

An Evaluation of Soccer for Success

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Abstract

Soccer for Success is a program implemented by the Sheriff PAL (Police Athletic League) program in the city of Pontiac in order to provide life skills for healthy living to children. The program aims to teach elementary aged kids valuable life skills through soccer. Many of the youth that participate in Soccer for Success are from low-income households. This thesis will use research to evaluate the pre-existing Soccer for Success program and provide knowledge about the effectiveness of the program and how it influences participating students. The results will likely benefit the PAL and provide valuable information about improvements that can be made to the program. In addition, it will provide information for similar programs to be implemented in other underserved populations.

Background

Childhood Obesity

Childhood obesity has become an extremely important public health issue in the United States in the past few decades. According to the CDC, about 18.5% of children or adolescents were affected by childhood obesity totaling approximately 13.7 million children between the ages of two and nineteen years (“Childhood Obesity Facts,” 2019). The disease is multifactorial, meaning the development of childhood obesity is due to the synthesis of many factors including environment, genetics, and socioeconomic factors (Kumar & Kelly, 2016). Obesogenic environments contribute greatly to the weight gain of children. An obesogenic environment is defined as: “an environment that promotes gaining weight and one that is not conducive to weight loss,” (Powell, Spears, & Rabori, 2011, p. 2). Factors in an obesogenic environment may include increased caloric intake and reduced physical activity levels (Kumar & Kelly, 2016). Caloric intake is easily increased through the increase in the consumption of “sugar-sweetened beverages, sweet snacks, fast foods containing excess fat, large portion sizes, and high glycemic foods,” (Kumar & Kelly, 2016). Environmental factors contributing to decreased physical activity include increased use of electronics such as television, computers, and phones which result in increased sedentary time. A combination of increased caloric intake and decreased energy expenditure results in weight gain. In addition to environmental factors, socioeconomic factors also influence instances of childhood obesity. Higher prevalence of childhood obesity is associated with, “adverse household socioeconomic circumstances...and the proportion of families in low socioeconomic position is higher in poor areas,” (Navalpotro et al., 2011). Generally, children who live in low income areas are more likely to experience childhood obesity.

Comorbidities of Childhood Obesity

Childhood obesity is associated with a variety of comorbidities. Many of these diseases can carry into adulthood and cause an assortment of health problems. Childhood obesity has an effect on nearly every system in the body. Some of the most notable comorbidities associated with the disease are type 2 diabetes, obstructive sleep apnea, and psychosocial issues (Kumar & Kelly, 2016). When obesity persists into adulthood, there is a highly increased risk of type 2 diabetes mellitus, “hypertension, dyslipidemia, and carotid-artery atherosclerosis,” compared with those who never had childhood obesity (Kumar & Kelly, 2016). Type 2 diabetes can lead to a large number of health challenges later in life including nerve damage, kidney damage, and eye damage. These can be issues that require frequent visits to doctors which can be expensive, especially for those who live in low-income areas. In addition to physical problems, there are several psychosocial effects associated with obesity including, “poor self-esteem, anxiety, depression, and decreased health-related quality of life,” (Kumar & Kelly, 2016). Children who experience childhood obesity are also likely to be bullied for their weight which can lead to negative repercussions during adulthood. Families in low-income neighborhoods may experience many barriers preventing them from living healthy lifestyles. These barriers might include lack of time or money to purchase healthy foods or to be physically active, busy schedules, lack of support from friends and family, and lack of access to healthy foods (Van Stappen et al., 2018). These barriers only make it easier for the cycle of obesity to continue. If families live in low-income areas and have little access to healthy foods and ways to exercise due to their lack of monetary funds, it makes it much more difficult to prevent obesity.

Preventing Childhood Obesity

Childhood obesity can be reduced through increased physical activity and healthy diet. Healthy diet and exercise habits should be encouraged at home, but this is not always the case. Schools are also key settings for fostering healthy habits. Since children “spend more time in schools than in any other environment outside the home,” it is vital that school environments encourage and teach about healthy habits (Chochrane & Davey, 2017). Schools have the potential to positively influence the health of their students through teaching students how to live healthy lifestyles by providing opportunities for physical activity and healthy eating during the school day. Participating in sports or other forms of physical activity is vital for children to develop a healthy lifestyle that can continue into adulthood. Typically, adolescents get physical activity through daily activities including their commute to school, physical education classes, or other organized school activities (Elkins, Cohen, Koralewicz, & Taylor, 2004). Promoting physical activity and healthy eating habits is essential for decreasing instances of childhood obesity, and this can be done effectively through long term school programs. Being taught how to live a healthy lifestyle that can continue into adulthood can be done in schools throughout a child’s learning. Even with a small amount of exercise and learning about healthy eating mixed into the curriculum, a large impact can be made on the futures of students.

