Utilizing the School Health Index to Build Collaboration Between a University and an Urban School District

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ABSTRACT

BACKGROUND: Insufficient attention has been paid to the process of conducting the Centers for Disease Control and Prevention’s School Health Index (SHI) to promote collaboration between universities and urban school districts when developing adolescent health promotion initiatives. This article provides an overview of the real-world contextual challenges and opportunities this type of collaboration can pose.

METHODS: The SHI and selected collaboration principles were used to facilitate partnership and increase stakeholder buy-in, which led to developing and implementing an 8-year health promotion campaign.

RESULTS: The focus on planning brought together key stakeholders to allow for health promotion programming to take place, despite the competing demands on the schools. The SHI allowed for input from stakeholders to develop campaign activities and inform school- and district-wide policy. Universities and school districts desiring to develop and implement school-based, adolescent health promotion programs should (1) identify the hierarchical structure of the school district, (2) establish credibility for the program and the university staff, (3) emphasize the benefits to all partners, (4) maintain a cooperative partnership with teachers and administrators, (5) appreciate the need for planning, and (6) provide as many resources as possible to aid an already overburdened school system.

CONCLUSIONS: Promoting healthy behaviors among students is an important part of the fundamental mission of schools. The significance of collaboration using the SHI, with direct input from students, teachers, administrators, and university partners, is critical in the development of institutional support for implementation of adolescent health promotion initiatives.

Keywords: adolescent health; school health; School Health Index; collaboration; physical activity; nutrition.

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Adolescence is a critical time for the development of lifestyle practices, attitudes, and beliefs related to health and well-being.\textsuperscript{1} Many adolescent health behaviors, including dietary practices, physical activity habits, and weight control have been previously described.\textsuperscript{2-4} Yet evidence suggests there may be cause for concern, not only about the current health status and behaviors of adolescents, but also about their future health status as adults.\textsuperscript{1} Comprehensive school-based initiatives that target these behaviors can help sustain healthy lifestyles through the adolescent years and after the initiatives have ended.\textsuperscript{5} However, insufficient attention has been paid to the process of conducting the Centers for Disease Control and Prevention’s (CDC) School Health Index (SHI) to promote collaboration between a major public university and an urban school district to develop an adolescent health promotion campaign, and the real-world challenges and opportunities this type of collaboration can pose.
The social and physical environments of schools are considered significant factors that affect adolescent food consumption habits, physical inactivity practices, and subsequent obesity rates. These factors contribute to optimal health throughout the lifespan. Adolescents are not receiving or implementing health promotion messages designed to contribute to optimal health throughout the lifespan, and their communities lack resources to maintain areas and facilities to promote physical activity. Adolescents lack access to healthy foods in their schools and neighborhood.

In recognition of the growing prevalence of obesity and to promote the overall health and well-being of adolescents, the CDC’s Division of Adolescent and School Health developed the SHI. The SHI is an adolescent and school health assessment tool designed to help schools and school districts evaluate and improve their health policies and programs in the context of a Coordinated School Health Program (CSHP). The SHI currently addresses several adolescent health behaviors including physical activity and nutrition education.

In this article, we describe use of the SHI as a road map, guided by selected collaboration principles (building on partners’ strengths and resources, reciprocal learning, cultural humility, and long-term commitment), to build collaborations between an urban school district and a public university to plan a comprehensive health promotion campaign, which is designed to impact the school environment, school policy, and potentially the health behaviors of students.

**LITERATURE REVIEW**

Health promotion has been concerned with program settings for many years—most commonly in terms of carrying out comprehensive health promotion initiatives within a particular setting, for example, the workplace, community, and in schools. The school-based setting offers opportunities for health promotion initiatives to be directed at individual health behavior change, as well as environmental change to achieve improved health outcomes for school-aged youth, school administrators, and school staff.

In addition, by using a “settings approach” to adolescent health promotion provides an all-inclusive framework within which to work, encourages multi-stakeholder ownership of health, and is suitable for collaborations between universities, public school districts, and individual schools.

