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Competitive Foods Sales in Schools: Exploring New Interventions

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**Author**

Park, Susan K

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## **Introduction**

With approximately 16% of overweight children and teenagers (ages 6-19) in the United States today[1], childhood obesity is a major health epidemic placing children at increased risks for developing chronic health conditions[2]. Such alarming rates of childhood obesity have prompted researchers to take aim at identifying specific causes and developing effective interventions. In particular, the sale of various non-nutritive foods in schools has been identified as an important contributor to childhood obesity.

“Competitive foods”, items sold in competition with those offered through the school lunch program, are generally higher in sugar, fat, and calories[3-6] and consist largely of prepackaged chips, sweets, soft drinks, and other non-nutritive fare. The popularity and sales of these items are of great concern as they frequently replace nutrients found in cafeteria foods regulated by strict national and local school nutrition codes. The Center for Disease Control estimates that the majority of the nation’s public secondary schools currently offer competitive foods through vending machines, snack bars, campus stores, and canteens[7], and while some healthier fare is available, many of the popularly sold items contain minimal nutritional value[6].

In recent years, several national health agencies have focused on regulating competitive food sales as a means to lower childhood obesity rates[8-10]. In a 2001 report to the United States Congress, the United States Department of Agriculture described the detrimental impact of competitive foods on diet-related health risks and resolved to promote a healthier school environment by regulating sales of competitive foods[11].

In 2004, Congress passed an act requiring school districts nationwide to develop a “local wellness policy” creating, in part, nutritional guidelines for competitive foods by the 2006 school year[12]. However, recent reports demonstrate that current efforts are falling short of expectations. In a 2006 study evaluating a nation-wide sample of school districts’ nutritional policies, researchers concluded that the changes did not measure up to anticipated goals[9].

Therefore, identifying factors contributing to the sale of competitive foods is key to implementing more sweeping interventions. A review of the current literature highlights several factors such as problems associated with overcrowding and shortened lunch periods, strained school budgets, and students’ perception of various food offerings in schools. By identifying these factors, specific interventions can be formulated to aid prevention of childhood obesity.

## **Factors Contributing to Competitive Food Sales in Schools**

### ***Shortened Lunch Periods***

Overcrowding of students as well as pressure to increase academic hours has led many school districts to shorten lunch periods. Currently, the average time allotted for lunch in middle schools is 24.6 minutes and for high schools is 26.7 minutes[13]. For students facing shortened lunch periods, the time spent waiting to purchase meals from the school cafeteria translates to little or no time left over to eat[14].

In a study with over 200 adolescents, many remarked that lack of time was a major barrier to healthy eating[15]. For such students, lack of time in acquiring school meals or preference to spend their lunch period elsewhere behooves them to consider more convenient meal sources such as snacks from vending machines or student stores, or less nutritious meals from a la carte sources[16]. Moreover, scheduled lunchtime tutoring sessions, sports, and club meetings reduce time to purchase school meals and increase preference of purchasing snacks or convenience foods[17]. For some students, the lack of time or convenience in purchasing a

lunch may breed habits of skipping lunch altogether and waiting until after school to eat at home or at nearby fast-food restaurants[18].

In some districts, the overcrowding of lunch areas has prompted administrators to create additional lunch periods. Currently, the USDA allows the lunch program to run between the hours of 10:00am and 2:00pm, as well as for petitions to extend those times either earlier or later[19]. A recent study examining school lunch participation in Pennsylvania reported a strong positive correlation between sales of competitive foods and lunch before 10:30am, implying that anticipation of hunger later in the day prompted snack purchases[16].

The development of poor meal pattern and poor food-selection behaviors among children and adolescents contribute to diets poor in nutrients and rising childhood obesity rates, and may influence future dietary habits.

### ***Profits from competitive food sales***

The sale of competitive foods thrives partly due to school profits. For example, “pouring contracts” between beverage companies and schools offer lucrative benefits for schools who agree to sell exclusively a certain brand’s products on campus during school and after-school events such as sports games. Recent reports estimate monthly district profits of as much as \$50,000 in Washington D.C., and negotiations to create multi-year contracts worth between \$8 million and \$11 million in Colorado and California[20].

Fundraisers such as bake and candy sales also contribute significantly to the sale of non-nutritive foods on school campuses. These fundraising events help to pay for field trips and scholarships[14]. However, little formal research has examined the role of baked goods and candy sales and other food-based campus fundraising activities in sales of non-nutritious competitive food items[21].

### ***Students’ perceptions of school lunches***

Some youth associate a stigma with the purchase of school lunches[22]. In particular, with the lunch program offering free or reduced cost meal to low-income students, the ability to purchase competitive foods can be associated with higher socioeconomic status[11].

Many youth also believe that many of the food items served in the school cafeteria are of inferior quality and higher in fat[14] whereas healthier alternatives are considered unpalatable. In a sample of 289 high school students, 93.7% ranked taste as an important factor in their lunch choices and 71.7% stressed the importance of “getting a lot for their money”. For these youths, competitive foods offered more appetizing choices and sometimes perceived higher quality [23].

Some students who purchase or receive school meals also purchase competitive food items. One study among 250 sixth graders reported that nearly one third of students purchasing school lunches purchased competitive food items that contributed more than 1/3 of total lunch calories[6]. Such choices may create unhealthy perceptions of serving sizes and result in overeating.

