

## **Cafeteria Staff Perceptions of the New USDA School Meal Standards**

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### **ABSTRACT**

*Please note that this study was published before the SY2014-15 implementation of the Smart Snacks Nutrition Standards for Competitive Food in Schools, as required by the Healthy, Hunger-Free Kids Acts of 2010. As such, certain research relating to food in schools may not be relevant today.*

#### **Purpose/Objectives**

The new nutrition standards for the school meal programs implemented in 2012 align the school meal patterns with the US Dietary Guidelines for Americans, including more fruit, vegetable and whole grain offerings and minimum and maximum amount of calories per meal averaged over a week. The purpose of this study was to assess cafeteria staff perceptions about the new school food standards.

#### **Methods**

Cafeteria staff (N=72) in 12 schools, 8 elementary (EL) and 4 intermediate (INT), from a school district in the Houston, TX area were surveyed. The school district had 37,000 students [59% White, 26% eligible for free/reduced price meals (FRP)]. Half of the EL and INT schools were low income schools based on eligibility for FRP meals (49-79% EL; ~34% INT). Frequencies were calculated for all variables by grade level (EL and INT). Chi square analysis was conducted to assess whether responses differed by grade level.

#### **Results**

The survey had a response rate of 100% (N=72) with different sample sizes per question. More EL staff than INT staff (71% vs 40%;  $p < 0.01$ ) agreed that children like the vegetables served for school lunch and that they encouraged students to eat more fruits and vegetables (95% vs 77%;  $p < 0.05$ ). Significantly more EL school foodservice staff (64% vs 43%;  $p < 0.01$ ) reported that the reason “students know exactly what they want” was a barrier for food recommendations, and this was also the barrier that most INT staff chose.

#### **Applications to Child Nutrition Professionals**

A combination of interventions, such as offering healthy food options, providing nutrition education, marketing healthy choices, verbally encouraging students to eat fruits and vegetables, and facilitating opportunities for students to try new healthy foods may be more effective in influencing student dietary patterns than any single intervention.

**Keywords:** National School Lunch Program; School Breakfast Program; new school meal standards; USDA; cafeteria staff perceptions

## INTRODUCTION

In 2012, the new nutrition standards for the National School Lunch Program (NSLP) and School Breakfast Program (SBP) were implemented in response to the Healthy Hunger-Free Kids Act. These new guidelines align the school meal patterns with the 2010 US Dietary Guidelines for Americans (US Department of Agriculture [USDA] Food and Nutrition Service [FNS], 2013). Major changes include an increase in the fruit, vegetable, and whole grain offerings, as well as a minimum and maximum amount of calories per meal averaged over a week (USDA FNS, 2013). The meal pattern now includes two servings of vegetables and one serving of fruit for a reimbursable lunch meal. At least 50% of the grains at each meal must be whole grain rich, and schools may only offer plain 1% milk or flavored and/or plain skim milk. Reimbursable meals at breakfast and lunch must contain one serving of a fruit or a vegetable plus two other food components.

These new regulations not only affect the school nutrition environment and the foods offered to the students but also the foodservice staff who prepare the food. A few studies have investigated the perceptions of foodservice staff regarding the school meal programs. In a study conducted in northeast Tennessee, school foodservice staff reported that they have an important role in influencing student food choices, but support from school administrator, teachers, families and policies was essential in order to be more effective (Slawson et al., 2013).

Minnesota school foodservice staff reported that schools have the responsibility to provide healthy food choices to students, and about half of them believed that influencing students' food choices was an important part of their job (Fulkerson, French, Story, Snyder, & Paddock, 2002). They were interested in training on how to promote healthy eating to their students. However, although more than 75% of school foodservice staff felt comfortable giving food recommendations to students, they also believed that their suggestions did not make a significant difference in the students' food choices (Fulkerson, et al., 2002). In fact, they identified two major barriers that prevented them from making food suggestions to students: "lack of time" and that "students know what they want" in the cafeteria (Fulkerson, et al., 2002). They also reported that students did not select healthful foods because of peer influence, student dislike of certain foods, and lack of knowledge of healthy foods (Fulkerson, et al., 2002). Social norms within the school cafeteria appear to influence student food selection. In a previous study with fifth grade students, social norms for eating fruit and vegetables at school were positively correlated with total vegetable, low-fat vegetable, fruit, and total FV consumption (Thompson et al., 2007).

