WORK-IN-PROGRESS AND LESSONS LEARNED

A School Wellness Partnership to Address Childhood Obesity

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ABSTRACT

Background: Childhood obesity is a complex public health issue that requires community and environmental factors be addressed. Efforts to combat childhood obesity must be multifaceted and include community-based partnerships.

Objectives: The objective of this paper is to describe a partnership between a county health department and a local school district to address childhood obesity.

Methods: As part of a formal School Wellness Partnership, a nutrition and physical activity program was designed to meet the needs of a school community. The program included parent and teacher education, school-wide messaging and take-home activities.

Lessons Learned: The partnership generated positive program outcomes, including increased teacher knowledge and confidence and parental knowledge regarding healthy childhood behaviors. Lessons learned included the importance of resource sharing and building a stronger program with mutual partner benefits.

Conclusions: Community partnerships can lead to expanding health outreach and building community capacity to promote health through collaborative program development efforts.

KEYWORDS: Schools, Education, Public Sector, Community health partnerships, Program Evaluation, Physical Fitness, Parents, Nutrition, Teachers

Background

Childhood obesity, defined as a body mass index at or above the 95th percentile based on age and sex, affects 18.5% of children ages 6 to 19 years old in the United States.[1,2] Childhood obesity contributes to several physical health conditions such as high blood pressure, high cholesterol, and type 2 diabetes as well as mental health conditions such as anxiety and depression.[3] Children who are obese are more likely to be obese as adults.[3]

Traditionally, childhood obesity has been treated as an individual or family health issue.[4] However, more recently childhood obesity has been viewed as a complex health issue with multiple contributing factors, including community and environmental factors.[3,5] Therefore, efforts to address childhood obesity should be multifaceted and include multiple community-based partners.[4,6] The importance of building partnerships is supported by *Public Health 3.0,* which stresses the importance of cross-sector partnerships to improve health within our communities.[7] To this end, childhood obesity prevention efforts should include collaboration between entities in the home, school and community environments where children learn health behaviors and live their daily lives.[8]

Schools are key partners in childhood obesity prevention. Since most children in the U.S. spend a large part of their day at school during the school year,[9] the school is an ideal setting to reach students, families, teachers, and staff, using age-appropriate obesity prevention programs and activities.[4] Local health departments are also crucial community partners when addressing childhood obesity. With the rise of non-communicable diseases, health departments have shifted to focus more on chronic disease prevention, including childhood obesity prevention. Local

health departments are involved in multiple obesity prevention strategies, from developing community programs to advocating for related policies.[10] Partnerships between the two entities hold promise for addressing childhood obesity in the community. The purpose of this paper is to 1) describe the partnership between a school district and local health department 2) describe the school-based nutrition and physical activity program developed as a result of the partnership, and 3) discuss related program outcomes and lessons learned.

The School Wellness Partnership

Description of the Partners

The School District. The Waukegan Community Unit School District 60 (WCUSD 60) is located in Lake County, Illinois. WCUSD 60 serves 16,819 students with one pre-kindergarten school, fifteen elementary schools, five middle schools, and one high school split between two campuses.[11] Of the students attending WCUSD 60 schools, 78% are Hispanic, 15% are Black, 3% are White, 55% are eligible for free or reduced-price school meals, and 32% are in English Learner Programs.[11] The school district's vision to serve as "a diverse, world-class educational institution that engages, equips and empowers all children to be successful change-agents in an ever-changing global society" with core beliefs that parents are active partners in a child's learning, that teachers create educational environments to enhance student learning, and that school principals can engage stakeholders and partners to improve student learning.[11]

Health Department, Office of Health Equity. The Lake County Health Department (LCHD) is an accredited public health department with a $70 million budget that funds over 50 diverse public health programs and services within Lake County.[12] The health department's mission is "promoting health and well-being of all who live, work, and play in Lake County."[12]

The health department's Office of Health Equity, as a part of a larger Prevention Team, helps meet the organization's mission by coordinating strategies, efforts, and investments of partnerships between the health department and community partners to address the root causes of health inequities. This includes identifying health inequities that exist in Lake County, building organizational capacity, developing partnerships with traditional and non-traditional stakeholders in public health, and designing, implementing, and evaluating strategies.

