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General Article

A Whole School Approach: Collaborative Development of School Health Policies, Processes, and Practices

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ABSTRACT

BACKGROUND: The Whole School, Whole Community, Whole Child (WSCC) model shows the interrelationship between health and learning and the potential for improving educational outcomes by improving health outcomes. However, current descriptions do not explain how to implement the model.

METHODS: The existing literature, including scientific articles, programmatic guidance, and publications by national agencies and organizations, was reviewed and synthesized to describe an overview of interrelatedness of learning and health and the 10 components of the WSCC model.

RESULTS: The literature suggests potential benefits of applying the WSCC model at the district and school level. But, the model lacks specific guidance as to how this might be made actionable. A collaborative approach to health and learning is suggested, including a 10-step systematic process to help schools and districts develop an action plan for improving health and education outcomes. Essential preliminary actions are suggested to minimize the impact of the challenges that commonly derail systematic planning processes and program implementation, such as lack of readiness, personnel shortages, insufficient resources, and competing priorities.

CONCLUSIONS: All new models require testing and evidence to confirm their value. District and schools will need to test this model and put plans into action to show that significant, substantial, and sustainable health and academic outcomes can be achieved.

Keywords: coordinated school health; whole child; academic achievement; health outcomes; Whole School, Whole Community, Whole Child (WSCC) model.

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The Whole School, Whole Community, Whole Child (WSCC) model was created to encourage education and health organizations to work together to improve student health and academic outcomes. The model focuses on ''what'' should happen to improve student health and academic outcomes, mainly by describing the 10 school health components that should be coordinated (health education; nutrition environment and services; employee wellness; social and emotional school climate; physical environment; health services; counseling, psychological, and social services; community involvement; family engagement; and physical education and physical activity). The purpose of this article is to describe how districts and schools can use a systematic process to implement the WSCC model and improve health and academic outcomes.

The key to moving from model to action is collaborative development of local school policies, processes, and practices. The day-to-day practices within each

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WSCC component require examination and planning so that they work in tandem, with appropriate complementary processes guiding each decision and action. Developing joint and collaborative policy is half the challenge; putting it into action and making it routine completes the task. To develop joint or collaborative policies, processes, and practices, all parties involved should start with a common understanding about the interrelatedness of learning and health. From this understanding, current and future systems and actions can be adjusted, adapted, or crafted to achieve both learning and health outcomes.[1]

For several decades, various models have been developed to describe the many pieces that make up a school health program and how having such pieces in place can lead to improvements in health outcomes for young people.[2-4] Although these school health models have helped public health and school officials understand the roles schools can play in implementing health-related programs and interventions, such efforts have not always resulted in significant improvements in child and adolescent health. Similarly, they have not led to broader acknowledgement of the impact health-related interventions can have on academic outcomes. As recently as 2011, Charles Basch pointed out that ''school health is currently not a completely integrated part of the fundamental mission of schools in America nor has it been well integrated into the broader national strategy to reduce the gaps in educational opportunity and outcomes.''[5] Public health and education sectors continue to remain isolated from one another, and have not recognized the overlap and advantages of working together to improve both health and academic outcomes. The WSCC model is intended to remedy this problem by focusing on both health and academic outcomes. It is intended to bring health and education professionals together with a common purpose of helping the whole child.

LITERATURE REVIEW

Developing a Common Understanding of the Interrelatedness of Learning and Health

Educational attainment is an excellent indicator of future health: people who have more education tend to have better health than those who have less education.[6] In fact, the US Community Preventive Services Task Force recently recommended interventions intended to increase high school completion in order to improve future health equity.[7] At the same time, health issues of students (for example, hunger and chronic illness) can lead to poor school performance. Health-risk behaviors such as early sexual initiation, violence, unhealthy eating, and physical inactivity are consistently linked to poor grades, test scores, and lower educational attainment.[8-11] Scientific reviews have documented that school health programs can have positive effects on academic outcomes, as well as health-risk behaviors and health outcomes.[5,12] Similarly, programs that are primarily designed to improve academic achievement are increasingly recognized as important public health interventions.[6,13]

The 10 Health Components

The ''whole school'' section of the WSCC model lists sectors or components, of a school that are related to school health. Although the individuals engaged in these sectors might not recognize the contributions of their actions toward creating a healthy school, the model emphasizes that each plays a role toward creating a healthy and safe school that supports the health and academic achievement of students.

