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Incorporating a Healthy Reimbursable Snack in an Afterschool Homework Program for Middle School Students: A Case Study

Marilyn S. Nanney, PhD, MPH, RD[1], **Temitope M. Olaleye, MBChB**[1], and **Qi Wang, MS**[1]
[1]University of Minnesota, Minneapolis, MN, USA

Abstract

Background—This study tested the feasibility and acceptability of adding a reimbursable snack that meets the Institute of Medicine nutrition recommendations to an afterschool homework program for middle school students.

Methods—Snack menu was developed and administered to students attending an afterschool homework program over 12 weeks. In spring 2009, two cross-sections of middle school students completed study measures, including snack preferences. Key school personnel completed follow-up interviews assessing program feasibility.

Results—Survey evaluations from 110 students at baseline and 113 at posttest suggested improved preferences for healthy snacks. Teacher supervisors ($n = 3$) and the assistant principal rated the pilot project as feasible and beneficial, whereas school food service ($n = 3$) rated the program unsustainable because of administration logistics and costs.

Conclusions—The addition of healthy snacks to afterschool programs was liked by students and teachers. However, policies that support simpler accountability procedures may be needed for school-based afterschool snack programs to be sustainable.

Keywords

afterschool programs; school food environments; school-age children

Improving the afterschool food environment is a national priority (The Healthy Hunger-Free Kids Act, 2010; The White House Office Press Secretary, 2010). Children at higher risk for obesity and hunger, including those in poverty or minority groups, constitute a significant proportion of participants in afterschool programs (Afterschool Alliance Research, 2009). During school year 2009, nearly 180 million reimbursable snacks were served in afterschool programs (U.S. Department of Agriculture Financial Management Food and Nutrition Service, 2010). For schools to receive federal reimbursement, snacks must contain at least two combinations of the following: milk; meat or meat alternate; vegetable(s), fruit(s), or full strength juice; and a grain (U.S. Department of Agriculture Food and Nutrition Service, 2009). The current standards lack specificity (i.e., low fat milk, whole grains) and have been described as outdated (Story, Nanney, & Schwartz, 2009).

No studies have evaluated the feasibility of implementing a reimbursable afterschool snack, especially snacks that comply with standards consistent with obesity prevention. Therefore,

Corresponding Author: Marilyn S. Nanney, Department of Family Medicine and Community Health, University of Minnesota, 717 Delaware Street, SE, Minneapolis, MN 55414, USA msnanney@umn.edu.

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we conducted a 12-week pilot study in spring 2009 to test the feasibility and acceptability of adding a snack that meets the Institute of Medicine (IOM) nutrition recommendations to an existing afterschool homework program for middle school students (IOM, 2009).

Method

The pilot middle school is located in a large suburb of Minneapolis, Minnesota, serving about 1,400 students attending Grades 6 to 8, 80% White and 40% eligible for free or reduced-priced lunch. Any student not completing their homework during the school day gets ZAPped! (Zero's Aren't Possible) and is required to stay after school to complete the assignment(s). An assistant principal and teachers supervise the homework program. A nonfood service–sponsored snack consisting of a granola bar and juice had been served occasionally when discretionary funds were available. The University of Minnesota Institutional Review Board approved this study.

Snack Menu Development and Distribution

A 12-week menu that adhered to IOM recommendations, federal reimbursement, and local school district wellness policy and budget criteria was developed and tested. Details of the menu, development process, and lessons learned are available from the authors.

School food service did the snack ordering and receiving and placed the snacks in a locked refrigerator in the kitchen area. Researchers were given access to the refrigeration area and loaded a cart with the snacks and transported them to the library where the afterschool homework program was held. On entering the library, students signed an attendance sheet, seated themselves, and began working on their incomplete assignments. Researchers handed out snacks and a slip of paper for students to write their personal identification number (PIN) required for federal reimbursement. The next morning, food service personnel reconciled the student PIN slips with leftover product and manually entered each student PIN to obtain federal reimbursement.

Study Measures

Trained researchers explained the study purpose and handed out a survey to students and obtained heights and weights. Data collection occurred over three consecutive days before snack delivery began and 12 weeks later during spring 2009. Student assessment variables included general demographics, hunger status, food preferences and perceptions, and objectively measured heights and weights. A general survey question about how well students liked the snacks offered during ZAP and perception of healthfullness of the snacks was included at both pre- and posttesting. At the postsurvey only, students were asked whether the snack was new to them and whether they were asking for them at home. Follow-up interviews with school personnel associated with the afterschool snack study were conducted by a content expert not associated with the project. Open-ended questions assessing what went well, not so well, and how likely the addition of the healthy snack is sustainable were administered.

All student survey data were field edited during data collection and double entered by trained research staff. Chi-square test was used to examine the association between students' preference and perception of snacks, and Cochran–Mantel–Haenszel statistics was computed for adjustments. All statistics were analyzed using SAS 9.1 (SAS institute, Cary, North Carolina). A p value <.05 was considered statistically significant. All qualitative interviews were tape recorded, transcribed, and abstracted for themes by two researchers and checked by a content expert not associated with the project.

