



# Insight

A Publication for Child Nutrition Professionals from the National Food Service Management Institute

## The Impact of Healthy Menu Choices on School Nutrition Programs

**O  
V  
E  
R  
V  
I  
E  
W**

Over the past 20 years, obesity rates among children have more than doubled, resulting in one-third of children and adolescents in the United States (U.S.) classified as overweight or obese. The U.S. Surgeon General estimates that 70% of obese children and adolescents will grow to become obese adults and will be susceptible to serious health problems. The current obesity trend indicates the present generation of children will live shorter lives than their parents. Schools provide an important environment for improving access to healthy foods, opportunities for physical activity, and for providing children with both nutrition and physical education. School-aged children and adolescents spend a large portion of their day in school and consume 35% of

their daily energy intake at school, thus placing schools in a good position to have a strong impact in the fight against child and adolescent obesity.

On June 30, 2004, the Child Nutrition and Special Supplemental Nutrition Program for Women, Infants and Children (WIC) Reauthorization Act of 2004 was signed into law requiring every school district that participates in the National School Lunch Program (NSLP) to establish a local wellness policy. The objective of the wellness policy is to promote student health, reduce childhood obesity, and prevent nutrition-related chronic diseases. Since the implementation of wellness policies, school nutrition (SN) programs have offered healthier menu choices such as whole-wheat, reduced-fat cheese pizza, a variety of fruits



and vegetables, hummus and pita bread, fat-free flavored milk, and low-fat yogurt. However, SN programs that provide healthier menu options face challenges due to budget constraints, staff shortages, staff training, menu modifications, administrative burden, and lack of acceptance by school staff, students, and parents. Therefore, the purpose of this research project is to explore the impact of healthy menu choices on SN programs participating in the National School Lunch Program (NSLP).

## OBJECTIVES

The specific objectives of this project included the following:

- Identify the practices involved with providing healthy menu choices in SN programs;
- Identify the perceptions of SN professionals toward providing healthy menu choices in SN programs;
- Identify the barriers to providing healthy menu choices in SN programs; and
- Identify training/resources for SN professionals related to providing healthy menu choices in SN programs.

## METHOD

### Phase I: Expert Panel

- In Phase I of the research, two expert panel sessions were conducted with SN professionals. Panelists were chosen from a pool of SN directors, SN managers, state agency representatives, and coordinated school health representatives recommended by child nutrition state agency directors. Ten SN professionals agreed to participate as expert panel members for the first session, and 11 SN professionals agreed to participate as expert panel members for the second session.
- Participants in both sessions were asked semi-structured, open-ended questions designed to explore the impact of healthy menu choices on SN programs. Both expert panel sessions were facilitated by a National Food Service Management Institute, Applied Research Division (NFSMI, ARD) researcher with an assistant moderator capturing the participants' comments. After all questions were discussed, the researcher summarized responses, and participants were asked to verify that the summarized comments were an accurate depiction of the discussion.
- The responses were grouped into emerging themes and then used to develop statements that were incorporated into each of the quantitative survey instruments.

### Phase II: Survey Development

- Researchers used the data from Phase I as the foundation for drafting two surveys designed to identify the practices, perceptions, barriers, and training/resources related to providing healthy menu choices in SN programs that participate in the NSLP.

- The scannable survey for SN directors was titled *SN Director's Perspective on the Impact of Healthy Menu Choices*, and the scannable survey for SN managers was titled *SN Manager's Perspective on the Impact of Healthy Menu Choices*. Each survey consisted of five sections.
- Twenty-five SN professionals were invited to participate on a review panel to evaluate both draft survey instruments. The panel reviewed both draft surveys and completed evaluation forms which assessed the content, scales, readability, clarity, and flow of the draft surveys. Responses from the review panel members were tabulated, comments were summarized, and suggestions were incorporated into the final survey instruments.

