

Developing a Best Practice Guide for Increasing High School Student Participation and Satisfaction in the National School Lunch Program

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Please note that this study was published before the implementation of Healthy, Hunger-Free Kids Act of 2010, which went into effect during the 2012-13 school year, and its provision for Smart Snacks Nutrition Standards for Competitive Food in Schools, implemented during the 2014-15 school year. As such, certain research may not be relevant today.

ABSTRACT

Purpose/Objectives

The purpose of this project was to identify and confirm best practices for increasing high school student participation and satisfaction in school nutrition (SN) programs operating under the regulations of the National School Lunch Program (NSLP).

Methods

Using a modified best practices research model (BPRM; Mold & Gregory, 2003), we developed best practice statements framed around four practice areas which were based on previous research findings and pertinent foodservice, SN, and marketing literature. Eight SN professionals participated in an expert panel work group session to review each best practice statement, classify statements under the appropriate research-based practice area, and group similar statements into goals. Using a guided evaluation, expert panel members reviewed the results of the work group session and confirmed the list of best practice statements. We drafted a best practice guide, which a review panel (N = 11) of SN directors evaluated for appropriate grouping of best practice statements into goals and practice areas, ease of use of assessment scales, formatting, and general content validity.

Results

The *NFSMI Best Practice Guide for Increasing High School Student Participation and Satisfaction in the National School Lunch Program* contains 75 best practice statements grouped into 13 goals that support four practice areas (Food Quality, Staff, Program Reliability, and Marketing and Communications). There are two components to the guide: Baseline Assessment and Progress Review. The former assists the SN director in identifying best practices applicable to his/her program, as well as strategies that can be included in a plan of action for improvement, while the latter measures how effectively the plan of action is implemented.

Applications to Child Nutrition Professionals

This guide provides SN professionals a research-based tool to focus improvement efforts on best practices that will have the most impact on high school students' participation in the NSLP and satisfaction with their school lunch experience.

INTRODUCTION

School nutrition (SN) programs operating under the regulations of the National School Lunch Program (NSLP) continue to encounter the challenges of declining student participation at the high school level. Gordon et al. (2007) reported that daily participation in the NSLP among elementary students was at 73% in comparison to 44% among high school students. Although high school-aged

students accounted for 34.9% of all students aged five to 18 for the school year 2004-2005, they only accounted for 26% of all NSLP participants.

The National Food Service Management Institute, Applied Research Division (NFSMI, ARD) conducted a series of multi-faceted studies addressing student satisfaction and declining participation at the high school level. As a result, two high school foodservice surveys were developed, namely, *The Non-Participation Survey* (Asperin, Nettles, & Carr, 2008) for students who eat two or less school lunches a week, and *The School Lunch Experience Survey* (Asperin, Nettles, & Carr, 2009) to be administered to students who eat three or more school lunches a week. The *High School Student Satisfaction and Non-Participation Survey Guide* (Asperin & Carr, 2009) was then created to provide step-by-step instructions for using the surveys and for developing action plans framed around the Continuous Quality Improvement (CQI) process.

The Non-Participation Survey study (Asperin et al., 2008) showed that the six factors affecting non-participation can be classified as internal or external to the SN operation. Food quality, food access, and staff are operationally controllable and can be addressed internally. Dining area capacity, schoolwork, and food from home are generally external to SN program operations and may be addressed with the assistance of other stakeholders (e.g., district and/or school administration, teachers, parents, other community members). Students stated that they would be most likely to participate if they saw improvements in the following attributes: overall quality of the food, variety of menu items from day to day, and time spent waiting in line. On the other hand, *The School Lunch Experience Survey* study (Asperin et al., 2009) showed that 21 key indicators impact the dining experience of high school students. These statistically factor into three dimensions: food quality, program reliability, and staff responsiveness and empathy. Results indicated that food quality had the greatest effect on the students' evaluation of their overall dining experience.

