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# Approaches to Overcoming Barriers to Physical Activity in Urban Areas

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Approaches to Overcoming Barriers to Physical Activity in Urban Areas

A Synthesis of the Research Literature

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A Synthesis Project

Presented to the

Department of Kinesiology, Sport Studies, and Physical Education

The College at Brockport

State University of New York

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In Partial Fulfillment

Of the Requirements for the Degree

Masters of Science in Education

(Adapted Physical Education)

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By

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## ABSTRACT

Students in urban areas face many unique challenges when it comes to achieving at least 60 minutes of moderate to vigorous-intensity physical activity daily. Students in urban areas face many unique obstacles that prevent them from meeting this guideline. In this literature review, the barriers to physical activity are identified and broken down into four sub-categories, which are safety concerns, personnel factors, environmental factors and programmatic concerns to help synthesis the approaches to overcome these barriers. Approaches to overcome these barriers include, providing education to professional staff, provide supervision in appropriate areas where physical activity is in session, and partner with local sports clubs so that students can get the adequate amount of physical activity required.

## Introduction

“Half of America’s youth do not meet the national guidelines of 60 minutes or more of moderate to vigorous-intensity physical activity (PA) each day” (Russ, Webster, Beets, Phillips, 2015, p. 1436). Physical activity is defined “as any bodily movement produced by skeletal muscles that requires energy expenditure,” while “physical inactivity has been identified as the fourth leading risk factor for global mortality causing an estimated 3.2 million deaths globally” (World Health Organization, 2016). Without meeting the 60 minutes of PA daily, one of the main concerning factors is the high rise of obesity and/or overweight status among children and adolescents. According to The World Health Organization, participation in physical activity is an essential aspect of children’s health and well-being and is linked to health benefits such as improved cardiovascular fitness and lower rates of obesity (Law, Petrenchik, King, & Hurley, 2007). The increase of obesity and lack of activity is very common in urban areas affecting especially African-American and Hispanic students (Maljak, Garn, McCaughtry, Kulik, Martin, Shen, & Fahlman, 2014).

Physical activity is important to everyone, regardless of geography. But, adolescents in urban settings face many obstacles when it comes to trying to get physical activity daily during school, and even before and after school (Maljak, et al., 2014). These barriers result in after-school physical activity clubs facing many challenges such as not having proper transportation and the lack of trained supervision. Environmental factors also play a role because there is a lack of green space in many urban areas and many of the areas are very unsafe for children to go. Lastly, these barriers exist for all students in urban settings, including students with disabilities. This problem is not only rapidly increasing in the United States but also in other countries in urban areas such as Spain, Belgium, Canada and England (Martinez-Gomez, Veiga, Zapatera,

Gomez-Martinez, Martínez, & Marcos, 2014; Van Hecke, Deforche, Van Dyck, De Bourdeaudhuij, Veitch, & Van Cauwenberg, 2016; Law, Petrenchik, King, & Hurley, 2007; Stathi & Sebire, 2011). Experts propose that schools play a considerable role in increasing physical activity for students not only during school but also before and after (Maljak, et al., 2014).

Existing research has touched upon how researchers conducted studies to try and help improve the inactivity in inner city areas. Authors have discussed specific interventions, ways to improve safety, after school programs, activity clubs, and finding ways to motivate students to participate in physical activity (Russ et al., 2015). However, there has been no previous attempt to synthesize this research. It was the purpose of this study to review and synthesize the literature on identifying the barriers of PA then to identify the approaches to overcoming these barriers among youth, including those with disabilities, in urban areas.

## **Definitions**

- 1.) Inner city (interchangeable with urban areas)- an older part of a city, densely populated and usually deteriorating, inhabited mainly by poor, often minority, groups (<http://www.dictionary.com/browse/inner-city>, 2016)
- 2.) Physical Education- is a course taught in school that focuses on developing physical fitness and the ability to perform and enjoy day-to-day physical activities with ease. Kids also develop skills necessary to participate in a wide range of activities, such as soccer, basketball, or swimming. Regular physical education classes prepare kids to be physically and mentally active, fit, and healthy into adulthood. An effective physical education program should include engaging lessons, trained P.E. teachers, adequate instructional periods, and student evaluation

(<http://study.com/academy/lesson/what-is-physical-education-definition-overview.html>, 2016).

3.) Recess- A short period of time during the school day when children can play

(<http://www.merriam-webster.com/dictionary/recess>, 2016).

4.) Moderate to Vigorous Physical Activity (MVPA)- Moderate-Requires a moderate amount of effort and noticeably accelerates the heart rate such as housework and brisk walking. Vigorous- Requires a large amount of effort and causes rapid breathing and a substantial increase in heart rate such as competitive sports and games, running, and fast cycling (World Health Organization, 2016).

## **Methods**

The purpose of this section is to explain the methods used to find the exact literature for this synthesis project. The articles selected for this synthesis include studies from peer-reviewed and academic journals from the years 2004 to 2016 from online databases. All publications reviewed were from Sport Discus, Academic Search Complete, Education Source or the Physical Education Index. All of the articles used were full text from peer-reviewed journals.

## **Keywords**

Keyword combinations used to search the databases for this review were:

- “city education and obesity”
- “inner city and physical activity”
- “city schools and activity levels”
- “city schools and physical education”
- “city schools and physical education and exercise”

- “inner city education and activity levels and obesity”
- “city education and physical education”
- “city education and recess”
- “disabl\* or disabilit\*”
- “inner city or urban” and “physical activity” and “youth or children”

Three database searches were made. The first focused on school-based PA, the second on community-based PA and the third on PA barriers for individuals with disabilities. For the first search, using SportDiscus, the key words used were, “city schools and activity levels,” “city schools and physical education,” “city schools and physical education and exercise,” “city education and recess” and “city education and physical education.” There were 311 potential articles identified. When the same searches were conducted on Academic Search, 7,382 potential articles were identified. Lastly, when using the Physical Education Index, there were 95 potential articles identified. For the second search there were 295 articles identified when using the keywords “city education and obesity,” “inner city and physical activity,” “inner city education and activity levels and obesity.” The third search came from SportsDiscus, Academic Search Complete and the Education Source. The keywords “disabl\* or disabilit\*” and “inner city or urban,” and “physical activity” and “youth or children” were searched, resulting in 51 articles.

### **Inclusion Criteria**

The following criteria were used to identify published studies for inclusion in this review.

Studies had to:

- Be published in English

- Be published between the years of 2004 and 2016
- Include clear measures of physical education and/or physical activity such as
  - Physical Education class
  - Recess
  - Classroom-based physical activity
  - After school clubs/programs
  - Extracurricular physical activities
- Be inner city based
- Focus on school aged children from Kindergarten to 12<sup>th</sup> grade

The articles included in this synthesis utilized a mix of qualitative and quantitative methods with one research review. The journal sources identified by the search and used by the researcher were Journal of Physical Activity & Health, Annals of Human Biology, American Journal of Health Education, Journal of Human Sport & Exercise, Plos ONE, Journal of Human Nutrition & Dietetics, American Journal of Health Studies, Physical Educator, American Journal of Public Health, Journal of Family Psychology and Physical Education, Sport Pedagogy, American Journal of Preventive Method, and Journal of Arch Phys Med Rehabilitation.