### Survey Administration

- A random sample of 700 SN directors representing the seven USDA regions was selected for the national survey administration.
- A pre-notice letter was mailed to each of the 700 SN directors approximately one week before the survey instruments were distributed to notify the study participants about the surveys and briefly describe the study. A cover letter for the SN director was attached to the survey instrument explaining the purpose of the study, requesting participation in the study, assuring confidentiality of responses, and providing researchers' contact information. In addition, an instruction letter was provided to assist SN directors in selecting an SN manager who has experience with incorporating healthy menu choices, distributing the survey packet labeled SN manager to that individual, and reminding their SN managers to complete and return their surveys.
- A self-addressed postage-paid envelope was included with each survey for each participant to return the completed survey. A follow-up postcard was sent approximately one week after the survey was mailed. The postcard was sent to encourage SN directors to complete and return their surveys and remind their SN managers to complete and return their surveys as well.
- A total of 267 SN director surveys were returned and used in statistical analysis, for a response rate of 38.5%, and a total of 219 SN manager surveys were returned and used in statistical analysis, for a response rate of 31.5%.

### Data Analysis

- Survey data were analyzed using the statistical package SPSS Version 17.0 for Windows.
- Statistical analyses included descriptive statistics, exploratory principal components factor analysis, Cronbach's alpha, independent sample t-tests, and one-way ANOVA with Tukey's post hoc tests.

# FINDINGS

## Practices Related to Providing Healthy Menu Choices

### School Nutrition Directors

- School nutrition directors were provided with 35 practice statements related to providing healthy menu choices in their SN programs. Respondents were asked to rate the level of importance for each statement, using a scale of 4 (*very important*) to 1 (*not important*), and to indicate their current status in regard to each statement, using a scale of 4 (*fully addressed*) to 1 (*not addressed*).
- For level of importance, SN director respondents ranked the following four statements the highest: "Adequate time is scheduled for students to select and eat a nutritious meal" ( $3.75 \pm 0.55$ ), "Healthy menu choices served are appealing to students" ( $3.72 \pm 0.50$ ), "SN director serves on the district/school wellness committee" ( $3.71 \pm 0.62$ ), and "SN director was involved in developing the school district's local wellness policy" ( $3.68 \pm 0.64$ ).
- The current status levels were considerably lower than levels of importance. Out of the 35 practice statements, 25 statements had mean scores between  $2.96 \pm 0.90$  to  $1.16 \pm 0.47$ . The highest current status levels reported were "SN manager is involved in deciding which healthy menu choices to offer students" ( $3.35 \pm 0.83$ ), "SN director was involved in developing the school district's

local wellness policy" ( $3.35 \pm 0.99$ ), and "SN program offers students a variety of healthy menu choices" ( $3.29 \pm 0.76$ ).

### School Nutrition Managers

- School nutrition managers were provided with 15 practice statements related to providing healthy menu choices in their SN cafeterias. Respondents were asked to rate the level of importance for each statement, using a scale of 4 (*very important*) to 1 (*not important*), and to indicate their current status in regard to each statement, using a scale of 4 (*fully addressed*) to 1 (*not addressed*).
- For level of importance, SN manager respondents ranked the following four statements the highest: "SN program offers students a variety of healthy menu choices" ( $3.77 \pm 0.46$ ), "Healthy menu choices served are appealing to students" ( $3.74 \pm 0.52$ ), "SN director develops recipes for healthy menu choices" ( $3.67 \pm 0.56$ ), and "SN manager is provided professional development on providing healthy menu choices" ( $3.64 \pm 0.61$ ).
- The current status levels were lower than levels of importance. Out of the 15 practice statements, five statements had mean scores between  $2.62 \pm 0.98$  to  $2.14 \pm 0.92$ . The highest current status levels reported were "SN program offers students a variety of healthy menu choices" ( $3.49 \pm 0.64$ ), "SN director develops recipes for healthy menu choices" ( $3.33 \pm 0.83$ ), and "Healthy menu choices served are appealing to students" ( $3.33 \pm 0.71$ ).



