

Healthy School Nutrition Environments: Views of School Foodservice Personnel Compared to Other School Personnel

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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

Objectives

The U.S. Department of Agriculture (USDA) developed *Changing the Scene: Improving the School Nutrition Environment* to promote a healthy school nutrition environment (HSNE). The objective of an HSNE is to give students consistent, reliable health information and ample opportunity to use it. The purpose of this study is to learn more about issues related to HSNEs from the perspective of school personnel, and to compare the opinions that school foodservice personnel (SFP) and other school personnel (OSP) have toward developing HSNEs.

Methods

In October 2002, a nationwide survey was mailed to a random sample of K-12 school foodservice directors, foodservice managers, superintendents, principals, school business officials, teachers, and coaches. A total of 3,500 surveys were mailed, 500 from each group.

Results

The response rate was 34.9% (n=1,222) with 49.1% (n=600) of the responses from SFP and 50.9% (n=622) of the responses from OSP. Eighty-nine percent of respondents were from districts that participate in the National School Lunch Program (NSLP). According to the survey, an HSNE was a high priority for 68% of SFP and 38% of OSP. Thirty-three percent of SFP and 47% of OSP selected family education as the most important factor in increasing awareness of an HSNE. Both groups ranked behavior-focused nutrition education by staff, with appropriate training and adequate funds provided by local, state, and federal sources, as the most significant components of an HSNE. For the most prominent barriers to an HSNE, SFP chose funding for school foodservice, competitive foods, and children's peer pressure, while OSP chose television/media, funding for school foodservice, and competitive foods.

Application to Child Nutrition Professionals

To address the nutritional quality of foods offered and sold other than reimbursable school meals and snacks, the development of federal, state, and district policies is needed. The results of this study could be presented to school district stakeholders during the wellness policy development process to illustrate the need for changes that will improve the HSNE. Additionally, the results of this study showed that all school personnel need to work together on policies and programs to improve their HSNEs.

INTRODUCTION

Healthy eating behaviors and physical activity are important for children's health and well-being. The need to promote healthy eating among children has intensified in recent years due to the growing national epidemic of obesity (Ogden et al., 2002). Obese children may develop serious medical and psychosocial complications as a result of their weight, and they are at greater risk of adult morbidity and mortality (Ebbeling et al., 2002; Wang & Dietz, 2002). Although many diet-related health problems affect adults, the eating patterns that contribute to weight gain usually are established during youth and continue into adulthood (Centers for Disease Control and Prevention [CDC], 1996). Thus, it is very important to teach healthy eating patterns to students at an early age.

Schools are in a unique position to promote healthy eating behaviors, and the school environment is recognized as having a significant impact on students' food choices and eating habits (Kubik et al., 2003; Story, Neumark-Sztainer, & French, 2002). Although the U.S. Department of Agriculture (USDA) provides federal child nutrition programs, such as the National School Lunch Program (NSLP), School Breakfast Program, and the Afterschool Snack Program (USDA, 1995), to districts, many schools offer students nutrient-poor foods and beverages that are high in calories, sodium, fat, saturated fat, and sugar. These foods can be found in vending machines, school stores, school fundraisers, classroom parties, and rewards or incentives by teachers.

A survey of 336 secondary school principals in Minnesota found that although 65% believed it was important to have nutrition policies in high schools, only 32% reported having such a policy. Fifty-two percent of principals thought it was very important for the school to provide an environment that encourages healthy food choices (French et al., 2002). Findings from the second *School Nutrition Dietary Assessment* study (Food and Nutrition Service [FNS], 2001) indicated that more than 90% of schools offered an a la carte program at lunchtime; 76% of high schools, 55% of middle schools, and 15% of elementary schools had vending machines available for student use; and 41% of high schools, 35% of middle schools, and 9% of elementary schools had school stores or snack bars that sold food or drinks.

Results of the *School Health Policies and Programs Study 2000* (SHPPS) (Wechsler et al., 2001) also showed that 94.9% of senior high schools, 62.0% of middle/junior high schools, and 26.3% of elementary schools have one or more vending machines at the school. In addition, 53.9% of senior high schools, 39.4% of middle/junior schools, and 26.8% of elementary schools have school stores, canteens or snack bars. Foods and beverages offered through these venues can be high in fat, sodium, or added sugars because USDA nutrition standards for school meals do not apply to foods sold in school stores and vending machines, or as cafeteria a la carte items.

