachers and classroom teachers discussed having difficulty finding time to attend the training, as well. If the training occurred during the school day, they would need to find a substitute for their class, which requires additional work. If the training took place after the school day, it could interfere with planning and grading time.

Space

Eleven trained participants discussed having limited space at their school to implement the activities presented at the PU30 training. Participants discussed how the classroom sizes remain the same, but the school population continuous to grow. Participants explained that younger students need more space to avoid bumping into one another during brain breaks, since they do not have full control of their bodily movements. Participants discussed how that this problem continues as the students get older and bigger; the more space the students take up, the less space there is for PA. A principal explained how they have more students in the classroom than they have in the past, which limits the space they have for brain breaks.

"This year we happen to have 30 or 31 fifth graders. Those are the largest classrooms, but they're still kind of crowded. I would say some of the activities they might not be able to do, since most of them are standing next to your desk. They have tables in those room. They can do most of them. Running in place, things like that, that don't require a lot of space." (Participant 14, School 6)

Participants also discussed having limited space for after-school programs. Participants at three schools discussed not having outdoor space or sharing it with other schools and organizations. One participant explained that they rent their field out to a local soccer team in the afternoons, which limits the space they have for an after-school program. Other participants explained that their gym is frequently utilized by other programs, like after-school daycare. One PE teacher explained that she implemented a before-school cardio club after she attended the PU30 training, but does not have the space to offer it to all of her students each day. The school gym is not large enough to safely contain all the students who want to participate at one time and there is no other available space in the school to use. Therefore, the students in grades Kindergarten through 3rd grade participate in cardio club twice a week and the fourth and fifth graders participate twice a week.

Classroom teachers also explained that the playground space could limit the amount of time that kids are active outside. At some schools, there is only one playground area, with several classes and grade levels sharing the space at one time. If a class is using the field for a game of soccer or taking up the space on the jungle gym equipment, the other classes might not have the same PA opportunities as the class that first arrived to the playground. Other schools rotate where they have recess each day, so a class might have access to the jungle gym equipment one day and then have recess in the field the following day. Depending on how active the class is and the way the students prefer to spend their time at recess, this can limit the students' activity levels.

Facilitators Specific to PU30 (Trained Schools)

School-wide Effort to Increase Physical Activity Opportunities

Participants discussed how the PU30 initiative sparked a school-wide effort in increasing PA opportunities, which largely stemmed from the administrators. Teachers at trained schools discussed how their principals encouraged them to ensure time for recess and brain breaks each day. They explained that their administrators implemented a policy against withholding recess as a form of punishment. Administrators discussed how they wanted to see classroom teachers incorporating movement into their lesson plans when they observed a class. This support encouraged teachers to prioritize PA and created greater buy-in from teachers. The initiative encouraged them to collaborate with one another and share resources. For example, when a teacher found a YouTube video that their students liked, they emailed it to the other teachers in the school and encouraged them to use it as a brain break with their class. They also talked about brain break resources at staff meetings. Participants explained how PE teachers also provided support to classroom teachers, by sending resources and providing supplies for different academic activities that incorporate movement. Some participants explained that after the PU30 initiative, PA opportunities increased and the entire school worked together to create a culture that protected and prioritized PA.

Teachers as Role Models

Many participants discussed how they demonstrated the importance of PA to their students by showing them how they incorporated it in their own lives. Teachers discussed participating in PA along with the students, during brain breaks and at recess. Teachers also incorporated types of PA that they personally enjoy, such as yoga and running, into the school day. Schools created videos of different school personnel, such as art and science teachers and

facility managers, who the students usually do not see being active, to demonstrate that PA is important for everyone.

Focus on Holistic Health

When discussing the types of PA they offered their students, participants at trained schools also discussed other ways that their school prioritizes their students' health. Participants explained how they teach their students about a farm-to-table approach to eating. Three participants discussed their school garden, where students learn to grow their own food and the cafeteria staff then include the food they grew into the cafeteria meals. Participants also discussed the development and growth of their wellness committees and staff health initiatives, where teachers and administrators set health-related goals for themselves. This holistic health approach highlighted the school-wide effort that was apparent at many PU30-trained schools.

General Barriers to Physical Activity Opportunities (Trained & Untrained Schools)

In addition to the barriers and facilitators related to PU30, participants also discussed several barriers and facilitators specific to PA opportunities at school. The discussion of each barrier and facilitator in this section is organized by the components of PU30 that it affected, including PE, recess, brain breaks and before- and after-school programs.

Misbehavior and Classroom Management

Fourteen out of the 19 participants identified misbehavior and classroom management as a barrier to PA opportunities at school. Elementary school students had fewer PA opportunities if they or their fellow classmates misbehaved during PE, recess and brain breaks.

Physical Education

Participants discussed how activity time in PE class was shortened if one or several students misbehave. PE teachers explained how one student can limit activity time in PE for all students because the teacher has to spend time removing or disciplining the poorly behaved student, disrupting the flow and schedule of the class. One or two students misbehaving can also create a "ripple effect" in the class, where other students observe a misbehaving student and then behave similarly leading to several students misbehaving at the same time. Time spent disciplining these students reduces activity time for all students during PE. Depending on the severity of the behavior, misbehaving students may sit out for a few minutes or be removed for the entire PE class, further decreasing activity time.

Many PE classes have students from multiple academic classes at once and PE might be the only time that these children see each other at school. They may live in the same neighborhood or go to the same daycare and get into arguments that then continue into PE. Additionally, it is easier for students, even those who are well-behaved, to get excited and

distracted when they are with other groups of students in PE that they do not usually interact with. One PE teacher explained how mixing students from different classes disrupts his classes. He said,

> *"Occasionally, stuff comes out in the gym because it is the—it is a mixing of classes where they don't have any place else. Otherwise, they're just with their normal class all day. Whereas you come to the gym, and you can see they mix in with—I mean, I have four teachers' students right there. That's a big mix of kids."* (Participant 10, School 5)

Since a PE class usually has students from multiple classes at once, PE teachers can be responsible for teaching and managing up to 80 students in one class session. To manage so many students, most PE teachers have an assistant or a para-professional. A few PE teachers discussed how they used to have two PE teachers, but all of the participating schools had only one PE teacher. This means PE teachers have up to three to four times the number of students to manage compared to an academic classroom, and the students are significantly more active in PE than in an academic classroom. With limited staff members and 70-80 students in the gym at once, misbehavior can also become a safety concern, making proper classroom management essential in PE.

Recess

Many schools have policies that discourage teachers from taking away the entire recess period, but some classroom teachers still have students sit out of recess for five minutes as a type of punishment for poor behavior. Considering recess is usually about 15 minutes, taking away five minutes is a large portion of that PA time.

Teachers and administrators explained that the students who are often pulled from PE and recess time are often the ones who need the PA as an outlet. One teacher said she tries to ensure all of her students have time to run around during recess because otherwise it can negatively impact the rest of her day. She said,

> *"Sometimes with our behavior plan, if they're really misbehaving, we might have 'em sit [out of recess] for a few minutes, but we never take the whole time away from them, cuz that's detrimental to the rest of my world [for] the rest of the day."*
>
> (Participant 12, School 5)

Many teachers understood the physical, mental and academic benefit of PA opportunities during the school day, like recess, but also feel like they need to discipline students when they misbehave, making it difficult to balance between these two priorities.

Brain Breaks

Administrators and classroom teachers discussed the difficulty of managing a classroom of students while conducting brain breaks. Teachers explained that students see brain breaks as an opportunity to start a conversation with their neighbor and frequently get off task. This makes it difficult to keep the students focused on the brain break, even though it only lasts a few minutes. Teachers discussed sensing the tone of their class to determine if it is worth disrupting their focus for a brain break. A few teachers explained that it can be so difficult and time-consuming to get the students back on track, sometimes it is not worth the trouble to take a brain break. When asked about the barriers to brain breaks in the classroom, one assistant principal said,

> *"Probably just [classroom] management. Once they get up and get out of their seat, they get off task, then the teacher's gotta bring them back in. That probably aggravates some teachers. The problem is cuz they don't wanna have to go through that fight to get them back to the books."* (Participant 8, School 4)

Limited Time and Overburdened Teachers

Fifteen of the 19 participants indicated that there is not enough time to incorporate adequate PA throughout the school day. The expanding academic curriculum overtime places additional pressure on teachers. Limited time and overburdened teachers hindered all components of PU30, including PE, recess, brain breaks and before- and after-school programs.

Physical Education

PE teachers discussed how they are consistently making changes to the way they conduct their classes so the students have as much time as possible to be active. One PE teacher shared how she made warm-ups more cardio-focused to optimize activity time after the PU30 training,

> *"I definitely have shifted my focus more towards fitness and doing more cardio warm-ups than in years past and just making sure they're as active as possible and limiting my talking so they're more active."* (Participant 16, School 6)

PE teachers explained that PE class occurs less often than it did several years ago. As schools experience more academic pressures and requirements, time budgeted for PE is reduced. It was evident throughout the IDIs that participants think PE is less of a priority than academic coursework, leading to less budgeted time for PE.