History of the Partnership

Since 2011, WCUSD 60 and LCHD have partnered on a variety of health-related programs, including securing a Physical Education Program grant and implementing a BMI project within elementary schools. Based on the success of the previous partnership programs, in 2015, these two entities entered into a formal School Wellness Partnership. The goal of the School Wellness Partnership is to help build capacity to strategically plan for, develop, and oversee wellness initiatives, as a school district and within all school buildings within the district. The partnership began with the selection of one elementary school, who in-turn selected personnel to collaborate with the health department's Health Equity Team members to complete the CDC's School Health Index.[13] Upon completion of the School Health Index, school staff in partnership with LCHD staff worked together to create an action plan to improve school wellness. Through an Illinois Department of Public Health's Chronic Disease and School Health grant, the health department provided the school with a modest amount of funding to implement the school action plan. This process has continued each year with a different elementary school in the district.

Developing an Evidence-Based School Program to Meet the School's Needs

Identifying a School-Specific Health Need

The wellness team at the elementary school selected for the School Wellness Partnership for the 2016-2017 school year completed the School Health Index and a more in-depth school-based needs assessment with a focus on childhood obesity. The childhood obesity rate at the elementary school, as measured by the CDC's definition of childhood obesity[1] during the 2014-2015 school year, was 30%. In comparison, the national rate for Hispanic youth ages 6-11 is 25% and the overall national childhood obesity rate for youth ages 6-11 is 17.5%.[14] To better understand factors contributing to the high childhood obesity rate, further information was collected through a windshield survey, key stakeholder interviews, discussions with groups of teachers, as well as parent and teacher surveys. Based on the findings from the needs assessment, the school wellness team identified several factors that contributed to higher rates of childhood obesity at the school. The wellness team chose to focus on an action item school personnel had direct control over; increasing the school's capacity to provide nutrition and physical activity education to the entire school community.

Theoretical Framework - The Social Cognitive Theory

The wellness team developed a nutrition and physical activity education program designed to reach students, teachers, and parents using Bandura's social cognitive theory (SCT) as a conceptual framework. SCT examines how the social environment, personal characteristics, and an individual's behavior all influence each other.[15] According to SCT, child health behaviors can be shaped by observing the behaviors of people around them, such as parents and teachers.[16] By encouraging teachers and parents to learn more about childhood nutrition and physical activity and increasing teacher self-efficacy in sharing these messages with their students, they

can serve as positive facilitators and reinforce the development of healthy behaviors in children.[16]

Evidence Base for the Program: 5-4-3-2-1 Go!

The school wellness team prioritized the importance of a program that offered easy-to-understand, evidence-based information about childhood healthy eating and physical activity behaviors and found The Consortium to Lower Obesity in Chicago Children's (CLOCC) *5-4-3-2-1 Go!* to fit their criteria. *5-4-3-2-1 Go!* is a community-based social marketing program directed at parents in order to reach the whole family, with schools established as one of the community-based settings appropriate for this messaging.[17] *5-4-3-2-1 Go!* includes the following evidence-based behavior recommendations related to childhood obesity prevention: five fruit and vegetable servings as well as four servings of water, three low-fat dairy servings, no more than two hours of screen time, and at least one hour of physical activity each day.[18]

Program Description

A five-week nutrition and physical activity program, grounded by the SCT and based on *5-4-3-2-1 Go!* messaging, took place from May to June 2017. The program employed a three-pronged approach; 1) one-time teacher and parent education sessions, 2) a school-wide messaging campaign, 3) and classroom take-home activities. Findings from the literature and reports from key stakeholders at the elementary school identified class-time constraints, limited resources, and competing academic needs as barriers to including classroom nutrition and physical education in elementary schools.[19-22] To address these potential barriers, the school wellness team ensured the nutrition and physical activity education program was low-cost and involved limited classroom time. The project was approved by the Rush University Institutional

Review Board through exempt review. In addition, the district's Research Approval Committee approved the program proposal including all program materials in English and the Spanish translation.

The teacher and parent education sessions took place before the start of the five weeks of school messaging and take-home activities. A 20-minute teacher education session during a pre-scheduled faculty meeting focused on the *5-4-3-2-1 Go!* message, the evidence behind this message, and simple ways teachers can serve as positive role models and share the message in their classrooms. Teacher knowledge and confidence, as a measure of self-efficacy, were evaluated using brief pre- and post-tests. Completing the pre- and post-tests were voluntary. It was considered passive consent to participate if teachers completed and returned the pre- and post-test.

