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Is Lunch Still Gross? A Qualitative Evaluation of a New School Lunch Program

Daniel J. Cohn, BA, Rachel Pickering, BA, and Nancy P. Chin, PhD, MPH

Abstract: *The childhood obesity epidemic has raised national awareness about the need to improve school meals. Our research study partnered University of Rochester researchers with the Healthi Kids Coalition, a local health planning organization, to evaluate a newly instituted food service program in a metropolitan school district of western New York. Using the Centers for Disease Control and Prevention's Program Evaluation stepwise framework, we focused on stakeholder accountability and student satisfaction. The first author collected data through informal, conversational group interviews with students, key informant interviews (with school board members, food service employees, and the food services management company), and participant-observations at 2 schools. Then, we sorted data across the categories of "accountability" and "satisfaction." Analysis of stakeholder accountability data revealed 3 themes: (a) unsustainable program costs, (b) strained working relationships among stakeholders, and (c) student-staff interactions that could potentially encourage consumption, but often*

resulted in rushed, unfinished meals. Analysis of student satisfaction data also revealed 3 themes: (a) dissatisfaction with food quality, including taste, texture, and food preparation; (b) unappealing food presentation; and (c) tremendous food waste with large amounts of uneaten food thrown away. Our study identified

Keywords: qualitative evaluation; school lunch programs; food waste; community-based participatory research

Background

Approximately one third of children are overweight or obese in the United

“Preventing obesity among children and adolescents is especially important because a large portion of obese youths will remain obese into adulthood.”

a complex system of relationships between the school board, food services management company, and unionized food service workers, which ultimately affected the food quality and (non) consumption at the point of delivery. We recommend improving stakeholder relationships, training staff to reduce waste, reevaluating labor contracts pertaining to food services, continued program evaluation, and using an evaluation process that represents all relevant perspectives.

States.¹ Since 1980, national rates of obesity among 2- to 5-year-olds have more than doubled; among 6- to 11-year-olds have more than tripled; and among 12- to 19-year-olds have nearly quadrupled.² Local data indicate that 40% of Rochester's children are overweight or obese, substantially higher than the national average.³ Childhood obesity has been linked to a variety of negative health outcomes, including high blood pressure, high cholesterol, and type 2 diabetes.⁴ Preventing obesity among

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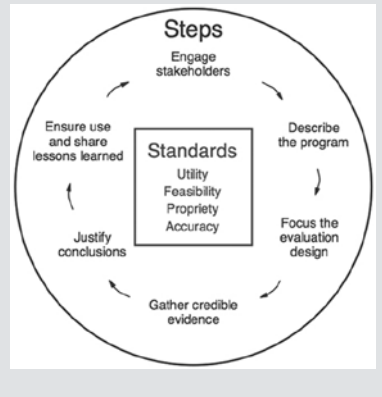
children and adolescents is especially important because a large portion of obese youths will remain obese into adulthood.^{4,5}

To curb this epidemic, national attention has recently focused on improving school lunches. Given evidence of widespread dissatisfaction with school meals in some districts, the current literature warrants a focus on ensuring students are satisfied with and are consuming school food.⁶⁻⁸ Indeed, providing students nutritious food is only worthwhile if that food is actually consumed. Efforts to improve food quality in Rochester City School District (RCSD) have been led by the Healthi Kids Coalition, a community-based health policy organization, which has worked to reduce childhood obesity since 2009. From its inception, the group supported the district in making changes to the school lunch program after students, parents, and teachers organized the “Lunch is Gross” campaign in 2008. The centerpiece of this campaign was a student-produced video, the impetus for which is described by classroom teacher, Lynn Gatto:

School food has long been the butt of jokes, and these jokes seem to have no boundaries . . . I noticed that students in my class chose to go hungry rather than eat the cafeteria food. School lunch was no joke for them.⁹

The campaign called upon the Board of Education to revamp the food services program, and in 2010 it resulted in the hire of a new food services management company (FSMC), which would be held to expectations established by the Healthi Kids Coalition and community stakeholders. These expectations, as outlined in the district’s request for bids, included (a) food taste, variety, and creativity; (b) onsite management and support structure; and (c) financial value, cost, and budget flexibility. Food quality expectations included minimum standards for producing nutritious, appetizing, and aesthetically appealing meals. In fact, request for bids evaluation criteria included “attention to ‘kid appeal’ of healthy meals” as well as “innovation

Figure 1.
Recommended Framework for Program Evaluation.¹¹



in ideas for making healthy food appealing.”