Low-Income Children and After School Programs

Children from low-income neighborhoods are at a higher risk for childhood obesity (Elkins, Cohen, Koralewicz, & Taylor, 2004). One way to combat this issue is by children participating in after school programs and sports programs. After school programs for children of low socioeconomic status allow for them to receive the same access to activities such as sports,

music, dance, and art as their peers from higher socioeconomic areas (Halpern, 2000). Halpern argues that,

Low-income children, as all children, need times and places in their lives where the adult agenda is modest, if not held at bay; where the emotional temperature is low, and acceptance is generous; where learning is self-directed, experiential, and structured to be enjoyable; where talents can be identified and nurtured; and where possible identities can be explored without risk of failure or ridicule. (p. 186).

After school programs have the ability to provide opportunities to children and help them form meaningful and beneficial relationships (Halpern, 2000). These programs help relieve the stress that children may face at home or at school and allow children to interact with peers and adults who understand what they are going through. These relationships are essential for the success of struggling students. In addition to fostering good relationships, after school programs remove children from the negative environments they may encounter if they were to go home after school. After school programs also have the ability to include physical activity and healthy eating habits in order to combat childhood obesity. Youth sports programs can increase the frequency of physical activity that can translate into a more active lifestyle (Lee, Pope, & Gao, 2018). Involvement in youth sports can help children stay active for a period of time. Sports programs allow children to have fun while remaining healthy and active (Lee et al., 2018). Both after school programs and youth sports programs have the potential to make a positive impact on children from low-income areas as well as those facing childhood obesity.

Soccer for Success

Soccer for Success is a free program created by the US Soccer Association that aims to combat childhood obesity and youth delinquency through an after school soccer program. This program provides, “kids with positive role models, safe places to play, physical activity, and nutritional knowledge,” (US Soccer). The Soccer for Success program introduces healthy concepts such as diet and exercise in a fun and engaging way for children. It serves as a way for children from low-income areas to be part of a program that allows them to form healthy relationships and have a safe environment to learn and play. Soccer for Success works to combat childhood obesity by helping participants engage in physical activity and teaching them about nutrition (US Soccer). By offering the program after school, juvenile delinquency is prevented. Having a safe environment to go and have fun and learn after school prevents children from getting into trouble after school (US Soccer). The program emphasizes nutrition, physical activity, and mentorship. At each practice, coaches deliver nutritional information to participants to aid them in making healthy choices. Physical activity is guaranteed at practices through playing soccer and doing drills. Each coach serves as a mentor that participants can learn from and go to if they have any concerns. Overall, Soccer for Success is a program that emphasizes physical activity, mentorship, and nutrition for children in underserved areas.

Soccer for Success in Pontiac

In this project, the Soccer for Success program was implemented in the Pontiac School District in an underserved area of metro-Detroit. The program was offered at three elementary schools in addition to the Pontiac Youth Recreation and Enrichment Center. Students from kindergarten to fifth grade were sent home with flyers allowing their parents to enroll them in the Soccer for

Success program. Each school had one to two teams with each team being led by a coach. Coaches ranged from high school students to adults who worked in the schools. Each team met after school for an hour of practice with their coach one time per week. Students participated in soccer drills that helped them improve their skills as well as scrimmages to help them learn the rules and about teamwork. In addition, coaches shared information with students about healthy eating and healthy living at home. On Saturdays, teams played soccer games against each other. The program ran for about six weeks from late September to early November.

Methods

Survey Creation

First, thorough research was conducted of previous studies relating to diet, exercise, and healthy lifestyle changes in children. The Soccer for Success curriculum and administrators guide were also reviewed. After gathering and evaluating research, a survey was created to evaluate healthy eating and exercise patterns as well as the current knowledge participants had regarding healthy eating and exercise. The surveys were created in an easy-to-read format to ensure all participants could understand and properly complete surveys regardless of their reading level. The surveys were designed to be able to be completed without assistance if needed. A pre-survey (Appendix A) was made to assess the current diet and exercise habits and knowledge of the participants. This survey included ten questions with simple response options such as a lot, every day, sometimes, and never. Questions designed to assess the knowledge of the participants included options for yes, no, and I don't know. The post-program survey included the same questions as the pre-survey so an accurate comparison could be made between the two. The post-survey also included three open-ended questions asking if the participants enjoyed the program, what they

learned, and what their favorite part of the program was. In total, 38 pre-surveys were collected in addition to 37 post-surveys.