### School Nutrition Manager's Perspective on the Impact of Healthy Menu Choices

National Food Service Management Institute  
The University of Mississippi

Completely fill in the circle of your answer. Use a #2 pencil.  
Correct ●●● ← Use No. 2 Pencil Only → Incorrect ⊗⊗⊗

**Section I: Characteristics**

Which of the following characteristics do you think describes HEALTHY MENU CHOICES in YOUR school nutrition (SN) cafeteria? (Select all that apply.)

<input type="checkbox"/> Colorful	<input type="checkbox"/> Texture	<input type="checkbox"/> Time Consuming	<input type="checkbox"/> Expensive
<input type="checkbox"/> Fresh	<input type="checkbox"/> Highly Processed	<input type="checkbox"/> Nutritious	<input type="checkbox"/> Appealing
<input type="checkbox"/> Unpopular	<input type="checkbox"/> Portion Control	<input type="checkbox"/> Limited Processing	<input type="checkbox"/> Tastes Good
<input type="checkbox"/> Good Quality	<input type="checkbox"/> Wholesome	<input type="checkbox"/> Variety	<input type="checkbox"/> Large Quantity

**SECTION II: Practices**

**Instructions:**

Please read the following statements regarding PRACTICES involved with providing healthy menu choices in YOUR school nutrition (SN) cafeteria.

In the IMPORTANCE column, indicate whether YOU think the following practices are important to providing healthy menu choices in your SN cafeteria. Use the scale 4 (VERY IMPORTANT) to 1 (NOT IMPORTANT).

In the CURRENT STATUS column, indicate YOUR current status in regards to the following practices related to providing healthy menu choices in your SN cafeteria. Use the scale 4 (FULLY ADDRESSED) to 1 (NOT ADDRESSED).

	Importance		Current Status	
	Very Important	Not Important	Fully Addressed	Not Addressed
1. SN program provides unlimited servings of fresh fruits and vegetables.	4	3	2	1
2. Student input is sought when incorporating healthy menu choices.	4	3	2	1
3. Adequate time is scheduled for students to select and eat a nutritious meal.	4	3	2	1
4. Healthy menu choices served are appealing to students.	4	3	2	1
5. SN director develops recipes for healthy menu choices.	4	3	2	1
6. SN manager is involved in deciding which healthy menu choices to offer students.	4	3	2	1
7. A la carte items are changed to reflect the school district's local wellness policy.	4	3	2	1
8. SN manager serves on the school wellness committee.	4	3	2	1
9. Students are offered food samples to promote healthy menu choices.	4	3	2	1
10. SN manager provides feedback from students on their acceptance of healthy menu choices.	4	3	2	1
11. SN program offers students a variety of healthy menu choices.	4	3	2	1
12. Students are involved in the menu change process to incorporate healthy choices.	4	3	2	1
13. SN manager is provided professional development on providing healthy menu choices.	4	3	2	1
14. SN staff is provided training on preparing healthy menu choices.	4	3	2	1
15. Stakeholders (students, staff, parents, district/school administration) provide positive feedback on healthy menu choices.	4	3	2	1



### School Nutrition Director's Perspective on the Impact of Healthy Menu Choices

National Food Service Management Institute  
The University of Mississippi

Completely fill in the circle of your answer. Use a #2 pencil.  
Correct ●●● ← Use No. 2 Pencil Only → Incorrect ⊗⊗⊗

**Section I: Characteristics**

Which of the following characteristics do you think describes HEALTHY MENU CHOICES in YOUR school nutrition (SN) program? (Select all that apply.)