Upon hire, the new FSMC was expected to assume responsibility for menu development, day-to-day operations management of the central kitchen, food distribution, and financial solvency. At the time of this study’s inception in late 2011, the new food services program, which served breakfast and lunch throughout the district, had not been formally evaluated for its quality or effectiveness. Recognizing the need for assessment, the Healthi Kids Coalition and other community stakeholders requested the authors evaluate school lunches prepared by the new FSMC.

This evaluation project was based on 2 critical frameworks: (a) the Centers for Disease Control and Prevention’s (CDC) Program Evaluation in Public Health^{10,11} and (b) community-based participatory research. The CDC’s framework describes both a stepwise process for evaluation as well as key concepts in evaluation research (Figure 1). Our team used the framework steps to ensure rigor in data collection and analysis and to define 2 concepts, accountability and satisfaction, which provided the focus for our evaluation. Accountability refers to stakeholder interactions, and their mutual responsibility for ensuring that the desired outcome of delivering nutritious, palatable meals was achieved.¹⁰ For the purposes of this study, responsibilities were identified

by stakeholders, and no formal plans were assessed. Satisfaction refers to the extent to which students’ expectations about the quality of school lunches were met. For the purposes of this study, food quality focuses on the palatability and aesthetic appeal of lunches. Community-based participatory research is a framework based on collaboration between community stakeholders and university evaluators in constructing research methods, analyzing data, disseminating results, and planning action steps. The authors were part of an interdisciplinary research team composed of a public health worker, a medical anthropologist, and a member of the community organization’s Policy Action Team. Together, the group assisted community partners in strategizing data collection plans, reviewing data on a regular basis, generating observations, and sorting, coding, and interpreting of data. This project had buy-in and joint ownership from several stakeholders, including the Healthi Kids Coalition, the Board of Education, the FSMC, food services employees, and school administrators. This research received approval from the Research Subjects Review Board of the University of Rochester.

Methods

Participants

At the time of the study, the RCSD food services program delivered 22 000 lunches to students per day. Eighty-eight percent of students districtwide were enrolled in the National School Lunch Program. Most RCSD elementary schools did not have functional kitchen facilities onsite to prepare food. Instead, a central district kitchen prepared, packaged, and chilled meals then distributed them to school buildings on the school day before consumption. Despite the new FSMC, the food services program itself, including all of its employees, remained under the direction of the school district rather than the FSMC.

In collaboration with school administrators, the Healthi Kids Coalition chose 2 schools for evaluation based on demonstrated faculty interest in

improved school lunches. Referred to here as “school A” and “school B,” both received lunches prepared by the central kitchen. School A enrolled approximately 500 students between kindergarten and ninth grade, approximately 72% of whom were eligible for free or reduced-price lunch. School B had nearly 800 students registered between kindergarten and sixth grade, of whom about 80% were eligible for the National School Lunch Program. The demographic data displayed in Table 1 give a social context to our findings. It is important to note that the vast majority of students are from low-income families, and school lunch is an important source of food for them. Table 1 also allows practitioners the ability to compare the present study population to their own populations. This study includes 11 key informants: 2 food services employees, 3 lunch monitors, 1 FSMC representative, 3 teachers or school administrators, and 2 members of the Board of Education.

Protocol

We used qualitative methods to gain an empathetic understanding of the school lunch environment from stakeholders’ perspectives. To understand the extent to which stakeholders were accountable to the school lunch program, the first author interviewed key informants based on a guide developed by community stakeholders, including school administrators, a representative from the FSMC, and several members of the Policy Action Team of the Healthi Kids Coalition. Informants were asked to speak about stakeholder accountability broadly, including their interpretations of how others fulfilled their obligations to the food services program. The interview guide is displayed in Table 2.