Most US public schools provide some type of nutrition and physical activity programs; however, multiple countervailing pressures (e.g., budget cuts, increasing demands on teachers’ time, and political pressures to improve student performance on standardized tests) act on school leaders to impede a sustained focus on the health of students. For example, due to budgetary concerns and testing requirements, the transfer of school food services to outside vendors, the reliance on vending machine revenues for extracurricular activities, and the elimination of physical education activities have all contributed to a less-than-optimal school environment where adolescents spend their formative years.

Nonetheless, schools still remain ideal settings for implementing comprehensive health promotion initiatives, including physical activity and nutrition education as they are an important context in which adolescents develop, grow, and spend time. In addition, school-based interventions that focus on healthy eating and exercise have been shown to significantly impact adolescent health behaviors. These interventions are especially relevant in racial and ethnic minority communities characterized by social and economic disadvantage.

Originally proposed in 1987, Allensworth and Kolbe provided a model with an “expanded” perspective, encouraging linkages, and coordination among a broader number of supports to ensure achieving healthy students. Thus the CDC’s CSHP model consists of 8 interrelated components that constitute a CSHP, including systematic communication and collaboration between students, families, teachers, and school administrators in an effort to impact the overall school environment as well as school health policies. The CSHP model asserts that schools by themselves cannot—and should not be expected to—solve the nation’s most serious health problems that affect students. Still, schools could provide a facility in which university faculty might work together with parents and school personnel to develop programs aimed at maintaining the health and well-being of adolescents. This type of interagency cooperation between a university and a school...
district harnesses the imagination, innovation, and mutual support that can come from working across professional and organizational boundaries.\textsuperscript{13,27} As a result, a CSHP that works meets the health needs of the students and increases the use of actions that improve student health, while also making better use of health promotion and disease prevention tools like the SHI.\textsuperscript{11}

Recognizing the potential for schools to provide more healthful nutrition and physical activity environments for the nation’s young people, the SHI enables schools to identify and evaluate the strengths and weaknesses of their health education, safety policies, and related programs.\textsuperscript{25,26} In addition, the SHI enables schools to develop action plans for improving student health and promotes the engagement of teachers, parents, students, and the community in advancing healthy behaviors.\textsuperscript{5,16,28} Although research demonstrates the use of the SHI in the assessment of adolescent school health promotion,\textsuperscript{4,16,28,29} there is a dearth of literature about the processes employed by university faculty and external collaborators to engage teachers, parents, students, and the community in the planning of health promotion initiatives. More importantly, to our knowledge, this process has less often been examined in urban public school settings.

Over the past several years, increased national attention has been given to issues of overweight and obesity among children.\textsuperscript{7,8} According to the US Department of Health and Human Services, 9 million children, or 16\%, were overweight and the rate of overweight children in Pennsylvania was 18\%.\textsuperscript{30} These statistics were particularly alarming for urban youth, as many were already overweight or at risk for overweight, and gender, age, race, and individual levels of poverty were associated with their increased weight gain.\textsuperscript{31,32}

\section*{THE SHI AS A PLANNING TOOL: GETTING STARTED}

The Pittsburgh, Pennsylvania school district along with its 18 middle schools and 10 high schools faced unique challenges related to its limited resources as it attempted to address the overweight epidemic among its students. Having firsthand knowledge of these challenges and a positive prior working relationship, the School District Superintendent requested formation of a collaborative effort with the university to address this critical health issue. Identifying and addressing these challenges while modifying school policies and curricula\textsuperscript{15} related to school-based health promotion initiatives became essential. Thus, the SHI was used as a planning tool and roadmap for developing collaborations and solidifying relationships between a public university and the school district to help the district launch a comprehensive health promotion campaign.

From September to December 2002, the School District Superintendent held a series of meetings with district administrators, teachers, and principals to introduce the SHI in all 18 middle schools. The primary aim was to select which SHI modules would be included in the planning process, and to gain buy-in from these key stakeholders. University faculty were also invited and attended these meetings to gain further understanding of the SHI and how it can be used to foster collaboration when planning comprehensive adolescent health initiatives.