The USDA developed *Changing the Scene: Improving the School Nutrition Environment* (USDA, 2000) to promote HSNEs that give students consistent, reliable health information, provide ample opportunity to use it, and present clear and consistent messages that explain and reinforce healthy eating and physical activity habits. Students learn to make healthy lifestyle choices in the classroom and dining room, at school parties and sports events, or wherever they are throughout the school day.

The purpose of this study is to learn more about components of an HSNE and explore issues related to their impact from the perspective of school personnel. Additionally, this study compares the opinions that school foodservice personnel (SFP), including foodservice directors

and foodservice managers, and other school personnel groups (OSP), such as superintendents, principals, teachers, coaches, and school business officials, have concerning their school's HSNE.

METHODOLOGY

Pilot Survey

In 2000, the National Food Service Management Institute's (NFSMI) Applied Research Division conducted focus groups regarding HSNEs and the promotion of healthy eating behaviors in middle schools (Meyer et al., 2001). Results of the focus groups were used to design a survey to learn more about the important components of an HSNE. In December 2001, the NFSMI released a pilot survey on HSNEs, which was approved by the Education Information Advisory Committee of the Chief State School Officers Council. Both the pilot survey and, subsequent, final survey were approved by the Eastern Michigan University Human Subjects Review Committee.

The purpose of the pilot survey was for school personnel to rank the most important components of an HSNE and identify barriers to its success. The pilot survey contained 22 questions and was conducted to refine the survey instrument prior to data collection. The pilot survey was sent to a random nationwide sample of superintendents, principals, school foodservice directors, school foodservice managers, teachers, coaches, and school business officials. Fifty individuals from each group were selected randomly, for a total of 350 surveys mailed in January 2002. The response rate was 42.3% and item analysis was performed.

Final Survey

Sample

In October 2002, the final survey was mailed to a random nationwide sample of superintendents, principals, school foodservice directors, school foodservice managers, teachers, coaches, and school business officials. The final survey was designed in software that allowed the returned surveys to be scanned. A total of 3,500 surveys were mailed, 500 to each professional group. Mailing labels for the pilot and final surveys were purchased from Market Data Retrieval, in Shelton, CT. In order to maximize the response rate, elements of the Tailored Design Method (Dillman, 2000) were used, including a pre-notice letter, thank-you postcard, and replacement survey to non-respondents. Surveys were numbered so that non-respondents could be sent a replacement survey. The cover letter for the survey included the following definition of an HSNE:

"A healthy school nutrition environment gives students consistent, reliable health information and the opportunity to use it. For example, in a healthy school nutrition environment, the classroom, school dining room, and other school activities provide clear and consistent messages that explain and reinforce healthy eating and physical activity habits. Students learn to make healthy lifestyle choices not only in classrooms and the dining room but also at class parties and other activities."

Questionnaire

Based on results of the pilot survey, the final survey was revised to include two additional

questions. (Both surveys and results of the pilot survey are available as part of the technical report at <http://www.nfsmi.org/Information/HSNE.pdf>.) Respondents were asked questions on a variety of topics, including the existence of an HSNE, vending and fundraising, components and barriers to an HSNE, methods for increasing awareness of an HSNE, and demographics. Respondents were asked to indicate the priority their school's HSNE had in their daily activities. The following options were provided: "high priority," "medium priority," "low priority", and "not a priority." The survey included 14 closed-ended questions, six open-ended questions with space to write individual answers, two ranking questions, and two open-ended comment questions with space for a paragraph to obtain additional opinions from respondents.

Data Entry and Analysis

Surveys were scanned twice using Inquisite 3.0 (Inquisite, Inc., Austin, TX) software, and the data from each survey were checked manually for quality control. All statistical analyses were completed with SPSS 11.5 for Windows (SPSS, Inc., Chicago, IL). Descriptive statistics, including means, standard deviations, and percentages of total responses, were used to examine components of and barriers to an HSNE. Responses to the open-ended questions were categorized into common themes.

RESULTS AND DISCUSSION

Demographics

The overall response rate was 34.9% (n=1,222). The response rate from each group of school personnel is presented in Table 1. SFP (n=600) had more knowledge and awareness of the NFSMI and were more likely than OSP (n=619) to complete and return the survey. OSP had a lower response rate. Eighty percent of foodservice directors and 39.6% of foodservice managers completed and returned the survey, whereas only 6.8% of coaches and 9.2% of school business officials completed and returned the survey. Respondents who indicated "other" job positions were not included in results.