Outcomes of these studies showed that, in addition to providing survey tools to SN professionals, there was also a need to provide feasible strategies that can be used for the completion of CQI Action Plans as outlined in the *High School Student Satisfaction and Non-Participation Survey Guide* (Asperin & Carr, 2009). Thus, the primary objective of this project was to develop and provide a best practice resource for SN directors that will identify sustainable best practices for increasing high school student participation and satisfaction. In addition, we aimed to classify these best practices into identifiable practice areas and actionable goals for operational improvement. The resulting best practice guide can be used as an assessment tool for establishing baseline performance and evaluating the improvement of the SN program. The study also aimed to validate and evaluate the usefulness of the best practice guide and to disseminate the information by providing the guide in an accessible and downloadable Web-based format.

METHODOLOGY

The five-step best practices research model (BPRM; Mold & Gregory, 2003) systematically identifies, describes, and combines effective and efficient strategies for program improvement. The BPRM in relation to the research protocol followed in this study is summarized in Figure 1. Participants for all steps were chosen from a pool of SN directors who have previously assisted in the development of *The School Lunch Experience Survey*, *The Non-Participation Survey*, and the *High School Student Satisfaction and Non-Participation Survey Guide*. These SN professionals represented a range of programs that varied in relation to free and reduced price percentages (high or low), district sizes (small, medium, large), ethnic diversity of students served, location (rural, suburban, urban), and United States Department of Agriculture (USDA) region (Western, Mountain Plains, Midwest, Northeast, Mid-Atlantic, Southeast, and Southwest). Added to the pool were SN professionals who either have had great success in increasing participation in their SN programs, as recognized by the School Nutrition Association (SNA), or academicians who have years of experience in training SN professionals to optimize program operations. All research protocols were approved by the Human Subjects Protection Review Committee at The University of Southern Mississippi.

Step 1 <i>Development of conceptual model</i>	Identification of practice areas that impact the participation and satisfaction of high school students in SN programs
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Step 2 <i>Definition of "best" method</i>	Drafting of best practices or quality indicators framed around identified research-based practice areas
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Step 3 <i>Identification/evaluation of potential methods for each component</i>	Confirmation of appropriate best practices by an expert panel work group of SN professionals
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Step 4 <i>Combining "best" components</i>	Classification of best practices into practice areas and grouping of similar best practices into goals
↓	
Step 5 <i>Test combined method</i>	Evaluation of best practice guide by a national review panel of SN professionals

Figure 1. Modified Best Practices Research Method. SN = School Nutrition

The best practice statements were framed around four practice areas (Food Quality, Staff, Program Reliability, and Other Factors) that affect both the participation and satisfaction of high school students in the NSLP (Asperin et al., 2008; 2009). A total of 143 best practice statements were drafted based on previous research and published resources for SN programs (Asperin et al., 2008, 2009; Cater, 2006; Center for Ecoliteracy, 2004; Fogleman, Dutcher, McProud, Nelken, & Lins, 1992; Gilmore, Hutchinson, & Brown, 2000; Lofton & Nettles, 2008; Penka, Ferris, Pickert, & Gould, 1996; Rainville, Lofton, & Carr, 2008).

Expert Panel Work Group

Invitations to attend a two-day expert panel work group were sent to 12 SN professionals via e-mail. Each confirmed participant (N = 8) received a pre-meeting review form containing the draft best practice statements. Participants were asked to review the best practice statements and to assess whether these were achievable and measurable. During the work group session, the panel was initially divided into two work groups to discuss outcomes of the pre-meeting review. Each group decided whether to accept, delete, or modify each of the best practice statements, classifying the remaining statements into the most appropriate practice area. Additional best practices were drafted if any gaps existed.

Consensus building steps were applied to guide the whole expert panel in coming to agreement on the wording and classification of each best practice statement. Unmodified statements classified by both groups under the same practice area were accepted without discussion. Modified statements classified in the same practice area were briefly discussed to resolve wording differences. Statements classified under different practice areas and additional best practices were discussed to

determine appropriate categorization and wording. The expert panel was then asked to group similar best practice statements into goal themes. In addition, the expert panel reviewed and modified the definitions of key terms, discussed the use of an evaluation scale to assess performance on the best practices, and provided suggestions for the format of the end product.