The initial activity of these meetings was having the stakeholders engage in a collaborative process to create healthier students and schools by completing the 8 SHI self-assessment modules, which correspond to the 8 components of a coordinated school program,\textsuperscript{11} with special attention paid to the Physical Education and Nutrition Services modules. Completion of the modules provided the framework for utilizing a “whole school approach”\textsuperscript{15} for engaging the schools in the process of planning regarding healthier school environments. In addition, the SHI provided the framework for a “whole child approach,”\textsuperscript{33} which we addressed by creating school health teams and identifying student role models to participate in leadership development, an important component of a CSHP’s sustainability.\textsuperscript{34} After completing the 8 SHI self-assessment modules, the stakeholders posed the question, “How can we address physical activity and nutrition education in our schools?” From this simple question and its subsequent discussion, the concept of a health promotion and disease prevention campaign was born specifically with the idea of following a cohort of students scheduled to graduate in the year of 2010, using Healthy People 2010 as a beacon. More importantly, this approach was inclusive of the entire school district and directly tied the campaign to the 2010 graduation.

Using the SHI recommendations for establishing school-level health advisory boards,\textsuperscript{11,33} the school district administrators, teachers, parents, students, and university faculty worked collaboratively to identify existing school health policies’ and programs’ strengths and weaknesses as the initial step in developing and implementing a new comprehensive school health campaign. According to the SHI, these boards can promote lifelong wellness by supporting a healthy learning environment, which impacts adolescent health and well-being: enabling the students to become healthy and productive adults.\textsuperscript{11,33} Thus, we instituted 3 advisory boards to guide the implementation of the SHI: (1) a Planning and Advisory Committee comprised of school district representatives and university faculty; (2) School Health Teams composed of teachers, staff, and parents; and (3) a Peer Health Council (student representation from each school).

In September 2003, activities derived from the SHI process were officially launched as a health promotion campaign and ambitiously targeted all sixth-grade
Table 1. A Description of the 10 Pittsburgh Public High Schools

<table>
<thead>
<tr>
<th>School</th>
<th>Description</th>
<th>Total Enrollment</th>
<th>African American (%)</th>
<th>White (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>The largest of the 10 schools offers programs at the gifted, scholars, and standard academic levels.</td>
<td>1402</td>
<td>37</td>
<td>56</td>
</tr>
<tr>
<td>B</td>
<td>This school provides comprehensive academic programs to accommodate student needs.</td>
<td>1124</td>
<td>38</td>
<td>55</td>
</tr>
<tr>
<td>C</td>
<td>Students receive a quality education in an atmosphere that nurtures their individual artistic talents.</td>
<td>551</td>
<td>32</td>
<td>61</td>
</tr>
<tr>
<td>D</td>
<td>The school provides special programs in business and health technology.</td>
<td>918</td>
<td>37</td>
<td>58</td>
</tr>
<tr>
<td>E</td>
<td>A teaching, horticulture/landscaping, health, and robotics academies are located within this school.</td>
<td>493</td>
<td>67</td>
<td>29</td>
</tr>
<tr>
<td>F</td>
<td>The law and public service and the Junior Reserve Officers’ Training Corps (ROTC) are 2 magnet programs offered to students.</td>
<td>575</td>
<td>82</td>
<td>13</td>
</tr>
<tr>
<td>G</td>
<td>The Robotics Technology and Public Safety programs and the health careers, Information Technologies and Culinary Arts academies are housed here.</td>
<td>492</td>
<td>93</td>
<td>4</td>
</tr>
<tr>
<td>H</td>
<td>This school provides students with opportunities to learn scientific research procedures through its mathematics and science program.</td>
<td>736</td>
<td>63</td>
<td>32</td>
</tr>
<tr>
<td>I</td>
<td>The school is home to 2 magnet programs: the International Baccalaureate and Robotics Technology.</td>
<td>684</td>
<td>70</td>
<td>23</td>
</tr>
<tr>
<td>J</td>
<td>The only school with a 100% African American population. Students can receive professional certifications and science and mathematics academy scholarships on completion of 4 years of school.</td>
<td>335</td>
<td>100</td>
<td>0</td>
</tr>
</tbody>
</table>

students (approximately 2000) attending the 18 Pittsburgh middle schools. To jump-start the campaign, “Back-to-School Rallies” were organized at every school. During the rallies, presentations were given by both university faculty and school teachers on the importance of healthy eating and physical activity and students were provided with pedometers and strategies to build these activities into their daily lives. The aim was to introduce concepts of healthy eating and physical activity and spark the students’ interest in the campaign, and stress the importance of having them as collaborators with the university-school district partnership. After graduation, these same students were then followed as they transitioned from middle school to the 10 Pittsburgh Public High Schools listed in Table 1.