Participants

Participants in this study were children ranging in age from five to eleven years. They were all students at Pontiac elementary schools who were signed up to participate in the Soccer for Success program after school from the last week in September to the first week in November.

Data Collection

The pre-survey was administered by a PAL staff member during the first practice. Students were pulled aside one at a time and were read the questions on the survey. Their responses were recorded by the PAL staff member by circling the response that the participant answered. Questions were elaborated upon if students did not understand what they were being asked. After the soccer program ended, post-surveys were administered. Surveys were initially distributed to participants to complete on their own at school or at home. Those who did not return their surveys met with the researcher to complete their survey during school hours.

Data Analysis

Data from the pre-surveys and post-surveys was entered into an excel spreadsheet. Data was recorded numerically. The most desirable option for each question was scored with a 2, the “sometimes” or in between option was scored with a 1, and the least desirable option was scored with a 0. For example, for the question “I eat vegetables...” participants who answered “always” received a 2, those who response “sometimes” received a 1, and those who responded “never” received a 0. This process was repeated for all ten questions on the pre-survey and post-survey.

Using the spreadsheet, the mean was taken for each question from the pre-survey and post-survey. An independent samples t-test was then performed using the t-test function of excel comparing the group mean for each question between the pre-test and post-test surveys. This was a one-tailed t-test performed using two-sample equal variance. The results of the t-test were evaluated for each question. For the open-ended response questions included in the post-survey, responses were placed into categories and analyzed numerically.

Results

Question	Pre (Mean)	Post (Mean)	T-Test
I eat vegetables	1.1842	1.1622	0.4162
I eat fruit	1.3947	1.6216	0.0316*
I eat fast food	1.0000	1.0811	0.2454
I drink water	1.7895	1.8378	0.3129
I drink sugary beverages	1.1842	1.1081	0.2807
I eat healthy foods	1.2895	1.5405	0.0183*
I exercise	1.3684	1.4054	0.3941
It is important to eat healthy	1.0000	0.9730	0.1571
It is important to exercise daily	0.9474	0.8919	0.1914

Table 1: Pre-survey and post-survey and t-test results
(* denotes statistically significant results, $p < .05$)

Table 1 shows the results of the comparison of answers to the pre-survey and post-survey questions. The t-test results are also shown, and only the Question 2: “I eat fruit...” and Question 6: “I eat healthy foods...” showed a significant change with a p value less than 0.05.

Additionally, the post-survey open-ended response questions were analyzed. 100% of participants said they enjoyed the soccer program.

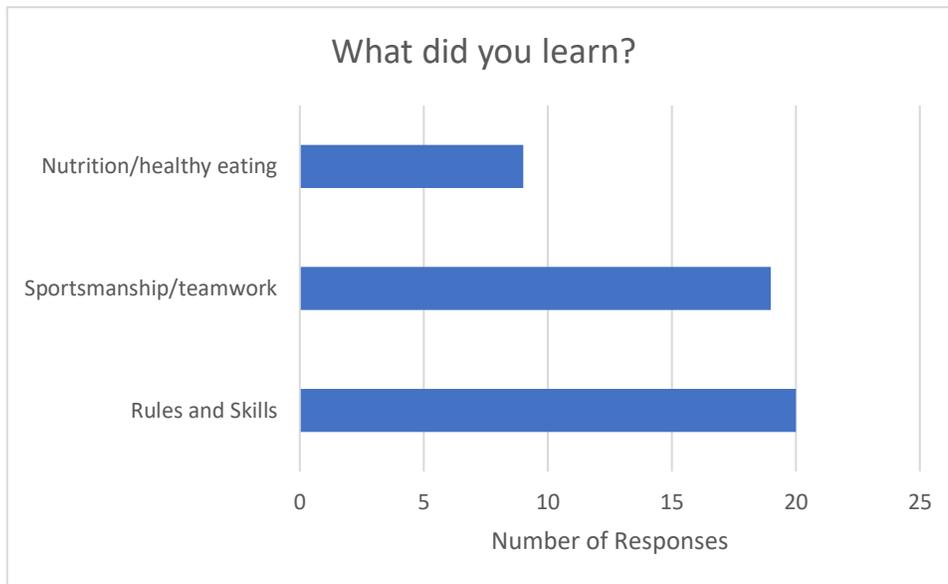


Figure 1: "What did you learn?" question responses

Figure 1 represents the responses to the question: "What did you learn from the soccer program?" The top two responses included learning about the rules and skills associated with soccer and sportsmanship or teamwork, with approximately an equal number of students reporting these themes. Only 9 out of 37 (24%) students responded that they learned about nutrition or healthy eating. This makes it clear that the nutritional aspect of the program was not something that stood out to the majority of participants.