One week later, the expert panel evaluated the outcomes of the meeting by confirming the wording and categorization of the best practice statements into the appropriate goals and practice areas, as well as the appropriateness of goal statements developed from goal themes. Additional comments that were not specifically addressed by the evaluation questions were encouraged. Tabulated information was used to develop a draft best practice guide.

National Review Panel

Invitations to serve as members of a review panel were e-mailed to 28 SN professionals. Each received a copy of the draft best practice guide, an overview of the project stating objectives for the review panel, and instructions for completing and returning the Review Panel Evaluation form. Return of the completed form (N = 11) signified consent to participate in the study. In Section I, reviewers evaluated content validity and in Section II, members evaluated the best practice guide for general usability in the SN setting. A four-point scale from strongly disagree to strongly agree was used for each evaluation statement in Sections I and II. Space was provided for reviewers to submit comments and suggestions. In Section III, reviewers were asked to provide demographic information. All evaluation scores and recommendations were used to finalize the best practice guide.

RESULTS AND DISCUSSION

Expert Panel Work Group

Characteristics of Participating School Nutrition Professionals

The eight members of the expert panel work group represented the Mid-Atlantic, Midwest, Mountain Plains, Northeast, Southeast, Southwest, and Western regions. The panel was composed of SN directors (n = 6), an SN area supervisor (n = 1), and an academician (n = 1) who have been involved in SN programs between five to greater than 20 years. All participants completed bachelor's degrees, one with additional graduate credits, and one with a doctoral degree. Credentials and certifications included School Nutrition Specialist (SNS) credentialed (n = 1), Registered Dietitian (RD; n = 3) and SNA certified (n = 1). Enrollment at the district level ranged from less than 2,799 to greater than 65,000 students. The average daily participation among the SN programs represented ranged from 52% to 94% at the high school level with free and reduced price eligibility ranging from 7 to 82%.

Work Group Session

Panel members agreed to delete 62 (43%) of the 143 statements, accept 44 (31%) as written, modify and accept 32 (22%) of the statements, and assign five (4%) statements as goals. A majority of the 62 deleted statements were either combined with another statement (40%) or were eliminated due to contextual redundancy (34%), while the rest (26%) were deleted because they were inapplicable or operationally impractical for SN programs at the high school level. New best practice statements proposed by the subgroups were incorporated into the modified statements.

The 76 best practice statements retained were then grouped into 13 goal themes under the four practice areas. After reviewing the goal themes, expert panel members agreed to change the practice area "Other Factors" to "Marketing and Communications" to more accurately reflect the best practice statements classified under it. The definitions of the practice areas agreed upon are listed below.

- **Food Quality:** Practices that focus on improving the overall appeal of food to students (i.e., taste, appearance, aroma, and temperature).
- **Staff:** Practices that address student concerns regarding staff attitude towards work, service efficiency, and staff behavior towards students.

- **Program Reliability:** Practices that reflect the SN program's ability to meet NSLP regulations and student expectations on the delivery of food and services in a consistent, timely, and reliable manner.
- **Marketing and Communications:** Practices that affect the awareness of students and other stakeholders regarding services offered through the NSLP. This also includes practices that affect and/or influence the students' dining experience and perception of the NSLP.

