Schools Linked to Obesity: Issues, Concerns and Reforms

Andrea Kolbeck

Undergraduate Student, Food and Technology

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Abstract: Obesity is a growing epidemic concerning children in the United States, which affects children's self esteem and school performance. Many concerns have been raised in relation to the federal government's school hot lunch programs and the steady increase in childhood obesity. Foods served in the school lunch programs are high in fat, sugar and calories. The goal is to offer foods that are high in nutritional value and also taste good. Schools are instrumental in shaping a child's diet and eating habits for the future. Using food contingencies also lead to negative and positive associations with vegetables and candy. The USDA is in the process of creating a small farmers initiative with schools to increase fresh fruit and vegetable consumption to help lower fats in the school lunch programs. School administrators also need to re-evaluate sugar consumption in correlation to vending machine sales in the schools. There is a significant need for change in the school lunch programs, administrative attitudes, and teacher responses.

Childhood Obesity

Childhood obesity is a growing epidemic concerning the nation's children, and unfortunately, the public school system's hot lunch program is partly to blame. Obesity affects children's selfesteem and school performance. However, it can be combated through incorporating improved nutrition efforts into the schools.

After World War II, the National School Lunch Act (NSLA) was passed by Congress to ensure the health and well-being of the nation's poor and malnourished children. In 1946, Congress established the National School Lunch Program (NSLP) to "safeguard the health and well-being of our nation's children" (Gleason & Suitor, 2003, p. 1047). Today, approximately 99,000 schools and 27 million children participate in the federal hot lunch program, which includes lunches, breakfasts, and after-school snacks (Bush, G.W., 2003). Unfortunately, school lunches are high in fat and sugar content and combined with decreases in physical education programs; juvenile diabetes and hypertension have increased. The percent of our nation's 6 to 11 year-olds that are overweight has tripled in the last two decades. As shown in Table 1, the prevalence of overweight children and adolescents ages 6 to 19 has increased since 1963. Note the increase in overweight children from ages 6 to 11 is at 16% (Department of Health, 1999).

Table 1

Prevalence of overweight among children and adolescents ages 6 to19 years, for selected years 1963-65 through 1999-2002 from the National Health and Nutrition Examination Survey (NHANES)

Age (years)	NHANES 1963-65 1966-70 ²	NHANES 1971-74	NHANES 1976-80	NHANES 1988-94	NHANES 1999-2002
6-11	4	4	7	11	16
12-19	5	6	5	11	16

Federal law requires that school lunches must provide one-third of the USDA's daily requirements for protein, vitamin A, vitamin C, iron, calcium, and calories. It also requires that no more than 30% of calories can come from fat and less than 10% can be derived from saturated fat (Salisbury, 2004). The goal is to offer nutritious foods, but to also to offer items that children like to eat.

According to the USDA, an estimated 12% of food served to children in schools is wasted. Girls tend to waste more food than boys, and younger children waste more food than older children (Economic Research Service, 2003). Plate waste can be decreased by increased food choices with more options in variety and fresh produce. Seeking student opinions about food menus and allowing ample time to eat lunch, while implementing food preparation programs, will help reduce plate waste as well. However, it may increase operating and purchasing costs. Nine reasons for plate waste are discussed in Figure 1. Note the number one reason for plate waste is socializing and recess (Ralston, Buzby, & Guthrie, 2003).



Figure 1. Graph depicting reasons for plate waste as cited by cafeteria managers (Ralston, Buzby, & Guthrie, 2003)

Scheduling recess after lunch creates a tendency for children to rush through the meal and hurry outside to play. This results in the children not taking enough time to finish eating their meals. Some schools allow only 20 minutes for lunch after seating. These are issues that need to be addressed. According to the American Academy of Pediatrics, "every school in every district shares a responsibility for the nutritional health of its students" (Health on the Net Foundation, 2004, ¶ 11)

Schools exist in our society to educate children. Teachers do not realize they are influential factors regarding children's preferences of vegetables and candy. When school children are asked to describe school lunch, usually 'gross, nasty, and scary' comes to mind and 'if it's good for you, it must taste bad' mentality is present as well (Baxter, 1998). By the time children reach five years of age, they have already developed personal preferences as to what they like and what they do not care for. Schools are instrumental in shaping a child's diet and eating behaviors. According to the Centers for Disease Control and Prevention Report, "Guidelines for School Health Programs to Promote Lifelong Healthy Eating," teachers need to discourage the association between rewards and food. Schools need to create a healthful environment that encourages healthful food choices and carries out healthful food practices (Baxter, 1998). Children have a tendency to prefer sweet and non-sweet snack foods when given as rewards.

Schools provide exposure to both vegetables and candy, but vegetables are perceived negatively and candy is seen as a positive reward. For example, a child may be rewarded with treats if all of the vegetables are eaten. These food contingencies are teaching children to dislike vegetables and relish dessert (1998).

Parents want their children to eat healthy, but when they are in the lunch line, children make different choices. Children need extra guidance because they are neophobic. In other words, they are afraid of trying new things. According to the Pediatric Nursing, it takes 10 exposures before changes in dietary preferences can be seen (Cathey & Gaylord, 2004). David Levitsky, professor of Division of Nutritional Sciences at Cornell University, created a hands-on, in-class program with 600 students in 27 classes between the grades of kindergarten through sixth grade6 at Dundee Central School in New York. The two-part program was to decrease the amount of fat in the school lunch program while increasing vegetable and fruit consumption. First, the students studied eight different countries, including lessons in food and recipes native to each country. Next, students completed in-class cooking projects to make these recipes. After completion of the units, school cafeteria employees began making the recipes and incorporating them into the school lunch program. Burgers, fried chicken fingers, French fries were substituted with pasta, Chinese stir fry, primavera and African stews. Levitsky's survey data reported students were more willing to try new foods presented in this manner (Powers, 1996).

