

School Health Reform: Investigating the Role of Teachers

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Please note that this study was published before the implementation of Healthy, Hunger-Free Kids Act of 2010, which went into effect during the 2012-13 school year, and its provision for Smart Snacks Nutrition Standards for Competitive Food in Schools, implemented during the 2014-15 school year. As such, certain research may not be relevant today.

ABSTRACT

National and local policies have positioned schools to play an integral role in addressing the obesity epidemic by establishing preventive activities. Teachers are ideally suited to have a role in this process because teachers have direct and indirect impacts on student health outcomes. The purpose of this exploratory study was to assess the health status of teachers in a large urban school district and understand their beliefs and self-efficacy on the intersection of learning and health for the students they teach. This exploratory study assessed the self-reported health status of 83 teachers in a large, urban school district and investigated teachers' beliefs and self-efficacy on the intersection of learning and health. Results indicate that although teachers surveyed were not practicing daily habits that promote health, they believe it is important to teach health education in schools. The teachers responding to this survey did not feel prepared, empowered, or able to integrate health education into their current curricula. Information from this survey may assist in identifying strategies to actively involve teachers in promoting health so that students will have the opportunity to learn health information in the classroom and observe healthier behaviors modeled by their teachers.

Introduction: The Role of Teachers in School Health Reform

More than one-third (33.6%) of children and adolescents across all racial and ethnic groups were overweight or at risk for being overweight in 2007-2008 (Flegal, Carroll, Ogden, & Curtin, 2010; Ogden, Carroll, Curtin, Lamb, & Flegal, 2010). Excess weight is associated with multiple physical and social consequences (Braet, Mervielde, & Vandereycken, 1999; Dietz, 1998; Wabitsch, 2000). The short and long-term effects of the childhood obesity epidemic have produced momentum for action by Congress. Congress' most recent action was in December 2010 when President Obama signed the Healthy, Hunger-Free Kids Act of 2010. This statute aims to raise nutritional standards for school lunches and lower the amount of minimal-nutrient dense foods in the cafeteria. In addition to endorsing these federal policies, the Robert Wood Johnson Foundation and several associations recommend that nutrition education be incorporated into all core subjects (Briggs, Fleischhacker, & Mueller, 2010; Chriqui, Schneider, Chaloupka, Ide, & Pugach, 2009). These actions and policies have positioned schools to play a leadership role in addressing the obesity epidemic.

The school setting is ideal for preventive activities for several reasons. First, the continual contact teachers, administrators, and staff maintain with students from preschool through high school creates a sustained opportunity to provide support for healthy food choices. Additionally, students may receive breakfast, lunch, and a snack at school, which comprises a large percentage of, or all, of their calorie and nutrient needs. Perhaps most important to situating health reforms within schools are the direct and indirect effects health factors have on educational outcomes, such as standardized test scores, which show that healthier students are better learners (Basch, 2010; Chomitz et al, 2009; Florence, Asbride & Veugelers, 2008; Joe, Joe & Rowley, 2009).

Despite the positive potential of the school setting for obesity prevention, the following barriers exist to fully utilizing this setting: the current curriculum is demanding; teachers do not receive adequate time to implement additional programs; there is insufficient professional development in nutrition and physical activity, and little attention is given to a teacher's personal health status. Health programming can be viewed as yet another initiative for an already overtaxed system. Therefore, school-based strategies need to be functionally integrated

into the existing school curriculum, so that students not only learn health topics in the classroom but also have opportunities to practice them during the school day.

Teachers are a key factor in reforming education. A critical dimension to effectively utilizing teachers as part of the solution to the childhood obesity epidemic is addressing their own personal health habits and conditions. In 2007-2008, the prevalence of obesity was 32.2% among adult men and 35.5% among adult women (Flegal et al., 2010). Compared to the suggested guidelines related to the daily physical activity suggestion of sixty minutes per day in Healthy People 2010, only 48.8% of adults report meeting the recommended amount of activity (Carlson et al., 2008). High rates of adult obesity, in conjunction with low amounts of physical activity, have resulted in higher rates of chronic conditions, such as diabetes and hypertension (Bales et al., 2003). Since teachers are seen as role models by their students, it is imperative that school-based initiatives also support teachers in adapting and maintaining nutrition and physical activity habits that are consistent with healthful living.