Parent education was provided during a program launch party at the school where families were invited to come and learn about the *5-4-3-2-1 Go!* message. Several community partners participated in the launch party including the school district's food provider, public library staff, parks and recreation department staff, a Supplemental Nutrition Assistance Program (SNAP) educator, and a physician from a local family health clinic.

The school-wide messaging campaign included large banners, 8-inch x 10-inch posters, number logos (see Figure 1) throughout the school (i.e. – a number 4 logo near all water fountains in the school), and a program-themed bulletin board located in a main hallway. In addition, information related to the *5-4-3-2-1 Go!* program was shared daily during the school's morning announcements.

<INSERT FIGURE 1 HERE>

Figure 1. School-wide messaging.

Twenty-five of the 27 (93%) classroom teachers agreed to send home and collect the weekly take-home activities. Each week the take-home activities focused on one of the five healthy behaviors detailed in the CLOCC *5-4-3-2-1 Go!* message. A letter, available in both English and Spanish, describing the program and the take-home activity sheets was sent home during the first week. The take-home activities included a healthy behavior tracking sheet with stickers for children and parents to keep track of how often the child participated in the healthy behavior highlighted that week. Also included each week were a brief parent and child activity to raise

awareness and encourage families to talk about the healthy behavior, and a list of tips for incorporating the healthy behavior into their daily routine. All take-home activities were available in English and Spanish. It was considered passive consent to participate in the program if the take-home activity sheets were completed and returned.

Partner Roles in the School-Based Nutrition and Physical Activity Education Program

The School District. WCUSD 60 played several important roles in the partnership. After receiving a report about the findings from the school-based needs assessment, members of the wellness team, consisting of school administrators, teachers, library personnel, and the school nurse, chose what issue to focus on for their action plan. Members of the school wellness team at the elementary school served as liaisons to the larger school community including students and parents. As experts about the school community, wellness team members provided invaluable input about best methods for including parents in the program, what school resources were available, potential barriers to program implementation, and what type of program materials would work best in the school environment.

The Health Department, Office of Health Equity. As a collaborative partner, the health department's Office of Health Equity played an important role in providing support and guidance throughout the community needs assessment and program development processes. With extensive experience working with area schools to complete the School Health Index, the Health Equity Team brought knowledge and experience of the process to the partnership. As part of the grant funding related to establishing each Comprehensive School Health Partnership, LCHD provided financial support to the school for wellness-related activities. The Prevention Team printed all program materials in color including weekly take-home activities, large banners,

number signs, and 8-inch x 10-inch posters. The collaborative and complementary roles of each partner organization led to successful program implementation and increased the strength of the partnership.

Outcomes

Program Outcomes

As a result of the nutrition and physical activity education program, 26 teachers received education on healthy childhood behaviors, evidence behind the *5-4-3-2-1 Go!* message and how they could incorporate healthy behavior messaging into their classrooms. Teachers showed an increase in knowledge through improved post-test scores regarding healthy childhood behaviors as a result of the 20-minute educational session. The mean number of correct answers (maximum possible = 5), increased from 1.52 on the pre-test (n=25) to 4.75 on the post-test (n=24). Upon analysis using a non-paired t-test this improvement in test scores was found to be statistically significant (p=0.000). On the post-test, 95.8% (n=23) of teachers also reported confidence in sharing *5-4-3-2-1 Go!* related messages in their classroom.

Thirty-two members of the school community, including parents, family members, and students, attended the program launch party where they participated in activities related to the *5-4-3-2-1 Go!* message including playing interactive games, making healthy yogurt and fruit parfaits, and sampling fruit-flavored water. Along with the activities, the launch party offered an opportunity for families to learn about different community organizations through these interactions.

Twenty-five classroom teachers participated in sending home the weekly take-home activities, reaching a total of 597 students each week. Over the 5 weeks, a total of 429 activity

sheets were returned with some or all of the activities completed. Of those returned, 21.2% (n=91) had the parent and child activity completed, indicating the take-home activities created some parent and child engagement around healthy childhood behavior topics.