Panel members suggested a two-part format for the best practice guide. The first section should enable users to establish a baseline to measure current best practices that are operationally addressed or not addressed by the SN program. The baseline should also help the user prioritize best practices that can be included in an action plan for improvement. The expert panel was agreeable to using a descriptive and numerical Current Status scale (3 = *fully addressed*, 2 = *partially addressed*, 1 = *plan to address*, 0 = *not addressed*, and n/a = *not applicable*), coupled with a Priority Level scale (H = *high*, M = *medium*, and L = *low*) for this section of the resource. The numerical scale was preferred to enable the user to easily tally scores per goal and determine the areas that will have the biggest impact on their program. The second part of the resource should enable users to evaluate progress on the best practices after the implementation of an action plan. Because this is a follow-up, a different measurement scale was suggested. Panel members were agreeable to an Implementation Status scale to measure progress (4 = *demonstrates excellence*, 3 = *area of strength*, 2 = *needs improvement*, 1 = *unsatisfactory*, and n/a = *not applicable*). In addition, expert panel members suggested that the resource include a short introduction describing the two sections, definitions of key terms, and bulleted instructions for using the two forms.

Work Group Post-Session Review

All expert panel members completed and returned the Expert Panel Work Group Summary form. Of the 76 best practice statements reviewed, 61 (80%) were retained as written in the same goal and practice area. Revisions to the remaining 15 (20%) included changes in wording and re-assignment to different goals. Two statements were combined and one best practice statement was added, as per panel suggestion, for a total of 76 statements. No changes were recommended for the 13 goals proposed based on the goal themes established during the work group session. Analysis of written comments showed that panel members approved the format and rating scales for the baseline and follow-up sections. Panel members also indicated that the introduction, definitions, and instructions provided were clear and concise.

National Review Panel

Characteristics of Participating School Nutrition Professionals

Of the 28 SN professionals invited to serve on the review panel, 16 (57%) agreed to participate, but only 11 (39%) completed and returned the Review Panel Evaluation form. The review panel was composed of SN directors (n = 9) and SN supervisors (n = 2) with representation from each of the seven USDA regions. Student enrollment in the districts in which they practiced ranged from less than 2,799 to 65,000 or greater students, with the majority (64%) ranging from 2,800 to 19,999. Experience in SN programs ranged from one to greater than 20 years. Seven of the review panel members have held their current position at least six years. All participants completed bachelor's degrees, seven of whom completed at least a Master's degree. Credentials and certifications included SNS credentialed (n = 5), RD (n = 3), SNA certified (n = 2), State Department of Education certified (n = 2), Licensed Dietitian/Nutritionist (n = 2), and Dietetic Technician, Registered (n = 1).

Review Panel Evaluation

Analysis of written comments led to: acceptance of 45 (59%) best practice statements as written, modification of 30 (40%) best practice statements, and deletion of one (1%) statement (Table 1). The majority of wording modifications involved changing "school nutrition office" to "school nutrition director/designee" to provide clarity of accountability. Four (5%) of the best practice statements were re-assigned to different goals within the same practice areas, and one (1%) was moved to a different practice area. Review panel members were instructed to evaluate the suitability of the best practices under each goal statement in relation to the practice area. For each of the 13 goals, the review panel indicated their agreement with the evaluation statement using a four-point scale from 1 (*strongly disagree*) to 4 (*strongly agree*). Mean levels of agreement ranged from 3.30 to 3.90 (Table 2) indicating the review panel agreed or strongly agreed that the best practices were reflective of the goals and practice areas. Again, the majority of wording modifications for the goal statements involved changing "school nutrition office" to "school nutrition director/designee."

Table 1. National Review Panel Evaluation of Best Practice Statements (N = 11)

Practice Areas and Revised Goals	Number of Best Practice statements	
	Expert Panel Results	Post Review Panel
Food Quality		
1. The school nutrition director/designee establishes a system to effectively plan and prepare nutritious, high quality, good tasting meals that appeal to high school students.	5	5
2. The school nutrition director/designee develops and implements policies and/or procedures for collecting information from a variety of stakeholders to guide menu planning.	3	4
3. The school nutrition director/designee establishes a system to ensure that food quality, including taste, temperature, texture, safety, and appearance, is maintained throughout the serving period.	7	7
4. The school nutrition director/designee establishes partnerships with stakeholders to determine products that meet the nutritional standards of the NSLP while appealing to high school students.	3	3
Staff		
1. The school nutrition director/designee provides training opportunities to ensure that school nutrition staff effectively communicate and interact with high school students.	4	4
2. The school nutrition director/designee provides training and professional development opportunities that support the enhancement of NSLP services.	6	5
Program Reliability		