Recess and Brain Breaks

Numerous teachers explained that "fitting everything in" is the biggest barrier to recess and brain breaks. Georgia Milestone testing occurs every year for grades third through 12th and was noted as a time-related barrier. One classroom teacher discussed how the academic priorities cut into PA time:

> *"More often than not, it's just a matter of things that need to be done during the day in class that just don't allow for that time. Sometimes it's other interruptions during the day, whether it's testing or some other activity that's mandated either by the school or by the county, but more often than not, it's academics taking precedent over them going outside."* (Participant 18, School 7)

Teachers discussed how the focus at school is always academic. They explained how PE, recess and brain breaks are perceived as fun and not academic; therefore, they are not prioritized the same way as math, science and writing. One teacher explained that in the 22 years that she has been teaching, she still teaches the same amount of material, but it is more regimented and there is more accountability. She said,

> *"It has become more academic. I think I probably taught my children the same information in the first years I taught that I'm teaching now, but it wasn't as regimented. It wasn't as much paperwork. It wasn't as much accountability, if you will, which I understand on the education sense of it, but I think we had more down time, more time for the kids to move about and play. Kindergarten has gone from centers where they moved around the room, and did housekeeping and blocks and things like that, to --- it's a lot of sitting and reading and writing, and we're gonna do math, and it's kind of the*

> *same thing. Same information, more sitting. I think over the years it's changed, and just the setting that we have and the world we live in has evolved into where the physical activity piece has gotten less and less in the school building."* (Participant 12, School 5)

As the academic curriculum becomes stricter and more regimented, more pressure is placed on teachers and administrators, which cuts into PA time, like recess and brain breaks. One fifth grade teacher discussed how the curriculum gets more intense as the students get older, so the fourth and fifth graders don't make it to recess as often as the younger students. He said,

> *"In the upper grades, it's a little more difficult. We just have a lot more to cover. We try to get out at least once a week to—for them to go outside, and during school or after-school."* (Participant 18, School 7)

One administrator explained that the academic requirements are never ending and always changing, contributing to the overburdened teachers and reducing time for PA. He said,

> *"Well, you got a lot of politicians that keep cramming hours down our throat that we don't have. You gotta create the hours somewhere. That's the part [physical activity] that misses out. They would rather get 'em in a book than get 'em active. That kills us, I think."* (Participant 8, School 4)

When there is limited time, brain breaks are often the first thing that is cut or shortened. Although brain breaks and the incorporation of movement into academic lessons is encouraged, it is not mandated like the academic curriculum. Teachers discussed how they must prioritize PA

throughout the day and build it into your daily lesson plans or it simply will not happen. One classroom teacher said,

> *"It's more just making sure you create that time in your day. That you don't say, oh it's not an important thing. You have to consciously make an effort for yourself as well as for your kids to be physically active."* (Participant 3, School 2)

Several teachers said that the resources are helpful, the kids enjoy PA and teachers know that movement is beneficial for the students, but "time is the biggest barrier."

Before- and After-School Programs

When participants discussed before- or after-school programs, time was identified as the biggest barrier. Several participating schools start as early as 7am, leaving little time for students to be active before-school. Students whose parents drive them to school spend time in the drop-off line, so even if their school provided a before-school program, they usually do not arrive early enough to participate. Many students have other priorities, such as attending speech therapy appointments or completing an assignment from the day before. A few schools that participated in our IDIs indicated that nearly all of their students were on free or reduced breakfast and lunch, meaning the majority of students had to get dropped off, eat breakfast and unpack, leaving little time to participate in a before-school program.

Incorporating all of the curriculum requirements involves more planning time, both in and outside of school, leaving teachers limited time and flexibility to be involved in before- or after- school programs and health-related events throughout the year, like Jump Rope 4 Heart or Relay for Life. Since the classroom teachers do not have the time, the burden often falls onto the PE teacher to organize and facilitate these programs and events. If the PE teacher and classroom

teachers do not have the time or energy, then the PA opportunities will not be offered. The limited amount of time during the school day mixed with the amount of academic material to cover, overburdens the staff and reduces the PA opportunities at school.

Transportation

Over half of the participants discussed transportation as a barrier to PA at school. Interestingly, at some schools, transportation came up in all three IDIs at the school, and was viewed as one of the most important barriers to before- and after-school programs, whereas at other schools it was not mentioned in a single IDI. Transportation only inhibits before- and after-school programs since they are the only two components of PU30 that occur outside of normal school hours.

In most school districts, the buses are shared between the elementary, middle and high schools, so they are not available to transport students outside of the designated elementary school shifts. Thus, for kids to participate in before- or after-school activities, their parents have to provide transportation, which can be difficult with work and family schedules. If buses are not available to provide transportation for before- or after-school programs, it will substantially decrease the number of students who can participate.

Some teachers also discuss how parents do not want their kids staying at school later, especially since they are still very young. They feel that they've already spent most of their day at school and parents do not want their children going to school any earlier or staying any later than they already must.

Disconnect Between Different School Personnel

Nine out of the nineteen participants discussed the disconnect between different positions at the school as a barrier to PA at school. PE teachers, classroom teachers and administrators had

varying knowledge about PA opportunities at school. Frequently, PE teachers did not know what PA opportunities their students have while they are in the classroom. They might not know how long or how frequent their students have recess. When asked about recess and brain breaks, one PE teacher made it clear that he had limited knowledge about both.

> Interviewer: OK. So you are not sure about what they do outside of PE—if they have brain breaks during the classroom or—
>
> Interviewee: *I am not sure.*
>
> Interviewer: And recess—are you familiar with recess at all?
>
> Interviewee: *No.* (Participant 10, School 5)

Additionally, there were instances where one participant at the school discussed a PA opportunity, such as a before- or after-school program and one or both of the other participants at the school would not know about the opportunity. For example, a PE teacher discussed a before-school program where the students walk around the track in the mornings prior to going to their classrooms, yet when the principal and classroom teacher were asked if there were any before-school PA programs at their school, both said their school did not have any. The level of knowledge and awareness of PA opportunities often varied by the participant's position at the school. PE teachers were often more aware of before- and after-school programs, classroom teachers were usually most informed about recess and brain breaks and administrators were usually less aware of PA opportunities at their school. Since administrators are responsible for all facets at the school, they typically had more general knowledge of PA opportunities available than specifics, such as how many kids participated and how frequently the programs occurred.

Some administrators discussed feeling disconnected from the rest of the school. When asked about PA opportunities at his school, one assistant principal said,

> *"I'm not sure. You get stuck back here. You don't get to see a lot of that stuff."* (Participant 8, School 4)

Although it is unrealistic for teachers and administrators to be aware of all PA opportunities at their school and know what is happening in each classroom, lack of communication between different positions at the school could lead to decreased PA opportunities. If teachers believe students are receiving PA at other times throughout the day, they may not feel responsible to provide adequate PA opportunities when they are instructing the students.

General Facilitators to Physical Activity Opportunities (Trained & Untrained Schools)

PE Teachers

It was clear during the IDIs that PE teachers are essential to all components of PU30. They prioritize the students' health and often take the lead to initiate and facilitate PA opportunities at school. Their efforts can vary from providing classroom teachers with new ideas for brain breaks or applying for grants to purchase more recess and gym equipment for their school. The importance of the PE teacher was discussed in 16 of the 19 IDIs and was the most commonly discussed facilitator to PA opportunities at school.

Physical Education

Several participants discussed how PE teachers have adopted new approaches to PE to teach their students about setting goals and physically challenging themselves. They focus on the

importance of PA to individual health and explain how it should be a part of the students' daily lives. They try to facilitate healthy competition and make it fun for the kids, while teaching the students that health and PA are a lifelong pursuit. One principal discussed how the PE teacher structures her curriculum. She said,

> *"These teachers are really looking to have children setting their own goals. What we also do is ask the children, '...you were able to do how many sit ups at the beginning of the year? What's your goal for the end of the year?'*
>
> *I also notice that their lessons in PE make a lot of real world connections. It's not just about how you wanna play sports when you get older, but it's the careers that involve sports, talking to kids about things like that. She does spend a lot of time, talking about how physical fitness is a lifelong goal. It's not something that you just do when you're a child, or you do because you're a PE teacher. It's something that should be part of your life no matter what."* (Participant 14, School 6)

PE teachers also discussed their efforts to supply the students with enough equipment while working within a tight budget. Some teachers discussed applying for grants, fundraising for more equipment and getting creative with equipment they already have, to provide the students with different activities.