A national study assessed the views of school foodservice personnel and other school personnel regarding healthy school nutrition environments (HSNE) (Rainville, Choi, & Brown, 2005). Both groups ranked behavioral nutrition education by trained staff and adequate funding as the most important components for HSNE, while funding and the presence of competitive foods in the schools were viewed as the two major barriers for an HSNE by both groups (Rainville, et al., 2005). These results support the need for in-service training for staff to enable them to positively influence student food choices in the cafeterias, particularly because of the recently implemented new school meals which increase the amount of fruit, vegetables, and whole grains in the meal patterns.

The purpose of this study was to assess cafeteria staff beliefs and perceptions about the new school food standards during the second semester of implementation (Spring, 2013). Questions were also included to examine staff interactions with students, and student barriers to selecting

healthy foods in the cafeterias.

## METHODOLOGY

This study was approved by the Institutional Review Board at Baylor College of Medicine. Consent forms were not required due to the anonymous questionnaires utilized for data collection. This research was part of a larger pilot study that investigated changes in student food selection and consumption in response to the new NSLP meal guidelines (Cullen, Dave, Chen, & Jensen, 2014).

### Sample

This study was conducted during the spring semester of 2013. Cafeteria staff from 12 schools, 4 intermediate (INT) and 8 elementary (EL), at a school district in the Houston, TX, area were surveyed. The school district had 37,000 students [21% Hispanic, 10% African-American, 10% Asian, 59% White, 26% eligible for free/reduced price meals (FRP)]. The school district utilized a 2-week menu cycle. A fresh fruit was available every day, plus a raw vegetable, canned fruit and cooked vegetable, but no salad bar. The district allowed the offer versus serve (OVS) option at all grade levels.

The child nutrition director selected the schools based on eligibility for FRP meals: 4 low (49-79% FRP) and 4 middle income EL schools (7-18% FRP), and two low (~34% FRP) and two middle income (~20% FRP) INT schools. There were 72 cafeteria staff in the 12 schools: 42 in EL and 30 in the INT. The surveys were delivered in a manila envelope to each school food service manager who then distributed them to the cafeteria staff during their break period. Each staff placed his/her own survey back into the envelope which was sealed and sent to the child nutrition office where research study staff collected them.

### Survey Instrument

The survey questions and statements used for the questionnaire were adapted from a previous study (Goldberg et al., 2009). Cafeteria staff provided the number of years of employment in school foodservice. Five questions assessed the cafeteria staff perceptions about the overall quality, nutrition, variety, presentation, and taste of the food offered through the NSLP with a 4 point scale from “excellent” to “poor”. Twelve questions queried cafeteria staff perceptions about student food preferences, cafeteria staff work load, feedback from students and teachers, and verbal encouragements from foodservice staff to increase fruit and vegetable consumption. A 4 point rating scale from “agree a lot” to “disagree a lot” was utilized. One question addressed the frequency of verbal encouragement to students with a 4 point scale (“every day” to “never”). Twelve statements and one question concerned cafeteria staff perceptions regarding food suggestions to students, including perceived barriers to giving food suggestions. The response scale was yes/no. Six statements addressed cafeteria staff perceptions concerning the reasons students do not choose healthy items.

### Data Analysis

The survey answers were entered into an Access database and then uploaded into IBM SPSS Statistics (IBM SPSS Statistics for Windows Version 22.0,2013. Armonk, NY.). Frequencies were calculated for all variables by grade level (EL and INT). Chi square analysis was conducted to assess whether responses differed by grade level.