### **Coding**

The coding process involved abstracting the most significant information from the articles and entering it into a coding sheet table (see appendix). For each article reviewed, the following information was collected: Title, References, Purpose of Study, Subjects, Setting, Barriers/Overcoming Barriers, Results and Comments/Recommendations.

## **Plan for Analysis**

When analyzing the articles, there were many trends concerning the barriers and approaches to overcoming barriers to PA in urban settings. There were three approaches taken to analyze the literature. The first approach noted the barriers to PA; all barriers found in the literature were compiled regardless of their prevalence in the articles reviewed. The second approach was to categorize the identified barriers on their common elements so as to reduce the number of barriers into more manageable sets. The third approach was to summarize the strategies to overcoming barriers to PA recommended in the literature and to present, when available, the efficacy of the recommended interventions.

## **Results**

The purpose of this synthesis was to review and synthesize the literature on the barriers of PA and also to identify the approaches to overcoming barriers to physical activity among youth, including those with disabilities, in urban areas. The database searches provided thousands of potential articles but only 12 articles were selected because they specifically met the inclusion criteria for this synthesis project. For this purpose, 12 articles on this topic were read and coded for this synthesis. The articles addressed either barriers, approaches to overcome the barriers or both. The results section is organized into three sub-sections: 1) identification of the barriers, 2) approaches to overcoming the barriers and 3) integration of individual studies.

### **Identifying the Barriers**

Table 1 summarizes the barriers discussed in the articles. Many of these barriers are described in more detail later in this section.

Table 1.

All Barriers to Physical Activity Stated in the Articles

<b>Barriers</b>	<b>References</b>
Lack of trained professionals during or after school clubs	(Holt, 2012) (Rimmer, 2004) (Russ, 2015) (Stathi, 2011) (Law, 2007)
Teachers weren't prepared for class or after school programs	(Russ, 2015) (Rimmer, 2004) (Holt, 2012)
PE was delivered by more than one teacher	(Russ, 2015) (Holt, 2012) (Stathi, 2011)
Curriculum problems	(Kahan, 2013) (Russ, 2015) (Holt, 2012)
Scared to take the bus	(Maljak, 2014) (Crouter, 2015)
No sense of safety in neighborhoods	(Farley, 2007) (Maljak, 2014)
No outdoor safety	(Farley, 2007)
Not allowed to walk outdoors because violence	(Crouter, 2015) (Fang, 2011) (Maljak, 2014)
No facility space	(Crouter, 2015) (Fang, 2011) (Maljak, 2014) (Rimmer, 2004) (Van Hecke, 2016)
Lack of or no supervision	(Jun-hyun, 2014) (Russ, 2015) (Van Hecke, 2016)
No green space	(Maljak, 2014)
Not accessible for individuals with disabilities	(Rimmer, 2004) (Law, 2007)
Lack of transportation	(Rimmer, 2004) (Maljak, 2014)
Large class sizes with no space	(Rimmer, 2004) (Maljak, 2014)
No recess provided in school	(Maljak, 2014)
Lack of knowledge for students	(Crouter, 2015)
Don't have proper equipment	(Rimmer, 2004) (Maljak, 2014)
Not enough PA during school	(Crouter, 2015) (Law, 2007) (Russ, 2015) (Maljak, 2014)

Note: Only first authors appear in the table.

Table 1 lists all the barriers to physical activity noted in the articles. A total of 18 barriers were identified. Among the most frequently cited barriers were lack of trained professionals during or after school clubs, no facility space, and not enough PA during school.

The barriers were further broken down into four categories to make the information more organized and manageable. The categories were based on common themes in the articles: 1) personnel factors, 2) environmental factors, 3) safety concerns and 4) programmatic concerns. The categorization of barriers is presented below.

### **Personnel Factors**

1. Lack of trained professionals during or after school clubs
2. PE was delivered by more than one teacher
3. Teachers were not prepared for class or after school programs
4. Curriculum problems

### **Environmental Factors**

1. Lack of or no supervision
2. No green space
3. Not accessible for individuals with disabilities
4. Lack of transportation

### **Safety Concerns**

1. Scared to take the bus

2. No sense of safety in neighborhoods
3. No outdoor safety
4. Not allowed to walk outdoors because violence

### **Programmatic Concerns**

1. Large class sizes with no space
2. No recess provided in school
3. Do not have proper equipment
4. Not enough PA during school
5. No facility space
6. Lack of knowledge for students

The narrative below summarizes the literature on the barriers under each of the four categories: personnel factors, safety concerns, environmental factors and programmatic concerns.

**Personnel factors.** In many of the articles reviewed, it became very clear how there was no trained staff in the schools for PE and also a lack of trained staff in the after-school clubs as well. This directly led to a decrease in physical activity for the children. One main reason for this is because there was no consistency with the curriculum because there was always someone new teaching the classes. And even if there were after school clubs offered for the students, they were inadequate because the administration running the programs were not trained in a field related to PE which led to a decrease of physical activity for the children. It was stated by the children in the Holt and colleagues (2012) article that they could tell that the teachers were not prepared for class. PE and intramural sports were administered by staff members who were not formally trained in this area, which is why teachers were not prepared for class. Russ et al.,

(2015) and Stathi & Sebire (2011) both stated how in their findings PE was delivered by a variety of people and that their after-school clubs staff were non-experts in the physical education domain. This also included not having proper trained staff when it came to helping a person with a disability. Rimmer, Riley, Wang, Rauworth, & Jurkowski (2004) stated in their article that the professional staff were not knowledgeable in terms of how to adapt programs and equipment to help or make it more accessible to people with disabilities. Not only that, this article also stated that the staff was not educated on physical activity for individuals with disabilities and they would not know how to modify activities for individuals with disabilities even if they had programs or facilities provided.

**Environmental factors.** Even when there are opportunities for children to get extra physical activity daily, there is little success in many of the after school clubs due to environmental factors (Maljak, et al., 2014). The challenges they face are lack of green space, sidewalks and providing transportation to and from the clubs. Transportation was also an issue because some students would have to take multiple buses just to get home. Students with disabilities also have a unique issue when it comes to environmental factors and getting around a busy city or getting around facilities. For example, reports have shown how wheelchair users have issues with getting from one place to another because of bad weather, no curb cuts, blocked curb cuts, inaccessible doors and bathrooms, no parking, poor travel surfaces or no ramps (Rimmer et al., 2004).

Individuals with disabilities from the inner city have the same environmental issues as those without disabilities (Law, Pettrenchik, King, Hurley, 2007). For this study, Law and colleagues used 229 boys and 198 girls with physical disabilities ranging from 6 to 14-years old and their parents. The data collected from the participants were based on activity preferences,

his or her recreational and leisure activity participation, social supports, demographic information, the child's behavioral status, and environmental barriers to their child's participation. The results showed the design and layout of natural environments make it extremely difficult for these individuals to get around. For example, the curbs on the city streets make it extremely difficult for wheelchair users. These individuals also have many issues in the community finding available programs and services. In schools, these students have to deal with not having a buddy system or peer model during class and, if they do, they face higher rates of bullying that decrease their opportunities to participate in physical activity (Law, Pettrenchik, King, & Hurley, 2007).