Recess and Brain Breaks

Classroom teachers discussed how the PE teachers supply equipment for the students to use at recess. When the equipment disappears or wears down, PE teachers replenish the supplies. PE teachers email ideas for brain breaks and suggestions on ways to easily and efficiently

incorporate PA into their days. One classroom teacher discussed using one of the many resources that the PE teacher has sent her,

> *"It's pretty easy to use. I mean Coach [the PE teacher] sent us a link at the beginning of the year. You just go to the link. [The website] is always sending me emails about new songs or activities that have been added. It's been pretty easy to use." (*Participant 5, School 3)

A few participants discussed how their PE teachers even make games and other fun activities for them to incorporate movement into their lesson plans. One PE teacher discussed putting together an interactive game for each teacher in the school after the PU30 training. She said,

> *"I even made one of the games with little popsicle sticks with ideas. A lot of times the teachers have popsicle sticks with the kids' names sitting on their desk, so I had popsicle sticks with activities on them. They would just pick them out and use those so making quick things that they could do that were easy for them to do and then easily regain control of their class to get back to learning."* (Participant 15, School 6)

Before- and After-School Programs

PE teachers are almost always the school staff member who initiates and leads before- or after-school programs. If they are unable to lead the programs, they may find a classroom teacher who is able to, but most often, they are the staff members who arrive to school early and stay late to provide the students with more PA opportunities. One teacher explained that the PE teacher at

her school is in the gym early every morning to give her students time to be active in the mornings:

> *"We've got morning activities that I know that the PE teacher organizes each morning for the kids that are in third through fifth. They give them an opportunity to go into the gym every morning and do physical activities."* (Participant 3, School 2)

Other

PE teachers often initiate and coordinate fundraising events to raise money for the school's PA programs, like collecting money for the after-school soccer program so each student has a jersey and shin guards. They also run fitness- and health-related programs, such as Relay for Life, Jump Rope for Heart and Field Day. Participants discussed how PE teachers incorporate students' families in their efforts to promote PA. They lead wellness committees at the school, who handle health-related efforts like school gardens, the lunch menu and food tastings for the students. Some PE teachers host after-school events, like Family Fitness Night to raise awareness of the importance of PA and overall health of the students. While discussing all that the PE teacher does at their school, one principal said,

> *"I think that actually our PE coach has done a good job in the years past speaking to the importance of health and the obesity concern and how there's been a rise in obesity over the last several years. She hosts Family Fitness Night and shows a slide about the increase in obesity, and [the importance of] keeping kids in motion as much as possible."* (Participant 1, School 1)

PE teachers are usually responsible for involving the school in PA initiatives, like PU30. PE teachers discussed wanting to join the initiative because they think students need more PA opportunities at school. Participants explained that the PE teacher heard about PU30, discussed the initiative with the principal and recruited school staff to attend the training with them. PE teachers at trained schools reported hearing about the initiative through district Health & PE Coordinators, who frequently encourage elementary schools in their county to join the initiative. The PE teacher almost always attended the training and were responsible for disseminating the training information to the rest of the school, by having a meeting with the principal, staff meeting, wellness committee meeting or school-wide presentation. PE teachers are frequently the staff member that implemented the action plan developed during the training. This could include starting a before- or after- school program or supplying resources to classroom teachers for brain breaks.

PE teachers discussed how they feel responsible to provide ample PA at school because they know that many of their students are sedentary once they go home. One PE teacher explained her daily goal for her students,

> *"My goal is, every time they leave the P.E gym, they're sweating. Regardless of what you do the rest of the day, or what you do when you get home, when you leave my gym, you are sweating. Your heart is beating fast."* (Participant 2, School 2)

It was evident in the IDIs how much support PE teachers provide to the rest of the school staff. They play a major role in the facilitation of PA opportunities at school. Most of the PE teachers were incredibly invested in prioritizing and protecting the health of their students.

Administrative Support

Administrative support is another key facilitator to all components of PU30, including PE, recess, brain breaks and before- and after-school programs. The importance of administrative support was discussed in fifteen of the nineteen IDIs. It is essential for a school's participation in PU30 since a school-wide initiative requires the permission of the administrative team. Administrative support can come in different formats including, school-wide staff meetings or presentations, professional development opportunities, school frameworks that prioritize healthy habits, such as the inclusion of brain breaks or individual conversations. One classroom teacher discussed how uptake and implementation of the initiative spread among the school once the administration supported PU30. She said,

> *"You know obviously it has to start with the administrator, that's the only way stuff comes in the door. I think when you've got a staff that supports that initiative it's an infectious thing. I think the combination of the administrator and teachers who work very actively doing it, helped. It created resources like, we found this really cool link. Once you started creating a catalogue of variety of different things that made it a lot easier than having such a limited number of options for brain breaks."* (Participant 3, School 2)

Physical Education

Three PE teachers discussed how their administrators are flexible with the PE schedule to optimize activity time in PE class, by ensuring they have the space and capacity to manage and teach all of their students at once. This may include hiring another PE teacher or paraprofessional educator. PE teachers also discussed how administrators worked with them to ensure that all students get PE at least once or twice per week, even as more requirements are added to the

academic curriculum. Administrative support is also crucial to ensure there is room in the budget for equipment in the gym and for other PA opportunities, such as before- or after-school programs.

Recess and Brain Breaks

Some administrators discourage withholding students from recess for any reason. Most administrators encourage their teachers to ensure all students get some recess time each day. One classroom teacher explained,

> *"We've reinforced that recess is something that is necessary every single day, whereas I know other schools don't do that. It's nice that our administrators really try to protect that time."* (Participant 3, School 2)

At some schools, recess time and frequency diminishes as the students get older, however, the majority of administrators require teachers to incorporate a minimum of 10-15 minutes of recess each day. A few participants discussed how their administrators are more flexible with extending recess time if teachers feel they have the extra time in their day or if the students need or deserve more of a break.

Classroom teachers discussed how administrators support incorporating brain breaks into their daily lesson plans and emphasize the connection between PA and mental focus. Participants explained that although brain breaks are not mandatory, administrators strongly encourage teachers to incorporate PA breaks throughout the day. One principal said,

> *"Yeah. We don't mandate that. We encourage them to do brain breaks and definitely every year we send out [emails], 'Try out these links. Here's this; here's this.' I know our kindergarten, first grade, second grade—every day would do it. At least one brain break.*

> *Anything they may find online. It's a quick, under five minutes. Usually, they do it during transition time like when we've just sat and done reading for an hour. Now, we're transitioning into math. Let's do a brain break."* (Participant 4, School 2)

Teachers reported that brain breaks are becoming more common and more frequent because of this supportive push from administration to incorporate them each day. They do not worry when administrators observe their classrooms and they are conducting a brain break, instead of teaching an academic concept because they know administrators understand the importance of PA breaks.

Before- and After-School Programs

Many administrators discussed their support for the before- and after-school programs at their school. They appreciate the effort that their staff puts into creating more PA opportunities. An administrator discussed the before-school program that their PE teacher runs each morning,

> *"Our PE teacher started [a before-school program] which I'm sure she told you about but it's great. The kids absolutely love it. Just get to go in the morning every other day, basically. She plays music. It's fun. It's not teacher led. It's very much student led. They play Four Square; they jump rope. They do whatever they want in the mornings."* (Participant 4, School 2)

Teachers discussed how their administrators make time for students to participate in before- and after-school programs. Principals also work with the after-school care programs to ensure PA is built into the school's daycare curriculum.

Other

Administrators discussed how they encourage teachers to use PA as a reward for good behavior. An assistant principal discussed how she plays basketball with the students each Friday as part of their good behavior program. She said,

> *"That's something that we do a lot of. We use fitness as a reward, so kids earn rewards to play basketball with us. They earn times to do Friday fun things with the administration team, so that they can earn different points to be able to do that as a reward. It could be anything, it's their teacher's discretion. Everything can be individualized, based on the students' needs, not just the classroom."* (Participant 19, School 7)

Administrators discussed how they try to lead by example by participating in PA opportunities with the students, so they can see that it is important for people of all ages and phases in life to be active and physically fit. For example, some schools who participated in the PU30 Kick Off Day included videos of teachers, principals and other school staff, like facility managers and cafeteria staff, being active and having fun while doing it. One principal discussed what the Kick Off Day looked like:

> *"It was pretty much in the PE teacher's hands, and his para-pro helped, too, but, before the Kick Off Day we did the videos. We got the custodians. The assistant principal and I were involved. They got different people from around the school that the kids knew to do the video. There was a lot of prep ahead of time, but he pretty much ran all that. He planned it, told us where to be when, and we just showed up and did what he needed us to do, so it went well."* (Participant 7, School 3)

It was clear throughout the IDIs that when administration supports a PA opportunity, the buy-in and encouragement spreads through the school.

Students Enjoyment of Physical Activity

Twelve participants discussed how students' enjoyment of PA facilitated more PA opportunities at school. Teachers discussed wanting to provide their kids with more time at recess and brain breaks throughout the day because they know the activity is good for them, it improves their focus and academic performance, and it is their favorite part of the school day. Students' enjoyment of PA facilitated all components of PU30, including, PE, recess, brain breaks and before- and after-school programs.

Physical Education

PE teachers discussed how they tailor their curriculum and lesson plans to what the students enjoy. One PE teacher discussed how the students at her school really enjoy running so she includes an extra element of the Fitnessgram assessment because the kids like it so much. When asked about her experience with PU30 she said,

> *"I mainly participate in the Fitnessgram part of it. We test first through fifth grade twice a year, all gamuts of the test. I know that five are only required. We do six, because our kids love to run, so we do not only the pacer, we also do the mile run. I can tell you that the kids used to be a big fan of the Presidential, only because we would have a record wall. We did incorporate a record wall in with the Fitnessgram, even though it is a healthy zone, and there's no real record. If you max out on the Curl--Up Test, you're part of the Eighty Club, and when we do the mile, we have our top 10 milers…. The kids love that."* (Participant 2, School 2)

Another PE teacher, who had previously taught at both middle and high schools, discussed how excited elementary school students are about participating in PE. He said that he designs the simplest game with limited equipment and the students love it. He said,

> *"I mean, it's elementary. They're happy I was amazed at what they will enjoy versus what my sixth-, seventh-, and eighth-graders would say, "Whatever." They wouldn't even get off the floor, and these kids love it. When I have a couple minutes left, or they start getting antsy, I'll just take out a Rubbermaid tub with little three-inch balls and roll them out on the floor and time them on how fast they can run and pick them up and they love it."* (Participant 10, School 5)

Recess and Brain Breaks

Teachers discussed how their students behave well because they want to ensure they get to spend the entirety of recess playing instead of finishing up school work or sitting out because of poor behavior. One classroom teacher explained how brain breaks and recess is her students' favorite part of the day and the large majority of students are motivated to get their work done to increase their activity time. She said,

