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PEDAGOGY

Impact of Physical Educators on Local School Wellness Policies

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Abstract

The Child Nutrition and WIC Reauthorization Act of 2004 required school district officials to approve a local school wellness policy by July 2006, making this the first federal legislation requiring school district officials to establish a goal for physical activity and that could focus on physical education. The purpose of this study was to evaluate a sample of local school wellness policies with particular attention to (1) the presence of seven federally mandated components as goals within the policy, (2) characterization of differences among policies created with and without formal input from physical educators, and (3) reference to assessment through having a monitor and a plan to measure implementation. Administrators in every district in Iowa were contacted by mail to complete a brief survey and submit a copy of their local school wellness policy; 241(43%) responded fully. Physical education (75%) and health teachers (64%) were not required committee members, but served on the majority of committees. Policies were examined in two ways. First, policies were examined to determine whether the seven federally mandated components were present. Second, a numeric value was assigned to the characteristics of each goal, nutrition guideline, and assessment plan that was summed (M = 54.5, SD = 28.4) from a possible score of 113. Policies were predictably influenced by committee membership. Having a physical education teacher on the committee had a modest influence on the content of the physi-

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cal education goal (3.1 vs. 2.4 goal points, ES =0.4) and specific aspects of the physical education goal (more minutes of physical education per week [ES = 0.4], all grades K–12 [ES =0.32]). Physical educators had a positive influence on school wellness policies.

Schools are a primary target of health promotion because most children attend school and spend a significant amount of time in school, thus positioning schools as a primary location to reach most children and their families (Koplan, 2005). Physical education (PE) is a key strategy to promote student health and reduce childhood obesity by increasing physical activity (PA). Thus, schools are critical in promoting student health and preventing childhood obesity (U.S. Department of Agriculture [USDA], 2006; Wechsler, McKenna, Lee, & Dietz, 2004). Children are influenced by teachers and school-based activities. Therefore, a school in which healthy eating and PA are encouraged is a logical place to address childhood obesity. However, until July 1, 2006, schools were not required by federal legislation to address key components of the health of the school environment, specifically PA and nutrition. The Child Nutrition and WIC Reauthorization Act of 2004 (USDA, 2004) required schools to adopt local school wellness policies by July 1, 2006, or the first day of the 2006 school year, whichever occurred first. The legislation was the first to systematically address nutrition and PA in most schools. The law applied to all districts participating in the Richard B. Russell National School Lunch Act (USDA, 2004), widely known as child nutrition programs (e.g., school breakfast, lunch, and/or snacks). The law included eight specific requirements.

The first requirement was to gather input from sources including parents, students, the public, representatives of the school food authority, school administrators, and school board members. District officials were encouraged to form a committee to gather input, but had the option of meeting this requirement in other ways. The law required goals in three areas to be established within districts: nutrition education, PA, and other school-based wellness activities. Two aspects of the law were directed at foods in schools. School officials were to provide assurances that school meal programs meet current regulations by stating that the school meal program is not more restrictive than federal regulations. Thus, eligible students were to be provided access to free and reduced-price lunch in a confidential way. School district officials were also required to develop nutrition guidelines for all foods available on campus. The focus of the nutrition guidelines were foods outside the school meals program in-

cluding vending, à la carte, celebrations (e.g., school parties), fundraisers, and school stores. Finally, the law required school district officials to have a plan to measure implementation and to designate a monitor of implementation.

During 2005, sample wellness policies were created by organizations and agencies to guide school districts at the national (e.g., National Alliance for Nutrition and Activity [NANA], 2005; School Nutrition Association, 2005) and state level (school board associations, state Action for Healthy Kids (2006) teams. National sample policies included PE goals designed to meet the PA goal requirement (Action for Healthy Kids, 2006; NANA, 2005). Other PA goal choices were recess, after-school programs, safe routes to school, the use of PA as a punishment, and integrating PA into the classroom. The requirement was for the district officials to select one or more areas of need for each goal so sample policies included multiple options. Each option, for example PE, was further defined by criteria that once again could be selected based on local needs. Some of those options for PE included certified teacher, daily, 150 and 225 min per week, Grades K–12, required for graduation, and student-to-teacher ratios similar to other academic classes.