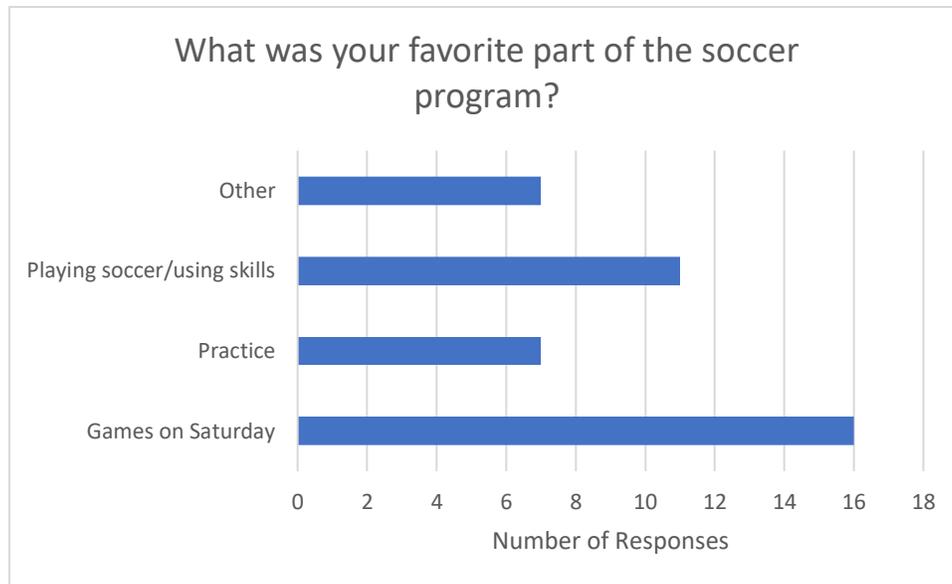


Figure 2: "What was your favorite part of the soccer program?" question responses

Figure 2 represents the responses to the question: "What was your favorite part of the soccer program?" There were a wide variety of answers. 16 out of 37 (43%) participants said their favorite part was playing at the soccer games on Saturdays against other teams. Among responses in the "other" category were: having fun, making new friends, being goalie, and learning new tricks. It was clear from this question that each participant had a different perspective on the program, and each student walked away with something they enjoyed. Some responses to this question that stood out were: "That I got to exercise a lot more" and "My favorite part of the soccer program is that I got to play soccer with my friends and that I got to make new friends."

Discussion

This study sought to evaluate the Soccer for Success program in Pontiac. By evaluating the pre-surveys and post-surveys, it was expected that there would be significant results in most of the categories being evaluated by the end of the program. This was not, however, the case. Most of

the survey responses yielded results that were not statistically significant. This could be due to many factors. First, the sample size was small at only 37 participants. It is possible that with a larger sample size, we would have had more power to detect a statistically significant improvement in the post-test. Secondly, we were not able to match students' responses in the pre and post-surveys, and thus used an independent samples t-test rather than a paired samples t-test, reducing statistical power.

Additionally, the program was quite short in duration, lasting only six weeks. This was due in large part to the lack of indoor practice space. In Michigan, it gets cold in early November, so it is not possible for students to play soccer outside. There is a necessity for indoor space that was not available for the soccer teams. As a result, the after school soccer program was limited on the length of time it could run. The Soccer for Success program is designed to be 12 weeks in length with two days of practice each week and a game on the weekend. This was not the case for the program in Pontiac. The after school soccer program ran for about six weeks with only one practice per week and a game on the weekends. Having only one fourth of the intended total practices has a large impact on the amount of information that students were able to learn.

Having a longer program or even one that met twice per week could have greatly impacted how much participants learned about a healthy lifestyle, and it could have greatly increased the relationships that students formed with their coaches. The limited time between the administration of the pre-survey and post-survey may not have left enough time for students to apply what they learned about healthy eating and exercise to their lives.

Next, families were not involved in the soccer program aside from taking their children to games and picking them up from practice. It is likely that they didn't know much at all about what their children were learning at soccer. Parents have a very heavy influence on what their children eat.

Children may learn about healthy options, but if those options are not available to them, they cannot apply that knowledge to their everyday lives. It is unlikely that children pack their own lunches for school in elementary school, and if they do, they are not the ones going to the grocery store to buy food for their lunches. If healthy foods are not available at home, they can't eat them. In addition, if they eat lunch at school, they do not have much control over what they eat.

