

QUALITATIVE ANALYSIS OF STUDENTS' BREAKFAST HABITS AND SCHOOL BREAKFAST PARTICIPATION IN TWO PUBLIC SCHOOL DISTRICTS

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ABSTRACT

PURPOSE/OBJECTIVES

The purpose of this study was to identify key drivers of students' breakfast habits, including eating breakfast at home or at school, to inform strategies that school nutrition professionals might use to increase participation in School Breakfast Programs (SBPs).

METHODS

A convenience sample of students in grades 1-12 from two public school districts in Connecticut participated in focus groups. Each of the 13 focus groups included students from two or three grade levels and was facilitated by a lead moderator and note-taker. Recorded discussions were transcribed with students' comments coded to identify common themes. Within each theme, the grade levels of participants were identified to determine whether the theme represented comments by elementary school (grades 1-6), middle school (grades 7-8), and/or high school (grades 9-12) participants.

RESULTS

A total of 105 students (57% female, 43% male) participated. Across all grade levels, hunger, or a desire to avoid its adverse effects (e.g., grumpiness, headache), was identified as a consistently mentioned reason for eating breakfast. Other reasons included parental influence (elementary students), desire to improve energy (elementary students), and desire to improve school performance (elementary and middle school students). Breakfast skipping was often reported by middle and high school students, who cited inadequate time and lack of hunger as reasons. Across all grade levels, reasons for not participating in the SBP included distaste for, distrust of, and/or cost of school foods. Inconvenience of eating at school and perception of school foods as unhealthy or "junk" were cited by elementary and middle school students. Suggestions to improve school breakfast included more choices (all grades), improved freshness or quality of foods (all grades), and healthier options (elementary and middle school students).

APPLICATION TO CHILD NUTRITION PROFESSIONALS

Emphasizing food quality and increasing convenience of school breakfast may help to increase SBP participation.

KEYWORDS: breakfast patterns, students, child, adolescent, habits, focus groups

INTRODUCTION

Evidence from observational (Nicklas et al., 1993; Ptomey et al., 2016) and experimental studies (Wyon et al., 1995; Adolphus et al., 2013) supports the importance of breakfast for dietary intake and academic performance. Children who regularly eat breakfast may also have healthier body weights (Affenito et al., 2005; Fiore et al., 2006) and reduced insulin resistance (Donin et al., 2014; Karatzi et al., 2014). School Breakfast Programs (SBPs) can have positive effects on academic performance (Adolphus et al., 2013; Kleinman et al., 2002), diet quality (Ritchie et al., 2016), and school attendance (Anzman-Frasca et al., 2015). Despite these benefits of breakfast consumption, breakfast skipping is common among school-aged children (Dykstra et al., 2016; Hearst et al., 2016). Participation in the United States Department of Agriculture's (USDA) National SBP is low, relative to participation in the National School Lunch Program (Food Research & Action Center, 2018). According to the School Nutrition Dietary Assessment Study-IV, factors associated with SBP participation included: lower grade level; eligibility for free or reduced-price meals; and lower meal price among students ineligible for free or reduced-price meals (USDA, 2012). However, few studies have examined determinants of breakfast consumption in general (Olstad, 2013; Reddan et al., 2002; Sweeney & Horishita, 2005), or participation in SBPs in particular (Sabol et al., 2011; Bailey-Davis et al., 2013) among U.S. children and adolescents. This qualitative study was designed to identify the factors influencing breakfast consumption and SBP participation among students in grades 1-12 in two Connecticut school districts.

METHODS

SAMPLE

Four school districts were invited to participate. Superintendents of two districts (referred to as Districts A and B) granted approval. The study was approved by the Griffin Hospital Institutional Review Board. In 2017, 12 focus groups were held with 11 in District A (nine in elementary schools, one in a middle school, and one in a high school) and one focus group in District B's middle school. Characteristics of school districts and study participants are presented in Table 1. Students were included if they: (1) were enrolled in a participating school; (2) were invited by a teacher or administrator; (3) provided signed parental consent and their written or verbal assent, as appropriate for age; and (4) were present in school on the day of the focus group.

