

# The School Wellness Nurse: A Model for Bridging Gaps In School Wellness Programs

Glenda Avery, Teresa Johnson, Misty Cousins, Bernita Hamilton

Incidence of pediatric overweight continues unabated among youth in the United States. Current estimates indicate that 31.8% of U.S. children are overweight, and 16.9% are obese (Ogden, Carroll, Kit, & Flegal, 2012). Overweight children have an increased likelihood of becoming overweight adults and developing chronic diseases, including diabetes mellitus, cardiovascular disease, asthma, osteoarthritis, non-alcoholic fatty liver disease, and certain cancers, among others (Dietz, 1998; Kopelman, 2007; Pi-Sunyer, 2002). If current trends continue, pediatric obesity may decrease the lifespan by three to five years by 2035 (Ludwig, 2007), and today's children may be the first generation not expected to outlive their parents (Olshansky et al., 2005).

School environments represent a desirable intervention setting for

Incidence of pediatric overweight continues to pose significant national health threats due to associated co-morbid, chronic conditions, including diabetes mellitus, hypertension, dyslipidemia, and others. Interventions to address health behaviors of children often focus on the school environment because of the opportunity to have an impact on child health through nutrition education and optimization of the school food and physical activity environments. Federally mandated school wellness policies provide schools with clear objectives to address poor health behaviors of their students. Unfortunately, these policies are largely ineffective because of identified gaps in their administration. Competing school and community factors further fragment their implementation. To bridge the gaps between wellness policy development and implementation, a school wellness nurse model is proposed. The role of the school wellness nurse serves to weave health interventions into the fabric of the school and community environments – displacing behaviors and policies inconsistent with national health goals to reduce incidence of overweight.

influencing the health of all children and promoting interventions to reduce obesity (Davis et al., 2007) because they provide benefit to all students regardless of weight status. Federally mandated school wellness programs and numerous school-based interventions have been conducted in U.S. schools to combat incidence of pediatric overweight (Brown & Summerbell, 2009), but they have been criticized for their modest impact (Levi, Vinter, Richardson, St. Laurent, & Segal, 2009; Thomas, 2006). The limited effectiveness of these initiatives may be due to fragmented implementation. School-based health interventions can be difficult to “sell” to schools because of competing academic priorities, poor “buy-in” from staff, and even resistance from parents (Levi et al., 2009). A 2009 Robert Wood Johnson report indicates that many school wellness policies are too weak and receive few resources to support success (Belansky, Chriqui, & Schwartz, 2009). Programs are ineffective because of national and local gaps in school wellness policies and implementation. The Action for Healthy Kids (2008) identified the following gaps in the implementation of federally mandated school wellness programs:

- *Gaps in perception among leadership, staff, and students on how they view school wellness and its implementation.* Administration tends to be more optimistic in the implementation of district wellness policies than those in the schools who are actually responsible for seeing that this task is done.
- *Gaps in attention and access to healthy food choices and improving nutritional quality.* The focus has been on foods to avoid such that the opportunity to teach healthy food choices has been missed. Improvements in nutrition quality of the school food environment have been mixed. The availability of vending machine foods and snack bars contributes to the decreased nutrient density of the school environment.
- *Gaps in physical education and school-based physical activity opportunities.* Funding for physical education is lacking. Few children meet the 60-minute per day recommendations for moderate to vigorous physical activity recess hour. Further, participation in physical education classes decline as children advance through school grades.

**Glenda Avery, PhD, RN,** is an Associate Professor, Troy University School of Nursing, Troy, AL.

**Teresa Johnson, DCN, RD, LD,** is an Associate Professor, Troy University School of Nursing, Troy, AL.

**Misty Cousins, BSN, RN,** is Project Director, School Wellness Program, Troy University School of Nursing, Troy, AL.

**Bernita Hamilton, PhD, RN,** is a Professor, Troy University School of Nursing, Troy, AL.

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- *Gaps in policy implementation.* Nearly 70% of schools had wellness policies in place that meet federal guidelines. However, fewer than half of schools had fully implemented their own policies.
- *Gaps in policy monitoring and evaluation.* At the time of this report, Kansas was the only state to have an ongoing monitoring system of school wellness policies.
- *Gaps in interest and perceived responsibilities.* Many schools do not believe wellness of students is part of the school's mission. Competing priorities push exercise and nutrition education to the periphery of the schools' goals and objectives.
- *Gaps in parental engagement.* There is a lack of connection between the exercise and nutrition education mission of wellness policies and parents. The message is not effectively communicated and subsequently reinforced in homes and community programs. Schools cannot bear the burden alone.
- *Gaps in addressing underserved communities.* These areas are disproportionately affected by obesity rates and poor nutrition. Further, these areas do not often have safe places to play outdoors and have limited access to neighborhood groceries offering fresh fruits and vegetables.
- *Gaps in systemic support.* Schools do not have financial resources to provide sufficient commitment to school wellness.