Although PA is one of the goals, input from a PA expert was not required during development of the policy. For example, the law did not require consultation with PE teachers. The law is associated with the federally funded child nutrition programs and has a requirement directed at the food service program (assurances that school meals are not more restrictive than federal guidelines), and the district officials were required to gather input from the district food service authority (typically the food service director). Two other requirements, nutrition education goal and guidelines for all foods available on campus, support the child nutrition program goals, but are not necessarily directed at the food service programs. Gathering appropriate input from physical educators would have been logical because PA is half of the energy balance equation and a significant factor in childhood obesity (Dietz, 2004). Furthermore, PA goals may influence the physical education program directly or indirectly. An indirect influence may be restricting PA as punishment or using facilities for after-school programs.

The purpose of the legislation requiring local school wellness policies was to improve children's health and reduce childhood obesity. Obesity is a significant public health problem, and schools need to be part of the solution (American Academy of Pediatrics,

2006; Pate et al., 2006; Wechsler et al., 2004). Excess weight brings significant health consequences. The general population, including children, is gaining weight at an alarming rate and to a dangerous degree (Institute of Medicine of the National Academies, 2004). The percentage of overweight children aged 2 to 5 years and 12 to 19 years has more than doubled over the past 3 decades, and among children aged 6 to 11 years, this number has more than tripled (Koplan, Liverman, & Kraak, 2005). Overweight children are at greater risk to develop a number of health problems including type 2 diabetes, high blood pressure, high blood lipids, asthma, sleep apnea, chronic hypoxemia, early maturation, and orthopedic problems (U.S. Department of Health and Human Services, 2001). Of particular concern is that many of these diseases were previously thought to be adult diseases. Overweight children also experience psychological burdens associated with the stigma of being overweight, including low self-esteem, poor body image, and symptoms of depression (University of California, Berkley/Cooperative Extension, 2000). Unfortunately, a poor self-image, which often accompanies overweight youth, tends to follow them into adulthood, which is related to negative outcomes including higher rates of poverty and fewer years of education (Dietz, 1998). Obesity is a complex problem that must be addressed at many levels as suggested by the socio-ecological model (Centers for Disease Control and Prevention [CDC], 2007). Policy directed at improving nutrition and PA, such as the Section 204 requiring school wellness policies, has been identified as a key strategy in the socio-ecological model (CDC, 2007).

Implementing effective local wellness policy is a difficult task in many districts. It was reported in a statewide survey of School Health Advisory Board coordinators in Virginia that over half (59%, $n = 54$) of district officials expressed an interest in receiving help from university experts regarding the development of local wellness policy (Serrano et al., 2007). Lack of funding was cited as one of the main challenges in implementing a local wellness policy by 37% of those participants.

The content of district wellness policies in Utah was analyzed prior to the July 1, 2006, federal deadline (Metos & Nanney, 2007). Of participating districts, 77% met all five of what researchers considered to be the federal requirements (nutrition education and PA, guidelines for all food available at school, and monitoring and community/parent participation). Federal guidelines do not require any specific wording for policy goals, so any reference to the main goal

was considered as compliant. Metos and Nanney (2007) described the strength of the language used by these district officials as "disappointing." It is unknown how the district policies in Utah met the other criteria (e.g., assurances, other school-based wellness) not assessed in the Metos and Nanney study.

The purpose of this study was to evaluate a sample of local school wellness policies with particular attention to (1) the presence of seven federally mandated components as goals within the policy, (2) the characterization of differences among policies created with and without formal input from physical educators, and (3) reference to assessment through having a monitor and a plan to measure implementation.

Iowa is a "local control" state with over 350 independent public school districts. Thus, state officials provide few mandates or regulations for schools. Federal regulations are required to be met in child nutrition programs, but no state nutrition standards have been adopted. Similarly, there are no state PE standards and few regulations (National Association for Sport and Physical Education & American Heart Association, 2006). Therefore, the potential for variability in wellness policies in Iowa is greater than in most states where more guidance is provided to districts. The variety of policies in this state is more likely to represent the variety of policies nationwide because regulations vary widely among states. Elected school boards have greater influence on school policy in Iowa because local control means less influence of agencies (e.g., Department of Education, Department of Public Health, and the legislature). School board members serve at the will of the public and are viewed as a reflection of public opinion. Thus, examining policies in Iowa has the potential to reveal what parents and other stakeholders value related to school wellness.