Once the students transitioned into high school, the advisory board membership changed and new advisory boards had to be developed and reestablished. The former administration of the middle schools that comprised the initial advisory boards requested to remain involved with the SHI process. As a result, university faculty worked diligently to find tangible ways for them to remain connected to the process and its activities. An important component of the transition was that former advisory board members’ (eg, administrators and teachers from the middle schools) testimony regarding the importance of the SHI process garnered interest from the high school administrators and teachers. The former middle school administrators played a pivotal role in obtaining buy-in from the new high school administrators and teachers. Thus, their assistance created a more prudent process in the development of the new advisory boards and the transition of the campaign.

The advisory boards continually met and engaged its members, especially the students, in collaborative partnerships with the university to develop SHI activities. For example, the university conducted mini-grant writing workshops with the students and teachers on how to write and submit a competitive grant application. Subsequently, each school applied to the university for a mini-grant of $1500 each year to design their own health-related initiatives (eg, purchasing a microwave to heat lunch meals brought from home and exercise equipment to increase physical activity during after school programs). Table 2 presents selected activities derived from the SHI implementation process. Some of which focus on increasing physical activity and nutrition practices during an academic school year.

BUILDING COLLABORATION WITH THE SCHOOL DISTRICT

The Pittsburgh Public School District is the largest of 43 school districts in Allegheny County and the second largest in Pennsylvania. The district serves approximately 28,000 students in Kindergarten through grade 12 in 65 schools, and is composed of 10 high schools each with unique academic programs (Table 1). Although the university and the school district had a prior positive work relationship, district policy mandated that formal administrative approval must be obtained before any university-initiated health promotion program could be implemented. This process necessitated understanding the levels within the hierarchical framework of the Pittsburgh School District that included a Superintendent of Schools, Development Coordinators—who serve as liaisons between the district and external organizations who enter...
Collaborating With the High Schools

An early sustained focus on the school district liaison was critical to ensure that district needs and interests were gauged correctly. In districts with several high schools, communication with outside agencies usually requires trained school-based personnel to act as a designated intermediary. Our school district liaison filled an important role in providing a communication link between the university faculty and staff, the school district administration, and the schools.

The high school principals provided the school district liaison with a list of teachers to serve as SHI process facilitators responsible for initiating contact with their fellow teachers, the students, and staff from their respective schools. The facilitators were biology, health, and physical education, and English teachers who were interested in partnering with the university and ensuring the SHI health theme of physical activity and nutrition education would be integrated across the curricula. At this time, an initial meeting at each school, arranged by the facilitator, included the principal, vice principal, interested teachers, and the university faculty. Its purpose was to obtain buy-in and to determine SHI-specific activities. The facilitators further arranged meetings between the university faculty and the students to begin developing health-related activities (e.g., evening cooking classes with students and their parents).

COLLABORATION PRINCIPLES

The literature describes principles to identify and guide collaborations between universities, school...
These principles are congruent with the SHI, which stresses the need for people interested in adolescent health to become involved and work together to create healthier students and healthier schools. Although many of these principles can be applied to interactions with both participants and partners, our focus was on collaborations with our partner organizations—the schools and school district. For the purposes of this article, we chose to focus on 4 particular collaboration principles that are consonant with the settings approach to health promotion building on partners’ strengths and resources, reciprocal learning, cultural humility, and long-term commitment.

