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Food use in middle and high school fundraising: Does policy support healthy practice? Results from a survey of Minnesota school principals

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Abstract

This descriptive, cross-sectional study aimed to examine classroom, school-wide and club/sports teams fundraising policies and practices of middle and high schools; concordance between policy and practice; and associations between healthy policy/practice scores and selected school characteristics. In 2006, principals/designees of middle (n=45) and high (n=71) schools in the St. Paul/Minneapolis, Minnesota metropolitan area completed a self-administered mailed survey. Schools were attended by a convenience sample of students (n=349) participating in a longitudinal measurement study of children and their environments to assess obesity-related factors. Descriptive statistics, chi-square tests and multivariate linear regression were used to examine variables and associations of interest. Across schools, 50% had policies addressing the nutrient quality of food/drink items used in fundraising or disallowed food use for fundraising. About one-third used chocolate, candy and high-fat baked goods for classroom and school-wide fundraising; 60% sold these items for club/sports teams fundraising. More middle than high schools reported healthy fundraising policies or practices, as well as greater concordance between policies and practices. For all fundraising activities, high schools had significantly lower healthy policy/practice scores than middle schools ($p < 0.01$). For school-wide fundraising, scores were significantly lower for public than private schools ($p=0.02$). Policies to regulate food used for fundraising were common and most supported healthy practice, particularly in middle schools. However, the use of foods high in fat and added sugars remains a prevalent fundraising practice, especially in high schools and for club/sports teams, and requires further attention.

Keywords

school food environment; food policy; school fundraising

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INTRODUCTION

As prevalence of overweight and obesity among children has increased, so has concern about the 'toxicity' of the school food environment. Student access during the school day to low nutrient, calorie-dense food from commonly available school venues that include vending machines, a la carte programs and school stores/snack bars has merited considerable attention (1,2). In contrast, food used in fundraising, a common school-supported activity that also provides students access to less-than-healthy foods has received far less attention. According to the 2006 School Health Policies and Programs Study (SHPPS), 78% of middle schools and 84% of high schools permit food to be sold for fundraising (1). Not surprisingly, the most popular 'fundraising foods' are high in fat and added sugars, and commonly include chocolate candy, other candy, cookies, cakes and pastries (1). Student clubs, sports teams and even parent teacher associations report selling food at school to raise money, with many schools permitting students to purchase 'fundraising foods' before, during and after school, as well as during school lunch periods (1).

In 2004, Congress passed legislation requiring all schools participating in the reimbursable school meals program to establish by the start of the 2006–2007 school year wellness policies that included nutrition guidelines for all foods available at school (3). In the US, most schools participate in the reimbursable school meals program. According to the US Department of Agriculture, 99% of all public schools and 83% of all public and private schools participate in the National School Lunch Program and 78% of all schools offering the lunch program also participate in the School Breakfast Program (4). Chief among the foods targeted for policy attention by the federal legislation are items classified as competitive foods or foods available to students outside the school meals program that are not regulated by federal nutrient standards (5). Clearly, food used for fundraising meet these criteria. However, do schools recognize fundraising as a source of competitive foods and are schools addressing fundraising with policy action that regulates practice and the types of foods used?

The present study was therefore undertaken to examine the 1) food-related fundraising policies and practices of middle and high schools, 2) concordance between policy and practice and 3) associations between a healthy policy/practice score and selected school characteristics.

METHODS

Sample and procedures

Data were collected as part of the Identifying Determinants of Eating and Activity (IDEA) study, a longitudinal measurement study of youth and their environments to assess obesity-related factors. The study is being conducted in the Minneapolis/St. Paul, Minnesota metropolitan area. The cohort of youth (n=349) were recruited from three sources, which included an existing cohort participating in the Minnesota Adolescent Community Cohort Tobacco Study (6), a Minnesota Department of Motor Vehicle listing of 14–17 year olds applying for a learner's permit or driver's license and a convenience sample of community-residing adolescents.

At the time of study enrollment, youth participants were asked to identify the school they would attend during the 2006–2007 school year. District and school-level administrative staff were then contacted and invited to participate in the IDEA study. For schools, study participation included the completion of self-administered surveys by the principal (survey focus: school-wide policies and practices), the coordinator of nutrition services (survey focus: food service policies and practices) and the physical education coordinator (survey focus: policies and practices specific to physical education). Study participation also included permitting trained

research staff to visit the school to record food and beverage items offered for sale to students from vending machines, a la carte programs and school stores. Of 143 schools contacted, 116 agreed to participate (response rate = 81%). Principals (or designees) from middle (n=45) and high (n=71) schools completed a self-administered mailed survey. This research includes data only from the principal's survey. The study was approved by the University of Minnesota Human Subjects Research Committee.