The 10 components included in the ''whole school'' section of the WSCC model are an expansion of the 8 component coordinated school health (CSH) approach described by the Centers for Disease Control and Prevention (CDC).[14] The WSCC model splits the CSH ''Healthy and Safe School Environment'' component into ''Social and Emotional Climate'' and ''Physical Environment'' components. Furthermore, it divides CSH's ''Family/Community Involvement'' into ''Community Involvement'' and ''Family Engagement'' components. This evolution meets the need for greater emphasis on both the psychosocial and physical environment as well as the ever-increasing and growing roles that community agencies and families must play. The 10 final components are health education; nutrition environment and services; employee wellness; social and emotional school climate; physical environment; health services; counseling, psychological, and social services; community involvement; family engagement; and physical education and physical activity. Table 1 presents a detailed description of each component.

Some of the 10 components are easily recognizable as important parts of school health, for example, health education and health services. These components tend to have staffs, at both the district and school level, who are devoted at least part-time to managing or carrying out essential health-related functions. They identify themselves, and others identify them, as part of the school or district's approach to school health. On the other hand, they may not recognize that the work in which they are engaged also impacts academic achievement.

Staff engaged in other school services (for example, nutrition services; physical education; counseling, psychological, or social services; and employee wellness) might or might not recognize their relevance to school health. However, these services are also provided to meet health needs. Through nutrition services, schools provide access to nutritious and appealing

Table 1. **Components of the Whole School, Whole Community, Whole Child (WSCC)***

WSCC component	Description
Health Education	Formal, structured health education consists of any combination of planned learning experiences that provide the opportunity to acquire information and the skills students need to make quality-health decisions. When provided by qualified, trained teachers, health education helps students acquire the knowledge, attitudes, and skills they need for making health-promoting decisions, achieving health literacy, adopting health-enhancing behaviors, and promoting the health of others. Comprehensive school health education includes curricula and instruction for students in pre-K through grade 12 that address a variety of topics such as alcohol and other drug use and abuse, healthy eating/nutrition, mental and emotional health, personal health and wellness, physical activity, safety and injury prevention, sexual health, tobacco use, and violence prevention. Health education curricula and instruction should address the National Health Education Standards (NHES) and incorporate the characteristics of an effective health education curriculum. Health education, based on an assessment of student health needs and planned in collaboration with the community, ensures reinforcement of health messages that are relevant for students and meet community needs. Students might also acquire health information through education that occurs as part of a patient visit with a school nurse, through posters or public service announcements, or through conversations with family and peers.
Nutrition Environment and Services	The school nutrition environment provides students with opportunities to learn about and practice healthy eating through available foods and beverages, nutrition education, and messages about food in the cafeteria and throughout the school campus. Students may have access to foods and beverages in a variety of venues at school including the cafeteria, vending machines, grab 'n' go kiosks, schools stores, concession stands, classroom rewards, classroom parties, school celebrations, and fundraisers. School nutrition services provide meals that meet federal nutrition standards for the National School Lunch and Breakfast Programs, accommodate the health and nutrition needs of all students, and help ensure that foods and beverages sold outside of the school meal programs (competitive foods) meet Smart Snacks in School nutrition standards. School nutrition professionals should meet minimum education requirements and receive annual professional development and training to ensure that they have the knowledge and skills to provide these services. All the individuals in the school community support a healthy school nutrition environment by marketing and promoting healthier foods and beverages, encouraging participation in the school meal programs, role-modeling healthy eating behaviors, and ensuring that students have access to free drinking water throughout the school day. Healthy eating has been linked in studies to improved learning outcomes and helps ensure that students are able to reach their potential.
Employee Wellness	Schools are not only places of learning, but they are also worksites. Fostering school employees' physical and mental health protects school staff, and by doing so, helps to support students' health and academic success. Healthy school employees—including teachers, administrators, bus drivers, cafeteria and custodial staff, and contractors—are more productive and less likely to be absent. They serve as powerful role models for students and may increase their attention to students' health. Schools can create work environments that support healthy eating, adopt active lifestyles, be tobacco free, manage stress, and avoid injury and exposure to hazards (mold, asbestos). A comprehensive school employee wellness approach is a coordinated set of programs, policies, benefits, and environmental supports designed to address multiple risk factors (lack of physical activity and tobacco use) and health conditions (diabetes and depression) to meet the health and safety needs of all employees. Partnerships between school districts and their health insurance providers can help offer resources, including personalized health assessments and flu vaccinations. Employee wellness programs and healthy work environments can improve a district's bottom line by decreasing employee health insurance premiums, reducing employee turnover, and cutting costs of substitutes.
Social and Emotional School Climate	Social and emotional school climate refers to the psychosocial aspects of students' educational experience that influence their social and emotional development. The social and emotional climate of a school can impact student engagement in school activities; relationships with other students, staff, family, and community; and academic performance. A positive social and emotional school climate is conducive to effective teaching and learning. Such climates promote health, growth, and development by providing a safe and supportive learning environment.
Physical Environment	A healthy and safe physical school environment promotes learning by ensuring the health and safety of students and staff. The physical school environment encompasses the school building and its contents, the land on which the school is located, and the area surrounding it. A healthy school environment will address a school's physical condition during normal operation as well as during renovation (ventilation, moisture, temperature, noise, and natural and artificial lighting), and protect occupants from physical threats (crime, violence, traffic, and injuries) and biological and chemical agents in the air, water, or soil as well as those purposefully brought into the school (pollution, mold, hazardous materials, pesticides, and cleaning agents).
Health Services	School health services intervene with actual and potential health problems, including providing first aid, emergency care and assessment and planning for the management of chronic conditions (such as asthma or diabetes). In addition, wellness promotion, preventive services and staff, student and parent education complement the provision of care coordination services. These services are also designed to ensure access and/or referrals to the medical home or private healthcare provider. Health services connect school staff, students, families, community, and healthcare providers to promote the health care of students and a healthy and safe school environment. School health services actively collaborate with school and community support services to increase the ability of students and families to adapt to health and social stressors, such as chronic health conditions or social and economic barriers to health, and to be able to manage these stressors and advocate for their own health and learning needs. Qualified professionals such as school nurses, nurse practitioners, dentists, health educators, physicians, physician assistants and allied health personnel provide these services.