DATA COLLECTION

School administrators asked teachers to identify students who were willing to share their opinions and diverse in race/ethnicity, gender, and academic performance. Each focus group included 5 to 11 students from two or three grade levels and ranged in length from 30 to 60 minutes. Two researchers served as facilitator and note-taker, respectively. They jointly developed an interview guide based on a literature review and input from the districts' school foodservice directors. Key questions included:

- If you eat/don't eat breakfast every day or almost every day, why/why not?
- If you eat breakfast on days that you go to school, do you usually eat breakfast at home or at school? Why?
- How could your school make school breakfast better?

Follow-up questions varied depending on students' responses. Sessions were audio recorded and transcribed. Each participant's grade level and gender were noted, but not race or ethnicity, to minimize the collection of personal information.

DATA ANALYSIS

NVivo 11 software was used to code transcripts. Two independent coders, including the focus group facilitator, assigned codes to participant statements based on their content. Codes generated by each coder were compared and discussed until agreement was reached on a final set of codes. Each coder then re-coded the transcripts using the established codebook. Codes were compared again, with any discrepancies reviewed and resolved, and collapsed into themes based on how they related to our research questions. Responses in each theme were reviewed to determine whether some categories were populated more by comments from students in elementary (grades 1-6), middle (grades 7-8), or high school (grades 9-12).

RESULTS AND DISCUSSION

THEMES

A total of 105 students participated. Distributions by grade level and gender are presented in Table 1.

Table 1. *School District and Participant Characteristics (N=105)*

	District A, n (%)	District B, n (%)
District Characteristics (2016-2017)		
Number of Schools	8	6
Total Enrollment	4,815	2,364
White	3,507 (72.8)	951 (40.2)
Black or African American	243 (5.0)	428 (18.1)
Hispanic or Latino	604 (12.5)	828 (35.0)
Eligible for Free or Reduced-Price Meals	1,37 (21.5)	1,597 (67.6)
Overall SBP Participation Rate (%)	14.0	76.4
Free/Reduced SBP Participation Rate (%)	35.8	72.6
School Breakfast Program Features		
Chef involved in meal program	No	No
Breakfast in the Classroom	No	No
Grab-and-Go Breakfast Carts	Elementary schools only	No
Second-Chance Breakfast/Extended Service Hours	High school only	No
Focus Group Participant Characteristics		
Total participants	99	6
Grades 1-4	67 (67.7)	0 (0.0)
Female, n (%) within grades 1-4	34 (50.7)	0 (0.0)
Grades 5-8	11 (11.1)	6 (100.0)
Female, n (%) within grades 5-8	7 (63.6)	4 (66.7)
Grades 9-12	21 (21.2)	0 (0)
Female, n (%) within grades 9-12	15 (71.4)	0 (0)

Sources: EndHunger CT, 2018; Connecticut Department of Education, 2018

Students' comments were organized into four themes: (1) reasons for eating breakfast, (2) reasons for skipping breakfast, (3) reasons for not participating in the SBP, and (4) opportunities to improve school breakfast. Within each theme, subthemes were identified (14 total). The themes and subthemes summarized below are outlined in Table 2, which includes examples of quotes related to each theme.

Table 2. Representative Quotations Regarding Breakfast Consumption and School Breakfast

