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Two years later: Wellness councils and healthier vending in a cohort of middle and high schools

Martha Y. Kubik, PhD,

University of Minnesota, School of Nursing, 5-140 Weaver Densford Hall, 308 Harvard St SE, Minneapolis, MN 55455, Phone: 612-625-0606; Fax: 612-626-2359

Kian Farbaksh, MS, and

University of Minnesota, Division of Epidemiology and Community Health, Minneapolis, MN

Leslie A. Lytle, PhD

University of Minnesota, Division of Epidemiology and Community Health, Minneapolis, MN

Martha Y. Kubik: kubik002@umn.edu

Abstract

Purpose—To examine the association between school wellness council structure over two years and low-nutrient, energy-dense (LNE) vending fare assessed as a food score (range 0–7), following enactment of federal legislation.

Methods—Multivariate linear regression was used to examine 2006/2007 and 2008/2009 data among a cohort of middle (n=16) and high (n=38) schools located in one Midwest metropolitan area.

Results—Schools with district and school councils had a significantly lower mean food score (3.28) than schools with district only (4.50) and no councils (4.99).

Conclusions—Wellness councils, particularly a structure that includes both a district and school council, may decrease LNE food/beverage availability in middle and high schools.

Keywords

school food policy; wellness councils; vending

The 2006/2007 school year found most US schools responding to the Child Nutrition and WIC Reauthorization Act of 2004 requiring school districts participating in the federal school meal program to establish policies that included nutrition guidelines for all foods/beverages offered at school and policy development involving key stakeholders, such as parents and school representatives (1). National data suggest that many schools and/or school districts utilize health/wellness councils to develop and disseminate nutrition policies (2).

In middle and high schools, vending machines (VM) are a prevalent source of low-nutrient, energy-dense (LNE) foods/beverages and a policy target (3, 4). Prior research conducted

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Correspondence to: Martha Y. Kubik, kubik002@umn.edu.

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in 2006/2007 found that LINED vending fare was lower in middle and high schools reporting a district-only or district and school wellness council structure, with the latter offering the greatest benefit when compared to schools without councils (5). However, due to weaknesses with the federal legislation related to policy implementation and enforcement, there is concern about council sustainability and meaningful policymaking over time (6–8). For the current study, wellness council structure in 2006/2007 and 2008/2009 was assessed in a cohort of public middle and high schools and the association between council structure at the two time-points and availability of LINED vending fare in 2008/2009 was examined.

Methods

Data were collected as part of a longitudinal measurement study of youth to assess obesity-related factors, conducted in Minneapolis/St. Paul, Minnesota (9). Study recruitment and data collection details have been reported elsewhere (5, 9). The sample for this study included 54 public middle (n=16) and high (n=38) schools that completed school-level data collection in 2006/2007 and 2008/2009. The University of Minnesota Human Subjects Research Committee approved the study.

On both measurement occasions, a survey completed by the school principal/designee asked whether the school and school district had a health/wellness advisory council. A composite variable representing wellness council structure at both time-points was created as follows: district and school councils at both time-points; district-only council at one or both time-points; and no council at one or both time-points.

In 2008/2009, trained study staff visited schools on one day and directly observed and recorded package size and kilocalories and fat grams per package for all vending items. LINED foods/beverages, defined as snacks containing > 3 grams of fat/serving or > 200 calories/serving and soft drinks (regular and diet), fruit drinks (not 100% fruit juice), sport drinks, and 2% or whole milk (plain or flavored) were grouped into seven categories (chocolate; other candy; baked goods not low-fat; salty snacks not low-fat; 2% or whole milk (plain or flavored); soda pop/fruit drinks; sports drinks) (3, 5). A food score was calculated based on number of categories (range: 0–7). Higher scores indicated more LINED foods/beverages. Schools without VM or VM offering only healthy items (water, 100% fruit juice) were scored as 0. Prior research demonstrated a high correlation between the mean number of LINED food/beverage items and the food score (5).