“People with disabilities are far less likely to engage in physically active lifestyles than people without disabilities. According to *Healthy People 2010*, 56% of adults with disabilities do not engage in any leisure-time physical activity compared to 36% among adults without disabilities” (Rimmer et al., 2004 p. 419). In this study, Rimmer and colleagues (2004) conducted focus groups that were instructed to assess issues related to four types of fitness venues: fitness centers, swimming pools, parks, and trails. Results showed that there were a number of personal and environmental barriers and facilitators related to access and participation. The major barriers that were constant between all participants were:

- Built and natural environment- “Relating directly to aspects of the built of natural environment.”
- Cost/economic- “Relating to the cost of participation in recreation/fitness activities or cost associated with making facilities accessible.”
- Equipment- “Accessibility of exercise and recreation equipment.”

- Guidelines, codes, regulations and laws- “Issues related to the use and interpretation of laws and regulations concerning accessibility of information, particular building codes and the ADA.”
- Information- “Access of information both within the facility and in facility brochures and advertisements.”
- Emotional/psychological- “Barriers to participation in fitness and recreation activities among person with disabilities.”
- Knowledge, education and training- “Regarding the education and training of professionals in the area of accessibility and appropriate interactions involving people with disabilities.”
- Perceptions and attitudes-“Attitudes of both professional and non-disabled individuals toward accessibility and person with disabilities.”
- Policies and procedures- “Barriers imposed by the implementation of facility or community-level rules or regulations.”
- Resource availability-“ Needed resources that would allow persons with disabilities to participate in fitness and recreation activities, including transportation and adaptive equipment” (Rimmer et al., 2004).

Rimmer and colleagues (2004) stated that in previous studies the common environmental barriers cited for wheelchair users attempting to access facilities included blocked curb cuts, inaccessible doors and bathrooms, no parking, poor travel surfaces and no ramps. Previous research “also reported that a large number of barriers to physical activity among African-American women with physical disabilities included lack of transportation, lack of knowledge on

where and how to exercise, and lack of understanding the importance of exercise in improving their condition or health” (Rimmer et al., 2004 p. 419-420).

**Safety concerns.** Parents, who believe their neighborhood to be unsafe, are more likely to be physically inactive compared to parents who believe their neighborhood is safe (Farley, Meriwether, Baker, Watkins, Johnson & Webber, 2007). Parents are not going to want their child playing at a local playground or walk the streets outside their home knowing how unsafe their city is. The local parks and playgrounds do not get put to good use because children are not allowed to go. There is nobody there after school to look after these children because their parents are still working. The lack of safety is a very important challenging factor of physical activity for children in low-income urban areas. Another challenge is transportation because of the safety concerns children have while trying to take a public bus, which is sometimes the only transportation option for the students. In addition, the bus schedule does not always coordinate with the time the students get out of an after school club, which makes students wait with many people at the bus stop at dark. Students reported fear and violence while waiting at bus stops or even on the bus back home. Many students reported that they got anxiety riding the public bus home after the club (because it was dark and unsafe for them to do so) so they just will not go to after school activities. And walking home after dark was unsafe for the students, or they just were not allowed by parents (Farley et al., 2007; Maljak et al., 2014). Schools often are closed around 6:00 PM and students have to stand outside and wait in front of the buildings for a ride, which potentially is unsafe for students. Many of the parents reported that they do not have cars or they get out of work really late so they cannot be there to get their child.

**Programmatic concerns.** When club leaders cannot provide a facility for the students, this creates a ripple effect causing students to get frustrated and then showing a significant

decrease in attendance. Even when the space was provided, unscheduled athletic teams would take over the place or the facility used was just so small for the amount of students. When the staff leaders would try and get a facility, they did not receive support from administration because it was not considered a competitive sport so they do not get priority scheduling time. There are even these issues in schools; there is no space for the physical education class, forcing the class to participate in hallways (Maljak et al., 2014). Because facility space was such an issue, the emotions of leaders and students were challenged. Many grew frustrated and alienated from school activities. A quote from an interview reported by Maljak and colleagues by one of the teachers is instructive: “I think the biggest issue with space is that some days I hold sessions between hallways, other days I hold session in one classroom and the following time I’m moved to another classroom. Every time we move I lose somebody. Actually, I don’t just lose somebody, I lose a few and that has been frustrating” (Maljak et al., 2014 p. 302-303). Crouter and colleagues noted that in their study the students who had education on PA participated in PA more often in a day compared to students who did not receive that education. Students who are not educated in the topic are not getting the amount of PA needed daily (Crouter et al., 2015). Lastly, Russ and colleagues (2015) stated that during school not enough PA is given to the students during the school day. This was because of the lack of facility space and lack of time in the school day.

### **Overcoming the Barriers**

While many barriers to PA exist for urban children, a number of academic papers described interventions for overcoming those barriers. These interventions are summarized below.

Russ, Webster, Beets, and Phillips (2015) documented that America’s youth in inner cities are not meeting the national guidelines of 60 minutes or more of MVPA daily. They tried to

address this problem in a school in the United States for children 5-18-years old using the approach CSPAP, which stands for Comprehensive School Physical Activity Programs. The purpose of a CSPAP is to increase the quantity and quality of physical activity opportunities through schools to maximize participation in physical activity using five distinct components which include: 1) physical education, 2) physical activity during school, 3) physical activity before or after school, 4) staff wellness, and 5) family and community engagement. (Russ, et al., 2015). The authors justify the importance of this particular study because they found that the effects of school-based PA interventions for youth have been inadequate. The most common approach they used was to try and increase PA by increasing enjoyment, self-efficacy and developing movement skills during physical education classes (Russ et al., 2015). In addition, equipment was provided for the students to use in a variety of settings during the school day where the classroom teacher was the main help. The final part of the study was designed to engage families and/or communities to promote physical activity. The authors tried this by increasing communication with the families in an effort to increase PA outside of school (Russ et al., 2015). The results of the study showed that this intervention had little impact on the total daily PA. Overall the results of this study showed that using a CSPAP is an appropriate path, but strategies within and across components may need to be reconsidered for maximal impact.