Method

Participants

Superintendents from all public (n = 370) and private schools (n = 190) in Iowa were contacted by direct mail and asked to participate in the study. Two hundred ninety-nine (53%) school district superintendents agreed to participate and returned materials in postage paid envelopes. After two mailings and a follow-up phone call, 241 superintendents (public schools, n = 152; private schools, n = 29; unidentified, n = 60) returned the required information for an

overall usable response rate of 43%. This response rate is aligned with other similar studies noted in social science research literature (Abes, Jackson, & Jones, 2002; Sax, Austin, Korn, & Gilmartin, 1999). The project was approved by the institutional review board, human subjects review committee. Participants provided passive consent by returning the survey and/or policy.

Instruments

Survey. A seven-question survey was focused on the process used to develop the local school wellness policy. Open- and close-ended questions included committee membership, whether a needs assessment was conducted, and information about the committee meetings (e.g., when they first met, number of meetings, progress reports, whether the committee will continue to meet). This information could not be determined by examining the local wellness policy.

Global analysis. These seven criteria should be present in the policy: (1) nutrition education, (2) PA, (3) other school-based wellness, (4) nutrition guidelines for all foods available on campus, (5) assurances that the school meal program was not more restrictive than federal guidelines, (6) a monitor, and (7) a plan to measure implementation. Therefore, a global score representing whether each of the seven areas was addressed was calculated. This score was not based on a value judgment; instead, the global score represented a valid indicator as to whether each of the seven required areas was identified in the policy. The global score represented the district superintendent's intent to meet the requirements of the law similar to the process used by Metos and Nanney (2007). One point was assigned for each of the seven components of the policy regardless of how much or little detail was included. For example, each of the statements below would be scored as 1 for the global analysis:

- Our district will measure implementation of the local wellness policy.
- Each year the building principal will measure implementation of the policy and report to the superintendent; the report is due 2 weeks after the last day of student attendance. The food service director will report to the superintendent on compliance with nutrition policies within food service areas. The superintendent will examine the reports of building principals and the food service director, then report to the school board on the implementation of the local school well-

ness policy. This report is due to the board one month after the last day of student attendance.

Content analysis of the policy. Members of the Iowa Association of School Boards (IASB) in conjunction with members of Iowa Partners: Action for Health Kids developed a model school wellness policy and made this sample available to school districts through the association website (IASB, 2007). The IASB sample policy, based on the NANA (2005) sample school wellness policy, was used as a template for the content analysis of the policies. The template had 113 unique characteristics for the three goals, nutrition guidelines, and a plan to measure and monitor. Most goals in the sample policy had more than one subgoal. For example, the other school-based wellness activities subgoals included staff wellness and communication with parents, and for PA, subgoals included PE, recess, and after-school programs. Subgoals typically had multiple descriptors. Each subgoal component was given a numeric value based on the level of qualifiers. A sample for a portion of the coding scheme is presented in Table 1. The point scheme used for the content analysis aligns with Metos and Nanney's (2007) recommended point scheme system as a valid way to compare and contrast policies. The values could be summed for subgoal and goal scores and a total policy score. This allowed policies to include one or more subgoals. Higher scores would represent more subgoals and/or more detail. The legislation encouraged district officials to create policies to meet local needs; therefore, the template was designed so additional subgoals and descriptors could be added during the content analysis. An additional 101 subgoals and descriptors were added to the original template, and policies examined prior to each addition were rescored but also compared to the original IASB template.

Reliability. One rater evaluated all of the policies. This rater then randomly reevaluated 5% of the policies with agreement between the two ratings at 94% (intrarater reliability). Two additional trained raters evaluated a randomly selected sample of the policies (n = 6). These scores were compared and produced agreement of 91% (interrater reliability). A comparison of the ratings among these three raters produced a kappa value of > .90 for inter- and intrarater scoring.

Table 1
Sample Coding Scheme for Content Analysis of the Local Wellness Policy

Policy goal	Subgoal	Points		
		1.0	0.5	0.25
Physical Activity	Physical Education	Will require daily	May be daily	Research a process to move toward daily PE
	Recess	20 minutes per day recess minimum	Strive for 20 minutes of daily recess	
	Punishment	Exercise will not be used as punishment	Encourage teachers to not withold recess and PE as a punishment	
		Physical activity will not be withheld as punishment	Encourage teachers to not withold recess and PE as a punishment	

Effect sizes. Effect sizes were calculated (Hedges & Olkin, 1985, p. 76) to guide the interpretation of meaningful findings and to compare data from districts with a physical educator serving on the school wellness policy committee with those districts where a physical educator was not formally on the committee. For this type of data, an effect size of 0.3 is considered a small effect, around 0.5 is a medium effect, and 0.8 or greater is a large effect (Cohen, 1992).