> *"Administrators say on the days [the students] have PE, and they're outside for longer than 15 minutes and getting more exercise, if they truly do not finish something that they need to do, they can spend 5 minutes, at the most, doing it. That's a motivation for those kids, too. It's just a motivator for them to get their work done."* (Participant 15, School 6)

Teachers discussed how they work to stay on schedule every day to make sure their students have as much time as possible at recess. Some participants explained that they think recess is just as important as any academic lesson plan that they teach. Participants also discussed how brain breaks are one of the students' favorite things to do in the classroom. Sometimes the students will even ask their teachers for a brain break. One principal said,

> *"The kids really enjoy them. They would never imagine that it was exercise the way I think about exercise."* (Participant 14, School 6)

Many students are so familiar with brain breaks and the different resources available, they inform their teachers about different activities that they do in their other classes. Some students use of the resources at home, like Go Noodle, so they are even able to show their teachers how to use them. One classroom teacher explained how her students taught her how to use Go Noodle. She said,

> *"For me, I'm really glad that the kids have used it before, because at first I had a hard time navigating it on my own when I first pulled it up. I think that's why I didn't use it, because I pulled it up after the school. The kids weren't there and I didn't really know what to click on or how it works. They're really good. They're like, 'Click here. Do this. Do that.' Now I know how it works. That was easier for me."* (Participant 15, School 6)

Before- and After-School Programs

Participants discussed how they create and sustain before- and after-school programs because the kids enjoy them so much. They want to offer different types of PA programs to ensure that all students have PA opportunities that interest them. Some schools have more

specific programs, such as dance club or the soccer team, whereas others have different activities each morning that vary on the age level and feedback from the students.

A classroom teacher discussed how students enjoy participating in the before- and after-school programs at her school because it's another way for the students to play with their friends. The students encourage one another to be more active. She said,

> *"I think that they see their friends. That sparks them to take interest in what their friends are doing. Then they want to play baseball. They want to play lacrosse. They want to go to Girls on the Run. They want to be a part of Cardio Club. Things like that. I think it's just sparked their intrigue. Different programs, not even really knowing like, 'Oh, I want to be more healthy.' Just like, 'I want to do this with my friends.' 'Yes, I would much rather go to Cardio Club and run around than go to the classroom and read.'"*
>
> (Participant 15, School 6)

The majority of participants discussed their students' enjoyment of PA and their personal desire to create more opportunities. Teachers explained how students frequently choose to participate in PA opportunities as a behavioral reward. For example, students will choose to play a basketball game with administrators or opt to have longer recess or additional brain breaks as a reward for good behavior. Therefore, teachers and administrators want to continue to find ways to incorporate PA throughout the school day – both as a behavioral reward and as a fundamental part of the school day. It was clear throughout the IDIs that students' enjoyment and interest in PA facilitated more PA opportunities at school.

Helpful Resources

Over half of the participants discussed how helpful resources facilitated PA opportunities at school. These resources vary from easy-to-use websites to a deck of cards with different activities on them, like jumping jacks or yoga poses. This facilitator applied to all components of PU30, including PE, recess, brain breaks, before- and after-school programs.

Go Noodle was a resource that came up in several IDIs. Classroom teachers use it for brain breaks and during indoor recess when there is inclement weather, while PE teachers use it as part of their curriculum. One teacher explained the resource:

> Interviewee: *This is the first year using Go Noodle. Usually, in the past, I've just pulled up a song or video online. The kids are really into it. It reminds them of Class Dojo, which is an online [program]—where they get points for behavior. They get points on Go Noodle, too. They think that's really awesome. They love it. It's one of our rewards now. If you do this, you might be able to choose our Go Noodle song today.*
>
> Interviewer: What do you think about Go Noodle is so effective?
>
> Interviewee: *I think it's the points. I think it's the variety in songs and music. I think that they like the structure of being told where to move and how to move. You can click on one, and it's people dancing. You click on another, and it's animals dancing. They all have different ones that they like. I also think it's the music. It's they like the ones that are more pop music, something that they know and recognize.* (Participant 15, School 6)

There is a lot of collaboration around the resources that teachers use to incorporate movement in the school day. As mentioned previously, PE teachers often take the time to create the equipment for fun, active games for each classroom. They also hear about new resources

through state or nationwide PA initiatives, from the district Health and PE Coordinators, or through wellness committees. The PE teachers share the new resources with the classroom teachers at their school. Teachers also share resources with each other when they find activities that is really effective or ones that the children enjoy. Sometimes this collaboration occurs at the district level. A principal explained how one teacher in her county makes videos and posts them on a blog for other teachers to access. When asked about what resources the teachers at her school use, she said,

> *"There's a lot of them that use different ones. There's a _____ County Teacher, who actually has their own [videos] that they've put out. A lot of the teachers in the county use his ideas. He posts them and they use some of his materials. It's like learning with rhythm and dancing, and then a song that's really catchy. Whether it be rhyming words or numbers or something like that. They use it a lot in the lower grades. I know that for a fact. I hear about [his videos] all of the time."* (Participant 19, School 7)

Teachers frequently discussed how the online resources make it easier for them to incorporate PA in the classroom. Teachers want resources that are easy to access and take limited time to get started. One principal discussed the advantages of using online resources. She said,

> *"Yeah. Teachers don't have to think about it. It's not something they have to plan. They know they can just go to these links, and click on them, and it just shows up on the whiteboard."* (Participant 14, School 6)

Since brain breaks are usually conducted during times of transition between lessons, the activity needs to be user friendly and easily accessible. The activities also need to be short and

engaging, so it does not require too much time, but still captures the students' attention. It is best if the students enjoy the resources because they will remain on task, cause fewer behavioral issues and return their focus to academics quickly and easily.

Teacher and Parent Volunteers

Seven participants discussed how teacher and parent volunteers allow for more PA opportunities at school. This facilitator mostly applied to before- and after-school programs.

Some school districts have student populations where it is more common for a parent to stay at home and have the extra time and flexibility in their schedules to volunteer at their children's school. Parent volunteers reduce some of the burden on teachers to run PA programs, making these events and programs more feasible and manageable. Participants explained how helpful it is to have an extra set of eyes when you are managing 20 to 30 elementary school students at once. Parents also provide drinks and snacks that the school might otherwise not be able to offer. Teachers discussed how it is ideal to have parents who are passionate about PA, to help reinforce the concept that PA and overall health is a lifelong pursuit for people of all ages. Participants also discussed parents helping with the school wellness committees. They work with the PE teacher, classroom teachers who are interested in health and wellness, and other staff members such as cafeteria workers, school nurses, school nutritionists and health champions. The success of school wellness committees is dependent on teacher and parent volunteers.

Participants discussed how before- or after-school programs are also dependent on volunteers. If the teacher or parent who leads the program leaves the school, the program usually ends unless another someone else volunteers to take over. One classroom teacher explained how this happened at her school,

Interviewee*: You know, last year we did—we did have a run club before-school. This year, they haven't started it.*

Interviewer*:* Okay. Do you know why that is, or—?

Interviewee*: You know, I don't—because the girl that was in charge, left.*

Interviewer*:* Okay. Can you think of anything that might be helpful to developing a before-school program?

Interviewee*: Yeah, that's probably the biggest thing. I mean, that's why it doesn't get done. Just because we have so much work in the classroom to do. That teachers don't have the time to volunteer.* (Participant 9, School 4)

Since it is evident that many teachers do not have the time to facilitate before- or after-school programs, it is especially appreciated when teachers make the extra effort or when parents volunteer their time. Parent and teacher volunteers create PA opportunities that would otherwise not exist in the school-setting.

Differences Between Schools and Positions

There were some barriers and facilitators that are more prevalent among trained schools and others that are more prevalent among untrained schools. Transportation was discussed as a barrier among five out of the six participants from untrained schools, yet only four out of the 13 participants from trained schools. Untrained schools were less likely to have a before- or after-school program because they were located in more rural settings with limited or no access to sidewalks, which made transportation to before- and after-school programs a major barrier.

Additionally, misbehavior and classroom management was discussed by all six of the participants from untrained schools, but was only discussed by five of the 13 participants from

trained schools. The school populations at the untrained schools were bigger and had higher proportions of disciplinary referrals compared to the trained schools. Therefore, misbehavior and classroom management seem to be a bigger barrier to PA opportunities at untrained schools than trained schools.

Additionally, PE teachers were perceived as facilitators much more frequently in trained schools than untrained schools. All 13 of the trained participants explained that their PE teacher was a facilitator to PA opportunities at school, but only two of the untrained participants perceived the PE teacher as a facilitator. This difference could be attributed to the techniques presented to PE teachers at the PU30 training.

The last major difference between the trained and untrained schools was the level of engagement and enthusiasm about the children's health. Trained schools talked a lot about holistic health; they discussed efforts outside of PA and PU30 that they were doing to make their school a healthier place for their students. Participants at trained schools discussed school gardens, wellness committees, family fitness nights and school-wide frameworks that they used to incorporate healthy habits into the children's daily lives. Meanwhile, there was less discussion of health efforts at untrained schools and overall less engagement, enthusiasm and staff buy-in related to the children's health. This was one of the most important differences identified between the trained and untrained schools.