## RESULTS AND DISCUSSION

The survey had a response rate of 100% (N=72). However, some of the questions were not answered by all the cafeteria staff which produced different sample sizes per question. All the respondents were female. The majority of the school foodservice staff reported working 2 or more years (76% EL; 97% INT) and half or more worked in low income schools (60% EL; 50% INT).

Table 1 displays the school foodservice staff perceptions regarding the overall quality of the food. The ratings of “average” and “poor” were combined for the chi-square analyses due to the few responses in the “poor” category. The majority of the school foodservice staff rated the overall food quality, food presentation and nutrient value of food as “Good” or “Excellent”. However, they were more likely to rate menu variety and taste of food as “Average”. There were no significant differences in response based on grade level.

**Table 1. School Foodservice Staff Perceptions about Different Aspects of Cafeteria Food <sup>a</sup>**

Question	Rating Scale	Grade Level	
		EL <sup>b</sup> N (%)	INT <sup>c</sup> N (%)
Overall Food Quality	Excellent GGG	13 (32)	13 (43)
	Good GG	23 (56)	15 (50)
	Average G	4 (10)	2 (7)
	Poor G	1 (2)	0
Food Presentation	Excellent GGG	21 (53)	12 (40)
	Good GG	15 (37)	17 (57)
	Average G	3 (8)	1 (3)
	Poor G	1 (2)	0
Nutrient Value of Food	Excellent GGG	16 (39)	12 (40)
	Good GG	20 (49)	15 (50)
	Average G	5 (12)	3 (10)
	Poor G	0	0
Menu Variety	Excellent GGG	12 (29)	11 (37)
	Good GG	13 (31)	11 (37)
	Average G	14 (33)	6 (20)
	Poor G	3 (7)	2 (7)
Taste of Food	Excellent GGG	9 (21)	6 (20)
	Good GG	15 (37)	13 (43)
	Average G	15 (37)	10 (33)
	Poor G	2 (5)	1 (3)

<sup>abc</sup>Total possible responses: 42 EL (Elementary School); 30 INT (Intermediate School)

Perceptions of the school foodservice staff regarding the implementation of the new school food regulations are found in Table 2. There were two questions with significant differences by grade level. Significantly more EL staff (71% vs 40%;  $p < 0.01$ ) agreed that children liked the vegetables served at school lunch and that they encouraged students to eat more fruits and vegetables (95% vs 77%;  $p < 0.05$ ). The majority of EL and INT staff agreed that children liked the fruits served at the school lunch and that students were taking a serving of fruit at lunch (both groups ~ 90%). Fewer INT (30%) than EL staff (52%) perceived that children were taking 2 servings of vegetables at lunch and more EL (60%) than INT staff (50%) perceived that children liked the whole grains, but these differences were not significant. Students who eat the school lunch have significantly higher consumption of healthier items like fruits and vegetables (Gosliner, Madsen, Woodward-Lopez, & Crawford, 2011). Increased fruit and vegetable consumption has been associated with lower rates of chronic disease such as many types of cancer, heart disease, strokes, diabetes, obesity, and many other diseases (US General Accounting Office, 2002).

More INT (83%) than EL (64%) staff perceived that they had to work harder this year but also agreed that they were willing to work harder to bring children more nutritious foods (93% EL and 97% INT). More EL than INT staff (69% vs 53%) reported receiving positive feedback from students while more INT staff (83% vs 62%) reported receiving more positive feedback from teachers. This supports the findings of a previous study where school food service staff suggested that support from administrators, teachers, students and teachers was essential for helping to influence student healthy food choices (Slawson et al., 2013). The majority of the EL (81%) and INT (80%) foodservice staff agreed that they feel comfortable giving food recommendations and that they feel gratified for being part of the healthy changes this year.

