Poverty-related Factors Associated with Obesity Prevention Policies in Utah Secondary Schools

Susie Nanney PhD, MPH, RD
University of Minnesota
Program in Health Disparities Research

Co-Authors

Utah Department of Health

Salt Lake City, UT

- Claudia Bohner
- Michael Friedichs

Background

- Consensus that improvements in schools' nutrition and physical activity policies are needed *(Healthy People 2010, 2000; Pilant, 2006; American Academy of Pediatrics, 2004, Nicklas, 2004; Koplan, 2005)*
- Many have provided policy recommendations and strategies for schools *(CDC, 1996; CDC, 1997; Stallings, 2007; School Nutrition Association, 2005; National Alliance for Nutrition and Activity, 2005; USDA, 2000; National Governors Association, 2003)*
- Strategies are based upon varying degrees of evidence *(Sturm, 2005; Koplan, 2005)*

Background

- Organizations agree that students should have equal access *(Stang, 2006; Lund, 2001)*

- Schools serving a higher proportion of lower socioeconomic status children had increased calories from the school lunch *(Addison, 2006)*, poorer school meal nutrient profiles *(Gould, 2006)*, and fewer healthy food advertisements at school (i.e., salads) *(Maher, 2005)*.

Purpose

- To examine whether school nutrition and physical activity policies differ by
  - schools serving more students eligible for free and reduced priced lunches and by
  - geographic location

Methods

- Cross sectional study
- 2006 School Health Profiles Principal Questionnaire - Utah
- Spring 2006

School Health Profile Policy Question	Policy Recommendation
How long do students usually have to eat lunch once they are seated? • Less than 20 minutes • 20 minutes or more This school does not serve lunch to students	CDC, SNA, AFHK, NANA, UT GMP
Has this school adopted a policy stating that if food is served at student parties, after-school or extended day programs, or concession stands, fruits or vegetables will be among the foods offered?	CDC, SNA, AFHK, NANA, UT GMP
Can students purchase each snack food or beverage from vending machines or at the school store, canteen, or snack bar?	CDC, IOM[a], SNA, ABA&AHG, AFHK, NANA, NGA, UT GMP
• Salty snacks that are low in fat, such as pretzels, baked chips, or other low-fat chips	
• Low fat cookies, crackers, cakes, pastries, or other low-fat baked goods	
• Fruits or vegetables, not juice	
• 100% fruit or vegetable juice	
• Bottled water	
• 1% or skim milk	
Can students purchase candy; snacks that are not low in fat, soda pop, sports drinks, or fruit drinks that are not 100% juice; or 2% or whole milk (plain or flavored) during the following times? • Before classes begin in the morning • During any school hours when meals are not being served • During school lunch periods	IOM[b]
Does this school offer opportunities for students to participate in intramural activities or physical activity clubs? • If yes, does this school provide transportation home for students who participate in after-school intramural activities or physical activity clubs?	CDC, IOM, SNA, ABA&AHG, AFHK, NANA
Does your school support or promote walking or biking to and from school (e.g., through promotional activities, designating safe routes or preferred routes, or having storage facilities for bicycles and helmets)?	CDC, IOM, SNA, ABA&AHG, AFHK, NANA, NGA, UT GMP

Results

- N=209 principals (82% response rate)
- 38/40 districts represented
- Free and reduced priced lunch eligibility
  - Range: 0-72%
  - 46.9% **Low** (0-30%),
  - 34.0% **Medium** (31-44%),
  - 19.1% **High** (45-72%)
- Geographic location
  - 40.2% Urban
  - 30.1% Suburban
  - 29.7% Rural

School Adopted Nutrition Policies by Free/Reduced Lunch Enrollment

	Free/Reduced Lunch Enrollment % (Confidence bounds)		
	Low (0-30%)	**Medium (31-44%)**	**High (45-72%)**
Nutrition-Related Policies			
Students have 20 minutes or more to eat lunch	86.5 (77.6-92.2)	90.7 (80.7-95.8)	88.6 (72.9-95.7)
Fruits & vegetables are available at all school sponsored events	18.1 (11.3-27.6)	21.1 (12.8-32.8)	23.6 (12.2-40.9)
Student can purchase from vending machines or at the school store, canteen or snack bar			
• Salty snacks that are low in fat	96.7 (90.2-98.9)	**86.7*** (75.5-93.3)	**75.8*** (58.3-87.5)
• Low fat baked goods	87.7 (78.6-92.6)	77.8 (65.8-86.5)	**61.3*** (44.0-76.2)
• Fruits or vegetables	43.0 (33.1-53.4)	38.2 (27.1-50.6)	34.4 (20.4-51.8)
• 100% fruit or vegetable juice	84.1 (75.1-90.2)	79.1 (67.1-87.5)	72.1 (54.4-84.8)
• Bottled water	97.9 (91.8-99.5)	97.3 (89.5-99.3)	91.6 (76.8-97.3)
• 1% or skim milk (plain or flavored)	56.8 (46.5-66.6)	49.9 (38.0-61.8)	**30.2*** (17.3-47.3)
Students can purchase candy, snacks that are not low in fat, soda pop, sports drinks, or fruit drinks that are not 100% juice; or 2% or whole milk during school lunch period	7.6 (3.7-15.3)	9.4 (4.2-19.6)	**28.4*** (15.8-45.6)