**Building on Partners’ Strengths and Resources**

This principle encourages university faculty to build on partners’ strengths and maximizes the equitable exchange of resources rather than focus on deficits. In our case, the school district provided access to the students, school facilities, and the investment of various school staff members with dedicated time and effort devoted to implementation of the SHI as part of their jobs. The university provided dedicated staff support, professionally designed campaign materials, and financial resources for each school in the form of a $1500 mini-grant to develop innovative health promotion initiatives driven by each school and designed to increase physical activity and advance nutrition education to increase consumption of fruit and vegetables.

In addition to a mutually valued goal and a favorable exchange of resources, another significant aspect of readiness to collaborate is the characteristics of the partner’s leadership. The school district was led by experienced administrators committed to finding ways to better respond to adolescent health issues. Moreover, these administrators embraced the university assistance as a means to address the challenges from a public health perspective. These district administrative strengths were important assets facilitating the collaboration.

**Reciprocal Learning**

Through the process of reciprocal learning, the university faculty and the school district gained a deeper understanding of each other and the fundamental issues of nutrition education and physical activity among adolescents. The process required faculty to understand the culture of the school district, each individual school, and orient the partners to the culture of a public university. Advisory boards are a mechanism increasingly used by universities in collaboration with targeted groups to reciprocally learn from one another. As noted above, 3 advisory boards guided the SHI process that represented the views and interests of the students, teachers, parents, school district representatives, and university faculty. These advisory boards informed the university faculty about culturally sensitive and effective recruitment strategies. The boards also provided insight into the development of materials and how to obtain district-wide support and overcome barriers via conflict resolution. Currently, the literature describing advisory boards tends to place more emphasis on 1-way information flow, from advisers to university faculty. Our experience is best described as a 2-way, reciprocal, communication, and learning model between both partners.

**Cultural Humility**

University faculty should demonstrate what Terrillon and Murray-Garcia refer to as cultural humility, which involves respecting the strengths, expertise, and organizational culture of collaboration partners. Practicing cultural humility serves to minimize potential power imbalances between faculty and partners. Although a university and an urban school district are institutions of education, it was clear from the outset that each institution had its own unique culture of operation. We tried to demonstrate cultural humility by consulting with the advisory boards to learn about each school’s practices that may impact the implementation of the SHI. For example, university faculty had to humble themselves and respect the existing meeting culture of the school district and not push its own meeting agenda based on convenience. As a result, one direct outcome from this experience was that SHI planning meetings were integrated into the standing Board of Education meetings with principals.

**Long-Term Commitment**

Collaboration calls for a strong commitment by university faculty to the long-term, iterative processes of human and social capital development in school districts and to sustaining effective school-based health initiatives. The first year of the SHI collaboration process began with limited resources. However, a grant from a local philanthropic organization was later received. Our experiences indicated the philanthropic organization gained confidence in our strategy of collaborating with the school district and provided us with a substantial multiyear grant, which is longer than their traditional 1-year-at-a-time grant funding. Notwithstanding, our school district partners continued to demonstrate their commitment to the SHI process by informing us of culturally sensitive practices, effective implementation strategies, development of materials, and solutions to overcoming barriers in the achievement of our goals.

Formal projects in which representatives from public schools and universities work together to resolve
common problems is critical in planning school district and university collaborations. These collaborations can pose several challenges especially in terms of the “sweat equity” time investment, the tension between conducting research versus providing service, adhering to state laws and school district policies, and the limits of time in a school day where “no child left behind testing” shapes school priorities. In our case, the SHI was the mechanism that allowed for inclusion of all stakeholders—from school district administrators to students—to make meaningful contributions, strategically plan and implement the SHI, and build a solid relationship from collaborations with university faculty.

DISCUSSION

Brener et al found that few schools nationwide are addressing the entire breadth of SHI items and a more coordinated approach to school health is needed to reinforce health messages. Moreover, Staten et al reported that most schools have made immediate change in their school environment, yet require planning and perhaps the assistance of subcommittees in the development of district-wide health curriculum. Our work highlights the process and the use of the SHI in the development, implementation, and evaluation of an adolescent health promotion campaign. Thus, our work fills a gap in the literature by examining how to collaborate and form important partnerships. Furthermore, this work demonstrates how the SHI can be used both at the micro-level (students) with emphasis on the planning process and collaboration instead of just at the macro-level (schools); where the majority of published literature has limited focus.