<input type="checkbox"/> Colorful	<input type="checkbox"/> Texture	<input type="checkbox"/> Time Consuming	<input type="checkbox"/> Expensive
<input type="checkbox"/> Fresh	<input type="checkbox"/> Highly Processed	<input type="checkbox"/> Nutritious	<input type="checkbox"/> Appealing
<input type="checkbox"/> Unpopular	<input type="checkbox"/> Portion Control	<input type="checkbox"/> Limited Processing	<input type="checkbox"/> Tastes Good
<input type="checkbox"/> Good Quality	<input type="checkbox"/> Wholesome	<input type="checkbox"/> Variety	<input type="checkbox"/> Large Quantity

**SECTION II: Practices**

**Instructions:**

Please read the following statements regarding PRACTICES involved with providing healthy menu choices in YOUR school nutrition (SN) program.

In the IMPORTANCE column, indicate whether YOU think the following practices are important to providing healthy menu choices in your SN program. Use the scale 4 (VERY IMPORTANT) to 1 (NOT IMPORTANT).

In the CURRENT STATUS column, indicate YOUR current status in regards to the following practices related to providing healthy menu choices in your SN program. Use the scale 4 (FULLY ADDRESSED) to 1 (NOT ADDRESSED).

	Importance		Current Status	
	Very Important	Not Important	Fully Addressed	Not Addressed
1. SN director networks with other SN programs to gain creative ideas for the development of healthy menu choices.	4	3	2	1
2. SN program provides unlimited servings of fresh fruits and vegetables.	4	3	2	1
3. Student input is sought when incorporating healthy menu choices.	4	3	2	1
4. Healthy menu choices reflect the school district's local wellness policy.	4	3	2	1
5. Students are offered food samples to promote healthy menu choices.	4	3	2	1
6. Resources are sought to incorporate healthy menu choices in the SN program.	4	3	2	1
7. District/school administration demonstrates support for providing healthy menu choices.	4	3	2	1
8. Students are involved in the menu change process to incorporate healthy choices.	4	3	2	1
9. SN director was involved in developing the school district's local wellness policy.	4	3	2	1
10. Healthy menu choices served are appealing to students.	4	3	2	1
11. Social media (Facebook, Twitter) is used to promote healthy menu choices.	4	3	2	1
12. Nutrition education offered encourages students to make healthy choices.	4	3	2	1
13. Marketing is used to increase awareness of healthy menu choices.	4	3	2	1
14. SN director develops recipes for healthy menu choices.	4	3	2	1
15. SN director incorporates healthy menu choices to decrease the risk of chronic diseases (heart disease, obesity, diabetes) among students.	4	3	2	1

## Perceptions Related to Providing Healthy Menu Choices

### School Nutrition Directors

- School nutrition directors were asked to rate their level of agreement with 15 statements regarding their perceptions toward providing healthy menu choices using a scale of 4 (*strongly agree*) to 1 (*strongly disagree*).
- The majority of the statements had a high level of agreement from respondents, with 12 out of the 15 statements receiving a mean rating of 3.0 or greater. “Incorporating healthy menu choices is the right thing to do for students” had the highest mean rating ( $3.88 \pm 0.37$ ), followed by “Healthy menu choices improve students’ learning abilities” ( $3.62 \pm 0.63$ ), “Nutrition education makes it easier for students to select healthy choices that will carry over into adulthood” ( $3.57 \pm 0.65$ ), and “SN director is a positive role model for school wellness” ( $3.50 \pm 0.65$ ).

### School Nutrition Managers

- School nutrition managers were asked to rate their level of agreement with nine statements regarding their perceptions toward providing health menu choices using a scale of 4 (*strongly agree*) to 1 (*strongly disagree*).
- The majority of the statements had a high level of agreement from respondents, with seven out of the nine statements receiving a mean rating of 3.0 or greater. “Incorporating healthy menu choices is the right thing to do for students” had the highest mean rating ( $3.90 \pm 0.33$ ), followed by “Offering healthy menu choices teaches students how to make healthier lifestyle decisions” ( $3.57 \pm 0.74$ ), and “SN manager is a positive role model for school wellness” ( $3.55 \pm 0.61$ ).