*–Significantly ($p<.05$) different than low free and reduced lunch enrollment schools

School Adopted Nutrition Policies by Location

	Geographic Location % (Confidence bounds)		
	Urban	**Suburban**	**Rural**
Nutrition-Related Policies			
Students have 20 minutes or more to eat lunch	84.5 (74.5-91.0)	85.9 (74.1-92.8)	**95.9*** (85.0-99.0)
Fruits & vegetables are available at all school sponsored events	25.7 (17.1-36.6)	13.9 (7.0-25.5)	19.6 (10.8-32.9)
Student can purchase from vending machines or at the school store, canteen or snack bar			
• Salty snacks that are low in fat	94.9 (87.0-98.1)	96.7 (87.7-99.2)	**73.9*** (59.9-84.3)
• Low fat baked goods	79.8 (69.4-87.3)	89.6 (78.6-95.3)	67.3 (53.3-78.8)
• Fruits or vegetables	40.0 (29.8-51.2)	40.9 (29.1-54.0)	37.9 (25.8-51.7)
• 100% fruit or vegetable juice	88.6 (79.4-94.0)	81.7 (69.8-89.7)	**67.1*** (53.2-78.5)
• Bottled water	96.2 (88.8-98.8)	100.0	93.3 (83.4-97.5)
• 1% or skim milk (plain or flavored)	60.0 (48.9-70.2)	45.5 (33.2-58.3)	**39.0*** (26.7-52.7)
Students can purchase candy, snacks that are not low in fat, soda pop, sports drinks, or fruit drinks that are not 100% juice; or 2% or whole milk during school lunch period	11.6 (6.1-20.9)	4.9 (1.6-14.3)	21.1 (12.0-34.5)

*–Significantly ($p<.05$) different than urban schools

School Adopted Physical Activity Policies by Free/Reduced Lunch Enrollment

	Free/Reduced Lunch Enrollment % (Confidence bounds)		
	Low (0-30%)	**Medium (31-44%)**	**High (45-72%)**
Physical Activity-Related Policies			
Offers intramural activities or physical activity clubs	82.4 (73.4-88.8)	70.8 (58.9-80.4)	**61.8* (45.8-75.6)**
• Offers transportation for intramural activities or physical activity clubs	19.6 (12.1-30.0)	22.5 (12.9-36.4)	**59.2* (39.2-76.6)**
Promotes walking or biking to and from school	60.4 (50.3-69.6)	59.9 (48.0-70.8)	58.6 (42.5-73.0)

*–Significantly ($p<.05$) different than low free and reduced lunch enrollment schools

School Adopted Physical Activity Policies by Location

	Geographic Location % (Confidence bounds)		
	Urban	**Suburban**	**Rural**
Physical Activity-Related Policies			
Offers intramural activities or physical activity clubs	80.5 (70.4-87.7)	82.7 (71.3-90.2)	**59.0*** (46.2-70.6)
• Offers transportation for intramural activities or physical activity clubs	24.0 (15.2-35.7)	19.5 (10.8-32.8)	42.5 (27.6-59.0)
Promotes walking or biking to and from school	67.1 (56.4-76.3)	63.6 (50.9-74.6)	**47.7*** (35.4-60.3)

*–Significantly ($p<.05$) different than urban schools

Summary of results

- School districts with highest free and reduced price lunch eligibility and rurally located offered fewer healthy food and drink choices
  - They also offered fewer *unhealthy* choices
- School districts with highest free and reduced price lunch eligibility and rurally located offered fewer physical activity programs

Limitations of work

- Self report data
- District level indicators
- Select policies

Take home message

- Results are **pre** USDA wellness policy initiative
- The extent to which this unfunded mandate will impact health disparities needs to be evaluated

Acknowledgements

Centers for Disease Control and Prevention
Division of Adolescent and School Health

- Nancy Brener Davis, PhD
- Terry O'Tool, PhD

Manuscript *in press* with the Journal of the American Dietetic Association

Funded by the National Cancer Institute

msnanney@umn.edu