The successful collaboration reported here would have been nearly impossible without the use of the SHI as an organizing tool through which the planning process could flow and adapt to the cultural norms present within a school district.

Urban school districts are complex organizations complete with public debates over policy and funding priorities. During the course of our work, the school district went through a major reorganization with school consolidations, closings, and staff reductions. This resulted in political controversy, public demonstrations, and charges of racism and discrimination that spilled out into the social and political environment. This was the real-world context in which we collaborated with an urban school district and its implementation of an adolescent health promotion campaign. For example, programs that appeared to detract from “academic areas of study” were viewed by the teachers and administrators as being of “marginal importance.” Use of the SHI, however, provided a framework from which to address these and other challenges.

We discovered that the focus on planning put teachers, students, parents, and the university faculty on the same level of mutual respect for the SHI process, as they collectively had control. The SHI also allowed for flexibility to use input—from the school district administrators to the students in the classroom—to develop activities and to inform district wide and local school policy related to health promotion and disease prevention. We also believe that the mini-grant program added value to the process so that schools received financial support to implement their shared vision on how best to improve the school environment. This approach resulted in the integration of health promotion activities across the school curricula including, but not limited to, English, math, social studies, and health and physical education classes.

IMPLICATIONS FOR SCHOOL HEALTH

Creating a school environment conducive to promoting healthy behaviors among students is an important part of the fundamental mission of schools to provide young people with the knowledge and skills they need to become healthy and productive adults. Improving student health can lead to increased capacity to learn, reduced absenteeism, and improved physical fitness and mental alertness. Use of the SHI, underscored the significant need for an adolescent health promotion campaign that specifically addressed physical activity and proper nutrition.

Moreover, using the SHI as a planning instrument, rather than an assessment tool, facilitated the adoption of the 4 collaboration principles: building on partners’ strengths and resources, reciprocal learning, cultural humility, and long-term commitment. The SHI highlighted the importance of developing a carefully organized plan to build collaborations and solidify relationships that were necessary to effectively implement this school-based campaign across the entire school district. The school district, its schools and students took ownership of the SHI processes and outcomes to successfully implement the campaign. Furthermore, the SHI helped ensure that the health promotion activities launched across the school district were not fragmented, but became branded as a district-wide (ie, across all 10 high schools in the system) campaign known as the Healthy Class of 2010.

To guide future university and school district collaborations, we recommend addressing the following critical areas when developing and implementing school-based, adolescent health promotion initiatives.

First, determine the hierarchical structure of the school district before approval is sought. Second, establish credibility for the initiative and the university faculty and staff. Third, emphasize the benefits of the program to the school district, schools, parents, and students. Fourth, maintain a cooperative partnership with
teachers and administrators to ensure effective implementation of the initiative. Fifth, appreciate the need for meticulous schedule planning and changes that will affect program implementation. Finally, provide as many resources as possible rather than making requests on an already overburdened and underfunded school system.

By utilizing the SHI and selected collaboration principles, we believe there are useful strategies and lessons learned that may benefit urban school districts, and outside organizations seeking to work together to potentially change student health behaviors, the school environment and policies. In our case, the need for district-wide changes in the types of food options offered at the schools was stressed by the students via mini-grants and the Peer Health Councils that informed policy. This led to overall changes in food service by providing healthier food and drink options in the cafeteria and vending machines. It is both the students’ and partners’ ownership of the process that makes use of the SHI a tool that continues to yield positive results.

The use of the SHI during the planning process served as the foundation for establishing this significant partnership between a public university and an urban school district. Our experience utilizing the SHI and selected principles of collaboration within an urban public school district helped the district launch a comprehensive health promotion campaign that was designed to impact the school environment, school policy, and potentially the health behaviors of its students. Moreover, this experience confirms our belief that universities can play an important role in shaping the healthy behaviors of our youth and impact the social and physical environments of the neighborhoods where these youth live.

REFERENCES