1.	The school nutrition director/designee develops and implements policies and/or procedures to ensure all high school students have access to NSLP services.	8	9
2.	The school nutrition director/designee develops and/or implements a training module on food safety, food handling, and portion control.	3	3
3.	The school nutrition director/designee collaborates with district/school administrators to establish a system for ensuring that a pleasant, attractive, and functional serving and dining environment is provided for students.	12	12
4.		2	2
Marketing and Communications			
1.	The school nutrition director/designee establishes a system to communicate with stakeholders the programs available for high school students through the NSLP.	6	5
2.	The school nutrition director/designee establishes a system to ensure that students receive consistent, positive, and motivating messages promoting healthy eating and the school lunch program.	10	9
3.	The school nutrition director/designee establishes a system to communicate with stakeholders the role of the school lunch program in providing adequate nutrition to high school students.	7	7

Table 2. National Review Panel Evaluation of Goals (N = 11)

Evaluation Statements per Goal	Level of Agreement ^a Mean ± Standard Deviation per Practice Area and Goal
	Food Quality

	1	2	3	4
The goal statement accurately reflects the best practices listed.	3.45 ± .52	3.63 ± .50	3.82 ± .40	3.45 ± .69
The goal statement is clearly worded.	3.36 ± .50	3.36 ± .50	3.82 ± .40	3.55 ± .52
The best practices listed are applicable to increasing participation and satisfaction of high school students in the National School Lunch Program.	3.45 ± .52	3.45 ± .52	3.73 ± .47	3.45 ± .69
	3.45 ± .52	3.45 ± .52	3.73 ± .47	3.55 ± .52
Staff				
	1	2		
	3.70 ± .48	3.63 ± .50		
The goal statement is clearly worded.	3.80 ± .42	3.64 ± .50		
The best practices listed are applicable to increasing participation and satisfaction of high school students in the National School Lunch Program.	3.70 ± .48	3.73 ± .47		
	3.60 ± .52	3.64 ± .50		
Program Reliability				
	1	2	3	4
	3.55 ± .52	3.82 ± .40	3.40 ± .84	3.70 ± .48
The goal statement is clearly worded.	3.64 ± .50	3.82 ± .40	3.50 ± .71	3.70 ± .48
The best practices listed are applicable to increasing participation and satisfaction of high school students in the National School Lunch Program.	3.64 ± .50	3.82 ± .40	3.70 ± .48	3.60 ± .52
	3.64 ± .50	3.90 ± .32	3.60 ± .70	3.67 ±50
Marketing and Communications				

	1	2	3
	3.60 ± .52	3.80 ± .42	3.67 ± .50
The goal statement is clearly worded.	3.40 ± .70	3.70 ± .48	3.40 ± .70
The best practices listed are applicable to increasing participation and satisfaction of high school students in the National School Lunch Program.	3.60 ± .52	3.60 ± .52	3.60 ± .52
	3.60 ± .52	3.70 ± .48	3.60 ± .52