The first author traveled to school A 7 times throughout the fall of 2011 to collect data, where he noted student satisfaction and student–staff interactions. He then collected data in school B 5 times in spring of 2012. During each visit, he used informal, conversational group interviews and participant-observations to examine student satisfaction. While students ate, the first

Table 1. Profiles of Schools Participating in Informal, Conversational Group Interviews, Participant-Observations, and Key Informant Interviews.

	School A		School B	
	n	% of Total Enrollment	n	% of Total Enrollment
Enrollment				
Kindergarten	44	9.4	107	13.6
Grade 1	46	9.8	103	13.1
Grade 2	47	10.0	114	14.5
Grade 3	49	10.4	122	15.5
Grade 4	50	10.6	127	16.2
Grade 5	47	10.0	118	15.0
Grade 6	47	10.0	94	12.0
Grade 7	73	15.5	—	—
Grade 8	67	14.3	—	—
Total enrollment	470	100.0	785	100.0
Race/ethnic origin				
American Indian or Alaska Native	5	1.1	3	0.4
Black or African American	358	76.2	458	58.3
Hispanic or Latino	42	8.9	210	26.8
Asian or Native Hawaiian/Pacific Islander	10	2.1	10	1.3
White	50	10.6	101	12.9
Multiracial	5	1.1	3	0.4
National School Lunch Program eligibility				
Eligible for free lunch	296	63.0	578	73.6
Eligible for reduced-price lunch	40	8.5	48	6.1
Key informants^a				
Food services employees	1	N/A	—	N/A
Lunch monitors	1	N/A	2	N/A
Teachers/school administrators	2	N/A	1	N/A

^aSome key informants, including 1 food services employee, 1 food services management company representative, and 2 members of the Board of Education, are not represented in this table because their roles are not confined to school A or B specifically. Instead, their perspectives are of the district at-large.

Table 2.

Key Informant Interview Guide.

What do you think about the food program provided by [the new food services management company (FSMC)]?
What are the strengths of the program provided by [the new FSMC]? Where could it improve?
How well do you think you stakeholders [FSMC, food services employees, school faculty, Board of Education, and the Healthi Kids Coalition] fulfill their obligations to the school food program?
What do students think about school lunches? What do teachers, parents, others think about the lunches?

author questioned students about their opinions of the food and collected their thoughts on school meals in general. Questions included the following: “How’s lunch today?,” “Do you like the food you eat at school?,” “What school meals do you like/not like?,” and “How does the food you eat here compare with the food you eat at home?” The first author interviewed 63 students in school A and 44 in school B. He noted students’ thoughts in a field notebook, paying particular attention to the words they used to describe food. He also made observations while walking through lunch lines with students. He stood behind lunch counters when students obtained meals and tasted the meals himself, taking note of food quality.

As a result of data collected in school A, observations in school B focused especially on food waste with continued emphasis on student-staff interactions. A pilot observation tool was used for two periods of food waste observations, per the request of community partners, who wished to quantify food waste in future observational evaluations. The tool was used to record basic demographic information of observed students, the menu items they retrieved from the lunch line, and the approximate portion of food thrown away. The first author observed 24 students using this tool. Observations were tallied, but no statistical tests were performed because of small sample size.

Data Analysis

The first author transcribed field notes and key informant interviews then read,

summarized, and highlighted data that appeared with high frequency and intensity. In consultation with community stakeholders, the analytic team sorted data across the public health evaluation framework provided by the CDC. We then identified recurring themes within each category of the framework.

Results

Accountability

In interviews, informants identified 2 key issues related to accountability: (a) unsustainable program costs and (b) strained working relationships between the FSMC and food services employees. Observations revealed a third area of accountability: student-staff interactions that could potentially encourage consumption and reduce plate waste.