A study by Stathi & Sebire (2011), which took place in London, United Kingdom (UK), stated that inner city schools are experiencing difficulties providing sufficient PA for their students because of the lack of opportunity such as limited green space and accommodating students from diverse ethnic backgrounds. The authors expressed that common barriers in inner city schools in the UK also include limited curriculum time, non-expert staff and financial constraints. The authors of this study evaluated an intervention between the inner city primary

schools and a voluntary service provider which, in this case, was the Y-Active Program. The Y-Active Program is the umbrella term for the multicomponent children's program delivered by the Central YMCA in London, UK (Stathi & Sebire, 2011). This program consists of a breakfast club, physical education, Fit Kids lunchtime fitness classes, after-school play club, and after-school sports. During this study, there were focus groups and interviews conducted with participants that focused on involvement with the Y, perceived impact of the Y activities, the participant's opinion on how the Y's work, and their suggested improvements. For the school staff, interviews focused on the impact they perceived the Y employees had on their students, their role as a teacher, and elements of success and challenges for the Y. The results concluded that Y-Active leaders had created a positive learning environment supporting autonomy, balancing discipline, and structure, providing feedback with a strong focus on fun and praise. From the feedback provided, results showed a positive impact on the students in physically, psychologically and socially well-being ways (Stathi & Sebire, 2011). For example, from one of the interviews about physical activity, a child stated at school, "In play time you can't really run around in the playground. You're not allowed to because it's too small. And so with the YMCA and the other programs included in with the YMCA, you can run around a bit more because there's less people. So it's really good because you can stay fit and healthy" (Stathi & Sebire, 2011 p. 242). The authors concluded that the Y- program provided ample opportunity for students to receive sufficient amount of physical activity before, during, and after school (Stathi & Sebire, 2011).

According to Maljak et al., (2014), little is known about why some after school clubs in inner cities are not successful when the purpose is to provide physical activity for youth. This article's purpose was to show the challenges that are faced from the students' and after school

leaders' perspectives. In this study, there were 278 students and 20 PAC leaders who were interviewed in 14 different high schools in inner city areas. PAC is a Physical Activity Club, which is offered for underserved students to participate in physical activity before or after school in a safe, supportive environment (Maljak, et al., 2014). The questions asked during the study to the students regarded challenges they faced in participating in PA in inner city high schools concerning transportation, food, and balancing other clubs. Results identified four themes that became consistent from the students and the PAC leaders: finding consistently available facility space, providing snacks for adolescents, securing reliable transportation, and balancing clubs with other after school obligations (Maljak, et al., 2014). When club leaders could not reserve a facility, it became an unfortunate ripple effect. It first led to cancellations, which created frustration to both the students and the leaders, which then eventually led to a large decrease in club attendance for students. The clubs generally lacked support from administration and coaches because they were not considered a competitive sport. Clubs often became an oversight in scheduling and, because of that, they ended up getting moved to classrooms because higher priority events got scheduled over their club time. The leaders had a difficult time getting students to stay after school because they were always so hungry and had no energy to exercise on an empty stomach. Students would much rather go out to eat after school than participate in high intensity activities, especially if many of students ate lunch as early as 10:30 AM. Once snacks were offered or mentioned for the after school clubs, the attendance increased tremendously. But, the lack of resources to consistently provide snacks decreased participation. Many club leaders had to find their own funding to provide healthy snacks for the students just so the participation would stay constant.

Transportation also was a major factor in having students go to after school clubs. Walking home after dark was either unsafe in the city or the students' parents would not allow them to walk in the dark back home. Coordinating carpools, conflicting bus scheduling, and parent/guardian work schedules were also other factors that the students had to consider. Some students reported that they would have to take up to three buses just to get home after the club, and others had anxiety about taking a public bus. Students also reported fear and violence while waiting at bus stops or even on the bus back home. Lastly, students had other commitments such as tutoring programs and family obligations or they had to work to help support themselves. Students reported that they had to work just to have money for lunch every day, or they had to immediately go home to babysit either their younger siblings or elderly family members. Having other obligations made it extremely difficult to even consider going to an after school program (Maljak, et al., 2014).

As stated previously, one approach to help increase physical activity is providing after-school programs for children. The study conducted by Crouter et al., (2015) investigated the impact on activity levels when students are provided an after school physical activity and nutrition education program. There were 42, 3<sup>rd</sup> through 5<sup>th</sup> graders from an inner city school in Boston, Massachusetts, randomly assigned to a 10-week after school program. The program was either education based on nutrition on a weekly basis for 30 minutes or supervised PA three days a week at a community based center plus the 30-minute weekly nutrition education. PA was measured using an accelerometer. The sessions were taught by Boston Children's Hospital nutrition staff who were trained to deliver healthy diet messages. The authors concluded that, in combination with the results of previous research, children obtained increased amounts of activity in after-school programs (Crouter, et al, 2015). The study showed that 20 minutes of

after school physical activity, in combination with regular PE classes at school resulted in participants reaching the PA guidelines of 60 minutes or more of MVPA, regardless of environmental challenges or barriers. In addition, the participants who received the nutrition education element had additional incentive to exercise on their own.

Many youth, especially during the high school years, are not engaging in physical activity and the consequences of inactivity include a higher chance of obesity (Fang et al, 2011). In urban areas especially, out of school opportunities for physical activity is a challenge. What Fang and colleagues (2012) intended was to examine the neighborhood environmental factors that influence PA behaviors outside of school. The 350 participants selected were from the Baltimore Living Teens Study (BALTS). Students' physical activity was measured by Actigraph accelerometers. A monitor was worn on participants' hips and it monitored their physical activity throughout the day. Results from this research study showed that physical activity is affected by both individual and neighborhood characteristics. Specifically, it showed that African Americans and females were at a higher risk of inactivity compared to their fellow classmates. Specifically, low-income African-American girls faced a higher risk for inactivity solely because they have limited or no access to physical education opportunities (Fang , Voorhees, Guangyu, Beck, Shuo & Hua, 2011). Lastly, a major consideration was that individuals in the study who had a commute of 30-minutes or more lead to a significant decrease in time they could have spent on PA.

As described earlier, parents who believe their neighborhood to be unsafe, are more likely to be physically inactive compared to parents who believe their neighborhood is safe (Farley et al., 2007). Farley and colleagues stated that finding a safe place for children to play

and get more PA is a substantial concern for parents. Which is why this particular study sought to evaluate the effect of providing a safe place for inner city children. The authors wanted to see if the children would be more active if they had somewhere safe to play, so they opened a schoolyard and provided supervision to make sure that the students were safe at all times. Over two years they observed the number of children and their physical activity in the schoolyard they provided. As a result, the schoolyard became very popular once opened. During the first year, 710 children attended the schoolyard at least once, and of the children observed, 66 percent were physically active, 33 percent were recorded as very active and the last 33 percent were recorded as walking (Farley et al., 2007). Overall, when the children were provided with a safe play space, there was an increase in PA. Additional evidence did prove that the lack of safety is a very important challenging factor of physical activity in children of low-income urban areas.

Van Hecke and colleagues (2016) first examined physical activity in Public Open Spaces (POS) to determine which social and physical environmental factors affect children's reasons for visiting these POS in low-income neighborhoods. There were 30 participants from eight different neighborhoods who were 12 to 16-years old living in an inner city neighborhood in Belgium. They were all interviewed about frequency of visiting POS, duration of visit, the activities during POS, transportation to and from POS, whether or not they have sport club memberships, and their parents' occupations. Almost all participants stated that it is extremely important to be able to get to the POS by foot, bike and public transportation. Some participants mentioned that natural origins, such as ponds, water features, trees to climb, green spaces and paths are very important to have in the POS. Participants mentioned how nature and the green space motivated them to be active because they have that space at the park to jog. Playgrounds and sports fields were considered attractive features to visit and be actively engaged in physical

activity. Participants mentioned that some sports facilities such as badminton and table tennis were rarely ever used because the participants do not have the equipment to use those facilities. Participants also mentioned that if the POS is located close to other destinations such as shops, the schools, the center of the city or friends' houses, they will most likely visit more often because they can combine activities (Van Hecke et al., 2016).