Measures

Practices and policies for three types of fundraising activities were assessed: classroom, school-wide and club/sports teams. Survey questions addressing fundraising were adapted from the SHPPS 2000 School Policy and Environmental School Questionnaire (7) and the Teens Eating for Energy and Nutrition at School (TEENS) study key informant principal interview (8). Content validity of questions was confirmed by experts in community-based nutrition and school based research.

Practices—Practices were defined on the survey as “what your students and staff are allowed to do on a regular basis” and measured with the item, “Chocolate, candy and other high fat baked goods are used in a) classroom fundraising, b) school-wide fundraising and c) fundraising by school sports teams &/or clubs.” Responses for each item were ‘Yes/No.’ A fundraising practice was coded as healthy if the response was ‘No.’ Questions regarding practices preceded policy questions on the survey.

Policies—Policies were defined on the survey as “written procedures or guidelines shared with students and staff” and measured with the item, “Does your school have policies that address the nutrient quality of food and drink items sold in a) classroom fundraising, b) school-wide fundraising and c) other fundraising (Girl Scouts, sports teams, clubs)?” Responses for each item were ‘Yes/No/We don't permit fundraising.’ A fundraising policy was coded as healthy if the response was ‘Yes’ or ‘We don't permit fundraising.’

Concordant policies and practices—Policies and practices were considered concordant if a respondent answered either ‘Yes’ or ‘We don't permit fundraising’ to the policy item and ‘No’ to the practice item.

Healthy policy/practice score—For each type of school fundraising activity (classroom, school-wide and club/sports teams), a score was created with 0 = no policy, 1 = healthy policy *or* healthy practice, 2 = healthy policy *and* healthy practice. The score range was 0–2. A cumulative fundraising score was then created by summing the classroom, school-wide and club/sports teams scores. The range for the cumulative score was 0–6. All scores were assessed as continuous variables.

School demographics—Demographic characteristics assessed as possible correlates of the healthy policy/practice score included urban/suburban location, public/private school status, student enrollment, percent white students and percent free/reduced meal participation (the latter three were assessed as continuous variables). School demographic information was obtained from the Minnesota Department of Education website, and when necessary supplemented by information obtained from a school representative. Wellness council status was determined by answers to the following two survey questions: “Does your school district have a health or wellness advisory council?” and “Does your school have a health or wellness advisory council?” Answers to both questions were Yes/No. A three-category variable was created and coded as: District or school, District and school or No council.

Statistical Analysis

All analyses were stratified by school type (middle versus high school). Descriptive statistics (means, standard deviations, frequencies) were used to examine variables of interest (Table 1). The chi-square test of significance was used to assess differences between fundraising practice and policy and concordance between practice and policy, stratified by school type (Table 2). In multivariate models, linear regression was used to assess the association between the healthy policy/practice scores, assessed as continuous variables and hypothesized school-level correlates (Table 3). A backwards stepwise selection method was used to identify variable associations at $p \leq 0.10$. School location, wellness council status, percent free/reduced meal participation and student enrollment were excluded from all final models as there were no associations with the dependent variable at $p \leq 0.10$. Analyses were performed using SAS version 9.1 (SAS Institute, Cary, NC).

RESULTS

Most schools were public and suburban. On average, 78% of students were White and 19% qualified for free/reduced meal participation. Mean school enrollment was 1210 students $\pm$ 719 students. Forty-seven percent of schools reported either a district or school wellness council, 29% had both and 23% reported no council. See Table 1.

Across schools and fundraising activities, about one-half had policies addressing the nutrient quality of food and drink items used in fundraising (23%) or disallowed food use for fundraising (29%). About one-third used chocolate, candy and high-fat baked goods for classroom (32%) and school-wide fundraising (37%), whereas 60% sold these items for club/sports teams fundraising (data not shown). More middle than high schools reported fundraising policies or practices considered healthy, as well as greater concordance between policies and practices. See Table 2.

In multivariate models assessing the healthy policy/practice scores, high schools were significantly more likely to have lower scores than middle schools for all fundraising activities ($p < 0.01$). Public schools were significantly more likely than private schools to have lower scores for school-wide fundraising ($p = 0.02$). High schools had significantly lower cumulative fundraising scores than middle schools ($p < 0.01$). Public schools had significantly lower cumulative scores than private schools ($p = 0.01$). See Table 3.