Program Costs. Informants expressed resounding concern about the financial deficit of the food services program. One food services employee reported rumors that the program ran a \$1 million deficit in 2010. A food services manager and a Board of Education member confirmed a \$300 000 deficit in 2009-2010, a \$900 000 deficit in 2010-2011, and an anticipated \$1.4 to 1.8 million deficit in 2011-2012.

The food services manager, the FSMC representative, and the Board of Education also expressed concern about money allocation. “About 67 cents of every dollar goes to labor and benefits. The other 33 cents go toward management and food. . . . At the end of the day, that’s about 20 cents per

dollar spent on food,” said one Board member. He believed the quality of food was “not that good” in large part because a large portion of the total budget went toward labor and benefits while a relatively small portion toward the purchase of food. The food services manager echoed these concerns: “We as a school district can’t get out of our own way. . . . The district has allowed labor organizations to take more than their fair share of revenues.” Every informant indicated that the FSMC could contain costs most effectively by strengthening the relationship between the FSMC and food services employees, which was seen as highly conflicted. Many informants also believed revising the food service employees’ labor contracts would be vital to promoting financial solvency of the program.

Relationship Dynamics. Most informants expressed frustration with the dynamic between the FSMC and food services employees. In fact, none of the stakeholders who commented on the relationship characterized it in positive terms.

One Board of Education member described the relationship as inefficient:

The system is inefficient. The [food services management company] cannot direct workflow of district employees . . . If [food services employees] don’t want to do it [ie, prepare food according to specifications], there’s nothing we can do. This is a classic case in labor relations and management. It’s a problem we’re going to have to come to grips with.

A district-hired food services manager described similar constraints: “The school district has put handcuffs on [the food services management company]. The organization cannot manage the labor; they cannot direct day-to-day operations.”

One food services employee also expressed unhappiness with the relationship. “The [food services management company representatives] are just arrogant,” she said. “They talk down to you.” There was also evidence of mistrust among stakeholders. Referring to a nutritionist the FSMC hired to assist in menu planning, this food services employee said, “They say they have [a nutritionist]. They say they brought one in from out of state. But I doubt it.” Also indicating mistrust between the FSMC and employees, the food services manager pointed out that most employees became “defensive” when FSMC representatives “pointed out flaws” with food services. “The employees are full of fear and mistrust,” he said, “because [the food services management company] is pointing out everything that’s wrong.”

According to this manager, poor relations between the FSMC and food services employees had a negative impact on the quality of food served to students. He believed the FSMC was unable to effectively manage employees because employees were, by contract, accountable to the district rather than the FSMC. “[The food services management company] cannot manage the labor. It cannot direct day-to-day operations.” This translated to regular deviations from the FSMC’s proposed menus.

If there’s a tough task, the employees will just slow down and claim they can’t produce the food. We put egg and cheese on an English muffin on the breakfast menu one day while I was out. I came back the next day and learned the menu was changed to egg and cheese with a piece of bread on top.

This sort of deviation was not an irregular occurrence. In fact, lunch monitors in both schools noted that the

food served to students was often not the same as the items published in the monthly menu.

Student–Staff Interactions: Waste Not. Observation data from cafeterias and classrooms indicate that adults play an important role in students’ consumption behaviors.

Student–staff interactions were especially important when students waited in line for lunch and when they ate. In the lunch line, food services employees influenced students’ food choices by informing students about the lunch menu and often helping younger students put food items on their trays. In school A, staff enticed students to take fresh fruit by holding it out in front of them and describing how good it tasted. One employee was particularly successful in her efforts to get kids to take fruit and vegetables. This effort was not observed often in school B. On one day of observation, an employee there told students, “You don’t have to take the broccoli if you don’t want it.” Most students who heard this or other similar messages chose not to take the vegetables.

Student–staff interactions were also important in how much food was discarded. Keeping tables clean was a primary responsibility for lunch monitors in both schools, and this responsibility entailed disposing of students’ trash.