Results

Overall Data

Results were organized around three data collection strategies: (1) a survey, (2) a global analysis, and (3) the content analysis of the local school wellness policy. Policy statements consisted of brief and varied action statements of what school district officials were doing or planning to do (e.g., "Our district will not allow teachers

to use physical activity as punishment or withhold physical activity as punishment").

Committee Membership

The law required input from specific stakeholders, and it was recommended in the sample policy that a committee be formed in each district to meet this requirement. Survey information was used to determine compliance with this aspect of the law because this information was not required to be included in the policies. A committee was formed in 97% of the districts ($n = 233$), but all stakeholders, as defined by the requirements of the law, were involved in less than half of the school districts (39%; Table 2). The typical committee had 15 ($SD = 7.5$) members. Those were the food service director, two administrators, a school board member, one to two students, a representative of the public, and one to two classroom teachers. On average, the committees met 4.3 times ($SD = 3.1$).

Table 2
Local School Wellness Policy Committee Composition: Stakeholders Providing Input During Development of the Local School Wellness Policy

Variable	Required?	Percent of committees having at least one person for the category	*M*	*SD*
Food service director	Yes	96.7%	1.05	0.34
School administrators	Yes	96.3%	1.99	1.08
Parent	Yes	90.5%	2.38	2.64
School board members	Yes	72.6%	.99	0.85
Student	Yes	66.4%	1.55	1.54
Member of public	Yes	60.2%	1.24	1.39
Physical education teacher	No	75.9%	.76	0.43
Classroom teacher	No	74.3%	1.49	1.39
School nurse	No	72.2%	.89	0.70
Health teacher	No	64.7%	.86	0.79
Other food service	No	30.7%	0.42	0.73
Other(s)	No	29.9%	1.40	1.24

Global Score and Content Analysis

Approximately 58% of the 241 superintendents addressed the seven requirements in the law: (1) nutrition education goal, (2) PA goal, (3) other school-based wellness goal, (4) nutrition guidelines for all foods available on campus, (5) assurances that the school meal program was not more restrictive than federal guidelines, (6) a monitor, and (7) a plan to measure implementation. Of the remaining 42%, most (38%) identified between three and six of the requirements based on the global analysis. Assurances that access to school meals were not more restrictive than federal regulations accounted for nearly 1 in 3 of the missing requirements (Table 3). When two global goals were missing from the districts (e.g., the global score was 5 or less), typically assurances and monitoring were missing.

Table 3
Percent of Policies Meeting the Seven Requirements of the Local School Wellness Policy Based on Global Analysis

Requirement	% policies met
Nutrition guidelines goal	94%
Nutrition education goal	93%
Physical activity goal	92%
Plan for implementation	88%
Other school wellness goal	81%
Monitor goal	81%
Assurances statement	71%
Met six of seven	15%
Provided assurances but missed something else	12%
Met six of seven but not assurances	8%

Content analysis point values were summed within policy and averaged for nutrition education ($M = 4.41$, $SD = 2.94$, max = 7), PA ($M = 6.59$, $SD = 4.46$, max = 36), other school-based wellness ($M = 18.87$, $SD = 11.89$, max = 18), nutrition guidelines ($M = 5.75$, $SD = 6.87$, max = 31), and assurances ($M = 0.71$, $SD = 0.46$, max = 6). Two hundred fourteen descriptors were in the final version of the template. Most of the new descriptors were used only once and by officials in one district. Officials in one district used each of the 113 descriptors from the state sample policy without adding additional

goals, and several others left some sample goals out without adding others.

The average score from the content analysis was 44.4 (SD = 25.8) of 113 for total points and 5.9 of 7 (SD = 1.5) for global points. Pearson correlation (two-tailed test) indicates having a higher global score was correlated with more policy points (r = .70, p = .01).

Influence of Gathering Information From Stakeholders

The Child WIC and Reauthorization Act of 2004 requires that stakeholders provide input for six areas during the development of the local wellness policy. These required areas are (1) the food service director, (2) a school administrator, (3) a parent, (4) a school board member, (5) a student, and (6) a member from the public.

About 21% (n = 50) of district officials met both the seven global requirements and the criteria for gathering input (e.g., complete committee). Small differences in average total policy points were observed when comparing districts whose officials gathered input from the required stakeholders (M = 41.47, SD = 28.44) and districts whose officials did not include all stakeholders in developing the policy (M = 46.19, SD = 23.95; ES = 0.18). The overall frequency of goals used and the number of times policy goals from the state sample policy template were modified are shown in Table 4. For example, "daily" could have been modified to "recommend daily."