Respondents were employed in school districts for an average of 15.7 (\pm 9.8) years and were employed in their current district for 12.8 (\pm 9.2) years. Forty-eight percent were from districts with less than 2,500 students; 33% had 2,501-10,000 students; and 19% had more than 10,000 students. Eighty-nine percent of respondents were from districts that participate in the NSLP. This is similar to the results of SHPPS (Wechsler et al., 2001), which reported that 87.8% of the schools surveyed participated in the NSLP. Although 76% of respondents indicated that nutrition was included in school curriculums, school foodservice personnel were involved in nutrition education in only 55% of the districts. In the SHPPS study, 26% of district foodservice staff worked with the health education staff.

Vending

SHPPS (Wechsler et al., 2001) assessed foodservice data from schools, districts, and states. These researchers found that 49.9% of districts had a contract with a soft drink company; in this study, 54.6% of districts reported having such a contract. Also in the current study, vending machines were reported in 87% of high schools, 70% of middle schools and junior high schools, and 42% of elementary schools. The percentage of elementary (23.6% for SHPPS) and middle/junior high schools (62% for SHPPS) with vending machines was higher in this survey

than the SHPPS (Wechsler et al., 2001), while the percentage of high schools with vending (94.9% for SHPPS) was lower in this study. Bottled water, soft drinks, juice drinks, sports drinks, and chips were the most common vending machine offerings in this study.

Foods and Beverages as Rewards

In SHPPS (Wechsler et al., 2001), 16% of states and 22% of districts prohibited or discouraged schools from using food or food coupons as rewards for good behavior or good academic performance. In this study, 55% of respondents reported that teachers and/or administrators used foods as rewards. In order of prevalence, candy, pizza, popcorn, soft drinks, and ice cream were frequently mentioned as rewards.

Fundraisers and School Stores

Fundraisers by schools, school organizations, or parent-teacher organizations were reported by 82.4% of SHPPS (Wechsler et al., 2001) respondents. Ninety-nine percent of respondents in this study reported fundraisers and 63% of respondents reported that school organizations have fundraisers several times a year (9.3% once a year, 13.4% monthly, 8.0% weekly, and 6.3% other). Candy and baked goods were the most popular fundraising items sold. Thirty-one percent of respondents (n=379) reported school stores that sell candy, chips, soft drinks, and other snack foods.

Perceptions of HSNEs

When asked about whether their school(s) were providing an HSNE, 77% of SFP and 70% of OSP responded that they strongly agreed or agreed. Considering the high percentage of schools with vending and school store offerings that are not very nutritious, food rewards, and candy/baked goods fundraisers, these affirmative perceptions of an existing HSNE were surprising to the authors. Not only is there room for improvement in most schools' vending and school store offerings, rewards, and fundraisers, but there is also a concern by the authors that respondents who believe that they are providing an HSNE may not be willing to improve their HSNEs.

Family education was chosen by 43.2% of SFP and 47.0% of OSP as an influential method to increase awareness of an HSNE. Nineteen percent of SFP ranked "teachers and administrators" as the second most significant individuals to increase awareness of an HSNE. OSP ranked this same factor as the least important among six components; OSP ranked "local, state, and regional focus groups" as the second most important factor.

Priority of HSNE

As expected, based on job responsibilities, 68% of SFP placed a high priority on an HSNE as compared to only 39% of OSP. Answers to the open-ended question on what could be done to make HSNEs a higher priority yielded insights into the concerns of each group. Responses from each group were categorized to determine the main issues that existed. SFP comments (n=177) focused on nutrition education, adequate funding, support from administrators, competitive foods, and parental involvement. OSP comments (n=206) focused on better menus with more variety and healthy choices, more time to become involved, parental involvement, adequate funding, nutrition education, and family education. (The complete listing of all comments can be found in the technical report at <http://www.nfsmi.org/Information/HSNE.pdf>.)

Components of an HSNE

In ranking the most essential components of an HSNE (Table 2), both groups ranked "behavior-focused nutrition education" and "adequate funds provided by local, state, and federal sources" as first and second priority, respectively. SFP ranked "adequate time for children to enjoy their meals with friends" as third, and OSP ranked "a la carte menu items that contribute to healthy eating patterns" as third.

One of the interesting findings of the survey was that SFP ranked "healthy snacks in vending machines, snack bars, and school stores" lower (number 11) than other components. Another finding was that SFP respondents were more concerned about meal schedules that meet children's hunger needs and adequate time for children to enjoy their meals with friends than were OSP respondents. "Sufficient serving areas for student access to meals with a minimum waiting time" was ranked sixth by SFP, but ranked tenth by OSP. This may be explained by considering the daily duties of SFP. SFP generally thought that foods offered in schools were providing healthy choices to students, and they were concerned more about environmental factors, such as funds, meal schedules, or serving areas for student access to meals. This also explains why SFP ranked a la carte menu items that contribute to healthy eating patterns lower than did OSP. It was ranked as number three by OSP, but was ranked as number nine by SFP. There were few opinion differences in choosing the least-important components of an HSNE. "Adequate dining space," "pleasant ambiance," and "customer service" were ranked as the least important components of an HSNE by both groups.

