School Breakfast Program: Efficacy and Impact

A Senior Project

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Abstract

The primary goals of the school breakfast program are to reduce food-insecurity among low-income students and to decrease the growing habit of breakfast skipping. Consumption of school breakfast has been associated with improved health and academic performance. The purpose of this review was to investigate these alleged beneficial outcomes and to evaluate the program's success in promoting accessibility and participation for all students. Results showed that children who ate a school breakfast were more likely to have a healthier BMI and a broader daily nutrient intake. Participation also helped students achieve higher math and reading grades. Their teachers reported improvements in behavior, mood, and cooperation. Other benefits included fewer truancies, tardiness, and visits to the nurse's office. Research revealed that the program is underutilized when compared to participation of the national school lunch program. Eligible, food-insecure children are still not participating. In 2008, failure to reach national participation goals resulted in a loss of \$561 million in federal child nutrition funding. Increasing participation can increase access to federal funding. Program modifications, such as providing a free breakfast in-class, are practical strategies to increase participation and extend the program benefits to all U.S. schoolchildren.

Introduction

In 2008, President Barack Obama stated, during his campaign, that his national goal is to end child hunger by 2015 (Food Research and Action Center [FRAC], 2009a). This is in response to the substantial increase in the prevalence of child hunger that was reported to have breached 19% in 2008 (Census Bureau, 2009). A low-income child's access to adequate nutrition at home is becoming more limited, mostly due to the ramifications of our current recession (Story, 2009). The provision of school meals has developed into a safety net for low-income, hungry children; incidentally shifting the responsibility of nourishing the nation's children into the government's hands for at least two meals per day (USDA, 2009d).

Concurrent with this problem is the growing trend of breakfast skipping amongst school children (Siega-Riz, Popkin, & Carson, 1998). In 1998, Siega-Riz, Popkin, and Carson (1998) performed a time-trend study that revealed a significant decline in breakfast consumption for children between the years 1965 and 1991 (Siega-Riz et al., 1998). Another red flag, identified in the same study, was that breakfast skipping has become more habitual with age. The tendency to eat breakfast declined in pre-schoolers by ~5%, 8-10 year olds by 9%, and in adolescents by 13-20% (Siega-Riz et al., 1998). A review performed by Rampersaud, Pereira, Girard, Adams, and Metzl (2005), found that the breakfast skipping in the United States and Europe ranged from 10%-30% (Rampersaud, Pereira, Girard, Adams, & Metzl, 2005). Similar findings came from a study performed by Nicklas, Boa, Webber, and Berenson (1993) where they found that 16% of 10-year-olds were breakfast skippers (Nicklas, Boa, Webber, & Berenson, 1993). Numerous demographical characteristics have been suggested to explain this trend such as the diminishing occurrence of meal preparation in the home and the general lack of time for breakfast due to the increasing numbers of families with two working parents, working moms, and single moms

(Siega-Riz et al., 1998; Pearson, Biddle, & Gorely, 2009). These obstacles can be said to have evolved into a national attitude that does not prioritize breakfast consumption over other morning activities that compete with that time allotment (Siega-Riz et al., 1998; Tapper, Murphy, Lynch, Clark, Moore, & Moore, 2007).

The ultimate concern is that children from low-income families and other school children that do not consume a nutritionally adequate breakfast are deprived of the potential benefits that children who do eat breakfast profit from (Story, 2009). Research has supported that a healthful breakfast can improve a child's health status, academic performance, and psychosocial development (Murphy, Pagano, Nachmani, Sperling, Kane, & Kleinman, 1998a; Derelian, 2004; Weinreb, Wehler, Perloff, Hosmer, Sagor, & Gunderson, 2002). More specifically, eating breakfast has been associated with improved test scores, attention span, memory, mood, and reduced depression, truancy, and tardiness (Gajre, Fernandez, Balakrishna, &Vazir, 2008; Alaimo, Olson, & Frongillo, 2001). More recent research has indicated that when breakfast is eaten at school, these benefits can be enhanced (Vaisman, Voet, Akavis, & Vakil, 1996; United States Department of Agriculture [USDA], 2009d; Gleason & Dodd, 2009). Based on these findings, the lastest focus has been geared towards increasing the consumption of school breakfast for all students (Sodexo Foundation, 2008; Food and Research Action Center [FRAC], 2009). The universal-free breakfast program (UFSB) is a pilot project that has been implemented in many studies to increase program participation by making school breakfast available to all students at no cost to them. Through implementation of the UFSB, the most impressive results from this program have been observed in low-income children who were already at nutritional risk and who showed increased participation (Crepinsek, Sing, Bernstein, & McLaughlin, 2006; Kleinman, Hall, Green, Korzec-Ramirez, Patton, Pagano, & Murphy, 2002).

Because of its effectiveness in promoting SBP, the UFSB has already been funded in some states and is a possible permanent feature of the SBP nationwide (FRAC, 2009a).