Table 4
Frequency of Inclusion of Sample Policy Subgoals and Descriptors

Policy goal and subgoal	Sample policy possible points	Frequency of occurrence	Number of districts that modified goal (of 299)
Physical activity goal points	25	89%	92
Physical education subgoal points	7	83%	21
All grades (K–12)	1	68%	1
Certified teacher	1	67%	0
50% of class is moderate to vigorous	1	59%	5
Inclusion of students with disabilities	1	59%	0

Table 4 (cont.)

Policy goal and subgoal	Sample policy possible points	Frequency of occurrence	Number of districts that modified goal (of 299)
Specified 150 and 225 min	1	21%	4
Prohibit exemptions	1	5%	8
Daily	1	4%	3
Recess subgoal points	4	72%	23
Physical activity integrated subgoal points	4	64%	1
Will not use physical activity as punishment	1	37%	17
Will not withhold physical activity as punishment	1	33%	25
After-school subgoal points	4	25%	4
Safe routes to school subgoal points	4	5%	1

Influence of Having a Physical Education Teacher on the Committee

In over three quarters (75.9%) of the districts, at least one PE teacher was on the committee. Three aspects of the policy were identified a priori as most likely influenced by a physical educator: the PE subgoal, the PA goal, and the nutrition education goal. Physical educators often teach health or are certified to teach health, and nutrition is a component of health education. Three t tests were used to compare the number of goals for PA, $t(297) = 2.29$, $p = .02$; PE, $t(297) = 2.80$, $p = .009$; and goal for nutrition education, $t(297) = 1.95$, $p = .05$, and one significant effect was found after Bonferroni. A physical educator on the committee had a positive effect for the PE subgoal. Effect size for difference between committees with and without a physical educator stakeholder was modest (ES = .32) as defined by Hedges and Olkin (1985). The results of the content analysis of the PA goal as well as overall policy information for committees with and without a PE teacher are shown in Table 5. The mean total scores for districts with and without a physical educator

are below 50% of the total points available from the original IASB school wellness policy template.

Table 5
Content Analysis of the Physical Activity Goal From the Local School Wellness Policies, Total Points With and Without Physical Education Teacher

	Points from sample	Points for PE teacher on the committee		Points without PE teacher on the committee		
Variable	***n***	***M***	***SD***	***M***	***SD***	**ES**
Total policy points from content analysis	113	46.4	25.89	38.3	24.83	0.31
Physical activity goal points	36	6.90	4.60	5.40	0.79	0.34
Physical education subgoal points	16	3.10	.91	2.40	1.67	0 .38
Specified minutes	1	0.26	0.44	0.08	0.27	0.43
All grades (K–12)	1	0.72	0.45	0.56	0.50	0.34
MVPA 50% of class	1	0.63	0.50	0.51	0.50	0.24
Certified teacher	1	0.69	0.46	0.59	0.50	0.21
Appropriate equipment budgets	1	0.03	0.16	0.00	0.00	0.21
Inclusion of disabilities	1	0.61	0.49	0.51	0.50	0.20
Daily	1	0.05	0.22	0.02	0.09	0.18
Graded as part of overall GPA	0	0.01	0.10	0.00	0.00	0.11
Standards-based curriculum	0	0.01	0.10	0.00	0.00	0.11
Prohibit exemptions	1	0.03	0.33	0.02	0.13	0.03
Standardized fitness screenings	0	0.03	0.16	0.03	.18	0.00
Student–teacher ratio	1	0.00	0.07	0.02	0.13	−0.23
Recess subgoal	7	2.40	1.79	2.00	1.74	0.22
After-school subgoal	4	0.40	0.74	0.15	0.36	0.37

Table 5 (cont.)

	Points from sample	Points for PE teacher on the committee		Points without PE teacher on the committee		
Variable	***n***	***M***	***SD***	***M***	***SD***	**ES**
Safe routes to schools subgoal points	4	0.16	0.71	0.02	0.13	0.22
Physical activity integrated goal	6	1.85	1.67	1.75	1.54	0.06
Will not withhold physical activity	1	0.37	0.46	0.36	0.51	0.02
Will not use physical activity as punishment	1	0.37	0.49	0.40	0.52	−0.06

In the IASB template, other school-based wellness activities included four subgoals: integrating PE into the classroom, communication with parents, food marketing in schools, and staff wellness. The results of the content analysis of the nutrition education goal as well as other school-based wellness activities acquired from policy data for committees with and without a PE teacher are presented in Table 6.