Results

Cross-sectional survey data were obtained from 110 afterschool homework program students at baseline (January 2009) and 113 at posttest (May 2009). A participation rate based on student attendance rosters was estimated at 80%. Reasons for refusals to participate in the study included in a hurry to get to practice (i.e., drama, sport) or needed all the time to complete homework. Table 1 describes a multiethnic composition of youth participants.

Table 2 describes the effect of the program on student snack preferences, perceptions, and purchase patterns. A greater proportion of students felt that the afterschool snacks were good or great, with a significant increased preference for healthful snacks from pre- to posttest. The association remained marginally significant after adjusting for grade and gender. Similarly, the proportion of students who felt that school snacks were either very healthy or mostly healthy increased at posttest. The association remained significant after adjusting for grade and gender. More than one third of students indicated that the healthy snacks served were new to them. About one third of the students indicated that since introduction in ZAP!, they have bought the snacks themselves or asked someone at home to buy the snacks for them.

Teacher supervisors ($n = 3$) and assistant principal interviewees reported that they felt that the afterschool program was successfully implemented and feasible to continue without researchers. Packaged foods were said to have made distributions easy and created very little mess, which was essential to continue the program in the library. Teachers also noted that the snacks helped bring students to the afterschool program; the kids were able to concentrate more effectively despite some lost homework time. Food service personnel ($n = 3$) noted logistical problems with storing afterschool snacks to be accessible for afterschool hours and significant costs associated with labor time to enter handwritten PINs the next day. Suggestions from all interviewees included serving the healthy snacks at more school venues.

Discussion

Similar to other studies, our analyses showed that youths attending the afterschool program represent a greater concentration of at-risk youth (Afterschool Alliance Research, 2009). Also consistent with previous research (Birch & Fisher, 1998), our results suggest that an association exists between food exposure, perception, and preference for healthy snack options. This is important because the increasing prevalence of childhood obesity has been shown to be associated with increasing trends in intake of high-calorie snacks in children (Briefel & Johnson, 2004). Overall, the addition of a reimbursable snack to this afterschool homework program was not sustainable because of the complexities of program administration costs.

Implications for Practitioners

Our findings have practical and policy implications for school-based afterschool research promoting healthy eating. Snacks that adhere to the updated nutrition standards are available and acceptable to at-risk middle school students. However, policies that support simpler administration procedures may be needed for some afterschool snack programs to be sustained. Youth health advocates can educate local (i.e., board members), state, and national policy makers on the benefits of serving healthy snacks in afterschool programs and ways to simplify implementation for sustainability.

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Table 1

Characteristics of a Cross-Section of Students Attending an Afterschool Homework Program (N = 110)

Student Characteristics	Middle School Students; *n* (%)
Gender	
Girls	47 (43.1)
Race	
American Indian	2 (1.8)
Black or African American	31 (28.4)
Hispanic, Latino/Latina	9 (8.3)
Asian American	6 (5.5)
White	42 (38.5)
Multiracial	15 (13.8)
Yes, qualifies for free or reduced meals	51 (47.2)
Weight status	
Normal	64 (66.0)
Overweight	19 (19.6)
Obese	14 (14.4)
School connectedness	
Eats school breakfast three or more times a week	16 (14.6)
Eats school lunch three or more times a week	95 (87.2)
Makes mostly As and Bs in school	52 (47.3)
Likes school most or all of the time	45 (40.9)
Skills learned in school will help in the future	97 (88.2)
Feels safe at school	84 (77.1)
Attends organized activities at school (e.g., dances, sporting events)	62 (56.4)
Food security classification	
High food security	40 (50.0)
Marginal food security	16 (20.0)
Low food security	16 (20.0)
Very low food security	8 (10.0)
In a usual week, how hungry are you after school?	
Not at all hungry	8 (8.3)
Somewhat hungry	50 (52.1)
Very hungry	38 (39.6)

Table 2

Program Effect on Snack Preferences, Perceptions, and Purchase Patterns

	n (%)		
Program Effect	**Pre (*N* = 110)**	**Post (*N* = 113)**	***p***
How healthy do you think the ZAP snacks are?			
Not at all/somewhat healthy	28 (42)	20 (22)	.0074
Mostly/very healthy	39 (58)	71 (78)	
How well do you like the snacks offered in ZAP?			
Snack taste: OK/horrible	29 (40)	24 (24)	.0297
Snack taste: great/good	44 (60)	75 (76)	
Have you asked someone at home to buy any of the snacks offered in ZAP? (yes)	NA	34 (30)	
Have you bought any of the snacks handed out in ZAP outside school? (yes)	NA	41 (37)	
How often was afterschool snack program the first time you tasted any of the snacks?			
Almost always/oftentimes	NA	37 (37)	
Sometimes	NA	32 (31)	
Rarely/never	NA	33 (32)	
After you ate the ZAP snacks, were you still hungry? (yes)	NA	50 (45)	

Note. NA = not assessed; ZAP = Zeros Aren't Possible.