The curriculum is another thing that could have had an impact on the lack of change in results between the pre-survey and post-survey. A coaches' meeting was held before the start of the program to inform coaches about the after school soccer program and the types of things they would be teaching. The director of the program stated that she would send out a guide each week for what should be taught at the practice. Coaches were allowed to deviate from the drills that were listed, but they were required to talk about the nutritional and lifestyle information that was included each week. It is possible that not all of the coaches taught the same things and even that some of them completely omitted the nutritional and lifestyle information. When asked, some students didn't recall learning about healthy eating at all at the end of the program.

Recommendations

Longer program, more participants, parent involvement

After evaluating the Soccer for Success program in Pontiac, a few recommendations can be made for improvement. First, getting more children involved in the program would allow the knowledge of healthy eating and lifestyle to be spread to more students. This may involve sending out information at an earlier date and allowing registration to run for a longer period of time to allow for parents to sign their children up for the program. Making sure parents received information about the program through direct means of communication rather than through a

flyer that their child may or may not bring home would be beneficial. In addition, getting more coaches would allow the program to run at more locations and increase availability to more students. It would also create potential for students to have practices twice per week instead of only one time. This could possibly be done by opening the opportunity up to college students in the area. In addition, it would be beneficial to involve a wider age range in the program. This may extend to the middle school level. The more students that have the opportunity to be involved in the program, the more students can learn.

Next, it would be beneficial to the students if the curriculum was followed more closely. The nutritional and lifestyle information being provided through this program is just as important as learning and playing soccer. This fact should be emphasized for the coaches. Additionally, it could be recommended that a certain portion of practice should be dedicated to learning about nutrition and healthy living. For example, making a schedule for the coaches in which the first or last 15 minutes of practice is dedicated to talking to students about this information.

A program that is longer in duration would also be greatly beneficial. This would likely involve gaining access to indoor space for practicing since weather may not permit a longer program. In addition to making the program longer, more practice time per week would also be of benefit to the students. This would allow them to exercise at practice or a game three days a week and would help the information they are being provided with stick with them more if they are talking about it twice per week. The longer duration would also allow students to form more meaningful and lasting relationships with their coaches and their teammates.

Lastly, involving parents more heavily in the program would prove beneficial. Parents have a large impact on the health of their children, so it is important for them to be involved in their children's learning. Something as small as sending home a piece of paper or an email weekly

that summarizes what the children have learned at practice and ways that parents can reinforce positive healthy habits would be greatly beneficial. If parents know more about what is going on in the after school program, they have a greater ability to strengthen what their children are learning and elaborate upon those lessons.

Conclusion

All in all, the Soccer for Success program improved how much fruit participants were eating and the frequency with which they ate healthy foods. Student enjoyed the program because they got to exercise more and spend time with their friends while learning about and playing soccer.

However, to increase the impact of the program, the nutrition portion should be emphasized, and the program should be expanded to meet more days each week and more weeks overall in order for there to be greater improvements in more areas. Many positive lessons came out of the Soccer for Success program in Pontiac, but there is much room for improvement and many ways the program can reach greater potential.

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Appendix A
Soccer for Success Survey

1. I eat vegetables:

Every day	Sometimes	Never
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2. I eat fruit:

Every day	Sometimes	Never
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3. I eat fast food:

Every day	Sometimes	Never
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4. I drink water:

A lot	Sometimes	Never
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5. I drink sugary beverages:

A lot	Sometimes	Never
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6. I eat healthy foods:

Every day	Sometimes	Never
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7. I exercise:

Every day	Sometimes	Never
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8. It is important for me to eat healthy:

Yes	No	I don't know
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9. It is important for me to exercise every day:

Yes	No	I don't know
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Appendix B
Soccer for Success Survey

1. I eat vegetables:

Every day	Sometimes	Never
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2. I eat fruit:

Every day	Sometimes	Never
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3. I eat fast food:

Every day	Sometimes	Never
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4. I drink water:

A lot	Sometimes	Never
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5. I drink sugary beverages:

A lot	Sometimes	Never
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6. I eat healthy foods:

Every day	Sometimes	Never
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7. I exercise:

Every day	Sometimes	Never
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8. It is important for me to eat healthy:

Yes	No	I don't know
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9. It is important for me to exercise every day:

Yes	No	I don't know
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Did you enjoy the soccer program?

What did you learn from the soccer program?

What was your favorite part of the soccer program?