Kahan (2013) recognized that his students were not motivated to participate in physical education, so he took the approach that maybe the school curriculum should be modified to suit the students' interests. Kahan used 700 participants from an urban middle school physical education class (6th and 7th graders) who took part in an anonymous survey based on interests in participating in 24 physical education activities. "Basketball was preferred most overall, which reinforces the culture of basketball that urban physical educators encounter" (Kahan, 2013, p. 253). Students preferred a variety of activities to be team sports, the most popular being basketball, soccer, volleyball and football. The three most popular individual sports named were playground games, target games, and racquet games. Two conditioning activities noted were weight training and tag games. Lastly, one combative activity listed that students also enjoyed was martial arts. Only the four team sports were regularly offered as part of the current curriculum (Kahan, 2013).

Holt and colleagues (2012) collected the children's and school staff members' perceptions of physical education, intramural sports, and sport teams to see if the program, Positive Youth Development (PYD) could influence PA. Data were collected from the individual interviews of eight teachers and 59 children. The interviews included questions about participants' perceptions of opportunities for play and PA in their neighborhood, and also about their involvement in PE classes, intramural sports and school sports teams. Results showed that

in physical education, the importance of a specialist PE teacher and establishing clear boundaries during lessons while providing children with the ability to be able to choose what they wanted to do was important. PE on occasion was administered by someone who was not formally trained in PE, which resulted in teachers sitting on the side of the gym and not paying attention to the students. When PE was observed, it was shown that PE was not delivered consistently with the curriculum because of the inconsistency with the teachers and the non-trained staff teaching the classes. The results of the interviews also showed that children enjoyed intramural sports, the students did not cope well with losing, they damaged the equipment, they did not listen to the referee, they would swear at the referee, and they would have occasional aggressive behavior toward one another (Holt et al., 2012). There were few attempts to create an appropriate developmental atmosphere during these classes to help fix these problems. Overall, there was no significance in the integrated school-wide approach to promote PYD, PE and sports programs to help promote physical activity.

Recess during school is an opportunity to get PA but little is known about the contribution of recess regarding the guidelines of getting 60 minutes of MVPA daily (Martinez-Gomez et al., 2014). The purpose of this study was to see if recess actually does give enough opportunity for PA. This study included students from a Spanish high school who were 13 to 16-years old who self-reported, using the Recess PA Recall (RPAR) questionnaire, to find out their levels of MVPA. The results of this study showed that recess contributes to 13 percent of daily guidelines for boys and 11 percent for girls (Martinez-Gomez et al., 2014). Overall, even though the percentage is not high, recess is a contributing factor to meeting the daily guidelines. Decreases in PA for adolescents have been shown in many studies, but having recess in high school can partially counteract this issue. Although girls in this study are getting less physical

activity during recess, it is an important factor to consider because they are still receiving 11% more activity than they would get without recess being available for them.

### **Integration of Literature**

Summaries of barriers to PA in urban settings and approaches to overcoming those barriers found in the literature have been provided in previous sections of this paper. Here an attempt is made to match a specific approach or intervention to one or more relevant categories of barriers. This integration of the literature is presented in Table 2. Eight interventions found in the literature are matched to one or more of the four categories of barriers discussed earlier in the paper. In cases where the efficacy of the intervention was tested, the results are provided.

Table 2.

Results of the Interventions Provided to Overcome Barriers of PA

<b>Categories of Barrier</b>	<b>Intervention</b>	<b>Result</b>
Environmental factors	Implemented a CSPAP program	No increase in PA
Environmental factors and Personnel factors	Partnered with local sports club and delivered PE at club	Increase in PA
Environmental factors and Personnel factors	Implemented a PAC (physical activity club)	Not tested
Personnel factors	Interviewed students to see what sports/activities they enjoyed	Not tested
Programmatic concerns	Provided professional education from staff for students to learn about healthy lifestyles	Increase in PA
Safety concerns	Provided playground supervision	Increase in PA

Safety concerns, Environmental factors, and Personnel factors	Interviewed staff and children about perception of appropriate play and PA in neighborhoods	Not tested
Environmental factors	Providing HS students recess	Increase in PA
Personnel factors	Implemented PYD program	No increase in PA

The information provided in Table 2 suggests that while a number of categories of barriers to PA exist, potential interventions for addressing those barriers also exist. Although the effectiveness of the recommended interventions found in the literature was not tested in all cases, a corresponding increase in PA was found in a majority of the cases.

**Discussion**

As stated, the purpose of this study was to synthesize the barriers to physical activity along with synthesizing the approaches to overcome these barriers among youth, including those with disabilities, in urban areas. The narrative below will expand on suggestions for overcoming the barriers that were discussed earlier and is organized by the four categories of barriers.

**Personnel Factors**

Theoretically, the solution for not having an educated staff is simple, education! Facility/staff management and administration in the schools and after school clubs need to support continued education and training of their professional staff. They need to provide times for seminars and workshops for their employees. For example, in the Rimmer and colleagues article (2004) the employees stated that they would not know how to modify for individuals with disabilities. Trainings and workshops need to be implemented so that the staff is well educated on how to provide services for individuals with disabilities. This also should be included in schools during

professional development for teachers. In the Russ et al., (2015), Holt et al., (2012), and Stathi & Sebire (2011) articles, physical education was delivered by more than one teacher who does not have the training in PE. If these teachers during professional development were provided workshops on how to appropriately deliver a physical education class, the students would have a class where they would actually be getting the appropriate physical activity needed. Further research by Belansky and colleagues (2016) tested if workshops would help improve physical activity in physical education classes. The teachers were given workshops and were provided a new curriculum and within the two-year intervention, MVPA was increased from 51.1% to 67.3% resulting in approximately 14.6 additional hours of physical activity over a school year (Belansky, Cutforth, Kern, & Scarbro, 2016).

Another recommendation for schools or programs is to use volunteers, particularly college students with training in adapted physical education, physical education or therapeutic recreation. This is a very inexpensive way to help with problems occurring and providing services to the needs of individuals with disabilities or simply supporting staff that needs help in this area of specialty, especially if these schools cannot afford to hire a qualified physical education teacher. The non-expert staff in schools and clubs need to be trained, or it is not fair to the students in their classes or programs. It is a shame that a school or program cannot supply adaptations to their students who have disabilities solely because they are not educated on the topic. Lee, Kim & Koo (2016) researched the impact of volunteers in sports and stated how their findings can be cost effective for sport organizations that are generally confronted with limited resources.

Trained staff also is important in after-school settings. “In the US, approximately 8 million children attend supervised after school programs that are conducted in the school or other

community based settings” (Crouter et al., 2015 p. 3). This statistic shows how important it is to have trained staff because so many individuals go to after school programs. This is a solution to the lack of physical activity in children because they should be getting the activity they need daily in these after school clubs.