Despite these differences, it is important to note that many of the barriers and facilitators to PA opportunities that were shared during the IDIs were very similar at the trained and untrained schools. Furthermore, administrators, classroom teachers and PE teachers discussed similar barriers and facilitators to PA opportunities at school. There were no barriers or facilitators that were discussed more often by one of the positions compared to the other

positions, which demonstrates how prevalent these factors were since they were consistently discussed across all three positions at the schools.

Chapter V: Discussion

Key Findings

This evaluation examined the barriers and facilitators to uptake and implementation of PU30 and general PA opportunities among seven elementary schools in metro-Atlanta. The most prevalent barriers to uptake and implementation of PU30 include: disconnect between different positions at trained schools, teacher and administrator turnover, limited time to attend PU30 training and space. The most commonly mentioned facilitator to uptake and implementation of PU30 was a school-wide effort to increase PA opportunities at the school. The most pervasive barriers to PA opportunities at school were misbehavior and classroom management, limited time and overburdened teachers, transportation and the disconnect between different school personnel, while the most commonly discussed facilitators were PE teachers, administrative support, students' enjoyment of PA, helpful resources and teacher and parent volunteers. Many of our findings support existing literature on the barriers and facilitators to uptake and implementation of a school-based health initiative. We also identified barriers and facilitators directly related to PU30, as well as more general barriers and facilitators to PA opportunities at school that varied from those identified in the literature.

Barriers and Facilitators to Uptake & Implementation of School-based Health Programs

Many of the barriers specific to PU30 consisted of problems at the school and teacher level. Complex and unforeseen changes at the school, such as teacher and administrative turnover, limited time and changing curriculum requirements, make it difficult to implement health-based programs in the school setting. These school and teacher level barriers to implementation were consistent with the findings of several other studies evaluating school-based health initiatives (van Nassau et al., 2016; Domitrovich et al., 2008; Durlak & DuPre, 2008). Studies found that schools are often not prepared to handle teacher and administrative

turnover, particularly if the staff members who leave the school led the health-based program at the school (van Nassau et al., 2016; Domitrovich et al., 2008). Similar to our findings, other studies found that a health-based program might terminate if the staff member who run the program leaves the school.

Limited time to incorporate a health program into the school day was a very common barrier in the literature (Powers, Bowen & Bowen, 2010; Skar et al., 2015). Participants in similar studies discussed having limited time to incorporate elements of the health program into the day while maintaining the curriculum requirements (Powers et al., 2010; Skar et al., 2015). Additionally, participants in similar studies discussed having little time to participate in trainings outside of school hours, such as on weekends and before- and after-school (Powers et al., 2010; Skar et al., 2015). Similar to our findings, several studies also found that limited time was associated with overburdened teachers and pressure from the academic requirements (Protheroe, Shellard, & Turner, 2003; Raines, 2008; Aarestrup, et al., 2014; Skar et al., 2015). Several studies, including our research, have found that creating time slots in the day to incorporate health-related activities is essential for the success of health programs at school (Skar et al., 2015).

In contrast with our findings, disconnect between different school personnel and limited space for PA were not identified as common barriers in other similar studies. In fact, some studies identified space as a facilitator to PA programs at school (Hastmann et al., 2013). Space for PA varies greatly between schools, so it could be a major barrier for some schools and a facilitator to PA for others. The disconnect between different school personnel may not have been identified as a barrier in other studies because the studies included one or two types of school personnel, not three different positions at the school as our study did. The communication

between different school personnel could also vary greatly at different schools, which was evident in our IDIs. Although the disconnect between school personnel was not frequently identified as a barrier in the literature, the importance of communication and clearly established responsibilities between different stakeholders, such as parents, teachers and administrators, was highlighted (Bergstrom et al., 2015; Skar et al., 2015; Pommier et al., 2010). Our findings substantiate the claim that support and communication between different school personnel and various stakeholders is essential for the implementation and success of a health program at school.

In contrast with other studies, high costs of program participation was not perceived as a major barrier to uptake and implementation of PU30 (Powers et al., 2010; Beets, Tilley, Turner-McGrievy, Weaver & Jones, 2014). Participating in PU30 is free of cost, so financial restraints of participating were not frequently discussed. However, teachers and principals discussed the cost of supplying the school with equipment for recess, PE and before- and after-school programs. Therefore, the cost of equipment was perceived as a barrier to PA opportunities at school, but was not identified as a barrier to uptake and implementation of PU30.

Other studies also identified lack of accessible information about the program as a major barrier to school-based programs, yet this was not the case in our research (Powers et al., 2010). Some participants at trained schools felt that they did not have adequate information about the initiative, but this problem was more attributable to the disconnect between different positions at the school than the accessibility of the information. The majority of our participants, particularly those who attended the PU30 training, felt like they had access to sufficient information about PU30. If the participants who attended the PU30 training held a school-wide presentation or meeting about the information from the training, then the other school members also felt

adequately informed about the initiative. Communication between different school personnel is essential for the proliferation of accessible information throughout the school.

Several studies discussed the importance of a school-wide effort to implementing and sustaining health programs (Young et al., 2008; Hall et al., 2014). We found that collaboration between teachers and different positions in the school lead to increased buy-in and support and greater interest and increased participation in different components of the program, which paralleled the findings of other studies evaluating a school-based health initiative. Since school-wide support was the most commonly discussed facilitator to uptake and implementation of PU30, we perceive it as an essential component to the successful implementation and sustainability of a health-based initiative.

General Barriers and Facilitators to Physical Activity Opportunities at Schools

Similar to Hall and colleagues (2014), we identified student behavior and classroom management as barriers to PA opportunities at school. This barrier is often associated with the number of children in the class, the students' age and their attitudes towards the activity. Misbehavior and classroom management was the most pervasive barrier to PA opportunities identified in our research. Although it was identified in other studies, it was not as prevalent in the literature as it was in our evaluation. Transportation was also identified as a barrier to PA in similar studies, particularly in regards to before- and after-school PA opportunities (Efrat, 2016; McDonald, 2007). The location of the school usually determines whether transportation is identified as a barrier to PA opportunities at school; rural schools typically identify transportation as a barrier more often than urban or suburban schools.

Many of the key facilitators in our findings were associated with individual people at the school level. Similar to our findings, several studies noted that having enough volunteers, or

human resources, facilitated PA opportunities at school (Acker et al., 2012; Doyle & Ristevski, 2010). Having more people to assist with PA opportunities, such as before- and after-school programs or PA-related events, like Field Day or Relay for Life, increases the frequency and ease of these events and the number of children who can participate. Similar to our findings, other studies also identified administrative support as an essential facilitator to PA opportunities at school (Langley, Nadeem, Kataoka, Stein, & Jaycox, 2010; Hall et al., 2014). Activities and programs at the elementary school level are unlikely to develop and thrive without the support of the administration. PE teachers have also been identified as a key facilitator to PA opportunities at elementary schools (McKenzie & Lounsbery, 2014). However, our findings identified PE teachers as the most significant facilitator to PA opportunities at school, which was not the case in other studies.

A few studies identified students' enjoyment of PA as a predictor to their participation in PA (Health Education Authority, 1997; Sallis, Prochaska, & Taylor, 2000; DiLorenzo, Stucky-Ropp, Vander Wal, & Gotham, 1998). However, our findings suggest that teachers and administrator's acknowledgement of their students' enjoyment of PA facilitated more activity at school, which was not commonly discussed in the literature. Classroom teachers in our evaluation discussed their desire to incorporate the PA opportunities that their students enjoy, such as using Go Noodle or including additional recess time, into the school day simply because their students enjoy it. Additionally, PE teachers discussed tailoring their curriculum around their students' favorite activities. This motivation from the PE and classroom teachers creates more PA opportunities at school.

Strengths

There were several strengths to this research. First, this qualitative evaluation is a portion of a larger, mixed methods evaluation of PU30; the qualitative and quantitative research will complement one another and lead to more meaningful findings than if either were conducted individually. Next, the IDIs involved different personnel at the school, which provided a variety of opinions and perspectives, and there was a relatively equal representation of PE teachers, classroom teachers and administrators in the data. IDIs were also conducted with participants from both trained and untrained schools, which addressed an important gap in the literature in regards to the decisional process of participating in a school-based volunteer initiatives.

Each interview was conducted by the master's candidate, which created consistency during data collection. It was also beneficial to have a coding team during the analysis process, to discuss discrepancies and reduce the chances of incorporating bias into the results. Lastly, the collaborative efforts between Emory University, HealthMPowers, DPH and DOE was a very significant strength to this evaluation since each organization and agency had different background knowledge and perspectives to add to the evaluation process.

Limitations

There were also several limitations to this research. Recruitment was more challenging than anticipated and resulted in a lower number of participants than our original goal. As discussed earlier, teachers and administrators are incredibly busy and this limited the number of our participants. With additional time, we could have spent more time recruiting, interviewing and analyzing the data. However, the coding team felt that saturation of the data had been reached, so conducting additional IDIs and further analysis would not have changed the final results.

Next, there were more participants from trained schools who participated in our research, so their perspectives and opinions are better represented than individuals from untrained schools. All of the untrained participants were from one district and the trained participants were from two districts. It would have been beneficial to have participants from different areas to increase the representativeness and implications of our findings. Furthermore, the demographics of the trained and untrained schools were very different. In the future, it would be advantageous to have trained and untrained schools with similar demographics to conduct a more accurate comparison of the barriers and facilitators at the two different types of schools.