Table 6
Content Analysis of the Local School Wellness Policy and the Nutrition Education and Other School-Based Wellness Activities Goal

	Physical education teacher on committee (*n* = 182)		No physical education teacher on committee (*n* = 59)		
Variable	***M***	***SD***	***M***	***SD***	**ES**
Nutrition Education Goals	4.63	2.98	3.72	2.73	.31
All grades	0.58	0.49	0.53	0.49	.10
Vertical and horizontal curriculum	0.51	0.48	0.42	0.45	.18
In health class	0.50	0.50	0.37	0.49	.25
Integrated	0.50	0.50	0.49	0.50	.01

Table 6 (cont.)

Variable	Physical education teacher on committee (n = 182)		No physical education teacher on committee (n = 59)		
	M	*SD*	*M*	*SD*	ES
Developmentally appropriate	0.36	0.48	0.27	0.45	.19
Promotes fruits, vegetables, grains, etc.	0.64	0.48	0.58	0.50	.13
Energy balance	0.51	0.50	0.41	0.50	.21
Links with food	0.37	0.49	0.25	0.44	.25
Media literacy	0.06	0.24	0.00	0.00	.29
Staff development	0.41	0.49	0.28	0.46	.27
Other School-Based Wellness Activities Goals	19.41	12.06	17.23	11.33	.18
Communicate with parents goal	0.62	0.49	0.58	0.50	.09
Subgoals	2.14	2.16	1.68	2.05	.21
Food marketing in schools goal	0.42	0.49	0.42	0.50	–.02
Subgoals	0.95	1.37	1.02	1.43	–.05
Staff wellness goal	0.51	0.5	0.48	0.50	.07
Subgoals	1.16	1.56	0.81	1.29	.24
Assurances	0.71	0.45	0.68	0.47	.07
Nutrition guidelines	6.44	7.04	3.63	5.94	.41

Monitoring

By law, a monitor must be designated in district policy to oversee the implementation of school wellness policies. In this study, a monitor was named in 81% of districts, and that monitor was always the superintendent. The position of the person designated to monitor the policy was asked for in an open-ended survey question. According to survey data, in 35% (n = 82) of all districts with a monitor (n = 237), the superintendent was identified as monitor. Conversely, policy data indicate the superintendent is monitor for 100% of districts in which monitoring is occurring (n = 195). The percent agreement between survey and policy monitoring data was 39%. That

is, when the superintendent was identified as monitor in the district policy, the superintendent was also identified as monitor on the survey 39% of the time (n = 75). Descriptive frequency data indicated that in districts where a monitor was designated in the survey but not the policy (n = 45) the principal was identified most frequently as monitor (22%, n = 10), followed by superintendent (16%, n = 7), and food service director (11%, n = 5). The term *administration* was also used to identify the monitor five times (11%). According to survey data, when the superintendent was not monitoring, it was most likely the principal (11%, n = 26), administration (8%, n = 19), or the food service director (6%, n=13).

Survey data indicated that in 58% of districts (n = 139), at least one needs assessment was conducted. Of the districts where assessment occurred, the Iowa State University Online Assessment (40%, n = 56) was most frequently used. District officials also reported using the School Health Index (20%, n = 48), Changing the Scene (8%, n = 20), or another type of assessment (17%, n = 36) that was typically their own creation. In 21 districts, more than one needs assessment was used. It was stated in most district policies (74%, n = 178) that the committee will continue to meet. However, continuing to meet was not associated with an increase in policy points.

Having a plan to measure implementation helps ensure compliance to the federal mandate. Presence of a monitor explained a significant proportion of variance in total policy points, $R^2 = .53$, $F(13, 227) = 19.66$, $p < .01$. Stepwise linear regression showed that three monitoring characteristics significantly predict the overall policy points: having a school designee monitor implementation, $\beta = .66$, $t(227) = 2.30$, $p = .02$; having a district school meals initiative report $\beta = .16$, $t(227) = 2.48$, $p = .01$; and planning to assess at the building level, $\beta = .17$, $t(227) = 2.21$, $p < .03$.