In response to these gaps in implementation of school wellness policies, Congress passed the 2010 Healthy, Hunger-Free Kids Act that added provisions for implementation, evaluations, and public reporting of local school wellness policies. This Act requires school wellness policies to include goals for nutrition education and physical activity, nutrition guidelines to reduce obesity, creation of a wellness committee of diverse school and community members to implement the policies, and evaluation and reporting of outcomes (Healthy, Hunger-Free Act, 2010).

A dedicated school wellness nurse may provide the solution for fragmented implementation of school wellness policies and serve as the designated "agency" to ensure school compliance to the 2010 Act. A dedicated school wellness nurse may provide the solu-

**Table 1.**  
**CATCH vs. Non-CATCH Comparison for Collapsed Behavioral Variables**

		Intervention		No-Intervention		$\chi^2$	p
		n	%	n	%		
Milk	No milk consumed on the previous day	85	23.6	137	32.6	7.72	0.005 OR = 1.56
	Drank one or more servings of milk on the previous day	275	76.4	283	67.4		
	Total	360	100.0	420	100.0		
Sodas	One or less sodas consumed on the previous day	313	86.0	327	77.1	10.9	0.001 OR = 0.55
	Or more sodas consumed on the previous day	51	14.0	97	22.9		
	Total	364	100.0	424	100.0		
30 minutes MVPA	Yes	328	90.9	351	83.4	9.52	0.002 OR = 1.98
	No	33	9.1	70	16.6		
	Total	361	100.0	421	100.0		
30 minutes non-MVPA	Yes	249	69.4	228	54.0	19.18	0.000 OR = 1.91
	No	110	30.6	194	46.0		
	Total	359	100.0	422	100.0		
	More than 2 hours	120	33.0	113	26.7		
	Total	364	100.0	424	100.0		

**Note:** MVPA = moderate to vigorous physical activity.

tion for fragmented implementation of school wellness policies. School nurses can serve as a care safety net for students, but many schools lack a full-time nurse (Fauteux, 2010). Further, although the role of the school nurse has expanded to include health promotion (Council on School Health, 2008), school nurses are heavily involved in episodic care of students, which limits time for wellness initiatives. RNs who serve in a school environment of an underserved community may face even greater workloads because uninsured children are more likely to have unmet dental, medical, and medication needs.

National school-based programs to address incidence of pediatric overweight frequently emphasize proper nutrition and physical activity through educational curricula and optimization of the school environment. These programs typically use outside facilitators because they are effective in helping schools carry out wellness responsibilities (Austin, Fung, Cohen-Bearak, Wardle, & Cheung, 2006). In 2005, a Health and Rural Services Administration (HRSA) grant-funded project to address poor health behavior (#D04RH04340-01-01) was conducted in 7 rural, underserved schools in Alabama by a community consor-

**Table 2.**  
**A Comparison of Health Indicators for Bullock County, Alabama, and the United States**

	2005 Diabetes Death Rates per 100,000 (%)	2005 Heart Disease Death Rates per 100,000 (%)	2005 Stroke- Related Deaths (%)	2007 Poverty Estimates (%)	2006 Care Providers per 10,000 to Population	
					Doctors (%)	Dentists (%)
<b>National</b>	25.3	288.2	48.4	13.0	7.2	2.9
<b>Alabama</b>	30.1	351.7	60.5	16.6	6.5	4.3
<b>Bullock County</b>	47.0	454.1	74.8	34.0	5.0	1.9

**Source:** Office of Primary Care and Rural Health, Alabama Department of Public Health, & The Alabama Rural Health Association, 2009.

tium. This three-year project used the Coordinated Approach to Child Health (CATCH) as the intervention (CATCH, 2006). School staff received CATCH training and continued support by two registered nurses who made frequent visits to the intervention schools over the three-year period. At the end of the project, data analysis indicated improvement in beverage selection (type and frequency) and time spent in physical activity (see Table 1), but this did not translate into changes in anthropometric variables. Data on 788 children revealed 46.4% of the children in the schools remained overweight/or obese, and 60% of the children had a higher than recommended percentage of body fat.