The majority of EL cafeteria staff (70%) and half of INT staff reported encouraging students to eat fruits and vegetables every day. Table 3 reports the types of food suggestions cafeteria staff made to students and their perceived barriers for making food suggestions. More INT staff (73%) reported giving suggestions to students about food than EL staff (45%). Significantly more INT staff reported suggesting foods that taste good ( $p < 0.01$ ), that the staff likes ( $p < 0.05$ ), and foods that are inexpensive ( $p < 0.01$ ) when compared to EL staff. The majority of EL and INT staff reported suggesting foods that are healthy. There were very few barriers identified regarding food suggestions made by school foodservice staff. Significantly more INT staff reported that the following reasons were not barriers for making food suggestion: other staff not suggesting food to students ( $p < 0.01$ ), lack of time ( $p < 0.05$ ), not perceiving food suggestions as part of their job ( $p < 0.05$ ), and embarrassment of students because of the attention ( $p < 0.05$ ). Significantly more EL school foodservice staff (64%;  $p < 0.01$ ) reported that “students know exactly what they want” was a barrier for food recommendations, and this was also the barrier that most INT staff chose (43%). These results support findings from a previous study (Fulkerson et al., 2002). Other reasons such as knowledge of foods, knowing the students, and never thinking about suggesting foods were not perceived as barriers, particularly by the INT staff, but differences by grade level were not significant.

**Table 2. School Foodservice Staff Perceptions Regarding Implementation of New School Food Standards<sup>a</sup>**

Statement	Grade Level			
	E <sup>b</sup>		INT <sup>c</sup>	
	Agree N (%)	Disagree N (%)	Agree N (%)	Disagree N (%)
*This year, I encouraged children to eat fruits and vegetables at school lunch.	40 (95)	2 (5)	23 (77)	7 (23)
Children are taking a serving of fruit at lunch.	39 (93)	2 (5)	26 (87)	3 (10)
I am willing to work harder to bring children fresher and more nutritious foods.	39 (93)	2 (5)	29 (97)	1 (3)
Children like fruits served at the school lunch.	38 (90)	2 (5)	27 (90)	3 (10)
I am comfortable giving students recommendations on what to select in the cafeteria.	34 (81)	6 (14)	24 (80)	6 (20)
It has been gratifying for me to be part of the food service changes this year (food quality improvement, encouragement of healthful students' habits, new equipment, etc.)	32 (76)	7 (17)	25 (83)	4 (13)
**Children like the vegetables served at school lunch.	30 (71)	12 (29)	12 (40)	18 (60)
I've had positive feedback from the <b>kids</b> about the menu changes and food quality improvements we've made over the past 2 years.	29 (69)	13 (31)	16 (53)	14 (47)
Because of the changes in food service this year, I have had to work harder.	27 (64)	12 (29)	25 (83)	4 (13)
I've had positive feedback from the <b>teachers</b> about the menu changes and food quality improvements we've made over the past 2 years.	26 (62)	15 (36)	25 (83)	5 (17)
Children like the whole grain foods.	25 (60)	17 (40)	15 (50)	14 (47)
Children are taking 2 servings of vegetables at lunch.	22 (52)	20 (48)	9 (30)	20 (67)

<sup>abc</sup>Total possible responses: 42 EL (Elementary School); 30 INT (Intermediate School)

\*Significant difference between grade level ( $P < 0.05$ )

\*\*Significant difference between grade level ( $P < 0.01$ )

**Table 3. School Foodservice Staff Interactions with Students <sup>a</sup>**

Statement or Question	Grade Level			
	EL <sup>b</sup>		INT <sup>c</sup>	
	Yes N (%)	No N (%)	Yes N (%)	No N (%)
I suggest foods that are healthy.	31 (74)	6 (14)	22 (73)	7 (23)
**I suggest foods that taste good.	23 (55)	13 (31)	28 (93)	0
Do you ever give suggestions to students about what to select?	19 (45)	16 (38)	22 (73)	7 (23)
*I suggest foods I like.	17 (40)	18 (43)	22 (73)	8 (27)
**I suggest foods that are inexpensive.	8 (19)	30 (71)	17 (57)	13 (43)
<b>Barriers that Prevent Foodservice Staff from Suggesting Foods to Students</b>				
**Students know exactly what they want.	27 (64)	6 (14)	13 (43)	16 (53)
*Students may be embarrassed by the attention.	16 (38)	13 (31)	7 (23)	21(70)
*Lack of time.	14 (33)	17 (40)	5 (17)	22 (73)
**Other staff do not suggest food to student.	11 (26)	19 (45)	1 (3)	26 (87)
*It is not part of my job.	11 (26)	21 (50)	2 (7)	25 (83)
I do not know the students well enough.	7 (17)	22 (52)	9 (30)	19 (63)
I really never think about suggesting foods to students.	5 (12)	21 (50)	4 (13)	25 (83)
I do not know enough about the food to suggest it.	4 (10)	25 (60)	3 (10)	24 (80)