Discussion

The goal of the federal legislation requiring local school wellness policies is to improve student health and reduce childhood obesity. Sample wellness policies at the national and state level were developed to guide local district administrators to develop policies that would meet the requirements in the law and the goals of the legislation. In most sample policies, several options were provided for each of the goals (e.g., nutrition education, PA, and other school-based wellness). Many also included goals that were not required in the legislation (e.g., school meals). Two reasons the samples includ-

ed multiple options were to address local situations and to describe the best practices of healthy schools. In most of the samples, it was suggested that school administrators select one or more of the options based on the local needs and conditions.

Many sample policies had general statements, for example, "All students in grades K–12 will have opportunities, support, and encouragement to be physically active on a regular basis" (NANA, 2005), followed by the options describing how districts will accomplish the goal. The sample options following the NANA goal included PE, recess, after-school programs, safe routes to school, use of facilities, and PA and punishment. The goal is directed at grades K–12, yet the recess goal is focused on elementary students and, if selected alone, would not achieve the goal. The choices selected by district officials provides an interesting picture of what stakeholders value and where further advocacy and education are necessary to ensure healthy school PA and nutrition environments. The sample policy provided to Iowa schools was based on the NANA sample policy with few modifications.

Of the school districts participating in this study, 21% had wellness policies in which all requirements of the Child Nutrition and WIC Reauthorization Act of 2004 were addressed. In two studies of wellness policies in other states, the requirement to provide assurances was not considered (Metos & Nanney, 2007; Serrano et al., 2007). There were policies in which assurances were provided, but in which other aspects of the requirements were not covered. The primary omission in this sample was assurances that school meal programs are not more restrictive than federal guidelines. All federal requirements that were not related to assurances were met in only 8% (n = 20) of the districts.

Unfortunately, the mean total scores for districts with and without a physical educator are below 50% of the total points available (Table 5) from the original IASB school wellness policy template. In most educational settings, this would be a failing score. Clearly, not all school district officials were using the IASB sample wellness policy template to develop their own school wellness policy. In Table 5, there is large standard deviations between the Physical Education and No Physical Education groups. In most cases, the standard deviations were greater than 50% of the mean. This amount of variability warrants further examination of additional factors beyond committee membership that may also influence the overall wellness policy content analysis.

As aforementioned, the Child Nutrition and WIC Reauthorization Act of 2004 requires local school wellness policy committee membership from (1) the food service director, (2) a school administrator, (3) a parent, (4) a school board member, (5) a student, and (6) a member from the public. Many district officials did not gather input from all stakeholders (38% met all seven other requirements). In those districts where all eight were identified, the policies were more robust, although a small effect (ES = .18). In most of the state sample or model wellness policies, including the IASB sample wellness policy, examples of assurance separate from the nutrition guidelines were not provided. In part, this may have been because at the time the sample policies were developed, no guidance was available about how, when, and who would monitor the federal legislation. School meal programs were monitored, and the district officials may have assumed the assurances were provided through the existing monitoring by the USDA. Currently, members from several states in the National Association of State Boards of Education (NASBE) have developed systems to monitor the local wellness policies, and USDA officials have developed monitoring guidance for agency officials supervising the child nutrition programs. As school district officials revisit wellness policies, addressing those assurances is clearly one aspect of the policy they should consider.

School district officials may have selected options that were already in place in the district. Clearly, this was not consistent with the intention of the legislation or with the intent of the sample policies. The intention of the legislation and of the sample policies was to support and promote improved school health behavior and elicit change. The key indicator that schools may have selected goals that were already in place was that many policies did not include any plan to measure or monitor implementation. There would be no reason to monitor or measure if the goals had been accomplished and no change was expected.

The global score was a sufficient indicator of whether all seven federal requirements were addressed in the policy and whether the quality of the policy was based on the total policy points. However, based on the results of this study, as school officials consider continuous improvement and measuring implementation, an in-depth examination of the policy would be helpful. The overall goal of the local school wellness policy is to improve children's health by making positive changes in the school nutrition and PA environment. To ac-