In school A, there were occasions in which lunch monitors explicitly urged students to leave the lunchroom before finishing their meals, as evidenced by the first author’s fieldnotes:

The teacher beckoned to students to go outside. “You can’t go out until you’ve finished,” he said. If I were a student, I’d hurry so I could play outdoors before “it snows tomorrow,” as the teacher suggested. “The faster you finish, the faster you can go outside.” Though nearly a dozen students at one table had taken oranges for lunch, not one was eaten. As students hurried for the exit, seven oranges were left behind, this, after three or four students had already thrown away trays each containing half

of an entrée and an unpeeled orange.

A couple students stayed behind to help clean up. Orange after orange was tossed into the trash can, wasted.

In addition to explicit instructions to discard food, students in school A also appeared to receive implicit messaging which may have encouraged food waste. Students put trash in the middle of the table when they were “done” eating, and lunch monitors walked through the room every few minutes to collect the trash and throw it away. Repeatedly, the piles of trash in the middle of the table included uneaten or unopened packages of food. Rather than verbally discouraging students from wasting uneaten food, the monitors’ quick removal of the items implicitly normalized wasteful behavior.

Food waste did not appear to be as prevalent in school B, where there existed a different system of trash collection. There, lunch monitors waited for students to finish eating before collecting food. They typically asked, “Are you done with that?” before taking any items from the table. This brief conversation prompted students to consider their food more intentionally and keep the uneaten food they wanted in front of them.

We observed other instances in which individualized adult attention through conversation reduced plate waste in school B. During one period of observations, several fifth-grade students at one table were not eating lunch and were interacting with each other instead. Halfway through the lunch period, a parent volunteer joined the table and interacted with the students. By simply asking students why they were not eating, encouraging them to do so, and offering to help open the plastic-wrapped packages, this parent successfully encouraged students to eat.

Some students ate in their classrooms rather than the lunchroom, and this appeared to reduce plate waste as well. According to one teacher whose students ate lunch in the classroom, this system ensured students ate balanced

Table 3.

Terms and Phrases Students in School A Commonly Used to Describe Lunch.

Feedback Category	Terms or Phrases
Taste	Nasty; disgusting; good
Quantity	Not enough
Preparation	Don't even cook it; cook it wrong; cook it all together; bread is hard
"Feeling"	Not homemade; processed; Like it went through a machine

meals. It also reduced food waste since the teacher required students show her they had eaten at least half of their food before leaving the room to play games. This, according to the teacher and our own observations, substantially cut down on food waste. It is important to note that this teacher's behavior may not necessarily align with accepted child nutrition standards that recommend children determine how much food they will consume; however, it is consistent with Gatto's observation that her students would choose to go hungry before eating food that looked unpalatable.

Satisfaction

Three important themes emerged from the data under the category of satisfaction: (a) dissatisfaction with food quality, including taste, texture, and food preparation; (b) unappealing food presentation; and (c) tremendous food waste with large amounts of uneaten food thrown away.

Food Quality. Data related to food quality had 5 subthemes: quality, flavor, preparation, "feeling," and quantity. Table 3 displays the words students used with highest frequency and intensity to describe school lunch.

Data were collected primarily from approximately 100 fourth through sixth graders, who were able to articulate their thoughts on food most effectively. Younger students were more likely to

view food favorably than older students; however, on the whole, students across all grades regularly reported not enjoying the taste of school food. Whether they reported the food was "sometimes cold," the bread was "sometimes hard," or the food "sometimes tasted like it went through a machine," student feedback was largely negative. The most common terms used to describe lunches were "nasty" and "disgusting." Although students found a great majority of menu items unappealing, a few options, including tacos, cheeseburgers, chili, and chicken nuggets received generally positive reviews.

In addition to student feedback, the first author tasted the food in school A during his 7 observations. His notes on the quality of pizza served on December 2, 2011 stand out as particularly illustrative:

The thick layer of cheese looked a bit strange. There was a plastic quality to it, as if the pizza had been cooked in an Easy Bake Oven, packaged in cellophane, then sold from a vending machine . . . I was underwhelmed by the taste of it and ended up finishing no more than half.