A convenience sample of 30 parents was surveyed at field day during the final week of the program. 76.7% (n=23) of parents surveyed reported awareness of the program's messages. Of those 23 parents, 52.2% (n=12) reported learning about the program through the take-home activities and their child talking with them about the *5-4-3-2-1 Go!* message. All parents exposed to the program messages reported learning about at least one of the five healthy child behavior recommendations (see Table 1).

Table 1. Parent Post-Program Survey Results

Have you heard of the 5-4-3-2-1 Go! program at school?	**n=30 (%)**
Yes	23 (76.7%)
No	7 (23.3%)
If you have heard of the 5-4-3-2-1 Go! messaging program at school, where did you see the 5-4-3-2-1 Go! messages? Choose all that apply.	**n=23 (%)**
Healthy behavior tracking sheets	12 (52.2%)
Your child talking about the 5-4-3-2-1 Go! message	12 (52.2%)
Posters at School	7 (30.4%)
Launch Party	5 (21.7%)
Large Banners at School	3 (13.0%)
Bulletin Board at School	2 (8.7%)
Which of the 5 healthy behaviors do you know more about after viewing the 5-4-3-2-1 Go! messaging? Choose all that apply.	**n=23 (%)**
5 - Fruits and Vegetables	16 (69.6%)
4 – Water	13 (56.5%)
1 - Physical Activity	13 (56.5%)
2 - Screen Time	11 (47.8%)
3 - Low-fat Dairy	9 (39.1%)

Lesson Learned

While the nutrition and physical activity program produced positive outcomes, there were also several partnership-related lessons learned. These included the importance of resource sharing, creating a stronger program with mutual partner benefits, and increasing the capacity to promote health within the community.

Resource Sharing

The partners were able to combine their resources to create a program that would not be possible to develop or implement as individual entities. School staff provided a unique knowledge of the needs of the school community related to nutrition and physical activity, which enabled the development of a program that was relevant to the school community. As noted previously, the health department provided the printed materials for the program, alleviating printing costs for the school. As experts in program planning, members of the health department's Health Equity Team provided technical support throughout the process, including the initial community needs assessment as well as during program development, implementation, and evaluation.

A Stronger Program with Mutual Benefits

By working together, a stronger program was created and implemented within the school environment, mutually benefiting both partners. The school district benefited by obtaining a nutrition and physical activity program, including program materials that were built for this school community based on community-specific needs. Through serving as the setting for program implementation, the school ensured that many children and families within the community received information about childhood nutrition and physical activity

recommendations. Since 597 children received the take-home activities each week, that means the families of 597 children may have also reviewed the information in these activities. This was a benefit for the health department, as the dissemination of healthy behavior messaging is an important part of the health department's role to provide health education within the community.

Building Capacity to Promote Health

This program resulted in positive program and partnership outcomes, which laid the groundwork for increased school district wellness initiatives through new wellness-focused funding and expanded wellness teams. During the 2017-18, 2018-19, and 2019-2020 school years, the WCUSD 60 school board approved $10,000 per school year for wellness efforts within the school district, the first time the district has approved this type of funding specifically for wellness initiatives. Along with wellness-focused funding, the school district's wellness committee, which has health department representation, continues to be a key point of connection for community collaboration and efforts related to wellness between not only WCUSD 60 and LCHD, but other key organizations focused on wellness, such as the local park district and a local university extension office.

WCUSD 60 and LCHD also continued working together with all five middle schools in the district to establish school-based wellness teams, which were not previously present at the middle school level. The partnership and this program provided a local exemplar of school-based wellness initiatives that could be developed and implemented at other schools in the district with the new wellness funding, including at middle schools with newly established wellness teams. These efforts will also have positive impacts upon the larger Waukegan community, as

reinforced messaging and mutually reinforcing activities are helping to cultivate a culture of health and wellness within the community.

Conclusion

Childhood obesity is a priority health issue that must be addressed at multiple levels within the community. Schools and local health departments are two entities with a keen interest in reducing the levels of childhood obesity. The ongoing partnership between WCUSD 60 and LCHD shows that partnerships between local health departments and schools are feasible and sustainable. Further, each organization's ability to reach the public was increased through this partnership. Lessons learned from this partnership highlight the importance of utilizing each partner's unique areas of expertise, sharing resources to enhance program delivery, as well as how collaborative efforts can support momentum for larger wellness initiatives within the community. Using this partnership as a model, similar communities may be able to reach the community and improve the health of the public.

Acknowledgement:

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