Themes and Subthemes	REPRESENTATIVE QUOTATIONS		
	Elementary School (Grades 1-6)	Middle School (Grades 7 & 8)	High School (Grades 9-12)
Reasons for Eating Breakfast			
Parental Influence	I always eat breakfast because my dad says breakfast is the most important meal of the day. (female, grade 2)	--	--
Hunger/To Avoid Physical Symptoms	Like for me, whenever I don't eat breakfast, my stomach gets upset and I can't focus as well. (female, grade 6)	I always make sure to have something in the morning because around like, 4 th period, my stomach starts to growl if I don't. It's really embarrassing. (female, grade 8)	'cus then [if I'm hungry and don't eat], I like, get grumpy. It's never good for me. (female, grade 10)
Desire to Improve Energy Level	The reason I get breakfast every day is 'cause I feel like it just energizes me...and I feel like it gets me ready for the day. (male, grade 3)	--	--
Desire to Improve School Performance	Whenever I don't eat breakfast, it's the only thing I'm thinking about. I can't think about what I'm supposed to be learning in class and yeah. It becomes a struggle so I feel that breakfast should be an important part of your morning. (male, grade 5)	'Cause [being hungry in class] distracts me from my work. I keep thinking about food and stuff, wanting to eat something, so I make sure I'm always fed. (male, grade 8)	--

Table 2. Representative Quotations Regarding Breakfast Consumption and School Breakfast (cont.)

Themes and Subthemes	REPRESENTATIVE QUOTATIONS		
	Elementary School (Grades 1-6)	Middle School (Grades 7 & 8)	High School (Grades 9-12)
Reasons for Skipping Breakfast			
Lack of Hunger	--	I feel like it's the time I wake up, also, because on the weekends and if I were usually to just wake up on my own time, I wouldn't wake up 'til probably like, an hour from now. So I feel that when its 6:30 in the morning I'm so focused on actually trying to wake myself up that I'm just not hungry or think I'm not hungry. I'm just not focused on that. (female, grade 8)	It's the time thing. Just getting up so early, I'm half asleep. I don't even want to eat. (female, grade 12)
Inadequate Time	--	I do it when I have time, because most likely I'm running late when I'm going to school. (female, grade 8)	I just don't have the time. (male, grade 12)
Reasons for Not Participating in School Breakfast			
Distaste for School Foods	And, like, sometimes, the food that's at the school, I don't like it so, and the food that's at my house, I like it, so that why I eat at my house. (female, grade 1)	I find [school breakfast] kind of disgusting. (male, grade 7)	The bagels here are soggy. They keep them in a bag and put them in the microwave. They get really moist. (male, grade 12)
Cost of School Foods	If there's cereal that you don't like and you have cereal that you do like at home, you're gonna waste money for nothing. (male, grade 3)	Yeah, I found disgusting things [in my school lunch] and plus school lunch costs money too, you know. (female, grade 8)	So, like, the smoothies here, I think they charge \$3. (female, grade 10)
	Once my brother got a lot of breakfasts and it costs way more money, and like, my parents had to bring in, like \$30 every week, 'cus he got breakfast and it was really bad. Now we just if we, like, don't have any more time to eat breakfast [at home]. (female, grade 1)		

Table 2. Representative Quotations Regarding Breakfast Consumption and School Breakfast (cont.)

Themes and Subthemes	REPRESENTATIVE QUOTATIONS		
	Elementary School (Grades 1-6)	Middle School (Grades 7 & 8)	High School (Grades 9-12)
School Foods are Unhealthy or Junk	'Cus they have really bad stuff here. Like Poptarts, they have these.. I mean I'm sure they could have cereal balls.. or I mean bars, but they could have cinnamon buns. All of these things you don't, like... apple strudel.. like, they're all desserts. They're not really breakfast. (male, grade 4)	I feel like I'm looking for something that will actually benefit my body. I obviously want to feed my body good foods. I 'm not into feed it junk that's not gonna benefit it whatsoever and it's just gonna tear it down in a sense. Like, I want something that is fresh and is appealing and it's also gonna benefit me throughout my day and like, throughout my lifetime. I want to have something healthy, I feel like, and I feel that, although it is easier to get the packaged food that you could heat up in the microwave, there's so many bad things in them, I feel like, and I don't think I want to put that in my body. And that's why most kids don't want to eat breakfast here. (female, grade 8)	--
Distrust of School Foods	So once, this person told me that once he found that his chicken nugget was raw and the other one was overdone. (female, grade 3)	We've had expired, we've had expired milk there and it smells disgusting we don't drink it. Cause that could get us sick. And then on top of that eating food that is from a freezer that could get us sick too. (female, grade 8) We don't trust it much. We don't trust the school lunches. (female, grade 8)	Yeah I trust the food at my house like 100% more than the food here. Like, I won't mess with the food here. (female, grade 12) I'm pretty sure prison food is safer than school food. (male, grade 12)
Inconvenient to Eat at School	I have breakfast at home because it's a lot quicker than here, because there's normally a line. (female, grade 4)	It's like your morning rush hour, even though it's like a small 15 minute slot, that's basically when you have to prepare for your day and you have to get everything done and completed. Like you have to talk to your teachers and I hate to say it's one of the most social points of the day but you get to see your friends in the morning and obviously everyone wants to talk to them, because you're not gonna see	--