### **Focused interventions to reduce competitive food sales**

In recent years, several different interventions combating the sale of non-nutritious competitive foods have been developed. A review of some of the intervention strategies is offered here to highlight how they target the factors discussed above as well as to elucidate areas where intervention efforts require further study.

### ***Reducing accessibility to competitive foods***

A primary strategy to reducing sales of competitive foods has been to decrease access to them during school hours. An older study from 1994 demonstrated that restricting sales of candy bars and chips to the student store created a large enough inconvenience among students such that there was a notable rise in the consumption of fruits in place of candy bars and chips[24]. Restrictions on competitive food purchase during various parts of the day have also been associated with reductions in sale of competitive foods. For example, one study identified 88.5% of snack items sold in student's stores to be high in fat or sugar, and half of these items were sold during the lunch period[25]. By restricting sales of snack items from student stores during the lunch hour, sales could potentially be reduced in half.

A second intervention has been through the adoption of a pricing strategy whereby lower fat, more nutritious foods are sold at lower cost and higher-fat/sugar items are offered at inflated costs. One study at a Midwestern high school noted a rise in the sale of lower fat foods from 9% to 13% when the prices for four low fat foods were dropped by 25% and the price of three high fat foods was increased by 10%[26]. These barrier strategies reduce the convenience of purchasing unhealthy competitive foods and may increase participation in school lunch programs.

Although sales of non-nutritious foods such as candy bars and bake sales via fundraising events was addressed as a concern for childhood obesity, no studies examining strategies for reducing sales of high fat/sugar fundraising foods were found. Suggestions for replacing sales of high fat/sugar baked goods and candy bars includes healthier options such as smoothies, and fruit salads, or sales of non-food items. Longitudinal studies across longer time frames are needed to assess various changes in students' behaviors after implementation of barrier strategies.

### ***Improving the nutritional quality and appeal of school lunches***

Interventions to improve the quality, nutritional value, and taste of school lunches target students' perceptions that school lunches are of inferior quality, unpalatable, and higher in fat. A key component of these interventions has been to train school nutritionists to develop recipes and criteria for healthier choices in the cafeteria.

Involvement of students and school officials are also important in improving the appeal of school lunches. For example, in 10 Minnesota secondary schools, the Try Alternative Cafeteria Options in Schools (TACOS) program offered opportunities for students and faculty to develop creative strategies to promote healthier cafeteria food consumption. In just two years, the TACOS program succeeded in implementing 181 promotional events such as coupons for low-fat foods, food-tasting sessions, media campaigns, and recipe contests, producing a significant increase in lower-fat food sales[27]. However, the researchers discovered from the short-lived success of many promotions that extending the duration of promotional activities is necessary to producing lasting change. Fostering student interest by increasing variety and availability of lower-fat foods was also recommended in developing novel promotions.

### ***Improving the nutritional quality of competitive foods***

With the current convenience that vending machines, student stores, and a la carte stations offer over long lunch lines, an important target for intervention is to increase the quality of food choices offered. Since a significant portion of the sales of competitive foods relies on partnership with outside companies, interventions to improve the nutritional quality of competitive food rely on participation by both the school and contracted vendors.

In May 2006, the Alliance for a Healthier Generation announced new guidelines to reduce portion size and calories on soda products offered by several major beverage companies[28]. The guidelines calls for eliminating sales of sodas, sports drinks and sweetened juices in elementary and middle schools, and restricting serving sizes of 100% juices and milk to 8oz and 10oz. In high schools, the guidelines calls for restricting servings of 100% juices and sports drinks to 12oz and increasing options of water and no/low calorie beverages to 50% of all beverages served. These guidelines are projected to impact beverage consumption by over 35 million students in coming years.

## **Discussion**

The consumption of unhealthy competitive foods in schools contributes significantly to childhood obesity, and influences the dietary preferences for youths into adulthood[20, 29]. While efforts to limit competitive foods in cafeteria have transpired, continued sales persist due to previously under-recognized factors such as effects of reduced lunch periods in overcrowded schools, profits from competitive food sales, and popularity of competitive food items among students.

Consequently, interventions aimed at reducing sales of competitive foods may consider taking a multi-step approach involving pooled efforts from school administrators, students, parents, healthcare providers, policymakers, and private companies. For example, school administrators can devise strategies to increase lunchtime periods or faster accessibility to healthier food items. Students can discourage sales of competitive foods by bringing healthier lunches or snacks from home when barriers to acquiring healthier school foods are anticipated. Students can also collaborate with faculty to promote sales of healthier foods. Health educators can work with students who defer to unhealthy diets or meal skipping out of convenience to develop strategies in which to acquire healthier meals easily. Policymakers can continue to work with private companies to limit sales of non-nutritive foods while increasing options for healthier items.

Physicians and other healthcare providers also have a unique role in evaluating the individual dietary habits of patients at risk of higher consumption of competitive, non-nutritive foods. By identifying students' meal patterns, lunchtime activities, and meal preferences from patient histories, physicians can provide customized counseling in developing healthier dietary habits as well as gauge progress through regular follow-up appointments.

Through collaborative efforts targeting various specific barriers to decreasing sales of competitive foods, lasting change may help to reduce the prevalence of childhood obesity.

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