Table 1. **Continued**

WSCC component	Description
Counseling, Psychological, and Social Services	These prevention and intervention services support the mental, behavioral, and social-emotional health of students and promote success in the learning process. Services include psychological, psychoeducational, and psychosocial assessments; direct and indirect interventions to address psychological, academic, and social barriers to learning, such as individual or group counseling and consultation; and referrals to school and community support services as needed. In addition, systems-level assessment, prevention, intervention, and program design by school-employed mental health professionals contribute to the mental and behavioral health of students as well as to the health of the school environment. These can be done through resource identification and needs assessments, school-community-family collaboration, and ongoing participation in school safety and crisis response efforts. In sddtion, school-employed professionals can provide skilled consultation with other school staff and community resources and community providers. School-employed mental health professionals ensure that services provided in school reinforce learning and help to align interventions provided by community providers with the school environment. Professionals such as certified school counselors, school psychologists, and school social workers provide these services.
Community Involvement	Community groups, organizations, and local businesses create partnerships with schools, share resources, and volunteer to support student learning, development, and health-related activities. The school, its students, and their families benefit when leaders and staff at the district or school solicits and coordinates information, resources, and services available from community-based organizations, businesses, cultural and civic organizations, social service agencies, faith-based organizations, health clinics, colleges and universities, and other community groups. Schools, students, and their families can contribute to the community through service-learning opportunities and by sharing school facilities with community members (school-based community health centers and fitness facilities)
Family Engagement	Families and school staff work together to support and improve the learning, development, and health of students. Family engagement with schools is a shared responsibility of both school staff and families. School staffs are committed to making families feel welcomed, engaging families in a variety of meaningful ways, and sustaining family engagement. Families are committed to actively supporting their child's learning and development. This relationship between school staff and families cuts across and reinforces student health and learning in multiple settings—at home, in school, in out-of-school programs, and in the community. Family engagement should be continuous across a child's life and requires an ongoing commitment as children mature into young adulthood.
Physical Education and Physical Activity	Schools can create an environment that offers many opportunities for students to be physically active throughout the school day. A comprehensive school physical activity program (CSPAP) is the national framework for physical education and youth physical activity. A CSPAP reflects strong coordination across five components: physical education, physical activity during school, physical activity before and after school, staff involvement, and family and community engagement. Physical education serves as the foundation of a CSPAP and is an academic subject characterized by a planned, sequential K-12 curriculum (course of study) that is based on the national standards for physical education. Physical education provides cognitive content and instruction designed to develop motor skills, knowledge, and behaviors for healthy active living, physical fitness, sportsmanship, self-efficacy, and emotional intelligence. A well-designed physical education program provides the opportunity for students to learn key concepts and practice critical skills needed to establish and maintain physically active lifestyles throughout childhood, adolescence and into adulthood. Teachers should be certified or licensed, and endorsed by the state to teach physical education.