To understand why success of this program was fragmented, 44 teachers answered 8 qualitative, open-ended questions about involvement in and implementation of the CATCH initiatives. Although school personnel were initially enthusiastic about adopting an intervention program, during the implementation phase, they were hindered by competing constraints. These constraints were identified as structured curricula that interfered with the health education and physical activity programs, the lack of personal knowledge of health and wellness, and lack of professional health care staff to serve as a resource for support and guidance.

### The School Wellness Nurse Model

In 2009, a second HRSA grant-funded project (HRSA grant #D04R H12670), Healthy Schools, Healthy Kids, Healthy Families (HSHKHF), focused and narrowed the interven-

tion to one school in a community setting with particularly poor health indicators (see Table 2) (Office of Primary Care and Rural Health, Alabama Department of Public Health, & Alabama Rural Health Association, 2009).

Minority groups are disproportionately represented in Bullock County, with 70% of African Americans compared to state (26%) and national (12%) levels (Office of Primary Care and Rural Health et al., 2009). The percentage of children living below the poverty level (38.7%) is much higher than the state (23.6%) and national (18.0%) rates (Office of Primary Care and Rural Health et al., 2009).

The HSHKHF grant project employed a full-time RN to serve as a dedicated wellness nurse at one rural, underserved elementary school. The position is supported by RNs, a dietitian, professional staff, and nursing students from Troy University School of Nursing. The project encompasses three goals:

- Demonstrate the benefit of a school-based comprehensive health wellness model in at-risk, culturally diverse elementary children in an underserved rural area.
- Change the health behaviors of elementary children to more wellness orientation through parental, school, and community involvement.
- Continue and increase collaborative participatory efforts of community partners to ensure wellness promotion in schools and in the community.

This comprehensive school model demonstrates to administrators, state agencies, and legislators how a designated health nurse can work in the

school setting to coordinate wellness activities. The nurse can monitor at-risk children and intervention effectiveness and work with parents, acute care facilities, and community agencies to promote wellness. The ultimate goal of the nurse is to exert a positive effect on health outcomes of children in these high-risk areas. The role of the wellness RN is distinct from the traditional school nurse who provides episodic care to a select group of children. The wellness RN will allow every child to have access to health and wellness education, health screening and monitoring, and referral to community health care resources partnering with the school. The school wellness nurse model represents a solution to bridging the current gaps in implementation of wellness policies and addressing pressing health care issues of school children.

### Establishing the School Wellness Nurse Model: First-Year Experiences

The objectives of the first year were to establish relationships with school staff, students, and their families and community leaders; assess school and community health indicators; and identify potentially effective interventions addressing identified needs. Gaining entry and acceptance was successful because of prior grant projects, established relationships with community gatekeepers, and development of a community consortium. School and consortium representatives participated in the initial hiring process of the wellness nurse.

During the first few weeks, the school wellness nurse began an extensive assessment of children ( $N = 420$ ),

*When school-based interventions are implemented in a sufficient “dose” to impact students across the school environment, and when these interventions are supported by community constructs and policies that can provide synergy to wellness policy objectives, substantial successes in reversing the prevalence of pediatric overweight can be realized.*

school environment, and community. Anthropometric data, nutrition knowledge, physical education and activity, academic progress of the school, and the food environment (snacks and cafeteria service) were collected. Student, staff, and community leaders were assessed for attitudes and knowledge regarding school health and wellness policies. The school wellness nurse was also very focused on the children – teaching health, nutrition, and physical activity lessons to all students each month. Children learned about the Food Guide Pyramid, personal hygiene, exercise, vaccinations, stranger danger, and avoiding illicit drug use. Children received snack and exercise journals, and learned the nutrition contribution of the various food groups. Troy University nursing students taught the children lessons on asthma, diabetes, and dental hygiene by using engaging, creative, and interactive activities, including a nutrition poster contest. The children visited health and nutrition Web sites to learn about heart disease, dental caries, and healthy eating. The school wellness nurse also increased the amount of time children spent in moderate to vigorous physical activity (MVPA) through programs designed to integrate physical education throughout the school day, including Jammin’ Minute, Twelve Days of Fitness, Monster Mash, President’s Challenge, and other similar programs. A “Fitness Is Fun Field Day” was conducted during the fall and spring semesters, and was very popular with children, parents, and staff. Team Nutrition Cookbooks were provided to cafeteria staff. Low-fat cookbooks, along with water bottles, newsletters, t-shirts, mileage competition awards, “Fit Kids Classroom Workout” DVDs, and

pedometers, were provided to teachers and faculty members.