At baseline (2006/2007), information on school-level characteristics was obtained from the Minnesota Department of Education website, supplemented by a school representative. A cross-sectional approach and multivariate linear regression, adjusted for school-level characteristics, were used to examine the association between the composite wellness council variable and the food score. Analyses were performed using SAS version 9.2 (SAS Institute, Cary, NC).

Results

Most schools were suburban (91%) and high schools (70%). Mean student enrollment was 1566 (SD 695) and 18% (SD 14.5%) of students reported free/reduced lunch participation. Among schools, 12 (22%) had a school and district council at both time-points. At one or both time-points, 33 (61%) had a district-only council and 9 (17%) reported no council (Table 1). In 2008/2009, schools with a school and district council at both time-points reported a greater variety of council participants and more frequent meetings than schools with a district-only council at one or both time-points (Table 2).

In adjusted multivariate analysis, having a wellness council structure at both time-points was inversely associated with the food score ($\beta = -1.71$ (district and school at both); $\beta = -0.49$ (district-only at one or both); F-test =0.07). High schools and suburban schools had higher scores than middle and urban schools, $\beta = 2.13$; $p = 0.003$ and $\beta = 2.66$; $p = 0.04$, respectively. In post hoc adjusted analysis, the mean food score for schools with both a district and school council was significantly lower compared to schools with district-only (3.28 versus 4.50; $p = 0.05$) or no council (3.28 versus 4.99; $p = 0.04$) at one or both time-points. The mean score for schools with district-only and no council structures at one or both time-points was not significantly different (4.50 versus 4.99; $p = 0.48$).

Discussion

This research contributes to the dearth of empirical evidence linking school policy to school-level food practice. Study findings indicate that two years post enactment of federal legislation, LNEED foods/beverages remain common vending fare in middle and high schools. However, schools reporting a wellness council structure over two years that included both a school and district wellness council had significantly less LNEED vending fare than schools with a district-only council or no council at one or both time-points. Consistent with earlier research, the added benefit of a school council is likely due to involving a greater variety of stakeholders, particularly students and teachers, and more frequent meetings (2, 5), factors that foster improved policy oversight and enforcement at the school level. Stability of council structure over time may also be a factor.

Study strengths include the examination of policy and practice in a school cohort over a two year period and the use of objective data to categorize food/beverages. However, the cohort was a small convenience sample of mostly suburban high schools in one Midwestern metropolitan area, thus limiting generalizability. Data collected on one day may not be representative of food/beverage availability throughout the school year.

Wellness councils may be a sustainable and useful structure for developing and disseminating food policy that results in healthy food practice at the school level, particularly a structure that includes both a district and school council. Future research should replicate this study in a larger sample of more diverse schools and examine other prevalent food practices, such as the use of LNEED foods/beverages as rewards/incentives and for school fundraising (3, 8), as well as the link between policy, practice and weight outcomes among students.

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Table 1

Wellness council structure over two school years in a cohort of Minnesota public middle (n=16) and high schools (n=38).

2006/2007	2008/2009			Total
	District only Council	School + District Council	No Council	
District only Council	19	9	4	32
School + District Council	5	12	0	17
No council	0	1	4	5
Total	24	22	8	54

Table 2

Characteristics of district and school wellness councils in a cohort of middle and high schools (N=54), ¹ Minneapolis/St Paul, Minnesota, 2008/2009.

	District Councils ² (n=33)	School Councils ³ (n=12)	<i>P</i>
Members:			
Principals	27%	50%	0.17
Parents	21%	33%	0.45
Students	9%	42%	0.02
School Nurses	36%	42%	0.74
Teachers	42%	92%	<0.01
Food Service Staff	36%	50%	0.50
Meeting Frequency			
Monthly	18%	33%	0.42
VM ⁴ policy			
Yes	70%	58%	0.50

¹ Nine schools reported no wellness council during one or both school years, 2006/2007 and 2008/2009.

² Defined as a school with only a district-level council during one or both school years, 2006/2007 and 2008/2009.

³ Defined as a school with a district and school council during both school years, 2006/2007 and 2008/2009.

⁴ VM=Vending Machine