## Barriers Related to Providing Healthy Menu Choices

### School Nutrition Directors

- School nutrition directors were asked to indicate their level of agreement with barriers related to providing healthy menu choices in their SN programs. A 4-point rating scale was used with 4 being *strongly agree* and 1 being *strongly disagree*. Of the 13 barriers listed on the survey, the highest level of agreements reported were “increase in food cost” ( $3.65 \pm 0.66$ ), “increase in production cost” ( $3.42 \pm 0.82$ ), and “increase in labor cost” ( $3.34 \pm 0.85$ ).

## Directors and Managers Agree on Top Five Qualities of Healthy Menu Choices

Nutritious  
Fresh  
Colorful  
Good Quality  
Tastes Good

### School Nutrition Managers

- School nutrition managers were asked to indicate their level of agreement with barriers related to providing healthy menu choices in their SN programs. A 4-point rating scale was used with 4 being *strongly agree* and 1 being *strongly disagree*. Of the nine barriers listed on the survey, the highest level of agreements reported were “increase in food cost” ( $3.50 \pm 0.82$ ), “increase in production cost” ( $3.25 \pm 0.87$ ), and “increase in labor cost” ( $3.16 \pm 0.97$ ).

## Training/Resources Related to Providing Healthy Menu Choices

### School Nutrition Directors

- Resource materials used most often to develop and incorporate healthy menu choices were state agency resources (74.2%), USDA resources (72.7%), and networking with other school districts (68.2%). Training attended most often by respondents related to healthy menu choices was state agency training (80.7%), SNA conference (63.9%), and SNA webinars (30.9%).
- Respondents indicated the training most often provided to their SN staff related to healthy menu choices was standardized recipes (84.0%), food safety (83.2%), kitchen safety (72.5%), production (71.4%), and regulations (70.6%).
- The majority of respondents reported that they were not Healthier U.S. School Challenge Award recipients (79.6%); however, 13.8% were in the process of applying for the award. Respondents were nearly equal in participation of the Department of Defense Fresh Fruit and Vegetable Program, with 44.7% of respondents indicating they participate while 52.3% do not participate. Almost 44% of respondents purchase fresh fruits and vegetables from local farmers, whereas 56.2% do not.

### ***School Nutrition Managers***

- Training attended most often by respondents related to healthy menu choices was training by SN director (63.1%), state agency training (52.2%), and SNA conference (50.7%).
- Respondents indicated the training most often provided to their SN staff related to healthy menu choices was food safety (93.1%), standardized recipes (86.6%), kitchen safety (79.6%), and regulations (73.1%).

### **Survey Factor Analysis**

#### ***School Nutrition Directors***

- Exploratory factor analyses were conducted on the statements regarding practices, perceptions and barriers for both SN directors and SN managers. Results from the study indicated there were 10 factors that contribute to providing healthy menu choices among SN directors, which included promotional practices, student benefits, operational practices, wellness policy practices, student-focused practices, partnerships and resources, and positive program environment. Mean scores for SN directors who purchase local fresh fruits and vegetables were significantly higher than SN directors who do not purchase local fresh fruits and vegetables for all 10 factors. This finding suggests that SN programs that purchase fresh fruits and vegetables from local farmers are more likely than SN programs that do

not purchase fresh fruits and vegetables from local farmers to recognize the importance of and to be currently providing healthy menu choices, thereby increasing the health benefits for students and establishing a supportive wellness environment in schools and with stakeholders.

- Mean scores for SN directors who are HUSSC Award recipients were significantly higher than SN directors who are not HUSSC Award recipients for six factors. This finding suggests that SN programs that have received the HUSSC Award are more likely than SN programs that have not received the HUSSC Award to recognize the importance of and also to be currently providing healthy menu choices to students, thereby gaining support from stakeholders through their operational, promotional, and wellness efforts.

#### ***School Nutrition Managers***

- Results from the study also indicated there were four factors that contribute to providing healthy menu choices among SN managers. These include student-focused practices, healthy environment, and operational practices. SN managers believed that in order to successfully provide healthy menu choices in their SN cafeterias, they must focus on the students and create a healthy environment to obtain the support of their stakeholders.