Additionally, due to the scope of this project, we were only able to recruit schools from metro-Atlanta; it was not feasible to recruit elementary schools in all the counties in Georgia. However, it would be interesting to expand this research to other areas in Georgia since schools in more rural settings could have very different barriers and facilitators to PA opportunities and to the uptake and implementation of PU30, compared to schools in more urban settings.

Implications for the Public Health Field

Our findings contribute to the current body of literature by emphasizing the impact that different school personnel have on the opportunities and activities students have at school. Support and buy-in from administrators and teachers are essential for PA opportunities at school, as they are responsible for providing the students with such activities. Without school-wide support and effort, a school-based PA initiative is unlikely to sustain.

In order to have support and buy-in from the administrators and teachers, it is important for all school personnel to be informed about the initiative. Our findings identify the disconnect that can occur when some school personnel are informed about the initiative and others are not. Communication between different positions within the school is vital for the success of a school-

based health initiative. A school-wide training or PU30 booster sessions at the school could address this barrier and ensure that all of the teachers and administrators at the PU30-trained schools have received the training and are informed about the details of the initiative. If more teachers and administrators at each school are trained, this could generate greater buy-in and support throughout the school and create a larger impact by facilitating more PA opportunities. Increased buy-in could also decrease the burden placed on the PE teacher and other school personnel who are responsible for leading PA programs and events at school.

Our findings identified limited time as one of the biggest barriers to PA opportunities at school and to the uptake and implementation of PU30. To address this barrier, school-based health initiatives need to be simple to implement. Helpful, efficient and appropriate resources for teachers to use to incorporate PA into the day can ease the implementation and contribute to the sustainability of the initiative. Additional resources, such as volunteers, funding, transportation and equipment can also contribute to an easy implementation process.

Recommendations and Future Directions

Several recommendations for HealthMPowers and DPH were generated from the barriers and facilitators identified through this evaluation. Future directions for this research were also identified.

1. *HealthMPowers and DPH could continue to provide a variety of PA resources and create a mechanism for centralized access.* It would be helpful for teachers to have resources with more vigorous PA that can be incorporated as brain breaks in the classroom. If brain breaks consisted of higher intensity activities, the students would receive the benefits of moderate to vigorous PA, yet the brain breaks would be limited to 1-2 minutes. This could prevent the students from

becoming distracted and misbehaving and these brain breaks would require less time during the school day, which might increase the likelihood that overburdened teachers would incorporate the activities into their lesson plans. Providing classroom teachers with a variety of brain break resources also prevents the students from becoming uninterested with the activities. New, exciting resources may help capture their attention and keep them focused on the brain break. HealthMPowers and DPH could also continue to provide more resources to schools that incorporate academic lessons with PA, so classroom teachers can continue to cover curriculum requirements while the students are being active. This could address the barrier of limited time for PA. Additionally, HealthMPowers and DPH could create a centralized website where PU30-trained schools can access the resources. This would allow all individuals at trained schools to have equal access to the resources, even if they did not attend the training. To address the issue of space, HealthMPowers and DPH could provide resources or suggestions for brain breaks that do not require much room, such as activities that include standing yoga poses, jumping or running in place. They could also provide instructions at the training on how to optimize space in a small classroom to facilitate more brain breaks. HealthMPowers and DPH could also consider incorporating classroom management techniques, such as how to efficiently transition to and from PA opportunities, in the PU30 training to address the misbehavior and classroom management barrier.

2. *HealthMPowers and DPH could provide further support after the training by providing a liaison for each school.* Since we identified communication between different school-personnel and school-wide support as two essential components for the uptake and implementation of PU30, these are two opportune areas for HealthMPowers and DPH to address. One major barrier

among PU30-trained schools was the disconnect between the teachers and administrators who attended the PU30 training and those who did not. HealthMPowers supplies a slide deck to trainees to use as a resource to disseminate the training information to the rest of the school, yet our findings indicate that the slide deck usually does not get used and the school personnel who did not attend the training are not well informed about the initiative. To address this barrier, the HealthMPowers trainers could spend more time during the training creating a plan for dissemination. The trainers could work with representatives from each school to create a mechanism for dissemination and provide resources, a meeting or presentation agenda and follow up support to ensure the information is disseminated. Additionally, it may be helpful to assign each school with a HealthMPowers liaison who would follow up with the PU30 trainees. This continuous relationship between HealthMPowers and each trained school may increase the likelihood that the training information is disseminated throughout the school. The liaisons could also keep track of the types of resources that the school needs to help tailor the information and supplies that HealthMPowers and DPH provide each school. This would be a more personalized approach than the general newsletter that HealthMPowers and DPH sends to each PU30-trained school.

3. *HealthMPowers and DPH could provide school-wide PU30 trainings and booster sessions.* Both trained and untrained schools discussed the desire for school-wide trainings. Having the training at the school, as a professional development opportunity, would be helpful and convenient for the teachers and administrators. School-wide trainings would also address the lack of communication between different school personnel and help cultivate the school-wide effort that is necessary to sustain a PA initiative, by ensuring that all teachers and administrators

are trained and knowledgeable about the different components of PU30 and the available resources. Participants at trained schools discussed the desire for booster sessions. Since teacher and administrator turnover was a commonly discussed barrier, holding booster sessions would be an efficient way to train new school personnel. Ideally, booster sessions would be held at the beginning of each school year to ensure all school personnel were trained. This would also help keep the rest of the school updated on new resources and aware of any changes to the initiative. Similar to booster sessions, participants also suggested additional support after the training, which could be addressed by creating liaison relationships between HealthMPowers employees and trained schools, as discussed above.

Moving forward, it would be beneficial to continue to explore what else can be done to increase PA opportunities at school and other strategies to assist schools in their efforts to implement and sustain PA programs. Continuing to explore the barriers and facilitators to uptake and implementation of school-based health programs will provide a clearer understanding of individual school needs and identify ways to improve existing initiatives, like PU30, to better address these needs.

Further research on the comparing trained and untrained schools is needed. With the small number of trained schools that participated in this evaluation, we were not able to identify major differences between the barriers and facilitators at trained schools and untrained schools. Another study with greater focus on these differences would be beneficial. Additionally, expanding this study to more rural areas of Georgia would also be helpful since the majority of the schools that participated were classified as suburban schools. Expanding the exploration on specific factors that influence uptake and implementation of school-based health initiatives would also be advantageous. For example, this evaluation did not assess socioeconomic status.

Since socioeconomic status can be incredibly influential on school priorities, it would be helpful to explore how socioeconomic status influences barriers and facilitators to PA opportunities at school and uptake, implementation and sustainability of a health-based school initiative. Furthermore, since the disciplinary referrals and free and reduced meal rates were so different between the trained and untrained schools, these factors should also be further explored. Lastly, it would also be advantageous to look at the differences in budgets for PA opportunities between the trained and untrained schools to better understand how schools prioritize PA and ways to make PA more of a priority at school.

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Appendices

Appendix A: Interview Guide for Trained Schools

Broad PA questions

1. Can you tell me about the physical activity that your students get at school?
2. Can you tell me about any changes you've noticed in the physical activity among students at your school in the last year or so?
3. How much physical activity would you say the students get in a typical day?

Only ask these questions to explore the barriers/facilitators to PA & determine if the different components of PA in the school day have changed since the PU30 training.

Recess:

- Has there been any change in recess time or quality?
    - If Yes:
        - How so?
        - What do you think prompted that change?
    - Barriers to recess? (or things that hinder/prevent/get in the way of students participating in recess?)
    - Facilitators for recess? (or things that help or increase the likelihood that your students will participate in PE? Or support/resources at your school that make recess easier to participate in? Such as administrative support? Or a school policy?)
    - Can you explain what a typical recess period looks like?
- PE:
    - Have you noticed any changes to PE in the last couple of years?
    - Barriers to PE (or things that hinder/prevent/get in the way of students participating in PE?)
    - Facilitators for PE? (or things that help or increase the likelihood that your students will participate in PE? Or elements at your school that make PE easier to participate in?)
    - Is PE always structured or does it include unstructured time?
- Does your school have a before-school physical activity program?
    - **If Yes**: Can you describe your schools before-school physical activity programs?
    - How long has your school had these before-school programs?
    - Have you noticed any changes in the before-school programs in the last couple of years?
    - Barriers to before-school programs? (or things that hinder/prevent/get in the way of students participating in a before-school physical activity program?)
    - Facilitators to before-school programs? (or things that help or increase the likelihood that your students will participate in a before-school program? Or elements at your school that make it easier to have before-school physical activity programs?)
    - Are the before-school programs structured or unstructured physical activity?
    - **If No**: Why do you think that is?
        - What are the barriers to a before-school program? (or things that hinder/prevent/get in the way of students participating in a before-school physical activity program?)
- Does your school have an after-school physical activity program?
    - **If Yes**: Can you describe your schools after-school physical activity programs?

  - How long has your school had these after-school programs?
  - Have you noticed any changes to your after-school programs in the last couple of years?
  - Barriers to after-school programs? (or things that hinder/prevent/get in the way of students participating in an after-school physical activity program?)
  - Facilitators to after-school programs? (or things that help or increase the likelihood that your students will participate in an after-school program? Or elements/resources/support at your school that make it easier to have after-school physical activity programs?)
  - Are the after-school programs mostly structured or unstructured physical activity?
  - **If No**: Why do you think that is?
    - What are the barriers to an after-school program? (or things that hinder/prevent/get in the way of students participating in a before-school physical activity program?)