### **Safety Concerns**

When it comes to providing physical activity for students in urban areas, one must have to consider safety concerns such as lack of supervision and transportation problems. Farley and colleagues (2007) provided a supervised playground experience for children on a daily basis. The research results showed an increase in attendance which overall increased the children’s physical activity once they had somewhere safe to go (Farley et al., 2007). One suggestion for practitioners would be to hire someone to be there for supervision at local parks so it puts parents at ease and gives students somewhere to play after school. Since cost can be another factor when considering supervision, grants can help with the costs of programs. There are many grants such as Brown Rudnick Charitable Foundation, Helping Children in Urban Poverty Grants, and The Safeway Foundation that provide money to urban areas to help economic stability. Getting grants would help organizations with financial troubles and this can solve the problem of not being able to hire supervision because of financial constraints.

### **Environmental Factors**

As there are limited green spaces in cities, it is important to use the resources that are provided. Because there were organizational issues with getting facility spaces for after school clubs, as reported in the literature, the clubs had to use other spaces such as the cafeteria, hallways, playgrounds and even other classrooms in the school. For schools with limited space,

a suggestion would be to partner with a local YMCA, Boys and Girls Club, or just a sport center nearby (if walking distance permitted). In the Stathi and Sebiros (2011) article, with supervision, students walked to this facility and had their physical education class at the facility. The students also will get that added exercise by walking to and from the facility. For students with disabilities, this should not be a question about making facilities wheelchair accessible, as these places can install push-button operated doors, create family changing rooms, provide adequate parking spaces and free or reduced transportation for people with disabilities so that they do not have an issue trying to get from one place to another (Rimmer et al., 2004). The transportation issue could be solved by having one bus dedicated to dropping off children to each home or having a specific drop off point close to homes so the walking distance is decreased. Rimmer and colleagues (2004) stated that neighboring communities with limited funds could pool their resources in order to provide transportation.

### **Programmatic Concerns**

Students who are getting educated on the topic of physical activity and health showed positive outcomes compared to students who do not have any education on the topic. By having extra education on the topic, it showed tremendous increase in their physical activity levels (Crouter et al, 2015). No other articles mentioned if the students were actually taught about positive outcomes from being physically fit, which is a factor few people are taking into account. If these children and staff are educated, then they can start making choices on their own to be more proactive on how they want to live their lives. If they are not educated, or if their families and/or teachers are not educating students, then they might not be aware of potential health concerns in the future.

Finally, a simple suggestion for helping after school programs and physical education classes increase activity levels is letting the children have a choice or a say in what they want to do when it comes to physical activity by incorporating their interests into a lesson or activity. Kahan (2013) stated that his research showed that majority of the games in the curriculum were not tailored to the students' interests. Once he found out the interests of the students, he could make a curriculum around what the students like possibly resulting in increased participation. Holt and colleagues (2012) stated it was important to provide children with perceptions of choice because it will actually get them excited for an activity and will encourage the students to engage in physical activity. Simply by interviewing students or giving a simple questionnaire can make a difference in seeing if the curriculum placed in the school is actually what students enjoy. Lack of physical activity can come from lack of motivation because students may not enjoy the activities and games that are currently in a curriculum.

### **Recommendations for Future Research**

Recommendations for further research would be to have an education-based study to see what children know about physical activity and how that knowledge impacts their PA. There was only one article found by Crouter and colleagues (2015) that taught students about physical activity and it had positive outcomes. Having a greater understanding of this intervention is important because, for a physical educator, there can be significant implications for increasing PA among students, which, in turn, may encourage those students to make a lifelong commitment to PA.

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### Appendix

<b>Title</b>	<b>Effect on Physical Activity of a Randomized Afterschool Intervention for Inner City Children in 3rd to 5th Grade.</b>
<b>Reference</b>	Crouter, S. E., de Ferranti, S. D., Whiteley, J., Steltz, S. K., Osganian, S. K., Feldman, H. A., & Hayman, L. L. (2015). Effect on physical activity of a randomized afterschool intervention for inner city children in 3rd to 5th grade. <i>Plos ONE</i> , 10(10), 1-18. doi:10.1371/journal.pone.0141584
<b>Purpose/ Methods</b>	This study aimed to evaluate the feasibility and short-term impact of a supervised after-school PA and nutrition education program on activity levels. Students were randomly assigned to a 10-wk after-school program of either: 1) weekly nutrition education, or 2) weekly nutrition education plus supervised PA 3 days a week at a community-based center.
<b>Subjects</b>	Forty-two 3rd-5th graders
<b>Setting</b>	-Inner city school in Boston, Massachusetts -10 week after school program -Children supervised at a community based center
<b>Barriers/Overcoming Barriers</b>	<ol style="list-style-type: none"> <li>1. Inner city children not getting recommended amount of PA daily</li> <li>2. Racial/ethnic minorities having the lowest PA levels</li> <li>3. Time constraints because schools are focused on standardized testing and other subjects so PA during school decreases</li> <li>4. Inadequate or nonexistent facilities</li> <li>5. Unsafe neighborhoods surrounding the schools</li> <li>6. During one wave of the study, it was impacted by bad weather in December, possibly impacting the amount of PA.</li> </ol> <p>2. Lack of Knowledge and Supervised after school program</p>
<b>Results</b>	Results showed that the nutrition + PA group got 25 minutes more of physical activity compared to just the nutrition group.
<b>Comments/ Recommendations</b>	Longer term studies with larger samples are needed. The students getting educated showed positive outcomes. Important considerations to keep in mind is that the accelerometer measurement was intended to capture changes in PA outside the program, so it did not take into account the time spent in PA during intervention. Because of this, changes in PA might of underestimated the actual increase in PA during the course of intervention.

<b>Title</b>	<b>A Multilevel Investigation on the Socio-Demographic and Urban Neighborhood Effects on Out of School Physical Activity Among Inner City Minority Adolescents</b>
<b>Reference</b>	Fang, Y., Voorhees, C. C., Guangyu, Z., Beck, K. H., Shuo, H., & Hua, W. (2011). A multilevel investigation on the socio-demographic and urban neighborhood effects on out of school physical activity among inner city minority Adolescents. <i>American Journal Of Health Studies</i> , 26(3), 121-130.
<b>Purpose</b>	The purpose of this study is to see the associations between out-of-school physical activity and a series of individual and inner city specific neighborhood environmental factors in an urban, predominantly minority adolescent sample.
<b>Subjects</b>	The 350 participants selected were from the Baltimore Living Teens Study that are between the age of 14 and 18 years old.
<b>Setting</b>	Inner City Baltimore
<b>Barriers/Overcoming Barriers</b>	Poverty, exposure to violence, environmental factors, crime
<b>Results</b>	Results show that physical activity is affected by both individual and neighborhood characteristics. African Americans and females were at a higher risk of inactivity compared to their fellow classmates. They also face higher risk for inactivity solely because they have limited or no access to physical education opportunities
<b>Comments/ Recommendations</b>	Considerations- a lot of people in the study had a thirty minute or more commute which lead to a huge decrease in time they could have spent on PA.