^aScale (Min/Max): 1=strongly disagree/4=strongly agree

Results showed that the review panel generally either agreed or strongly agreed that the organization, ease of use and understanding, formatting, and overall content validity of the best practice resource were acceptable (Table 3). However, the review panel rated the evaluation statement, "*The guide gives guidance for selecting the appropriate strategies for the school nutrition program*" lower ($M \pm SD = 3.18 \pm .60$) than other items, thus more detailed instructions on using the Baseline Assessment and/or Progress Review results were added to the Introduction section. The review panel confirmed that a Baseline Assessment of the best practices may be performed using the Current Status and Priority Level scales. A minor revision was made for the Current Status scale, eliminating the plan to address category and changing the numerical value of not addressed from 1 to 0, resulting in the following scale: 2 = *fully addressed*, 1 = *partially addressed*, and 0 = *not addressed*, with a *not applicable* (n/a) option for best practices that cannot be supported given the constraints of the SN program. The review panel also agreed that a Progress Review for best practices can be monitored using the Implementation Status scale. Minor revision for the Implementation Status scale involved changing the numerical value of unsatisfactory from 1 to 0, resulting in the following scale: 3=*demonstrates excellence*, 2=*area of strength*, 1=*needs improvement*, and 0=*unsatisfactory*, with a *not applicable* (n/a) option. The majority of panel members strongly agreed that the best practice guide was a useful tool for SN professionals.

Table 3. National Review Panel Evaluation of Draft Best Practice Resource (N = 11)

Evaluation Statements	Level of Agreement^a Mean ± Standard Deviation
The Best Practice Guide is organized in a logical sequence.	3.73 ± .47
	3.64 ± .50
The Best Practice Guide offers sufficient recommendations to school nutrition directors for increasing participation and satisfaction of high school students in the National School Lunch Program.	3.64 ± .50
	3.18 ± .60
	3.73 ± .47
	3.46 ± .52

	3.46 ± .52
	3.64 ± .50
	3.70 ± .67

^a Scale (Min/Max): 1=strongly disagree/4=strongly agree

CONCLUSIONS

Research Study Conclusions and Applications

The primary objective of the project was to identify and confirm best practices and/or quality indicators suitable for increasing participation rates and improving high school student satisfaction in SN programs operating under the regulations of the NSLP. *The NFSMI Best Practice Guide for Increasing High School Student Participation and Satisfaction in the National School Lunch Program* contains 75 best practice statements grouped into 13 goals that support four practice areas, namely Food Quality, Staff, Program Reliability, and Marketing and Communications. There are two components to the resource: the Baseline Assessment and the Progress Review. Both are provided to assist SN professionals in evaluating operational performance based on the best practice areas.

The Baseline Assessment is designed to help the SN professional to initially identify practices that are applicable to his/her SN program. Completing this assessment will help identify strategies that the SN program can continue to implement (or implement in the future) to maintain and/or increase high school student participation and satisfaction. Each best practice statement is assessed using a Current Status scale (*fully addressed, partially addressed, not addressed, and not applicable*). The user is then instructed to assign a priority level (high, medium, and low) for addressing the best practices as they pertain to the user's SN program.

Upon assessing the current status and priority level of the best practices, SN professionals can establish an action plan for addressing the practices identified as needing attention.

The Progress Review is designed to measure how effectively the action plan has been implemented to address challenges identified during the Baseline Assessment. Each best practice statement is evaluated using an Implementation Status scale (*demonstrates excellence, area of strength, needs improvement, unsatisfactory, and not applicable*). SN professionals are advised to perform the progress review annually to facilitate continuous quality improvement. Results of subsequent progress reviews may also be used to guide SN directors and/or managers in reporting program improvements to the district and/or school community.

This resource provides SN professionals a research-based tool to evaluate operational practices for program improvement. Use of the resource can help SN directors focus improvement efforts on best practices that will have the most impact on high school students' participation in the NSLP and satisfaction with their school lunch experience.

Limitations and Recommendations for Further Research

The project is limited only to the development of the best practice guide utilizing expert advice from a small number of practicing professionals. A feedback mechanism should be put in place for SN professionals to provide insight on the usefulness of the resource and their role in administering the self-assessment. A longitudinal study would be beneficial to assess and validate the effectiveness of the best practice guide as SN professionals implement action plans framed around the results of their Baseline Assessment. Additional studies using the BPRM related to participation and satisfaction include the development of a best practice guide for increasing school breakfast participation at the high school level and the development of a best practice guide for maximizing school lunch and/or breakfast participation and satisfaction at the middle school level.

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BIOGRAPHY

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