- Do the teachers at your school use physical activity breaks in the classroom?
  - **If Yes**: Can you describe the in-classroom PA breaks your students get?
  - Do all teachers conduct in-classroom PA breaks or only some of them?
    - If some: About how many?
    - Is there an emphasis or push from anyone (i.e. administration or the district Health & PE coordinators) to conduct classroom PA breaks?
  - Have you noticed any changes to the classroom breaks in the last couple of years?
  - **If No**: Why do you think that is?
    - What are the barriers to physical activity breaks in the classroom? (or things that hinder/prevent/get in the way of students or teachers participating in physical activity breaks in the classroom?)
  - Does your school start off the day with physical activity or health tips during morning announcements?
    - **If Yes**: Can you tell me more about that?
    - **If No**: Can you tell me about anything else your school does to increase physical activity a school?
  - Barriers to in-class physical activity breaks? (or things that hinder/prevent/get in the way of students or teachers participating in physical activity breaks in the classroom?)
  - Facilitators to in-class physical activity breaks? (or things that help or increase the likelihood that your students will participate in physical activity breaks in the classroom? Or elements/resources at your school that make it easier to have physical activity breaks in the classroom?)
- What are the barriers to having _____ (*insert whichever component the school does not have; i.e. before/after-school programs*)

Now lets talk more specifically about Power Up for 30.

PU30 – General

4. Can you tell me what you know about the Power Up for 30 initiative?
5. How did you find out about it?
- Is there a better way to relay this kind of information to you?
  Ex. Would a phone call be better than an email?
6. When did you find out about it?
7. What motivated your school to join the Power Up for 30 initiative?

- professional development?
- increasing PA?
- obesity rates?
- health of students?
- unknown?

PU30 -- Training

8. Did you attend the Power Up for 30 training?
9. Who else attended the training?
    - Did you have a team from your school at the training?
    - Did the team continue to work together after the training?
10. Do you know how it was decided who would attend the training?
11. When did the school become trained?

IF THEY ATTENDED THE TRAINING:

- What did you expect from the Power Up for 30 training prior to attending?
- Can you tell me your thoughts on the training?
- What was the best part of the training?
- What was the most effective part of the training?
- What, if anything, was not useful for you/your school? Why not?
    - What, if anything, did you learn that you were able to bring back to your school?
    - Did you share anything you learned from the training with other school staff after the training?
- If so, how?
- At a faculty meeting? Or by participating in a school PU30 kick off day?
    - What could have been done to make the training easier or more convenient for you?
    - Has physical activity levels changed since your school became Power Up for 30 trained?

- **If Yes:**
    - How so?
        - It sounds like the Power Up for 30 training encouraged physical activity in your _____ (*fill in appropriately* – i.e. classroom, gym, etc).
        - What would help increase physical activity after the Power Up for 30 training in the rest of the school?
- **If No:**
    - Why do you think that is?
    - Can you tell me more about that?
        - At the training, you created an action plan. Did you implement any of the plan?
    - Why? Or why not?
        - Has your school/team/leadership (*select whichever is most appropriate)* done anything else since attending the training outside of the action plan?
- **If Yes**:
    - How so?
    - Did you start a before/after-school program?
    - More classroom breaks?

- Longer recess/PE?

- **If No**:
  - Why do you think that is?
    - Any suggestions on ways to improve the training?

  IF THEY DID NOT ATTEND THE TRAINING:
    - Do you know who attended the training?
    - How did the individual(s) who attended the training share what they learned with other staff?
    - Can you tell me what you perceive as the barriers to physical activity at school?
  - Have these barriers changed in the last couple years? Or remained the same?
  - Can you tell me about competing priorities that might take focus away from PA?
    - Can you tell me what you perceive as the facilitators to physical activity at school?
  - Have these facilitators changed in the last couple years? Or stayed the same?
  - How so?

PU30 -- Kick off day (In case a school says they aren't trained, but participated in a "PU30 kick off day")

12. Can you tell me more about the kick off day?
    - When was the event?
    - Power Up for 30 Summer (May 2016)? Or PU30 Week in Sept 2015?
    - Who initiated it?
    - Who organized the day?
    - What did the students do?
    - How did it go?
    - Did physical activity increase after the kick off day?

PU30 -- Resources

13. Can you tell me about the Power Up for 30 resources that you use?
  - Go Noodle?
  - Mind in Motion DVDs?
  - Intelleboost?

  Show them resource guide to determine if they are familiar with other resources

14. Which resources are most effective?
15. What do you like about the resources you use?
16. How can the resources be improved to be more appropriate for your use?
17. Can you tell me how the Power Up for 30 resources matched the needs of your school and students?
18. What other resources or support could be provided to fit your school's needs?

Additional support

19. Would you like to see follow up support after the Power for 30 training?
    - If so, what would be helpful?
      - What would that look like?
        - Booster sessions?
        - Another training?
        - Working to get more of the school trained?
    - If not, why not?

20. If an online training was offered, would that be more convenient than an in-person training?
    - If Yes: What part of a face-to-face training is helpful?
    - If No: What part of a virtual training would be helpful?
21. Do you think a school wide training would be helpful?
    - If yes: What part of a school-wide training would be helpful?
        - Is a school wide training feasible/realistic?
    - If no: Why not?
22. What else could be done or provided to make increasing PA at your school easier?
23. Is there anything else you would like to tell me about your efforts to increase physical activity or your experience with Power Up for 30?

Appendix B: Interview Guide for Untrained Schools

Broad PA questions

1. Can you tell me about the physical activity that your students get at school?
2. Can you tell me about any changes you've noticed in the physical activity among students at your school in the last year or so?
3. How much physical activity would you say the students get in a typical day?

- Recess:
    - Has there been any change in recess time or quality?
        - If Yes:
        - How so?
        - What do you think prompted that change?
    - Barriers to recess? (or things that hinder/prevent/get in the way of students participating in recess?)
    - Facilitators for recess? (or things that help or increase the likelihood that your students will participate in recess? Or support/resources at your school that make recess easier to participate in? Such as administrative support? Or a school policy?)
        - Is recess structured or unstructured PA?
- PE:
    - Have you noticed any changes to PE in the last couple of years?
        - If Yes:
        - How so?
        - What do you think prompted that change?
    - Barriers to PE (or things that hinder/prevent/get in the way of students participating in PE?)
    - Facilitators for PE? (or things that help or increase the likelihood that your students will participate in PE? Or elements at your school that make PE easier to participate in?)
        - Is PE always structured or does it include unstructured time?
- Before-School program
    - Does your school have a before-school physical activity program?
        - **If Yes**: Can you describe your schools before-school physical activity programs?
            - How long has your school had these before-school programs?
            - Have you noticed any changes in the before-school programs in the last couple of years?
                - If Yes:
                - How so?
                - What do you think prompted that change?
        - Barriers to before-school programs? (or things that hinder/prevent/get in the way of students participating in a before-school physical activity program?)
        - Facilitators to before-school programs? (or things that help or increase the likelihood that your students will participate in a before-school program? Or elements at your school that make it easier to have before-school physical activity programs?)

        - Are the before-school programs structured or unstructured physical activity?
    - **If No**: Why do you think that is?
        - What are the barriers to a before-school program? (or things that hinder/prevent/get in the way of students participating in a before-school physical activity program?)

- After-School program
    - Does your school have an after-school physical activity program?
        - **If Yes**: Can you describe your schools after-school physical activity programs?
        - How long has your school had these after-school programs?
        - Have you noticed any changes to your after-school programs in the last couple of years?
        - Barriers to after-school programs? (or things that hinder/prevent/get in the way of students participating in an after-school physical activity program?)
        - Facilitators to after-school programs? (or things that help or increase the likelihood that your students will participate in an after-school program? Or elements/resources/support at your school that make it easier to have after-school physical activity programs?)
        - Are the after-school programs mostly structured or unstructured physical activity?
        - **If No**: Why do you think that is?
            - What are the barriers to an after-school program? (or things that hinder/prevent/get in the way of students participating in a before-school physical activity program?)
    - Do the teachers at your school use physical activity breaks in the classroom?
        - **If Yes**: Can you describe the in-classroom PA breaks your students get?
        - Do all teachers conduct in-classroom PA breaks or only some of them?
            - If some: About how many?
            - Is there an emphasis or push from anyone (i.e. administration or the district Health & PE coordinators) to conduct classroom PA breaks?
        - Have you noticed any changes to the classroom breaks in the last couple of years?
        - **If No**: Why do you think that is?
            - What are the barriers to physical activity breaks in the classroom? (or things that hinder/prevent/get in the way of students or teachers participating in physical activity breaks in the classroom?)
    - Does your school start off the day with physical activity or health tips during morning announcements?
        - **If Yes**: Can you tell me more about that?
        - **If No**: Can you tell me about anything else your school does to increase physical activity a school?
    - Barriers to in-class physical activity breaks? (or things that hinder/prevent/get in the way of students or teachers participating in physical activity breaks in the classroom?)

- Facilitators to in-class physical activity breaks? (or things that help or increase the likelihood that your students will participate in physical activity breaks in the classroom? Or elements/resources at your school that make it easier to have physical activity breaks in the classroom?)
- What are the barriers to having _____ (*insert whichever component the school does not have; i.e. before/after-school programs*)

PU30 – General

4. Have you heard of the Power Up for 30 initiative?
    - If familiar: How did you find out about it?
    - If familiar: Do you know why your school decided to not participate in the initiative?