The belief that teachers influence the nutrition and activity practices of students is supported by health behavior theories, such as the social ecological model (Stokols, 1996) and the social cognitive theory (Bandura, 1997). These theories recognize that significant adults, such as teachers, influence youth behavior through role modeling and social support. For example, previous research has shown that teachers' smoking during school hours is associated with adolescent smoking (Poulsen et al., 2002). The current eating patterns of elementary school employees, who were primarily instructional staff, show that employees rarely meet national nutrition recommendations for fruits, vegetables, whole grains, and milk (Hartline-Grafton, Rose, Johnson, Rice, & Webber, 2009). It has also been shown that teachers' participation in a physical activity program has a significant effect on students' physical activity involvement (Donnelly et al., 2009).

However, the role that teachers play as school leaders in demonstrating physical activity and healthy eating has not been fully explored. Previous research has revealed that high school students learn more health education material from their regular classroom teachers than from temporary programs or health education faculty (Anderman, Lane, Cupp, Zimmerman, & Phebus 2009). This study demonstrated that students felt that their regular classroom teacher was more accessible and provided more mastery of the concepts. This suggests that if classroom teachers were given needed health education content, they could help children make health behavior change (Anderman, Lane, Cupp, Zimmerman & Phebus, 2009; Sy & Glanz, 2008).

Self-efficacy can be defined as one's belief in his or her effectiveness to complete a task or goal (Bandura, 1997). Educational researchers view teacher self-efficacy as a major determinant of effective teaching (Gibbs, 2003). However, a teacher's self-efficacy may be hindered by a lack of knowledge, or a previously unsuccessful health behavior change. Both of these may compromise the teacher's ability to teach effectively. Teachers with greater levels of self-efficacy towards a particular curriculum will be more likely to instruct effectively than teachers who have lower levels of self-efficacy (Allinder, 1994; Dembo & Gibson, 1985; Guskey, 1988).

Research suggests teacher practices may be the most significant factor in student learning (Palardy & Rumberger, 2008). A teacher's efficacy and practices in terms of managing the classroom environment and curriculum may have a stronger effect on student learning, but is likely to be given less attention since such practices are more difficult to evaluate and document. Teacher practices may be improved through professional development, mentoring, or through better professional training programs (Blake & Monahan, 2007).

Improvements in teacher practices will likely help schools achieve the intended results of the federal legislation related to health, such as the Healthy, Hunger-Free Kids Act of 2010, which increases access to healthy foods for students. Teachers have a critical role to play in modeling and teaching healthy behaviors to their students. This role has largely been underutilized, not only in the research base, but also in discussions and solutions for improving students' health status, particularly with nutrition and physical activity behaviors. Professional development programs have the opportunity to play a critical role in school-based health programs aimed at the prevention of obesity.

An Exploratory Study to Assess Health Status of Teachers: Purpose and Methods

The purpose of this exploratory study was to assess the health status of teachers in a large urban school district and understand their beliefs and self-efficacy on the intersection of learning and health for the students they teach.

To elicit teachers' views and perspectives about learning and health, a quantitative, descriptive methodology was chosen. The sample included 83 teachers from Public and Public Charter Schools in a large urban area. The participants were enrolled in a professional preparation course through a local university and were invited to complete a survey after completing an informed consent that explained the purpose of the study. Approval for this study was obtained from American University's Institutional Review Board.

The final study sample included 83 participants. The majority of the sample was Black (68%); other participants were White (23%) with the remainder were Asian and Hispanic (8%). The gender breakdown was 75% (n=62) female and 25% (n=21) male. Twenty-seven percent (n = 22) teach at the elementary school level; 36% (n = 30) teach at the middle school, 14% (n = 12) teach at the high school level and 23% (n =19) teach at schools that offer multiple levels. The mean age of the participants was 42.1 years (SD = 12.9). The mean Body Mass Index for respondents overall was 28.3 kg/m² (SD = 7.2) and 27.9 kg/m² (SD = 4.9) for women and men, respectively.

Eleven questions assessed the personal health of the respondent. Questions were drawn from the Behavioral Risk Factor Surveillance Survey. Selected questions used a five-point Likert response scale ranging from (1) "very low or poor" to (5) "very high or excellent." Other questions had a choice of "yes" or "no" for health issues, such as, "Do you smoke?" or "Have you been told by a doctor that you have diabetes?"