Not all observations were negative. For example, the author was "pleasantly surprised" by the taste of the chicken entrée item. He noted the vegetables in the dish tasted fine once mixed with the rice and sweet and sour sauce. But despite the good flavor, he brushed

Figure 2.

(A) Photograph of Pizza Entrée Served on December 2, 2011.
(B) Photograph of Chicken and Rice Entrée Served on November 16, 2011.



aside most of the chicken, for he "could not bring [himself] to eat the fatty parts that glistened in the fluorescent light." The dishes are pictured in Figure 2A and B.

Certain labor arrangements may have impacted students' perceptions of food. On November 22 (the day before Thanksgiving Break), two food services employees from the central kitchen entered the lunchroom wheeling shelves containing entrées and side items for storage in the refrigerator. One employee from school A reported that the food, which included chicken Parmesan sandwiches, would not be eaten until after the break 6 days later. "I wouldn't eat that," the employee told the first author, "I think it's just too long for that food to be in there." Early delivery and delay in service resulted from the labor contract between food services employees and the district, which stipulated that employees could not work over school breaks. This and other similar delays in service may have negatively affected students' satisfaction with the food.

Presentation. Food presentation played an important role in students' satisfaction. Plastic wrap from entrée and side dish containers collected condensation and made it difficult to see what was served. This was evident in observations made from lunch counter in school A:

As I continued speaking with food services staff, I watched two boys walk through the lunch line together. One boy looked at the chicken and rice entrée and asked out loud, "What is it?" to his friend. "Does this have broccoli?" he asked. His friend replied with an unknowing shrug and slight frown.

An inability to identify food was not the only issue observed. Even when plastic-wrapped food was identifiable, it often appeared unappetizing. This was true even among adult employees, including one teacher who reported,

I make them show me that they've eaten at least half of their food before they are allowed to leave the room. . . . Well, sometimes I let it slide a little. When they serve chicken and rice, I understand that the kids won't eat it. I know it sounds good, but it just looks nasty.

This quotation indicates that unappetizing appearance deterred this staff member from encouraging students to eat lunch. Combined with students' inability to identify food, these data support general dissatisfaction with the presentation of meals.

Waste. Observations indicate that students threw away a substantial portion of their food, and excessive trash may be a sign of dissatisfaction. Students regularly disposed of entire entrées, side items, fruit, and vegetables. Some students threw away more than one of these items during the same lunch period.

On November 16, 2011, the first author observed waste behaviors among seventh-grade students. At one table of 6 students, 4 retrieved the main entrée

item, chicken and rice, from the lunch line. One student said she enjoyed school meals, and she ate the entire entrée. Two others ate one bite before throwing the rest away. The final student did not even open the wrapper and instead threw away the entire dish. This was not an uncommon scenario in school A. In fact, by the second day of observations, the research team found it appropriate to ask an additional question to students: "Why aren't you eating that?" Typical answers to this question included the negative responses identified in Table 3. Especially prevalent were comments about the food being "nasty" and "cooked wrong."

Once excessive food waste was observed, the first author piloted a quantitative data collection tool to be used in future studies. Over 2 lunch periods, he observed the waste behaviors of 24 students in school B. Among the 20 students who received a main entrée, 7 threw away at least half of the item. Another 3 students threw away at least one quarter of the item. Among the 14 students whose fruit consumption behaviors were observed, 5 threw away at least half of their fruit, and 1 threw away one quarter. Among all 24 students observed, only 10 took a vegetable item from the lunch line. Among them, 6 threw out at least three quarters of the vegetable option.

Discussion

Unexpectedly, this study revealed a complex system of relationships between stakeholders, which, according to informants, may have contributed to poor quality school lunches. Our data indicate poor working relationships between the FSMC and food services employees who worked at the point of delivery in school cafeterias. Without good working relationships, the food program suffers from an inability to coordinate services in an efficient and effective way. This inability, as described by one Board of Education member, translates into less money available to provide students high-quality, appetizing food. Lacking most was a sense of

mutual respect among stakeholders, an urgent issue that must be confronted in order to move forward constructively.