Table 2. Representative Quotations Regarding Breakfast Consumption and School Breakfast (cont.)

Themes and Subthemes	REPRESENTATIVE QUOTATIONS		
	Elementary School (Grades 1-6)	Middle School (Grades 7 & 8)	High School (Grades 9-12)
Opportunities for Improvement in School Breakfast		them all day. And I feel that most kids are more distracted with the things they prioritize above than breakfast than actually making their way down to get breakfast. (female, grade 8)	
More Choices	They kind of just have the same things, like carrots, oranges and apples and bananas. Like, some people don't like those so I think they should have like, strawberries and olives and grapes. Like, fruits and vegetables. Like, more variety of those two, so I'd just like a bigger variety of options. (female, grade 4)	Plus I think they should give us a variety of bagels instead of just one kind, you have to eat this kind, and varieties of cream cheese.(female, grade 8)	They're always saying that we don't have enough money. There's not enough in the budget to pay for things, but if we had the variety of food that we want, then we would put our money towards that and actually get that. (female, grade 10)
Fresher, Real, Better Foods	I think they should have eggs but not like... they are all soggy 'cus they're shipped so like, if they cooked them there it would taste better. (male, grade 4)	[The school should serve] Real meat, not fake meat; not plastic cheap cheese, real cheese. (male, grade 7) We were learning about processed foods and stuff and it gives us a perfect example about school foods, about how it sits in boxes inside of a freezer for months. And they only cook 6 out of 36 meals for us and they have all these different meals here and they could make something else good besides their everyday thing instead. (female, grade 8)	They could have the same menu, but just have better quality stuff. Like get fresher food and higher quality ingredients and like, this <i>trash</i> that they give us. (male, grade 12) I think, part of it is that they make stuff that's <i>kind of</i> real food, but like, like they want you to be able to take it to class, kind of, because we don't have time to like, sit and eat real food. But like, we just came from study hall so we would have time, if they had good breakfast food, we could actually like, sit and actually eat a real breakfast. (male, grade 12)
Healthier Options	I think they should take away all the junk food and put in more healthy stuff. (male, grade 1)	I know that they serve, like, brownie bars and if they were looking for something packaged that was easy to give a lot of kids, I think a better	--

Table 2. Representative Quotations Regarding Breakfast Consumption and School Breakfast (cont.)

Themes and Subthemes	REPRESENTATIVE QUOTATIONS		
Elementary School (Grades 1-6)	Middle School (Grades 7 & 8)	High School (Grades 9-12)	
[My friend] gets breakfast, and he gets, like, junk food all the time, like brownies and cinnamon rolls and I think they should change it to, like, healthy stuff. (male, grade 2)	alternative would be like a granola bar instead of a brownie, 'cus it's more nutritious even though it's not the most nutritious. (female, grade 8)		

Note. Cells are left blank when a theme does not apply to the grade level.