DISCUSSION

Consistent with other studies (1,2,8–12), the present study supports the popularity of schools using foods high in fat and added sugars for fundraising, especially among high schools and by clubs/sports teams. Nevertheless, more than two-thirds of middle schools and over one-half of high schools reported healthy fundraising practices and a somewhat similar although smaller proportion reported healthy policies. High school club/sports teams fundraising was the exception, with only 22% of schools reporting healthy practices and 38% healthy policies.

Although it is encouraging that most schools reported healthy practices or healthy policies, it is also critical to examine concordance between practice and policy. To our knowledge, this has not been previously done and several interesting patterns were revealed. For classroom and school-wide fundraising, across schools, healthy practices were more prevalent than policies. This may be the result of principals over-reporting healthy practices or an indication that schools do not recognize the importance of establishing and disseminating policy as a way to enhance consistent practice by all school staff, as well as sustainable practice over time. For all fundraising activities, middle schools were significantly more likely to report concordant policies and practices and higher healthy policy/practice scores than high schools. However,

for both middle and high schools, concordance rates, as well as mean values for the healthy policy/practice scores were the lowest for club/sports teams fundraising, with high schools demonstrating a remarkably low concordance rate of 15% and a mean healthy policy/practice score of 0.62 (range: 0–2).

The higher prevalence of healthy fundraising policies and practices reported by middle schools compared to high schools is consistent with SHPPS 2006 findings that suggest the overall food environment of middle schools is healthier than high schools. For example, SHPPS 2006 found that middle schools offered students fewer a la carte items high in fat or added sugars and had fewer vending machines (62% versus 86%) and school store/snack bars (33% versus 50%) than high schools (1). While it may be reasonable to offer the older, more autonomous high school student additional food choices at school, those choices need not be less healthful. Indeed, findings from the current study, as well as SHPPS 2006 data, indicate that students new to high school may expect and accept more healthy food choices at school.

Compared to private schools, public schools had a lower healthy policy/practice score for school-wide fundraising, as well as a lower cumulative fundraising score. This is not a surprising finding and is likely linked to constrained budgets common in public schools and the resultant need to procure external funding for both curricular and extracurricular programs, a practice supported by many parents and teachers (13). The tradition of schools selling candy and other food items for fundraising has been recognized by the Institute of Medicine (IOM) in their 2007 report addressing nutrition standards for foods in schools (14), as well as in the yet to be enacted federal Child Nutrition Promotion and School Lunch Protection Act of 2006, which aims to regulate 'food of minimal nutritional value' sold outside the school meals program (15). The IOM advocates the use of healthy foods consistent with the 2005 Dietary Guidelines for Americans or nonfood products for fundraising (14). The proposed federal legislation allows an exemption for school-sponsored fundraisers if approved by the school and offered infrequently (15).

Results from the current study indicate that many schools 'approve' the use of food for fundraising and 'foods of minimal nutritional value' appear to be the fundraising foods of choice. In the present study, club/sports teams fundraising was especially problematic and not an infrequent occurrence. Twenty-five percent of schools reported student clubs offering food items for sale to students during the school day at least once monthly, 14% reported club-sponsored food sales every two weeks and 19% reported sales in the cafeteria during lunchtime. Another study of 228 Pennsylvania high schools, found that 16% of schools reported club food fundraisers once weekly or more, with chocolate candy the most commonly sold item (9). It would seem then, that the IOM's approach to school fundraising is the preferred approach, recognizing both school need for supplemental income and public health need to ensure a healthy school food environment.

Strengths and Limitations

To our knowledge, this is the first study to report on concordance between school policy and practice for foods used in fundraising, a common school activity. Other study strengths include a relatively large sampling of schools, with a good mix of middle and high schools and public and private schools, as well as a good school response rate. Study limitations include the use of a convenience sample of schools located in the upper Midwest that were primarily suburban and White, thus limiting generalizability. Although our response rate was good, we cannot rule out response bias. Further social desirability bias may have influenced principal responses. Finally, although significant, the models accounted for a relatively small proportion of the total variance for each fundraising practice and the cumulative fundraising score. However, to our knowledge, school-level variance for a food practice has not been previously reported.