In addition to improving working relationships, it may be worthwhile to examine further the role of adult staff in ensuring that students eat. This is supported by the public health literature, which indicates that modeling healthy meals (in this case, by putting a balanced meal in front of children) can encourage healthier consumption behaviors.¹²⁻¹⁵ Overall, variation in student-staff interactions between schools suggests a lack of centralized planning of the school food environment, which could ultimately hinder the district and the Healthi Kids Coalitions goal of reducing childhood obesity by encouraging the consumption of nutritious food.

Participant-observation data also revealed excessive food waste, which may be a result of students' dissatisfaction as identified by the informal, conversational group interviews and participant-observation data. The excessive waste noted in the present study mirrors Gatto's observations, which were made during the tenure of the district's prior FSMC: "Each day I witnessed most of the students walking straight to the garbage can from the food service line to throw away their unopened trays of food." Gatto also notes that students used terms such as "nasty" and "gross" to describe school lunch. Together, these observations indicate that, despite district efforts to improve meals by hiring a new FSMC, food quality remains unsatisfactory for many students.

There is strong indication that inroads could be made in student-staff interactions to reduce waste and promote healthy eating. In school A, for example, food services employees encouraged students to take fruits and vegetables through playful interactions in the lunch line. However, the school's current system of trash collection reinforced the notion that wasting food was acceptable behavior. In school B, on the other hand, in-line interactions deterred students from taking certain menu items, especially vegetables, but

lunch table interactions appeared to stimulate students' food consumption and reduce waste. Other data indicate that individualized attention by adults may promote increased consumption and decreased waste. For example, one teacher required her students eat at least half of their food before leaving the room to play games. This system, unlike the trash collection system within the same school, deterred wasteful behavior. We observed similar attention paid to some students in school B with a parallel outcome. When a parent volunteer joined one lunch table and asked students why they were not eating, encouraged them to do so, and offered to help open the plastic-wrapped packages, she successfully prompted students, who were otherwise busy socializing, to eat their food. Finally, teacher and food services employee comments expressing dissatisfaction with meals may translate into a lack of accountability in encouraging students to eat. This translation effect is supported by the public health literature indicating that students' perceptions, and therefore consumption, of school food is influenced by the perceptions of teachers and food service personnel.^{16,17} Overall, these data indicate that interventions targeting student-staff interactions in line and at lunch tables are important in supporting the delivery and consumption of school lunches.

General dissatisfaction with school lunches was reflected in students' feedback. The words children used to describe the food were mostly negative. Our consumption experiences supported the informal, conversational group interview data. Together, observations from these group interviews and participant-observations suggest the need for continued qualitative evaluation. These data might also lend to future quantitative evaluation by means of surveys and taste tests.

The authors were unable to obtain literature regarding elementary-aged students' satisfaction with school meals in other districts. The elementary-aged students in the present study, however, were dissatisfied with school lunches

along many criteria identified in the literature by slightly older student populations.^{18,19} It is unclear whether these studies describe meals prepared onsite or at a central district kitchen and under the same labor conditions observed here. Our findings also support evidence of decreased satisfaction for students who receive meals prepared by a centralized district kitchen, as compared with students who receive meals prepared onsite.²⁰⁻²² Overall, many students in the present study were dissatisfied with the quality and taste of food, and others were dissatisfied with its presentation. Dissatisfaction manifested in widespread food waste behaviors, which, in some cases, appeared to be influenced by student-staff interactions and other systematic processes.

Dissatisfaction among students may be connected to stakeholders' lack of accountability. This study is the first we have found to draw a connection between labor relations and student satisfaction as it pertains to school lunches. Food services labor relations are complex, and this complexity does not appear to be easily mitigated within a district whose FSMC, food services employees, lunch monitors, and classroom teachers are accountable in different ways to a variety of constituencies. Moreover, issues of district debt may be difficult to resolve without an institutional review of labor relations.