In 2002, the USDA spent approximately \$338 million on surplus beef and cheese for schools, and only \$159 million on fruits and vegetables (Hersey, 2004). School lunches do not serve more fresh fruits and vegetables because they are more expensive. The USDA is currently developing the "Small Farms/School Meals Initiative" in an effort to incorporate more fresh fruits and vegetables into the schools. Shirley Watkins, Under Secretary for Food, Nutrition and Consumer Services, U.S. Department of Agriculture states:

The Small Farms/School Meals Initiative is an important step toward improving both the economic stability of small farmers and the long-term health of our children in our school systems. The farmers sell fresh produce to local schools for use in their meal programs, and for children to get the benefit of adding fresh fruits and vegetables to their diets. It's a win-win situation for everyone involved. (United States Department of Agriculture, 2000, p. 2).

This program not only supports increased nutritional value from the fresh food, but it also creates a relationship with the farmers who grow the food. The goal is to incorporate farmers into class-time during visits and explain how the produce is grown and how it incorporates into a healthy diet. This increases the students experience in the classroom, as well as the cafeteria, with first-hand knowledge of value and appeal of fresh fruits and vegetables needed in their diets. Problems associated with this initiative involve increased farmer's transportation costs, the inability to meet supply of volume, quality, selection, and variety of produce when the schools need it.

Children are a favorable choice for implementing social change. The United States Public School system must dedicate time and effort to increasing the nutritional values of the NSLP but it must begin with attitude improvement of public school officials. Profits prevail over nutrition. Schools and student organizations receive financial gain from the sale of candy, soda, vending machines, etc. Currently, no soda, gum, or candy can be sold on school premises until after the first lunch period (Salsibury, 2004).

These vending machine profits are usually spent on athletic programs and make up nearly 50% of the school's profit for the year. Contracts can range anywhere from \$20,000 to \$300,000. Blair High School in Montgomery County, Maryland, was paid \$100,000 up-front by Pepsi-Co[®]. for exclusive advertising on the school's scoreboards. Plus, they were promised cuts of soda sales in the vending machines in Blair High School, which currently net more than \$100,000 a year from sales (Slobogin, 2001).

According to the California's Childhood Obesity Prevention Act, each additional daily serving of sugar-sweetened soda increases the risk of obesity by 60%. Over 20 years ago, boys consumed twice as much milk, and girls consumed 50% more milk than soft drinks. By 1996, boys and girls consume twice as many soft drinks as milk. It is the leading source of added sugar in a child's diet ("California's Childhood Prevention Act," n.d.). Over consumption of empty calories is a major reason of childhood obesity.

Coca-Cola[®] has begun scaling back marketing strategies in schools due to complaints of commercialism targeted towards children through the soft-drink deals. The company plans to replace advertising on its vending machines with non-commercial graphics of students engaging in physical activities and sports while stocking the vending machines with more nutritional vitamin-enhanced juice drinks, water, and sports drinks ("Coke Alters," 2001). This encourages more nutritional consumption for the students without undermining the revenue of the vending machine sales the school districts are strongly dependent upon.

According to survey by the Centers for Disease Control and Prevention, a fifth of all schools in the U.S. offer brand name fast-foods such as Pizza Hut[®], Taco Bell[®], and McDonald's[®] for hot lunch (Salisbury, 2004). Allowing these companies in schools supports industries linked to obesity and threatens the USDA's nutritional goals. Also, 92% of all schools allow a la carte options that lead to the unattractiveness of school lunch (Salisbury, 2004). Typically, these a la carte choices hope to establish brand loyalty, offering foods such as French fries, pizza, and hamburgers. These options do not adhere to federal standards due to the high concentrations in fat, sugars, and calories.

School learning environments are also affected by the nutritional deficiencies. Changes in reforming the school lunch menu have had a great influence on the Central Wisconsin Alternative High School in Appleton, Wisconsin. The cafeteria has replaced burgers, fries, and burritos with salads, degreased meats, whole grains, fresh fruits and vegetables ("A different kind,"2002). In 1997, Natural Ovens[®] of Manitowoc, Wisconsin, initiated a five year project to bring healthier meals to the school's cafeteria (2002). Major differences have been seen in student's behavior, health and learning. Students are no longer tardy and they are calmer. Daily discipline issues are no longer an issue at the school and drop-out rates are non-existent since the incorporation of healthier and more nutritious foods into the lunch menu (2002). One student commented,

Now that I [can] concentrate [because of the healthier food options] I think it is easier to get along with people because now I'm paying attention to what they say and not just worrying about what I have to say to them ("A different kind", 2002).

In contrast, according to the study of Physical Activity, Dietary Practices, and Other Health Behaviors of At-Risk Youth Attending Alternative High Schools, most alternative high schools do not support healthy eating choices as a normal behavior. The Central Wisconsin Alternative High School is an exception. Almost one-half of the students are eligible for the free/reducedprice lunch program. However, access is limited, participation is low, and less than optimal food choices are offered due to budget constraints, finite resources and additional challenges dealing with the educational needs of students with multiple problems (Kubik, Lytle, & Fulkerson, 2004).

Children and adolescents spend most of their time in school. Schools need to provide an environment that promotes physical activity and healthy nutrition habits. Childhood obesity needs to be stopped. Reforming school lunches, eliminating food contingencies, increasing physical activity, offering a variety of nutritional options such as milk, fresh fruits and vegetables, versus soda, crackers and cookies, will begin to combat childhood obesity issues.

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