CONCLUSION

Policy has been advanced as a strategy to achieve healthy, sustainable change in the school food environment and limiting student access during the school day to low nutrient, calorie-dense food has been identified as a policy priority (3,14). Foods commonly used in fundraising, such as chocolate and high fat baked goods contribute to the 'toxicity' of the school food environment and require the attention of the school community. Fundraising to support school programs may be necessary, however, selling foods high in fat and added sugars to raise money is not. Healthy foods and nonfood items are viable fundraising alternatives that should be promoted.

The current study suggests that many schools are taking positive steps that support healthy fundraising practices. However, and importantly, changing a normative practice is challenging work that requires continued diligence and supportive guidance. Study results suggest this may be especially true for high schools and club/sports team fundraising. Food and nutrition professionals, as well as other health professionals working in school settings are well positioned to contribute to the ongoing and important work of developing, disseminating and monitoring meaningful nutrition policy that will result in a sustainable shift in normative practice and fundraising policy and practice that supports a healthy school food environment.

References

1. O'Toole TP, Anderson S, Miller C, Guthrie J. Nutrition services and foods and beverages available at school: Results from the School Health Policies and Programs Study 2006. *J Sch Health* 2007;77:500–521. [PubMed: 17908105]
2. Delva J, O'Malley PM, Johnston LD. Availability of more-healthy and less-healthy food choice in American Schools. *Am J Prev Med* 2007;33(4S):S226–S239. [PubMed: 17884570]
3. GovTrack.us. S.2507--108th Congress (2004): Child Nutrition and WIC Reauthorization act of 2004. GovTrack.us; [Accessed February 1, 2008]. (database of federal legislation). <http://www.govtrack.us/congress/bill.xpd?bill=s108-2507>
4. Fox, JK.; Hamilton, W.; Lin, BH. Effects of food assistance and nutrition programs on health and nutrition, vol.3: Literature Review, Food assistance and Nutrition Research Report no. 19-3. US Department of Agriculture, Economic research Service; Washington: 2004.
5. US Department of Agriculture, Food and Nutrition service. Foods Sold in Competition with USDA Meal Programs: A Report to Congress. [Accessed: February 1, 2008]. http://www.fns.usda.gov/cnd/Lunch/Competitive-Foods/report_congress.htm
6. Widome R, Forster JL, Hannan P, Perry C. Longitudinal patterns of youth access to cigarettes and smoking progression: Minnesota Adolescent Community Cohort (MACC) Study (2000–2003). *Preventive Medicine* 2007;45(6):442–446. [PubMed: 17719080]
7. School Health Policies and Programs Study 2000, School Policy and Environment School Questionnaire - Final Version. Revised: 10/26/99 <http://www.cdc.gov/HealthyYouth/shpps/2000/questionnaire/pdf/envl2000questionnaire.pdf>
8. Kubik MY, Lytle LA, Story M. School food practices are associated with middle school students body mass index. *Arch Pediatr Adolesc Med* 2005;159:1111–1114. [PubMed: 16330732]
9. Probart C, McDonnell E, Weirich E, Hartman T, Bailey-Davis L, Prabhakher V. Competitive foods available in Pennsylvania public high schools. *J Am Diet Assoc* 2005;105:1243–1249. [PubMed: 16182640]
10. French SA, Story M, Fulkerson JA. School food policies and practices: A state-wide survey of secondary school principals. *J Am Diet Assoc* 2002;102:1785–1789. [PubMed: 12487541]
11. French SA, Story M, Fulkerson JA, Gerlach AF. Food environment in secondary schools: A la carte, vending machines and food policies and practices. *Am J Public Health* 2003;93:1161–1167.
12. Greves HM, Rivera FP. Report card on school snack food policies among the United States' largest school districts in 2004–2005: Room for improvement. *Int J Behav Nutr Phys Act* 2006;3:1. Available from: <http://www.ijbnpa.org/content/3/1/1>. [PubMed: 16390544]

13. Kubik MY, Lytle LA, Story M. Soft drinks, candy and fast food: What parents and teachers think about the middle school food environment (2005). *J Am Diet Assoc* 2005;105:233–239. [PubMed: 15668681]
14. Institute of Medicine of the National Academies. Nutrition standards for foods in schools: Leading the way toward healthier youth. April;2007 Report Brief.
15. GovTrack.us. S.2592--109th Congress (2006): Child Nutrition Promotion and School Lunch Protection Act of 2006. GovTrack.us; [Accessed February 8, 2008]. (database of federal legislation). <http://www.govtrack.us/congress/bill.xpd?bill=s108-2507>

Table 1

Characteristics of school sample, MN school principals' survey, 2006.