REASONS FOR EATING BREAKFAST

Most elementary school students reported eating breakfast every day or almost every day. Many middle and high school students reported not eating breakfast regularly. Across grade levels, the most commonly mentioned reasons for eating breakfast were: parental influence, hunger, desire to avoid physical symptoms (e.g., fatigue, upset stomach, headache), and desire to improve school performance. Parental influence and/or desire to improve energy levels were important among elementary students.

REASONS FOR SKIPPING BREAKFAST

Main reasons for skipping breakfast, as reported by middle and high school students, included lack of hunger and inadequate time. Younger children generally reported feeling hungry and wanting to eat in the morning, whereas older children more often said they were not hungry. Many middle and high school students who skipped breakfast described feeling rushed and having little time to eat breakfast on school days.

REASONS FOR NOT PARTICIPATING IN SBPs

More students preferred eating breakfast at home rather than at school. The top reasons were distaste for and/or distrust of school foods, followed by cost. Many also mentioned inadequate time to eat at school, and perceived school food as unhealthy or “junk.”

Dislike of school foods was frequently noted in generic terms (e.g., “*I don’t really like the food*”). Specific reasons for disliking school foods included a perception that they were low in quality, less good than foods at home, or “fake.” Students at all grade levels were concerned about the cost of school meals. Many students in elementary schools, and some in middle schools, felt that school breakfast foods were unhealthy. In contrast, high school students expressed less concern about the healthfulness of school breakfast. Some said that efforts to provide healthful foods such as whole grain products were “a turn off” and that students should be able to decide whether or not to eat healthfully at school.

Middle and high school students frequently expressed a distrust of school foods. Paradoxically, although some complained about schools' heavy reliance on packaged foods, they also often chose these foods at school because they seemed "safer." Students at all grade levels shared stories of discovering non-food items in their foods (e.g. hair, plastic, a bug, "pink fuzz" resembling insulation) and discovering that items were expired or spoiled. Among the food quality complaints were incidents of curdled milk, undercooked cheeseburgers, and discolored salami.

For elementary and middle school students, inconvenience was also a barrier to SBP participation. Some students reported feeling too rushed to eat at school, while others said they had more important things to do, such as talking to teachers or friends or getting organized for class. Students also mentioned late buses, cafeteria lines, long walking distances to the foodservice area, and a perception that eating in the classroom could be messy.

While some students said they would eat school breakfast when their preferred foods were served (e.g. breakfast sandwiches or "brownie bars"), more students reported eating breakfast at school when hungry and lacking other options due to time constraints at home. However, some students made positive comments about school breakfast. For example, a female student in grade 4 said: *"Everyone thinks [the apple strudel] disgusting, but I think it's really good....And then, sometimes, they'll have new things, so I mean, whatever there is, I usually just have it."*

OPPORTUNITIES TO IMPROVE SCHOOL BREAKFAST

A common suggestion for improvement was greater variety of food choices. Students expressed a desire for more options (e.g., varieties of fruits, bagels, and beverages) and opportunities to customize meals (e.g., by selecting breakfast sandwich or bagel toppings). Many students, especially in middle and high school, prioritized "freshly made," "cooked," "good quality," "real" foods over those that were "packaged," "frozen," or "wrapped." Several elementary and middle school students wanted healthier options, such as fresh fruits not already offered (e.g., melon, berries, mango), Cheerios, and eggs.

DISCUSSION OF FINDINGS

Prior qualitative studies of students in grades 4 and 5 in Alabama (Sabol et al., 2011) and grades 6 to 8 in Philadelphia (Bailey-Davis et al., 2013) suggested that SBP participation was influenced by: belief that breakfast is important; dislike of foods offered; cost; stigma; and time. Sabol et al. and Bailey-Davis et al. reported that students ate breakfast to improve concentration or prevent feeling sick, and that distrust of school food was prevalent. These findings are similar to ours, with the exceptions of themes concerning cost and stigma. Sabol et al. reported cost as a concern for parents, but not students. In our study, students themselves cited cost as a barrier to SBP participation. Sabol et al. and Bailey-Davis et al. found that stigma associated with SBP participation was important, but this issue was absent from all focus group discussions in our study. Our findings also generally agreed with those of previous quantitative surveys that reported lack of time and lack of hunger as reasons for skipping breakfast (Olsta, 2012; Reddan et al., 2002; Shaw, 1998; Sweeny & Horishita, 2005) and belief that breakfast provides energy and improves ability to pay attention in school (Reddan et al., 2002).