*Adapted from Ref. [14]

meals that meet the health and nutrition needs of students. School nutrition services and the nutrition environment provide a learning laboratory for classroom health education. The intended outcome of physical education is to help improve the physical activity levels of students and help them improve their knowledge, skills, and confidence to enjoy a lifetime of healthy physical activity. School counselors, psychologists, and social workers attend to students' mental, emotional, and social health, either as individuals or in groups, or by addressing the whole school environment. Employee wellness programs improve productivity, decrease absenteeism, and reduce health insurance costs by addressing the health needs of school staff. In addition, these programs might help school staff better serve as models of healthy living to both students and parents. Each of these components also tends to have devoted staff, at least parttime.

Some components might not be as readily identified as contributing to school health. Community involvement benefits school health by sharing resources that support student learning, development, and health and creating opportunities for students to contribute to their community. Family engagement happens when families and schools work together to support the health and academic achievement of students. Schools or districts might have staff members who focus on improving community involvement or family engagement (for example, parent engagement centers), but they might not yet see the importance of working with these groups to improve health beyond involvement in homework or classroom assignments. Facility managers, site designers, and custodial staff might not immediately recognize their work as contributing to a healthy and safe physical school environment. Many others (other school staff, parents, students,

and visitors) can play important roles in creating a healthy and safe physical environment. The social and emotional climate of a school is even more strongly determined by the actions of the whole school community. In turn, how students experience the school climate impacts their heath and academic success.

IMPLICATIONS FOR SCHOOL HEALTH

A Collaborative Approach to Learning and Health

Bringing together multiple components of the whole school has the potential to create synergy and lead to health and academic results that could not be achieved otherwise. The WSCC model calls for greater collaboration, alignment, and integration to improve each child's cognitive, physical, social, and emotional development. Collaboration means to work together or cooperate. Alignment takes working together a step further, implying agreement among people on a common cause, ensuring that all components are working together toward the same purpose. Integration is the highest level of coordination—combining multiple components so that they function as a single whole. It is the rare school intervention or program that does not require at least some degree of collaboration, but not all need an integrated approach to be effective. Similarly, although it is unlikely that all 10 WSCC components will be engaged in every action, it is rare that an intervention would not be improved by integrating multiple components.

An integrated approach to learning and health goes beyond the coordination of specific interventions to the implementation of regular, ongoing, and systematic processes. In a complex environment such as a school, with 10 possible components to coordinate, systematizing such a process might help maximize use of component assets, facilitate a natural interaction among components, and engage school, public health, and community partners in achieving priority health and academic outcomes. A systematic process might also help overcome some of the common challenges that arise in addressing the health needs of students as part of a whole child approach to education.

A Systematic Process for Putting the Model Into Action

This article adds to the WSCC model by describing a systematic process districts and schools can use to implement the WSCC model and improve health and academic outcomes. The following 10-step process is designed to help schools or districts implement a systematic approach to integrating health and education and minimize or overcome the challenges, such as lack of readiness, personnel shortages, insufficient resources, and competing priorities that often delay or halt plans for school health and education improvement.