## ***PRACTICAL USE OF THIS INFORMATION***

- Training modules could be developed to assist SN professionals in developing and incorporating healthier menu choices into their programs. Modules could be developed around the 10 healthy menu choice factors among SN directors identified in this study, to include promotional practices, student benefits, operational practices, wellness policy practices, student-focused practices, positive program environment, and partnerships and resources. The materials should provide strategies for overcoming possible barriers, such as recipe development and students' perceptions.
- Additional training materials could be developed to assist SN directors in assessing their current local wellness policies, menus, nutrition education, and physical education in order to explore attaining the HUSSC Award.
- Educational materials could be developed to assist SN managers interested in finding creative ways to engage their customers and gain the support of their SN staff in relation to providing healthy menu choices.

## For More Information

- Bartholomew, J. B. & Jowers, E. M. (2006). Increasing frequency of lower-fat entrees offered at school lunch: An environmental change strategy to increase healthful selections. *Journal of the American Dietetic Association, 106*(2), 248-252.
- Briefel, R. R., Crepinsek, M. K., Cabli, C., Wilson, A., & Gleason, P. M. (2009). School food environments and practices affect dietary behaviors of U.S. public school children. *Journal of the American Dietetic Association, 109*(2) S91- S107.
- Black, J. D. (2005). Local wellness policies and the dietary guidelines: What does it mean to you? *Journal of the American Dietetic Association, 105*(6), 891-893.
- Patel, A. I., Bogart, L. M., Ulyeda, K. E., Martinez, H., Knizewski, R., Ryan, G. W., Schuster, M. A. (2009). School site visits for community-based participatory research on healthy eating. *The American Journal of Preventive Medicine, 37*(6), S300-S306.
- Snelling, A. M. & Kennard, T. (2009). The impact of nutrition standards on competitive food offerings and purchasing behaviors of high school students. *Journal of School Health, 79*(11), 541-546.
- The Child Nutrition and Special Supplemental Nutrition Program for Women, Infants and Children (WIC) Reauthorization Act of 2004, Public Law 108-265, Section 204.



*Please feel free to reproduce and distribute this publication.  
Copies are also available on our website: [www.nfsmi.org](http://www.nfsmi.org).*

Information about this and other topics may be obtained by contacting the  
**NATIONAL FOOD SERVICE MANAGEMENT INSTITUTE**  
**The University of Mississippi**  
Telephone: 800.321.3054

GY 2010 Project 1

Authors – Alexandra Castillo, MPH; Mary Frances Nettles, PhD, RD; Shellie Hubbard, MA. Ms. Castillo, Dr. Nettles, and Ms. Hubbard are Researcher, Director, and Research Assistant, respectively, with the Applied Research Division of the National Food Service Management Institute.

This publication has been produced by the National Food Service Management Institute, Applied Research Division, located at The University of Southern Mississippi with headquarters at The University of Mississippi. Funding for the institute has been provided with federal funds from the U.S. Department of Agriculture, Food and Nutrition Service, to The University of Mississippi. The contents of this publication do not necessarily reflect the views or policies of The University of Mississippi or the U.S. Department of Agriculture, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.

The information provided in this publication is the result of independent research produced by NFSMI and is not necessarily in accordance with U.S. Department of Agriculture Food and Nutrition Service (FNS) policy. FNS is the federal agency responsible for all federal domestic child nutrition programs including the National School Lunch Program, the Child and Adult Care Food Program, and the Summer Food Service Program. Individuals are encouraged to contact their local child nutrition program sponsor and/or their Child Nutrition State Agency should there appear to be a conflict with the information contained herein, and any state or federal policy that governs the associated Child Nutrition Program. For more information on the federal Child Nutrition Programs please visit [www.fns.usda.gov/cnd](http://www.fns.usda.gov/cnd).