To support the initiatives within the school, the school wellness nurse also worked with parents and community partners. She contacted parents to ensure all students had health insurance and provided information on All Kids (Alabama’s low-cost state insurance program for children), made presentations at parent-teacher association and Title 1 meetings, sent nutrition information home with students for their parents, participated in local health fairs, attended state obesity task force meetings, conducted parent/child nutrition poster contests, and assisted with vision screening. The school wellness nurse also provided wellness start-up kits to four area churches, as well as portable play equipment for children attending vacation Bible schools at area churches during the summer.

### **Building on Success: The Second Year Experience**

The positive outcomes of the first year enabled the school wellness nurse to identify particular areas of the school environment needing support. Interventions to increase student knowledge of optimal health and nutrition behaviors continued and were augmented (for example, purchase of a portable cooking cart with lesson plans and supplies). However, added priorities included improving physical education and promoting school and community buy-in of the wellness committee responsibilities.

A school wellness committee was established that included the school principal, school nurse, counselor, physical education teacher, teacher representatives from each grade, cafe-

teria staff, librarian, parents, community leaders, and consortium members. This committee completed the School Health Index and then met bimonthly to plan wellness events and discuss progress. This group helped establish a school garden, organize intramural sports, and organize a healthy fundraiser – Jump Rope for Heart. Although the school garden was initiated by the school wellness nurse, the county extension service and a local business have assumed ongoing responsibility for the project. The school organized a flag football team and cheerleading squad that have been very successful. HSHKHF gave the local television studio an exercise CD that airs the program several times a week after school. HSHKHF also sponsored A Day with the Registered Dietitian at the local grocery store. The school wellness nurse organized a weight loss program for staff, with over 25 teachers participating in the weekly exercise classes.

During the first year, the school wellness nurse noted limited school opportunities for physical activity for children. The crowded physical education classes and curriculum limited students’ time in MVPA. SPARK PE® curriculum was purchased and implemented during the spring semester. Accelerometers are being used to measure the effectiveness of the program’s ability to improve time spent in MVPA. The HSHKHF grant also renovated the school basketball court, provided new playground equipment, and developed a fitness course on the walking trail around the playground that is used by the school and community. Teachers began to use the Jammin’ Minute CDs in class and started a Scale Back team to lose weight in a state competition.

Fitnessgram® is an assessment tool that measures students’ fitness levels, and Alabama schools are requested to complete this assessment for their students. Not based on athletic performance, Fitnessgram measures three components indicative of overall health: 1) aerobic capacity, 2) body composition, and 3) muscular strength, endurance, and flexibility (Fitnessgram, 2011). Collecting Fitnessgram data can be difficult. There are nine variables to measure, and some require training and/or special equipment (such as skinfold calipers, body mass index calculation). Troy University School of

Nursing faculty, staff, and students collected Fitnessgram data at the beginning and end of the school year on all 420 students. These data will be analyzed and used to monitor progress and establish future health goals for the school.

## Sustaining the Future: Year Three

The focus of the third and final year of the HSHKHF grant project was to sustain progress of the interventions, expand to other schools, and promote positive interactions among students. Early data indicate positive outcomes. The school wellness committee developed operating guidelines, established clear leadership roles, and developed new objectives as it assumed more responsibility for school wellness policies. Increased community outreach to local businesses and health agencies will focus on school partnerships to support pieces of the wellness program (such as local YMCA and intramural sports). Additional grant funding will be pursued to continue the work of the school wellness nurse in health promotion and expand to mental health issues. Extensive data analysis measuring the impact of this three-year intervention on nutrition knowledge, attitudes, health behaviors, and anthropometrics indicated positive outcomes regarding increased participation in moderate to vigorous physical activity and improved dietary behaviors. Data will be disseminated in appropriate venues to foster similar initiatives and garner additional support for this school-based intervention model.

## Conclusions

School-based interventions have been criticized for their modest impact in reducing pediatric overweight (Thomas, 2006). However, school interventions will not work in environments where gaps exist that prevent programs from being woven into the fabric of the school and where policies (or lack of them) are counter-productive (Katz, 2009). When school-based interventions are implemented in a sufficient "dose" to impact students across the school environment, and when these interventions are supported by community constructs and policies that can provide synergy to wellness policy objectives, substantial successes in reversing the prevalence of pediatric overweight can be realized

(Foster et al., 2010; Hirst et al., 2009; Hoelscher et al., 2010; Popkin, 2010). This is particularly true in underserved minority communities, where failure to provide school-based interventions may have the unintended result of promoting greater health disparities (Huang & Story, 2010). A dedicated school wellness nurse can be the solution in bridging the gaps in school wellness policies and assuring their ultimate success to improve and sustain health outcomes of children.

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