complish this, a careful examination of school nutrition and PA policies is critical. As aforementioned, the global criteria for PA could be met by stating an existing practice in the district, and there is no way to determine this by looking at the policy. Another approach evident in the policies was to make recommendations rather than requirements. The policies evaluated for this study indicated that PE was a primary PA strategy for improving children's health. Certainly, this was a positive finding; however, practical challenges are faced in districts as indicated by the selection of less costly components of the PE goal such as moderate to vigorous PA for 50% of the class. District officials selected information from the sample policies and modified information from the samples. In Table 3, overwhelmingly the most frequently modified PA goals were withholding PA as punishment (32%) and use of PA for punishment (19%). Modification typically involved substituting the word *may* for the word *will* or the phrase *will encourage*. Although this modification may only appear as a slight change of semantics, it represents contrast in how students may be punished in schools, assuming there is a level of "buy-in" by the teachers in these districts. District officials also created their own language and subgoals for policies. The sample policy included 113 subgoals and descriptors for subgoals, whereas the final data set had nearly double that number (214). Recess, after-school programs, integrating PA into the school day, safe routes to school, and use of school facilities were not primary strategies based on the frequency of inclusion in the policies.

In districts with committees comprising at least one parent, student, representative of the school food authority, school board, school administrators, and the public, policies were produced that were only slightly different in terms of points, global goals, PA goals, and PE goals, than in schools that were missing one or more types of committee members. Similarly, increasing the number of committee members had no effect on these same variables. Smaller committees or committees comprising interested individuals may have been more efficient and effective, and larger committees may have had more difficulty reaching consensus. Intuitively, having a PA expert on the committee would have been advantageous. It is possible that a physical educator was provided on most committees to provide that expertise. Only the PE subgoal was better for policies with a physical educator on the committee.

Specific aspects of the PE subgoal that were influenced when a physical educator was on the committee were the PE minutes ad-

dressed in the policy (ES = .43) and PE for grades K–12 (ES =.34). The PA goal points were also positively influenced by having a PE teacher on committee (6.9 vs. 5.4, ES =.34), particularly the goals for after-school activity (ES =.37). Although the statistical significance of these reported effect sizes are small to medium (Cohen, 1992), there is a practical significance to these differences. Physical educators serving on the local wellness policies appeared to play a meaningful role. All but two PA goals were better with physical educators on the committee. A pivotal yet frequently overlooked function of effective PE programs (and teachers) is increasing PA for students beyond the PE class. The increased quality of PA goals, after-school PA in particular, may have been indicative of the desire of physical educators to impact PA patterns in their students and address perceived barriers to after-school PA.

In this study, there were instances when it would have been better practice for committee members to ignore some goals because, as written, they were contradictory to what a PE teacher should be trying to accomplish. Perhaps the most noticeable instance was allowing exemptions (e.g., members of an athletic team) to PE. Ironically, a PE teacher was on every committee whose members allowed such exemptions (n = 7).

Moderate to vigorous PA during class as a descriptor may have been included for several reasons. Increasing the amount of moderate to vigorous PA during PE is a low-cost goal. However, an alternative explanation is that PE teachers were looking for outside support to assist with motivating and enforcing moderate to vigorous PA in their classes.

Several explanations for the positive impact of physical educators on the committee are possible; one is that on committees with no physical educators, the members were less likely to know about the recommendations related to PE and PA (Pate et al., 2006). Physical educators may have been effective advocates, or district officials asking physical educators to serve on committees may have been predisposed to be supportive of PE and PA. The small (but meaningful) effect sizes reported earlier warrant an understanding for why there was not a more significant difference between the committees. It is possible that the efforts of many (physical and health educators, professional groups, the First Lady, public media, etc.) have had an impact and that members of these committees were aware of the benefits of attending to PE and PA.

The plan for measuring implementation and monitoring was a significant predictor of policy points. For this study, selecting a

school designee, filing a district School Meals Initiative (SMI) report, and planning to assess at the building level were steps associated with a more robust local wellness policy. Measuring progress would be critical to achieving the goals or establishing compliance. Logically, in districts with true goals, officials would be more likely to have plans for evaluating those goals, and in districts without plans for measuring implementation, officials may not need a plan because no change is expected. As district officials consider how to revise goals, either to meet the federal requirements or to improve continually, physical educators are likely to be involved. It is critical to develop methods to verify reports of implementation and consequences (positive and negative) tied to levels of implementation.

According to Payne (2008), there is a disconnect between policy and practice in most schools. Regarding implementation, Payne suggested starting from the bottom, meaning local school wellness policy decisions stem from the schools and classrooms instead of higher level interventions from the school district or even nationwide. Researchers should examine (1) the monitor's (administrator's) stance on the importance of PA, (2) the actual implementation of policies (e.g., are there identifiable factors that are different between high and low degrees of wellness policy implementation?), and (3) the overall impact of school wellness policies on school districts.

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