Barriers to an HSNE

The ranking of the most-important barriers to an HSNE are presented in Table 3. SFP and OSP ranked barriers differently in regard to their importance. SFP chose "funding for school foodservice," "competitive foods," and "children's peer pressure" as the three most significant barriers, whereas OSP chose "television and media," "funding for school foodservice," and "competitive foods."

Respondents were given an opportunity to add other barriers. A total of 63 respondents mentioned other barriers. Children's eating habits or food preferences, not enough time to eat, lack of support from administration, teachers' and principals' attitudes, and vending machines in schools were most frequently mentioned. SFP cited a lack of support from administrators and children's food preferences most often, while OSP indicated children's food preferences most often. The SFP results are similar to those in *School Policies that Promote Healthy Eating* (Barratt et al., 2004), which surveyed foodservice directors in North Carolina school districts and reported that the primary barriers for establishing a coordinated nutrition policy were lack of financial support and a lack of support from school administrators and teachers.

When asked for any additional comments about HSNEs, SFP respondents (n=142; 115 foodservice directors and 27 foodservice managers) provided input. See [Figure 1](#) for representative comments by position. SFP comments focused on adequate funding, administrative support, nutrition education, student preference for fast food, vending, establishment of dietary habits at home, and the need for regulations. OSP (n=92) comments concerned menus, food choices and healthy food portions, student preferences, parental involvement and responsibility, and funding. Among OSP, teachers and coaches seemed to have

more negative attitudes toward school foodservice than superintendents, principals, and school business officials.

CONCLUSIONS AND APPLICATIONS

In this survey, respondents identified the four most essential components of an HSNE as 1) behavior-focused nutrition education; 2) adequate funds provided by local, state, and federal sources; 3) a la carte menu items that contribute to healthy eating patterns; and 4) involvement of students and parents in developing food and nutrition policy. "Family education" was ranked as the number one need for increasing awareness of an HSNE. Respondents ranked "funding for school foodservice," "competitive foods," and "children's peer pressures" as the most significant barriers to an HSNE.

There were some differences in the recognition of the essential components of an HSNE. SFP personnel were confident that they provided nutritious foods to students, so they were more concerned about other issues, such as adequate funding, paperwork, more support from administrators, and involvement of parents. OSP, however, were more concerned about food quality and menu choices. Also, SFP indicated a desire for OSP to serve as role models for healthy eating.

As a means to understand an HSNE, the primary strengths of this study include 1) using a representative nationwide sample; and 2) targeting seven job positions of school personnel. Other strengths include the variety of variables, such as district location, size, years of employment of respondents, and types of schools. The response rate of 34.9% was a weakness of the study and it is unknown if a greater response would have changed the results.

Even though most respondents perceived they already had an HSNE, survey results on vending, school stores, and fundraisers indicated that most schools need improvement in creating and maintaining such an environment. To achieve a better HSNE, SFP need communication tools and strategies to help them convey the importance of HSNEs to superintendents, principals, school business officials, teachers, and coaches. Further study is needed to assess what opinions children and parents have of an HSNE. School personnel need to collaborate more frequently with each other on policies and programs that support an HSNE. They should work together to implement existing tools for improving HSNEs, such as those outlined in *Changing the Scene* (USDA, 2000) and the age-appropriate *School Health Index* (CDC, 2002).

To address the nutritional quality of foods other than reimbursable school meals and snacks that are offered and sold in schools, development of federal, state, and district policies is needed. Many states and districts currently are working on this issue. In addition, SFP believe that increased local, state, and federal funding for behavior-based nutrition education is needed to encourage students' healthy food choices. Adults who influence children, including parents, teachers, and administrators, must be better educated in nutrition to become effective role models for healthy eating behaviors.

The *Child Nutrition and WIC Reauthorization Act of 2004* mandated that, beginning with the 2006-07 school year, all school districts participating in the federal child nutrition programs

develop and implement a wellness policy. This wellness policy must be district-wide and set nutrition standards for all foods offered in the school environment. Policy development must incorporate input from the school community, including school foodservice personnel, parents, students, staff, school board, and administrators, to mandate compliance once the policy is implemented. Results of this study could be presented to school district stakeholders during policy development to illustrate the need for changes that will improve the HSNE.

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