Limitations

Three limitations are important to note for this study. First, students who provided satisfaction data may have exhibited social desirability bias—the tendency of individuals to answer questions in ways that would be viewed favorably by their peers. Conversations with students happened in the presence of peers, so their opinions may have been skewed toward responses that were perceived as favorable within the group.²³ In this study, data may have been skewed toward dissatisfaction based on a widespread cultural assumption that school food is unappealing. Despite the

potential for social desirability bias, observations revealed excessive waste, which supports data indicating students' overall dissatisfaction with the meals. Participant-observation data also indicate the first author's own dissatisfaction with food quality, further supporting the informal, conversational group interview data.

Second, all interviews were conducted by just one author, leaving potential for bias in its interpretation and presentation. However, all data were interpreted regularly by the entire research team under the guidance of stakeholders from the Healthi Kids Coalition to ensure internal validity. Furthermore, this article is coauthored by a member of the Healthi Kids Coalition Policy Action Team team, who helped ensure fair representation of findings.

Third, few food services employees were interviewed for this project, including none from the central kitchen. The views of food services employees are therefore not adequately represented, and further research is required to gain a deeper understanding of the relationship dynamics that have developed among relevant stakeholders.

Conclusions

This study builds on the program evaluation literature by presenting a qualitative framework for assessing school meals. Our findings support widespread understanding of the important role processes play in shaping program outcomes. Most important, this study identified a complex system of relationships between the school board, FSMC, and unionized food service workers which, according to stakeholders, may ultimately have affected the food quality and (non) consumption at the point of delivery. Findings from this study may have important public health implications regarding childhood obesity prevention and improved school meals. A meals program cannot be successful if students are dissatisfied with the quality of the food, and promoting the consumption of healthier meals requires

Table 4.

Five Recommendations Stemming from Informal, Conversational Group Interviews, Key Informant Interviews, and Participant-Observation Data.

Recommendation 1: Based on key informant interview data indicating mistrust among stakeholders, efforts should be made to improve stakeholder relationships. Building trust, mutual respect, and transparent communication would support these relationships.

Recommendation 2: Based on participant-observation data indicating varied student–staff interactions, efforts should be made to improve student–staff interactions. The public health literature highlights the important role adults play in students' consumption behaviors.¹²⁻¹⁷ Staff across the district should be trained on interacting with students in ways that promote the consumption of healthy food.

Recommendation 3: Based on key informant interview and participant-observation data indicating financial unsustainability and complicated labor dynamics, efforts should be made to reevaluate food services employees' labor contracts.

Recommendation 4: Based on group interview and participant-observation data indicating student dissatisfaction, efforts should be made to ensure continued program evaluation. Regular food quality evaluation is associated with increased student satisfaction,¹⁹ and we have developed evaluation tools that can be used by community volunteers to guide future data collection. Data from these tools could lend to quantitative analysis, which would provide an additional lens through which school food could be evaluated.

Recommendation 5: Based on key informant interview data and limited interview data representing the views of food services employees, efforts should be made to ensure all viewpoints are fairly represented in future evaluation and decision-making. Constructive steps to improving school food cannot be made without buy-in from and fair representation of everyone who is involved in the delivery of food. This includes food service employees and other community members.

concerted efforts to produce nutritious, appetizing, and aesthetically appealing meals. Ultimately, as national attention continues to focus on childhood obesity prevention and the improvement of school food, issues in stakeholder interactions and labor relations merit attention of school districts, policy makers, and public health advocates.

Implications for Practice

The results from this study informed 5 equally prioritized recommendations to improve the school lunch program. Displayed in Table 4, these recommendations stemmed from observations and contextual themes described above as well as discussions with community stakeholders and representatives from the Healthi Kids Coalition.

Children's dissatisfaction with school lunches cannot be separated from the issues of accountability among

stakeholders responsible for providing meals. In light of the obesity epidemic and national spotlight turning toward school food, it is important to ensure that conditions are sufficient to provide healthy and appetizing meals to schoolchildren, including agreeable working conditions, clear communication among stakeholders, and mutual respect and accountability for delivering high-quality meals.

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