CONCLUSIONS AND APPLICATION

While our results are consistent with prior research on breakfast consumption and SBP participation among school-aged children, they also provide new information about potential commonalities and differences between age groups.

Across grade levels, our study participants perceived that school meals were often made from processed foods and were low in quality. They wanted more foods to be cooked from scratch, a recommendation similar to those made in previous focus group studies with high school students (Asada et al., 2017; James, Rienzo, & Frazee, 1996). Prior studies designed to improve staff culinary training and increase scratch cooking have shown associations with improved nutrient profiles of school meals served (Cohen et al., 2012; Schober et al., 2016). Although scratch cooking requires more labor, one study suggested that total food and labor costs of scratch-cooked entrees may not exceed those of entrees requiring no scratch cooking (Woodward-Lopez et al., 2014).

Another consistent theme across age groups was lack of time or lack of hunger as a reason for skipping breakfast at the middle and high school level. Breakfast was served at “grab-and-go” carts in elementary schools in District A, but the cafeteria was the only place where middle and high school students could get breakfast. School foodservice administrators could consider adopting other school breakfast service models, such as longer service hours and/or breakfast in the classroom. Among high school students, “grab-and-go” carts (Larson et al., 2018; Olsta, 2013) and expanded cafeteria hours (Olsta, 2013) have increased SBP participation rates. Notably, while high school students in our study did have access to breakfast over an extended time, many reported not taking advantage of it, suggesting that addressing the timing alone may be insufficient to increase SBP participation. When planning “grab-and-go” meals, it is important to recognize that students may still expect these meals to be made onsite using fresh foods.

Lack of time and hunger in the morning among middle and high school students may be related to early school start times and changes in circadian rhythms that occur during puberty (Hagenauer et al., 2009). A delay of 1-3 hours in the circadian phase and timing of sleep in adolescents has been observed, peaking between the ages of 15 and 21 (Hagenauer et al., 2009). For many teens, just as they naturally shift their sleep later in the evening, they are required to be at school earlier in the morning. The high school attended by our participants in District A started at 7:40am, whereas elementary schools started at 9:00am. The impact of later school start times on SBP participation has not yet been investigated and could be explored in future research.

School nutrition professionals may use the findings of our study to inform their SBP marketing efforts. For example, messaging to elementary school students and their parents should emphasize the importance of breakfast to “start the day” and the nutritional value of school breakfasts. On the other hand, when targeting middle and high school students, it may be more effective to de-emphasize nutrition and to instead highlight the freshness and quality of foods. When cooking foods to order is not feasible, school nutrition professionals may consider assembling items at the time of purchase or offering students the opportunity to choose their own sandwich or salad toppings.

Due to the nature of focus group research, this study had inherent limitations. Although school administrators and teachers were asked to invite a representative group of students to participate, participants may have differed in important ways from other students. Additionally, some

participants were more engaged than others in the discussions; therefore, their opinions are overrepresented in the analysis.

While the results of our study cannot be generalized to other settings and populations, when considered in conjunction with the strikingly similar findings of other studies, they can be used to inform practices in SBPs. Attention to student perceptions of food quality and freshness should be paramount at every grade level. While participants' comments in this study were not always factually correct—for example, claims that the food was “fake” or that meat was undercooked—they reflect a pervasive perception among students about school food that influences their likelihood of participating in school meal programs. Making school breakfast more convenient and ensuring adequate time for students to eat when hungry (which may be later for older students) are also strategies that could reduce barriers, but these strategies alone will be insufficient without also addressing students' negative attitudes towards school meals.

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