<sup>a</sup>Total possible responses: 42 EL (Elementary School); 30 INT (Intermediate School)

\*Significant difference between grade level ( $p < 0.05$ )

\*\*Significant difference between grade level ( $p < 0.01$ )

Foodservice staff perceptions concerning why students do not make healthy food choices can be found in Table 4. The top 3 reasons why students do not eat healthy food options in the cafeteria as perceived by the EL cafeteria staff were lack of knowledge about healthy foods (67%), other students did not eat them (64%), and they did not like them (62%). These were the same reasons for students not selecting healthy foods reported by INT staff, but in a different order [“their friends do not eat them” (90%), “students do not like them” (83%), “students don’t know enough about what is healthy” (57%)]. More INT than EL staff perceived that students did not select healthy choices in the cafeteria because healthy foods were not filling (47% vs 24%), too expensive (23% vs 17%), or because they did not have time to think about healthy choices (40% vs 24%).

The findings on peer pressure are an important area for future research, especially if they differ by grade level. Middle school students in a previous research study completed a questionnaire on social norms on eating fruit and vegetables in school and recorded their lunch intake (Thompson, Bachman, Baranowski, & Cullen, 2007). In this study, social norms for eating fruit and vegetables were positively related to consumption (Thompson, et al., 2007). Thus there could be



potential for interventions to use social norms to improve healthy food selection in the cafeteria. However, differences by grade level might exist and should be investigated.

**Table 4: School Foodservice Staff Perceptions Regarding Reasons Students Do Not Select Healthy Food Option in the Cafeteria <sup>a</sup>**

Reasons Students Do Not Select Healthy Food Options in the Cafeteria	Grade Level	
	EL <sup>b</sup> N (%)	INT <sup>c</sup> N (%)
Students don't know enough about what is healthy.	28 (67)	17 (57)
Their friends do not eat them.	27 (64)	27 (90)
Students do not like them.	26 (62)	25 (83)
Students think they are not filling enough.	10 (24)	14 (47)
Students don't have time to think about it.	10 (24)	12 (40)
Students think they are too expensive.	7 (17)	7 (23)

<sup>abc</sup>Total possible responses: 42 EL (Elementary School); 30 INT (Intermediate School)

The findings from the staff about student food preferences are somewhat different than the actual perceptions of middle school students in a previous study (Cullen, Thompson, Watson, & Nicklas, 2005). During interviews, students reported liking a variety of fruit and vegetables, including strawberries, apples, grapes, oranges, kiwi, corn, broccoli with cheese sauce, cucumbers, potatoes and salad. Some of the preferred fruit items were ones available year round: bananas, apples, orange, canned peaches, mixed fruit, pineapple, and pears. Students also reported they liked strawberries, watermelon, and grapes, which are expensive items unless in-season. The preferred fruit items identified by these students were in an easy to eat form, i.e., sliced or wedged, and the raw vegetable items were ready to eat baby carrots (Cullen, et al., 2005). Middle school students have also suggested methods to promote fruit and vegetable selections in the cafeteria. These included increasing their variety, providing attractive displays, offering free samples, and advertising with posters, table tents, small raffles and contests (Cullen, et al., 2005).