	All Schools (N = 116)	Middle Schools (N= 45)	High Schools (N=71)
	n (%)	n (%)	n (%)
Public	92 (79%)	36 (80%)	56 (79%)
Private	24 (21%)	9 (20%)	15 (21%)
Suburban	97 (84%)	38 (84%)	59 (83%)
Urban	19 (16%)	7 (16%)	12 (17%)
Wellness Councils			
District or School	55 (47%)	17 (38%)	38 (54%)
District & School	34 (29%)	17 (38%)	17 (24%)
No councils	27 (23%)	11 (24%)	16 (22%)
% white			
Mean (SD)	78.4 (20.0)	78.3 (18.9)	78.4 (20.8)
% free/reduced lunch			
Mean (SD)	19.3 (18.2)	21.0 (18.6)	18.3 (18.1)
Student enrollment			
Mean (SD)	1210 (719)	871 (408)	1425 (790) ^a

SD = standard deviation

^aEnrollment in middle and high schools was significantly different ($p < 0.01$); t-test was used to determine the statistical significance of the estimate

Prevalence of healthy fundraising policies and practices and concordance between healthy policy and practice, by fundraising activity and middle school (N=45) compared to high school (N=71).^a MN school principals' survey, 2006.

Table 2

	Healthy Policy ^b N (%)		Healthy Practice ^c N (%)		Policy = Practice ^d N (%)	
	Middle School	High School	Middle School	High School	Middle School	High School
Classroom fundraising	31 (70%)	31 (46%) ^e	35 (80%)	42 (60%) ^e	30 (68%)	22 (33%) ^e
School-wide fundraising	27 (63%)	29 (43%) ^e	34 (77%)	38 (54%) ^e	25 (58%)	22 (32%) ^e
Club/sports teams fundraising	29 (67%)	26 (38%) ^e	30 (68%)	16 (22%) ^e	24 (56%)	10 (15%) ^e

^a Sample size varies due to missing data

^b Healthy Policy = written policy/guidelines addressing nutrient quality or food not used in fundraising

^c Healthy Practice = chocolate, candy and high fat food not used in fundraising

^d Policy = Practice (Concordance) = written policy/guidelines addressing nutrient quality or food not used in fundraising and chocolate, candy and high fat food not used in fundraising

^e Comparisons between middle and high schools were significantly different ($p < 0.05$). The χ^2 test was used to determine the statistical significance of estimates.

Table 3

Multivariate linear regression results: Associations between selected school characteristics and healthy policy/practice scores for fundraising activities, MN school principals' survey, 2006

	Classroom Fundraising Score ^{a,b} (N=110)			School-wide Fundraising Score ^{a,c} (N=110)			Club/Sports Teams Fundraising Score ^{a,d} (N=111)			Cumulative Fundraising Score ^e (N=110)		
	Estimate	P-value		Estimate	P-value		Estimate	P-value		Estimate	P-value	
High versus middle school	-0.45	<0.01		-0.43	<0.01		-0.74	<0.01		-1.61	<0.01	
Public versus private school	-0.35	0.06		-0.47	0.02		-0.30	0.10		-1.23	0.01	
% White (continuous)	---	---		-0.01	0.09		-0.01	0.05		-0.02	0.10	
R ^{2g}	0.10	<0.01		0.13	<0.01		0.23	<0.01		0.19	<0.01	

^a Assessed as a continuous variable. Range = 0–2, with 0 = no policy, 1 = healthy policy or healthy practice, 2 = healthy policy and healthy practice.

^b Mean (Standard deviation): All Schools = 1.24(0.81); High Schools = 1.06(0.78); Middle Schools = 1.50(0.79)

^c Mean (Standard deviation): All Schools = 1.15(0.83); High Schools = 0.99(0.83); Middle Schools = 1.42(0.76)

^d Mean (Standard deviation): All Schools = 0.91(0.84); High Schools = 0.62(0.73); Middle Schools = 1.37(0.79)

^e Sum of classroom, school-wide and club/sports teams scores, with range of 0–6. Mean (Standard deviation): All Schools = 3.25(2.20); High Schools = 2.62(2.07); Middle Schools = 4.23(1.96)

^f Variable excluded from the final multivariate model as $p > 0.10$

^g R² = the proportion of variance in the policy/practice score explained by the independent variables in the model