5. Does your school participate in other physical activity initiatives?
    - If Yes: Can you tell me more about them?
    - If No: Why do you think that is?

General barriers & facilitators to PA at school

6. Can you tell me what you perceive as the barriers to physical activity at school? (or things that hinder/prevent/get in the way of students being physically active?)
    - Have these barriers remained the same over time or changed?
        - If they have changed: How have they changed?
        - If they have stayed the same: Why do you think that is?

7. Can you tell me what you perceive as the facilitators to physical activity at school? (or things that help or increase the likelihood that your students will participate in physical activity at school?)
    - Have these facilitators remained the same over time or changed?
        - If they changed: How have they changed?
            - How so?
        - If they've stayed the same: Why do you think that is?

Final questions

8. If your school were to take on a PA initiative, what would be the most useful/helpful components?
    - For example, bringing the training staff to the school for the training, providing an online training, training all of the staff members

9. Is there anything else you would like to tell me about the work your school does to increase PA among students?

Appendix C: Consent Form

Emory University
Consent to be a Research Subject

Title: Qualitative Evaluation of Power Up for 30 in the Georgia Public School System

Principal Investigator: Patricia Cheung, MPH; Rollins School of Public Health

Funding Source: NIH MSTP Program
T32 Training Grant
Achievement Rewards for College Scientists Foundation

Introduction
You are being asked to be in a research study. This form is designed to tell you everything you need to think about before you decide to consent (agree) to be in the study or not to be in the study. **It is entirely your choice. If you decide to take part, you can change your mind later on and withdraw from the research study. You can decline to answer any questions that you do not wish to answer.**

Before making your decision:

- Please carefully read this form or have it read to you
- Please ask questions about anything that is not clear

You can take a copy of this consent form, to keep. Feel free to take your time thinking about whether you would like to participate. By signing this form, you will not give up any legal rights.

Study Overview
Power Up for 30 (PU30) is a state-wide joint initiative through the Georgia Department of Public Health and Department of Education to encourage 30 minutes of physical activity each day among elementary school students. Some Georgia elementary schools have participated in PU30 and some have not. The purpose of this study is to identify and explore the barriers and facilitators to uptake and implementation of PU30 among Georgia elementary schools.

Procedures
Participation in this study includes a 30-45 minute in-person interview.

Risks and Discomforts
The risks of participation are minimal. You will not be asked to report any identifying information about yourself or your school in the interview. Further, no cross-school comparisons of individual schools will be made, so there is no risk of schools or individuals being singled out. The only record linking you to the research will be the consent form. Your signature will appear on the consent form, but the forms will be secured separately from the interview notes and will not be accessed by anyone other than the the three individuals working on the study.

Benefits

This study is designed to learn more about the uptake and implementation of PU30 among schools in various school districts in the Atlanta metropolitan area to inform improvements to the PU30 program. The study results may be used to help schools in Georgia and beyond in the future.

Compensation

You will receive a $50 Amazon gift card for your participation.

Confidentiality

Certain offices and people other than the researchers may look at study records. Government agencies and Emory employees overseeing proper study conduct may look at your study records. These offices include the Office for Human Research Protections, the funder(s), the Emory Institutional Review Board, the Emory Office of Research Compliance. Emory will keep any research records we create private to the extent we are required to do so by law. A study number rather than your name will be used on study records wherever possible. Your name and other facts that might point to you will not appear when we present this study or publish its results.

Study records can be opened by court order. They may also be produced in response to a subpoena or a request for production of documents.

Voluntary Participation and Withdrawal from the Study

You have the right to leave a study at any time without penalty. You can request that your research information not be used at any point. You may refuse to do any procedures you do not feel comfortable with, or answer any questions that you do not wish to answer.

Contact Information

Contact Patricia Cheung at 248-818-0426

- if you have any questions about this study or your part in it, or
- if you have questions, concerns or complaints about the research

Contact the Emory Institutional Review Board at 404-712-0720 or 877-503-9797 or irb@emory.edu:

- if you have questions about your rights as a research participant.
- if you have questions, concerns or complaints about the research.
- You may also let the IRB know about your experience as a research participant through our Research Participant Survey at http://www.surveymonkey.com/s/6ZDMW75.

Consent

Please, print your name and sign below if you agree to be in this study. By signing this consent form, you will not give up any of your legal rights. We will give you a copy of the signed consent, to keep.

_____

Name of Subject

Signature of Subject	Date	Time
Signature of Person Conducting Informed Consent Discussion	Date	Time

Appendix D: Codebook

Code	Definition
Non-PU30 codes	
Knowledge, Beliefs, Expectations of who provides PA & Health	The participants assumptions or expectations of who is responsible for students' health & providing physical activity to students (e.g. home versus school; teacher versus administrators; district versus school; PE teacher versus classroom teacher, etc). Includes expectations of the roles of different teachers, including themselves (PE versus classroom teachers), in students' health & providing physical activity opportunities. Includes lack of knowledge of what other staff are doing regarding PA among students
Barriers & Facilitators to PA	Barriers: Factors or people that prevent physical activity at school, including before, during or after-school (i.e., weather, class size, classroom size, gym size, equipment needs, money, space, classroom management, competing priorities, transportation) Facilitators: Factors or people that (1) increased PA immediately among students, (2) made PA easier/simpler for PE or classroom teachers to incorporate into the school day or before/after the school day, or (3) increased awareness of PA or benefits of PA among teachers and/or students. Includes discussion of school framework/culture, like 7 habits & OTTER matrix or improved philosophy about PA in PE or other areas of the school (see example) Includes people who facilitate PA, such as PE teachers sending PA resources to classroom teachers or another teacher/H&PE coordinator sending PA resources to all teachers in the district, or administrator that support extending recess when possible, kids could also be considered a facilitator (if they tell their teacher about a brain break that they do at home or in another classroom, or show a teacher how to use a brain break website, like GoNoodle) Includes technology or difficulty/ease of use with technology

	Includes special needs students (their inability to exercise could be a barrier to PA OR the assistants that come in to help them incorporate movement could be a facilitator) Do not use this code if the participant is simply discussing PA at school (they must discuss that something facilitated PA or increased awareness of PA at school)
Results of PA among students	Includes immediate or long term results of PA or lack of PA among students Includes the discussion of the ways that PA is advantageous for the students (e.g. health-related benefits -- including improved body image, management, maintenance or prevention of chronic diseases or conditions, obesity reduction or prevention, improved mental health/well-being-- academic performance, ability to focus, students enjoyment of PA, etc.) Includes student responses to PA at school, including lack of participation among students, excitement from students, etc. Includes discussion among participants' about students reaction to PA in different settings, such as recess, during PE or in the classroom
PA culture at school	Organizational or system level support (or lackthereof) including: (1) Communication (or lackthereof) between staff about PA conducted in different school settings (e.g. PA that occurs in PE versus PA that occurs in the classroom); between administrators and staff; between H&PE coordinators and school; between those who attended PU30 training and those who did not attend training; between HealthMPowers/GA Shape/other PU30 staff and the schools; methods and culture (e.g. one-way or two-way) of communication regarding PA; communication between teachers about PA resources that they use (including PE teachers sending emails about different types of brain break activities). Does not include communication between the teachers and student level, such as brain breaks in the classrooms, PE class, before/after-school programs (2)

	Acceptability/Buy-In/Support to increase PA among students from district level, teachers & administrators; (3) Action/Participation/Involvement in increasing PA from the state-level, the district level, administration & all levels of teachers (i.e. Actions of sending emails about ways to increase PA/setting up trainings & meetings focused on increasing PA). Does not include individual action between teachers and student level, such as brain breaks, PE class, before/after-school programs, but use this code when participants talk about not having one of these PA components at school. Use this code when participants talk about the support they receive/experience or if they discuss how this organizational or system level support is missing at their school. Includes discussion of school frameworks, such as the 7 Habits or OTTER matrix
Perceptions of PA/health status	Teachers' and administrators' thoughts on amount/types of PA the students at their school get & their perceptions of the overall health status of students in their class or in their school.
PU30-related codes	
Perceived purpose & impact of PU30 on PA	Teachers and administrators perceptions and knowledge (or lackthereof) on the purpose or role of PU30 in the school day (i.e. what teachers/administrators think PU30 is supposed to do with respect to the school day over all and different sections of the day, such as before/after school, PE, recess, in-classrooms) and teachers and administrators perceptions and knowledge (or lackthereof) on the impact that PU30 had on their school/PA levels of their students (i.e. whether or not teachers/administrators felt PU30 had an impact on PA levels at their school or among their students). This code can be used based on what the participant says or from the coder's interpretation of what the participant says.
Knowledge & Perceptions of PU30 & its Resources	Discussion of PU30 and their opinions, understanding or thoughts on the program in

	general & the use of PU30 resources or their opinions or perspectives on the suggested videos, websites and activities provided by HealthMPowers (for example, a jump rope activity or using a deck of cards to separate students into groups, etc.); discussion of the lack of knowledge or confusion of which resources are related to PU30 (e.g. when participants discuss using GoNoodle or Mind In Motion DVDs, but did not know they were associated with the PU30 initiative or promoted or developed by HealthMPowers)
Areas of improvement for PU30	Things about or areas of the PU30 initiative that are lacking or could improve based on what the participant says or from the coder's interpretation of what the participant says Examples: Not knowing exactly what PU30 is/confusing this with other PA initiatives such as Play 60 or Strong4Life
Important Misc. Segments	Use this to keep track of important quotes