### CONCLUSIONS AND APPLICATIONS

In a nationwide study, school foodservice staff perceptions about students' overall satisfaction with the school meal programs appeared to be higher than what students actually reported (LeBlanc & Meyer, 2005). Student satisfaction with school foodservice drives participation rates and therefore revenue (Meyer & Conklin, 1998). Many factors influence student satisfaction and school meal program participation rates with the most important being hunger, taste, cost, menu variety, visual appearance, and number of choices (Gordon et al., 2007; Meyer, 2000a, 2000b, 2005; Meyer & Conklin, 1998). A substantial number of foodservice staff in this study rated "taste of food" and "menu variety" as average or poor which are two of the most important reasons that affect student participations rates. Therefore, it is very important that these factors are taken into consideration when determining the effects of the new school meal programs regulations on participation rates. It is essential to understand the needs of the students and tailor

the new menu items accordingly to maintain participation and financial sustainability of the school foodservice operation.

Promptings by cafeteria staff has been shown to increase fruit and vegetable purchase and consumption (Perry et al., 2004; Schwartz, 2007). The majority of the cafeteria staff in these studies and our study reported feeling comfortable giving food recommendations and many of them encouraged students to eat more fruits and vegetables. Therefore, staff promptings could be an easy and affordable way to promote fruit and vegetable consumption in schools. However, embarrassment of students, lack of time, or not knowing the students well enough may be some of the reasons that could prevent cafeteria staff from suggesting specific foods to students. The most important barrier to giving food suggestions to students identified in this study was that “students already know what they want”, which was similar to the results of another study (Fulkerson, et al., 2002). Future research in this area is warranted.

Cafeteria staff reported that lack of knowledge of healthy foods, not liking healthy foods, and peer influence were the top three reasons why students did not choose healthy options. However, students may “not like” healthy foods because they might have never had the opportunity to try them before. One study showed that only a few students (approximately 20%) were concerned about their weight when making food choices and more than 40% had problems identifying low fat foods (Shannon, Story, Fulkerson, & French, 2002). This suggests that there is a lack of knowledge among students regarding healthy foods which may be affecting the acceptability of these food items. In a Massachusetts study, students were encouraged to try new fruits and vegetables during monthly food tastings, offerings of fruits and vegetables at breakfast and lunch were increased, and nutrition information was marketed through posters, classroom lessons, and motivational messages (Goldberg, et al., 2009). After the intervention period ended, the demand for fruits and vegetables, participation, and revenue increased while waste decreased due to more accurate forecasting (Goldberg, et al., 2009). California students who participated in a program which emphasized healthy eating and physical activity wanted healthy foods to be offered at school, and they reported it was more important to purchase fresh fruits at school than unhealthy foods (Gosliner, et al., 2011). This study suggested that students’ diets and eating behaviors could be positively influenced by schools when school nutrition environments were modified to offer more healthy food choices and limit unhealthy foods (Gosliner, et al., 2011).

A combination of interventions, such as offering healthy food options, providing nutrition education, marketing healthy choices, verbally encouraging students to eat fruits and vegetables, and facilitating opportunities for students to try new healthy foods may be more effective in influencing student dietary patterns than any single intervention (Perry, et al., 2004). Moreover, interventions that provide nutrition education to parents, teachers, and foodservice staff could increase awareness about healthy nutrition behaviors that could in turn support the healthy changes that are being pursued with this new school meal regulation (Byker, Pinard, Yaroch, & Serrano, 2013).

The present study assessed the perceptions of EL and INT school foodservice staff regarding the effects brought by the new school meal patterns in one school district in the Houston, Texas area. Therefore, these results may not be applicable to high school grade levels or other school districts. There were differences in responses based on grade level. Studies have shown that

younger students are more satisfied with (Meyer, 2005) and participate more (Gordon, et al., 2007) in school meal programs. Perhaps this influences the cafeteria staff working in elementary schools. Future research should consider grade level differences and the potential need for grade level specific interventions, both for staff and students. Additionally, the study did not measure actual consumption or changes in height or weight of students as the result of the new school meal pattern. Future research should focus in identifying the effects of these new regulations on overall dietary intake and BMI of students to measure lasting outcomes of these changes in school meal policy.

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