To assess the respondents' nutrition and physical activity patterns, select questions from the National Health and Nutrition Examination Study, 2009, were used. Five questions about nutrition assessed consumption of soda, fruits and vegetables and water. Responses ranged from "0" indicating no consumption per day to "more than 5" per day. An additional five questions were used to assess the amount of vigorous and moderate physical activity and strength training done on a daily basis.

Teachers' beliefs and self-efficacy on school health education, as well as teachers' perceived role in teaching health, were assessed using 14 survey items. These questions probed the teachers' beliefs and self-efficacy on, "How important it is to teach health education?" and "If they, as teachers, feel empowered to integrate health education?" Responses were based on a five-point Likert scale with "1," strongly disagree or very little, to "5,"strongly agree or very much.

Data Analysis

Responses were analyzed with STATA, version 11. Descriptive statistics were calculated and included percentages of participants who had/have a health condition and who agreed or disagreed with individual survey items assessing beliefs and self-efficacy regarding how health may affect learning in schools. For belief responses on a five-point scale, Likert scale responses of 1 and 2 were coded as strongly agree/agree and 4 and 5 were coded as disagree/strongly disagree. For self-efficacy responses on a five-point scale, responses of 1 and 2 were coded as very much/some and 4 and 5 were coded as very little/little. Means and standard deviations were also calculated for each survey item.

Results and Discussion

Twenty-six percent (n=22) of the participating teachers in the study reported having hypertension, 12% (n=10) reported having diabetes and 15% (n= 12) reported having asthma. Seven percent (n=6) of the teachers reported being current smokers. Approximately 61% (n=51) reported being physically active for three or more days each week, yet only 33.3% (n=27) reported engaging in vigorous-intensity activities for three or more days each week. For screen times, 29.8% (n=25) reported watching three or more hours of television or videos on a daily basis and 31% (n=26) reported using a computer for three or more hours per day. For daily fruit and vegetable consumption, 47.6% (n=40) of the teachers reported eating two or fewer fruit servings while 28.6% (n=24) reported eating two or fewer vegetable servings. Overall, 33% (n=27) consumed more than five fruit and vegetable servings on a daily basis.

Ninety-four percent (n=78) indicated they believe it is important to teach health education in schools with 77.6% (n=64) agreeing that the health of students is an important issue to teachers. Ninety-four percent (n=78) of the teachers stated that they believe that a student's health status can impact students' academic achievement

with 88% (n=73) believing that healthy students can attain higher academic achievement compared to less healthy students. Mean scores for all items are shown in Table 1.

Table 1: *Health and Education: Beliefs of Teachers (n=83)*

	Strongly Agree/Agree	Neutral	Strongly Disagree/Disagree	Mean Score	
	%	%	%	Mean	SD
It is important to teach health education in schools.	94.0%	1.2%	4.8%	4.71	0.90
The health of students is an important issue to teachers.	77.8%	16.0%	6.2%	4.23	1.05
It is my responsibility as a teacher to address health issues in the classroom.	73.5%	7.2%	7.2%	3.99	1.05
A student's health status can impact their academic achievement.	94.0%	1.2%	4.8%	4.75	0.85
Healthier students can attain higher academic achievement compared to less healthy students.	88.1%	8.3%	3.6%	4.49	0.92
It is my role as a teacher to create classrooms that promote healthy habits for students.	81.0%	14.3%	4.8%	4.31	0.97

In addition, only 36% (n=30) of participating teachers reported feeling prepared, empowered, or able to integrate health education into their current curricula. Fifty-four percent (n=45) feel prepared, empowered, or able to actively participate in school wellness activities. About 57% (n=47) of the teachers believe they can assist families and about 65% believe they can play a role in improving the health status of a student who is engaging in unhealthy behaviors (Table 2).

Table 2: *Self-Efficacy of Teachers on Learning and Health*

	Some/Very Much	Neutral	Very Little/Little	Mean Score	
	%	%	%	Mean	SD
How much can you do to get students to believe they can engage in health habits?	84.3%	13.3%	2.4%	4.10	0.76
How much can you do to help your students value health habits?	91.6%	4.8%	3.6%	4.14	0.67