<b>Title</b>	<b>Safe Play Spaces To Promote Physical Activity in Inner-City Children: Results from a Pilot Study of an Environmental Intervention.</b>
<b>Reference</b>	Farley, T. A., Meriwether, R. A., Baker, E. T., Watkins, L. T., Johnson, C. C., & Webber, L. S. (2007). Safe play spaces to promote physical activity in inner-city children: results from a pilot study of an environmental intervention. <i>American Journal Of Public Health</i> , 97(9), 1625-1631.
<b>Purpose</b>	The purpose of this study was to evaluate the effect of providing a safe play space on the physical activity level of inner-city school children.
<b>Subjects</b>	Mean numbers during school year- weekdays-71.4, weeknds-25.8 Mean numbers during summer- weekdays-27.8, weekends-14.2 Approximately 80% of children's who used the school yard were in grades 2-5, 28% in 6-8 and the rest were younger siblings in K-1.
<b>Setting</b>	2 low-income neighborhoods in New Orleans
<b>Barriers/Overcoming Barriers</b>	-Providing children with a safe place to play and get extra activity outside of school -Provided supervision -Safety Concerns
<b>Results</b>	When the children were provided with a safe play space, the researchers revealed that there was an increase in physical activity
<b>Comments/ Recommendations</b>	That this only occurred in two neighborhoods.

<b>Title</b>	<b>Physical education and sport programs at an inner city school: exploring possibilities for positive youth development</b>
<b>Reference</b>	Holt, N. L., Sehn, Z. L., Spence, J. C., Newton, A. S., & Ball, G. D. (2012). Physical education and sport programs at an inner city school: exploring possibilities for positive youth development. <i>Physical Education &amp; Sport Pedagogy</i> , 17(1), 97-113.
<b>Purpose</b>	This case study examined school staff members' and children's perceptions of school PE, intramural sports, and sport teams with a view to establish factors that facilitated or impeded positive youth development (PYD)
<b>Subjects</b>	Eight teachers and 59 children
<b>Setting</b>	From an inner-city school
<b>Barriers/Overcoming Barriers</b>	PE not delivered by formally trained PE teacher, no consistency with the curriculum, few attempts to make intramural sports an appropriate atmosphere
<b>Results</b>	There was no integrated school-wide approach to promote PYD or an integrated approach for PE and sports programs which led to negative outcomes of PE and other sports programs. No preparation in class, and no support for sports programs. Negative social outcomes in intramural sports.
<b>Comments/Recommendations</b>	Need more than one PE specialist in the school

<b>Title</b>	<b>Here Is What Interests Us! Students' Reconceived Physical Education Activity Offerings in an Inner-City Middle School</b>
<b>Reference</b>	Kahan, D. (2013). Here Is What Interests Us! Students' Reconceived Physical Education Activity Offerings in an Inner-City Middle School. <i>Physical Educator</i> , 70(3), 243-261.
<b>Purpose</b>	Urban middle school physical education teachers wanted to understand activity preferences of his students to try and enhance engagement by figuring out what interested his students.
<b>Subjects</b>	700 sixth and seventh graders
<b>Setting</b>	Urban city in San Diego, CA
<b>Barriers/Overcoming Barriers</b>	-Curriculum problems - Not knowing student preferences -Getting to know students preferences to help with increasing PA
<b>Results</b>	Students overall preferred a variety of activities to be team sports which the most popular noted were basketball, soccer, volleyball and football. Three individual/dual sports (playground games, target games, racquet games), two conditioning activities (weight training, tag games), and one combative (martial arts). (Only the four team sports were regularly offered as part of the current curriculum.)  Data can be used as a starting point for teachers and researchers in other urban areas to confirm curricular reasons for low student engagement.
<b>Comments/ Recommendations</b>	Systematic measurements for students likes and dislikes for physical activity preferences

<b>Title</b>	<b>Perceived Environmental Barriers to Recreational, Community, and School Participation for Children and Youth With Physical Disabilities</b>
<b>Reference</b>	Law, M., Petrenchik, T., King, G., & Hurley, P. (2007). Perceived Environmental Barriers to Recreational, Community, and School Participation for Children and Youth With Physical Disabilities. <i>Archives Of Physical Medicine &amp; Rehabilitation</i> , 88(12), 1636-1642.
<b>Purpose</b>	Environmental barriers to recreational, community, and school participation for children with disabilities.
<b>Subjects</b>	226 boys and 198 girls with physical disabilities ages 6-8, 9-11, and 12-14.
<b>Setting</b>	Major Urban areas in Ontario, Canada
<b>Barriers/Overcoming Barriers</b>	<p>Environmental barriers – the design and layout of natural environments</p> <p>Community barriers- lack of availability of programs and services within a community</p> <p>School barriers- No buddy system and bullying- child with disabilities find it difficult to participate in school, challenges providing timely and effective services for children with disabilities</p>
<b>Results</b>	Barriers to participation came from school and work environments, physical and built environments, and services lacked for these students.
<b>Comments/ Recommendations</b>	Little research has focused on identifying and describing differences in environmental barriers to participation for children with disabilities.

<b>Title</b>	<b>Challenges in Offering Inner-City After-School Physical Activity Clubs</b>
<b>Reference</b>	Maljak, K., Garn, A., McCaughtry, N., Kulik, N., Martin, J., Shen, B., & Fahlman, M. (2014). Challenges in offering inner-city after-school physical activity clubs. <i>American Journal Of Health Education</i> , 45(5), 297-307.
<b>Purpose</b>	The purpose of this study was to examine the perspectives of leaders and students regarding challenges they faced in conducting and participating in after-school PAC's in urban, inner city high schools. The authors made a case for this importance because they spoke upon childhood obesity increasing and growing rates of physical inactivity throughout childhood in urban and inner city areas.
<b>Subjects</b>	There were 278 students and 20 PAC leaders that were interviewed
<b>Setting</b>	14 different high schools in inner city areas in the United States
<b>Barriers/Overcoming Barriers</b>	Lack of green space and sidewalks, facilities are not available, lack of time during school, how students rather sedentary activities versus physical activity. During the interviews, concerns about lack of transportation, food and balancing other clubs were the main barriers.  Provided an after school activity club for students
<b>Results</b>	1.Finding consistently available facility space 2. Providing snacks for students 3. Securing reliable transportation 4. Balancing clubs with other after-school obligations 5. Lack of administration support
<b>Comments/ Recommendations</b>	The authors didn't have any recommendations for this article.

<b>Title</b>	<b>Physical Activity During High School Recess in Spanish Adolescents: The AFINOS Study.</b>
<b>Reference</b>	Martinez-Gomez, D., Veiga, O. L., Zapatera, B., Gomez-Martinez, S., Martínez, D., & Marcos, A. (2014). Physical activity during high school recess in spanish adolescents: The AFINOS Study. <i>Journal Of Physical Activity &amp; Health, 11</i> (6), 1194-1201.
<b>Purpose</b>	The purpose of this study was to see if school recess gives enough opportunity for physical activity
<b>Subjects</b>	This study had 1065 Spanish adolescents (52% girls), aged 13 to 16 years.
<b>Setting</b>	Midrid, Spain
<b>Barriers/Overcoming Barriers</b>	Providing recess for high school students to see if PA is increased
<b>Results</b>	-The results of this study shows that recess contributes to 13 percent of daily guidelines for boys and 11 percent for girls.  - Recess is a main contributing factor when associating PA to meeting the daily guidelines
<b>Comments/ Recommendations</b>	Further studies using objective measures of PA are necessary to confirm these results.