1. *Form a committee of individuals who are interested and passionate in improving health and academic outcomes of students*. Many districts and schools have already established committees (such as a school health advisory or action committee or a school improvement committee) that could adopt this process. Establishment of a committee should include a clear statement about the authority given to the committee and which decisions will require approval from an administrator or school board. When determining committee membership, keep all 10 WSCC components in mind. Some staff members are clearly associated with specific WSCC components. Creativity may be needed to identify individuals who can represent the needs and interests of other components that might not have assigned staff. It is more important to identify dedicated, passionate, and knowledgeable individuals who can represent the interest of components as related to the whole child, instead of focusing only on officially appointed individuals. The committee should also include other school staff, especially a school administrator, and individuals representing the interest of students, families, and the community. These individuals should be interested in and knowledgeable about improving health and academic outcomes. The committee's voice can help advance the importance of addressing health needs over other competing priorities. Support from administrators is critical to ensure the committee has the power to develop and implement any action plan.
2. *Conduct a needs assessment to determine the health-risk and health-promoting behaviors that are prevalent among students and how these behaviors are related to academic achievement*. A variety of sources and tools can be used to identify the priority health problems and health risk behaviors of students in a district or school. The Youth Risk Behavior Surveillance System (YRBSS) monitors 6 types of health-risk behaviors that contribute to the leading causes of death and disability among youth and adults.[15] Existing YRBSS data can be used to highlight priority health risk behaviors among middle and high school students. For example, local data might show that students are not meeting physical activity recommendations. Students who are physically active tend to have better grades and classroom behaviors.[16] Many county health departments have other data about health problems and health risks experienced by young people in their community or even in neighborhoods that make up a school cluster. Staff

within the school or district might have access to additional useful data. For example, the nutrition services director has data on breakfast and lunch meal counts, and might have information concerning the specific foods students eat from school meals. The school counselor and school psychologist might have data from school climate surveys.[17]

3. *Identify the specific outcomes of greatest priority*. Ensuring that all committee members are focusing on the same outcomes is critical for alignment and a successfully coordinated approach. Committee members should review the results of the needs assessment, and identify priority health-related areas that need improvement. It is desirable to narrow the list of priorities to a manageable number of health problems or risk behaviors. In addition, it is important to set specific and realistic outcome expectations with clear indicators that will demonstrate what success will look like when the outcomes are achieved.
4. *Determine the relationship between the selected health outcome and academic achievement*. Given all the possible priorities that could be identified in Step 3, it is practical for the committee to choose priorities that have both clear health and academic outcomes. Significant research has been conducted showing the relationship between many health behaviors and academic achievement.[5,12,16] Selecting outcomes that address both interests will increase participation and engagement by many stakeholders across health, education, and community settings.
5. *Identify promising or effective interventions that have the greatest potential for impacting the chosen health outcomes*. Instead of reinventing the wheel, review the existing literature to determine interventions and programs that have been evaluated and have demonstrated success at significantly impacting target health problems or risk behaviors. For example, the US Community Preventive Services Task Force (www.thecommunityguide.org) conducts systematic reviews to determine which program and policy interventions have been proven effective while the Substance Abuse and Mental Health Services Administration's National Registry of Evidence-based Programs and Practices is a searchable online database of mental health and substance abuse interventions (nrepp.samhsa.gov/Index.aspx). Candidate interventions also should be reviewed in relation to the capacity of the staff working in each relevant WSCC component. In addition to these types of interventions, policies, processes, and practices should be reviewed and modified to help improve the chosen health and academic outcomes.
6. *Determine how staff and other committee members will collaborate and align to maximize success in achieving priority health and academic outcomes*. After identifying the specific outcome expectations, and selecting interventions to be administered, engage the key individuals representing or working within the WSCC components who will be involved in implementing interventions. Keep in mind that not every intervention or action will require the involvement of all 10 components. In addition, just because someone sits on the committee does not mean that they are necessarily the best representative of a component to implement a plan. Others might need to be involved depending on their abilities and resources. Determining how interventions or actions will be coordinated requires concrete steps including establishing schedules, timelines, milestones, and deliverables; establishing effective communications; holding periodic meetings to identify problems and effective solutions to those problems; and reporting progress as a form of accountability.
7. *Invite community agencies and organizations that have a mission or similar interest in addressing the identified priority health and academic outcomes*. Expand the committee's membership beyond school or district staff to include neighborhood and community members who can focus school and community resources on achieving the identified priority health and education outcomes. Volunteers or public health agencies frequently have health expertise and resources that can help districts or schools successfully reach their goal. This step also challenges community members to identify strategies they can implement outside of the school setting, thus reinforcing, or even improving, the impact of school programs.
8. *Create an action plan to impact the chosen health outcome*. Make plans concrete, with timelines and all actions assigned to specific people such as those responsible for implementing interventions, completing committee tasks, and monitoring progress in meeting expected outcomes.
9. *Develop a plan to monitor the implementation and outcomes of interventions*. An action plan is only good if people act on it, if it is implemented as intended, and if there is a way to tell if it made a difference. Districts and schools rarely have the resources to conduct full-scale outcome evaluation, but using interventions with evidence of effectiveness minimizes the need for this type of evaluation. Instead, districts and schools can determine how they will use their evaluation findings and shape their monitoring and evaluation plan around these goals. The committee can collect and analyze simple monitoring data to determine how,