How much can you do to motivate students to engage in healthy behaviors?	91.6%	3.6%	4.8%	4.12	0.74
How much can you assist families in helping their children do well in school?	57.3%	20.7%	22.0%	3.48	1.24
How much can you do to improve the health status of a student who is engaging in unhealthy behaviors?	65.1%	21.7%	13.3%	3.64	0.98
As a teacher, I feel prepared, empowered, or able to integrate health education into my current curricula.	35.8%	29.6%	34.6%	3.02	1.36
As a teacher, I feel prepared, empowered, or able to actively participate in school wellness activities.	53.6%	25.0%	21.4%	3.49	1.24

Examination of the health conditions and practices of this sample shows the health of the teachers closely resembles that of the population in the District of Columbia. The Behavioral Risk Factor Surveillance System (BRFSS) surveys indicate approximately 15.6% of the population smokes, 8.3% have diabetes, 26.1% have hypertension, and 10.4% have asthma (CDC, 2010). Hartline-Grafton, Rose, Johnson, Rice, and Webber (2009) studied elementary school employees and found high rates of obesity and overweight, along with a pattern of poor diets. However, only a handful of studies have investigated teachers and these studies were either conducted more than a decade ago, or do not present sufficient data for accurately characterizing the health of teachers (Bradfield & Fones, 1984; Cullen et al., 1999; Resnicow et al., 1998).

This study has several limitations. The relatively small sample size did not allow for analysis across multiple grade levels. The sample was taken from only one school district and may not be representative of other school districts. Finally, the respondents who were asked to complete the survey were a part of a graduate-level university course and may have already a positive predisposition related to engaging in health-related professional development.

This exploratory research provides insight into issues that may potentially affect the health and learning of students and teachers. The main objectives of this study were to assess the health status of teachers and to investigate the teachers' beliefs and self-efficacy on the intersection of learning and health in an urban environment. This information is valuable in understanding how teachers may be change agents for improving the nutrition and physical activity patterns of their students, as well as themselves. Further, the results may be used to create professional development programs for teachers in school districts that are interested in implementing school-wide obesity prevention programs.

Conclusion

These findings suggest the need for a health promotion program for teachers in this school district. The increasing rates of chronic disease have led many organizations to establish health promotion programs to address rising health care costs and improve the productivity of the workforce (Burton, Conti, Chen, Schultz, & Edington, 1999; Fielding, 1984; Goetzl & Ozminkowski, 2008). However, school systems have been slower than other organizations and sectors of the economy to adopt the implementation of health promotion programs. This may be due to the cost of the program, or the lack of effective strategies. Although schools may require innovation to deliver health promotion programs to teachers, the potential benefit is a healthier school workforce, which could translate to healthier students.

The teachers surveyed appear to believe in the intersection of health and learning, which may be indicative of the opportunity schools have to improve the health of students. This finding is encouraging, suggesting an opportunity for teachers to become more engaged in the role of health promotion and academic achievement. Despite their belief in this intersection, nearly two-thirds of the teachers who participated in this study rated themselves poorly in having the self-efficacy and skills needed to teach and integrate health into their disciplines. This is likely attributed the lack of a mandate or the professional development to address these health-related issues in the classroom (Ruglis & Freudenberg, 2010). This is a concern, given the issues surrounding the growing obesity crisis among children. A broad social movement emphasizing the intersection of health and education has the opportunity to transform how health and education are delivered for improving both academic achievement and health (Ruglis & Freudenberg, 2010).

Despite the limitations, the findings suggest a critical need for programming of teachers in the area of health education with an emphasis on nutrition and physical activity. A successful program will need to highlight the multifaceted nature of obesity, the multi-dimensional approach needed to addressing this issue, and support for the teachers as they face their own health issues.

The program might begin with a discussion of how health impacts learning and how poor health compromises a student's ability to reach their full potential. Basch (2010) has termed select health conditions as "educationally-relevant health disparities" and states that health interventions have been left out of the national strategy to improve education outcomes. Another important component of any school-based program is exemplified through the Coordinated Approach to Child Health (CATCH) program that identifies the importance of engaging multiple stakeholders to achieve successful program implementation (Franks et al., 2007). One particular stakeholder group is teachers, who may need specific resources developed for them (Martin, McCaughtry, Hodges-Kulinna & Cothran, 2008).

Engaging teachers in school-based wellness may begin to underscore how teachers might be role models for their students (Sy & Glanz, 2008). In addition to being role models, teachers have the responsibility for managing their classrooms, which may lead to teachers creating a "healthy" culture in their classrooms. Teachers have an important role to play in addressing the obesity epidemic and an opportunity to help themselves and their students to lead healthy lives.

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