<b>Title</b>	<b>Physical Activity Participation Among Persons with Disabilities</b>
<b>Reference</b>	Rimmer, H., Riley, B., Wang, E., Rauworth, A., Jurkowski, J. (2004.) Physical Activity Participation among persons with disabilities. Barriers and Facilitators. American Journal of Preventive Medicine, 419-425.
<b>Purpose</b>	The purpose of this study was to identify barriers and facilitators associated with participation in fitness and recreation programs/facilities among individuals with disabilities.
<b>Subjects</b>	There were four types of participants: 1.consumers with disabilities, 2. Architects, 3. Fitness and recreation professionals, and 4. City planners and park district managers
<b>Setting</b>	Focus groups were conducted in ten regions across the United states in big cities which are, Atlanta, Baltimore, Berkley, Boise, Boston, Chicago, Denver, Houston, Kansas City, and Syracuse.
<b>Barriers/Overcoming Barriers</b>	Published literature on barriers and facilitators associated with participation in physical activity among people with disabilities is limited  1. Built and natural environment, 2. Cost, 3. Equipment, 4. Guidelines, codes, regulations and laws, 5. Information, 6. Emotional/psychological, 7. Knowledge, education, and training, 8. Perceptions and attitudes, 9. Policies and procedures, and 10. Resources availability/transportation.
<b>Results</b>	10 major personal and environmental barriers and facilitators related to access and participation reported. Barriers of study listed above.
<b>Comments/ Recommendations</b>	Facility management should support continued education and training of professional staff by providing times for seminars and workshops, and/or on-site workshops or seminars for employees.

<b>Title</b>	<b>Systematic review and meta-analysis of multi-component interventions through schools to increase physical activity</b>
<b>Reference</b>	Russ, L. B., Webster, C. A., Beets, M. W., & Phillips, D. S. (2015). Systematic review and meta-analysis of multi-component interventions through schools to increase physical activity. <i>Journal Of Physical Activity &amp; Health</i> , 12(10), 1436-1446.
<b>Purpose</b>	The purpose of the review is because half of America's youth do not meet the national guideline of 60 minutes or more of MVPA each day. The authors justify the importance because they have found that the effects of school-based PA interventions for youth in schools to meet the requirements have been inadequate.
<b>Subjects</b>	The study targeted K-12, 5 to 18 year olds, total of 51,560 participants from 307 schools.
<b>Setting</b>	Inner City, United States
<b>Barriers/Overcoming Barriers</b>	PE was delivered by a variety of people including project staff, classroom teachers, certified specialist and did not meet guidelines for weekly allocated time for proper opportunities to learn. Details about PE curriculum were missing such as alignment with national standards, content progression and developmentally appropriate activities. A "Whole-of-school" approach: physical education, physical activity during school, physical activity before or after school, staff wellness and family and community engagement.
<b>Results</b>	The results suggest multicomponent interventions have had minimal impact on the total daily PA of youth. The reasons are unclear. Results suggest that taking a multicomponent approach to increase youth PA is an appropriate path, but strategies within and across components may need to be reconsidered for maximal impact.
<b>Comments/ Recommendations</b>	1. PE should be delivered by a qualified PE teacher and classes should meet for at least 150 minutes per week (elementary) or 225 minutes per week (middle and secondary school). 2. Providing equipment for students to use, scheduling PA time during and after lunch are important strategies. 3. Knowing how classroom teachers are promoting PA to students can also provide information useful for future intervention design. 4. Giving teachers the flexibility to individualize strategies for physical activity during school to fit their environment such as focusing on integration rather than adding.

<b>Title</b>	<b>A Process Evaluation of an Outreach Physical Activity Program in an Inner-City Primary School</b>
<b>Reference</b>	Stathi, A., & Sebire, S. J. (2011). A process evaluation of an outreach physical activity program in an inner-city primary school. <i>Journal Of Physical Activity &amp; Health</i> . S239-S248.
<b>Purpose</b>	The purpose of this paper is to evaluate an intervention between inner city primary school and a voluntary service provider (Y-Active Program). The authors recognize that there are health problems such as obesity are more common in urban areas compared to rural areas.
<b>Subjects</b>	Semi-structured interviews and focus groups for 17 students ranging from 9 to 11 years old, 4 Y-Active sports leaders, the head teacher, two class teachers and the Y-Active administrator.
<b>Setting</b>	Inner-city primary school in London, UK
<b>Barriers/Overcoming Barriers</b>	<p>Provided an after school program to give students a place to go and receive extra activity prior to school</p> <p>Limited curriculum time, non-expert staff, financial constraints, limited green space and accommodating students from diverse ethnic backgrounds. Urban home accommodations may limit children's and family's opportunities to be active outside of school hours. Barriers to Y- Behavior could be an issue because some children didn't choose to be there, their parents forced them</p>
<b>Results</b>	The Y-Active leaders created a positive learning environment supporting autonomy, balancing discipline and structure, providing feedback and a strong focus on fun and praise. From feedback provided, reports showed a positive impact on the students in a physical, psychological and social well-being way. Because of ample opportunity that the Y gives, this provided students more time to achieve more physical activity before, during and after school.
<b>Comments/ Recommendations</b>	Building rapport with children was difficult so keep in mind you have to be different than school teachers. (From the Y-Active leaders) If the leaders were strict they didn't get anywhere, they already got that from their teachers so the children need something different to compare too.

<b>Title</b>	<b>Social and Physical Environmental Factors Influencing Adolescents' Physical Activity in Urban Public Open Spaces: A Qualitative Study Using Walk-Along Interviews.</b>
<b>Reference</b>	Van Hecke, L., Deforche, B., Van Dyck, D., De Bourdeaudhuij, I., Veitch, J., & Van Cauwenberg, J. (2016). Social and physical environmental factors influencing adolescents' physical activity in urban public open spaces: A qualitative study using walk-along interviews. <i>Plos ONE</i> , <i>11</i> (5), 1-24. doi:10.1371/journal.pone.0155686
<b>Purpose</b>	The aim of this study was to determine which social and physical environmental factors affect adolescents' visitation and physical activity in POS in low-income neighborhoods.
<b>Subjects</b>	There were 30 participants aged 12-16 years old
<b>Setting</b>	From an inner city neighborhood in Belgium
<b>Barriers/Overcoming Barriers</b>	Not having a specific park in a city Recommendations for a quality park to increase attendance
<b>Results</b>	Increase in physical activity with the given green spaces, the facilities provided-fields  -if the POS was close to other destinations for example shops, schools, center of the city, friends' houses.
<b>Comments/ Recommendations</b>	N/A