when, and where activities are conducted and who participates in each activity.[18] In terms of outcomes, the committee can determine the level of changes they wish to explore. Some might decide to document changes observed in the classroom, school environment, or provision of services. Others might want to identify strengths and weaknesses of their policies or practices and make a plan for improvement.

10. *Implement and monitor the implementation of the action plan*. During implementation, the committee should meet regularly to ensure that all tasks are being completed on time and to troubleshoot any problems that arise. Plans are not static and might need to be changed during the implementation process. Evaluation should be a regular part of committee meetings to monitor implementation and look for barriers and unexpected difficulties. Collection of information throughout the implementation process will help ensure that the committee is able to understand the implementation of new interventions or practices.

Addressing Common Barriers

There are some common challenges in implementing any planning and implementation process in a district or school.

- *Lack of clear leadership*. It is essential to identify a school health lead, coordinator, or champion who is assigned to attend only to school health priorities and is not distracted by competing priorities. For example, a school could assign an existing school health position (such as a school nurse or health education teacher) to lead the steps for assessing school health priorities, coordinate relevant school health staff ideas, and convene a community/school council. These responsibilities might be assigned in place of athletic coaching or other school improvement or instructional responsibilities.
- *Lack of administrative support*. In addition to identifying a school health lead, it is critical to secure administrative support for school health. For example, work with the assistant superintendent or principal to be an advocate for student health by publicly identifying student health outcomes as district or school priorities.
- *Lack of clear messages and communication channels to increase understanding and buy-in from school staff and the community*. It is necessary to develop communication messages and identify communication networks, such as staff meetings, bulletin boards, and parent newsletters, to increase understanding and build school staff and community support for school health programs. Consistent and sustained messages can influence support for and adoption of school health programs by the school staff and larger community.
- *Lack of funding resources*. Districts and schools should seek federal, state, and local funding sources for school health as a natural part of school fund-raising efforts. Educational funding is a constant challenge. Districts and schools seek grant funding, community support, and foundational funding to support the costs of education. Districts and schools should investigate and apply for health-related funding as a routine part of their annual educational funding process.
- *Lack of engagement by community health partners*. It is important to build partnerships with the local community health providers proactively and continuously. It is easier to build support, seek funding, and focus school plans on improving health and education outcomes when there are community health advocates. Local health providers (such as physicians, health department staff, and mental and social health clinicians) can advocate for improving health outcomes for students and persuade others to support school health efforts. Their investment and interest in the health of their community makes them likely to participate in the 10-step action planning process.

The WSCC model presents a logical approach to improving health and academic outcomes. The 10 action planning steps demonstrate a systematic and achievable process to help a district or school focus on priority health and academic outcomes. Attending to some critical actions, such as identifying a leader, garnering support, and securing funding can help overcome many of the barriers that might arise in the priority planning and implementation process. Schools must attend to improving the whole child, including addressing health needs, if they expect to have a lasting impact on student learning. But, any model and proposed processes and actions require testing and evidence to confirm their value. District and schools will need to test this model and put plans into action to show that significant, substantial, and sustainable health and academic outcomes can be achieved.

Human Subjects Approval Statement

The preparation of this paper required no original research involving human subjects.

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