The school breakfast program (SBP) is a government-assisted program that was initiated as a resolution to the problem of breakfast skipping, mainly for low-income students (USDA, 2009c). The SBP was implemented as a supplemental effort to the already successful national school lunch program (NSLP) (USDA, 2009b; USDA, 2009c). SBP improves access to an additional meal outside the home and promotes the regular consumption of a nutritionally balanced breakfast meal. It has been suggested that through the implementation of the SBP, schools can improve the health and learning potential for their student body. The most challenging factor about measuring the national impact of the program is that school administrations are not required to offer school breakfast; therefore, not all schools participate (USDA, 2009c). If students who participate can, indeed, enjoy the benefits of a healthier nutrition status and improved academic performance, then it is left to conclude that nonparticipating schools deprive their students of these benefits. The intention of this review is to investigate the potential benefits that children, ages 5-13, can receive from the school breakfast program and to evaluate the level of the program's accessibility to decide if the program is operating at its maximum efficacy for the ultimate purpose of making these potential benefits available to all U.S. students.

School Breakfast Program

Providing access to nutritious food is not a new effort organized to help people survive economic hardships. Over the last few hundred years, programs have been set up all over Europe that aim to alleviate hunger and malnourishment (USDA, 2009b). Some of the earliest evidence dates back to 1790, when American-born physicist Benjamin Thompson began a

program called the *Poor People's Institute*. This program included efforts that helped educate and feed impoverished children in Munich, Germany (USDA, 2009b). Thompson is also known for innovating the most nutrient-dense foods at a low cost to expand limited resources and feed as many people as possible. Subsequently, he is now recognized for starting one of the first soup kitchens with his famous "Rumford Soup" (USDA, 2009b). Thompson was one of many influential people who developed programs that are consistent with the goals of the federally assisted programs employed today in the United States. (USDA, 2009b). The U.S. government did not recognize a need or assume responsibility for an organized school-feeding program until the major economic downturn that occurred in 1929 (USDA, 2009c).

Program History and Purpose

It is imperative to discuss the origin of the school breakfast program (SBP) before evaluating its efficacy because the initial program purpose was different than it is today. In 1966, the SBP was launched, as a pilot project, through the authorization of the Child Nutrition Act (USDA, 2009c). As an extension of its successful predecessor, the NSLP, it provided children with breakfast in an effort to prevent skipping, promote consumption, and increase access to a nutritionally adequate breakfast for low-income children (Crepinsek, et al., 2006). In order to completely understand how the program purposes have evolved over time, it is essential to provide the historical background of the NSLP.

The Great Depression. In 1929, the American stock market crashed and U.S. citizens were experiencing the worst economic destitution in history (United States, 2009). The Great Depression was the title assigned to the time period between 1929 and the late 1930's (United States, 2009). An increase in unemployment rates left almost a quarter of the working population unemployed; while the citizens still working experienced a wage decrease of 40%-

60% (United States, 2009). Federal assistance programs were beginning to develop in response to this national state of poverty and malnutrition (USDA, 2009b). The Work Projects Administration (WPA) was a government agency created in 1935 to help people obtain work (USDA, 2009b). Many unemployed women were issued work in school food service under the WPA (USDA, 2009b). This became a highly structured program, through state involvement, in terms of meal planning and incorporating nutritional goals for the meals prepared (USDA, 2009b). Because there was no cost of labor to schools, the prices of school meals could remain low for schoolchildren during the depression period (USDA, 2009b). This was also, in part, because the school lunch program was sponsored by government-provided food donations (USDA, 2009b). Economic times were so hard that more assistance programs were formed to respond to the need. For example, The National Youth Association was established in 1935 and resorted to employing children in the school lunch program (SLP) (USDA, 2009b). The SLP's success peaked in 1942, involving almost 93,000 participating schools that served 6 million students. The supply of food donations and the inexpensive labor were the key elements in making this program work (USDA, 2009b).

The effects of the Great Depression also devastated the income of the food growers/producers because the population could not afford to buy food (USDA, 2009b). As a result, farmers suffered and had to drop food prices below their production costs (USDA, 2009b). Surplus food was going to waste, so the government stepped in to secure the farmers financially by purchasing the surplus at a discounted price (USDA, 2009b). This caused a rise in the food prices and provided (federally-funded) food to hungry people through assistance programs (USDA, 2009b). Through this transaction, the new SLP became the road to resolution

for both problems: national malnutrition and financially struggling food producers (USDA, 2009b).

World War II. The number of schools offering the school lunch suddenly deflated when the U.S. entered the war in 1941 (USDA, 2009b). Job availability increased to meet the new demands of the defense industry and U.S. surplus food was being sent overseas to support the war (USDA, 2009b). These events weakened the sustainability of the SLP and the effects began to disintegrate so much that by 1944, the number of schools offering the lunch program shrank to 34,000 (USDA, 2009b). The most obvious affirmation of how much our nation needed the SLP was when the military had to reject World War II draft soldiers due to recognized problems relating to malnutrition. This realization of the magnitude of child malnourishment became a national concern and priority because it compromised national security. President Harry Truman acknowledged these consequences of poor child nutrition status, in 1946, by stating, "No nation is any healthier than its children" (Peterson, 2006). Truman signed the National School Lunch Act that same year, which authorized the allocation of federal funds to reimburse free and reduce-priced meals provided at participating schools (USDA, 2009b). The clear initial purpose of the NSLP was to give impoverished children access to food to alleviate child hunger and to provide and promote financial security for farmers by using agricultural surpluses to sponsor the program (USDA, 2009b). This was a dual action plan that boosted the agricultural economy.

The underlying purposes of both the school breakfast and lunch programs were to improve the nutritional status of school children by expanding access to meals for all children, but more specifically to those from low-income families (USDA, 2009b; USDA, 2009c).

How the School Breakfast Program Works

The Food and Nutrition Service (FNS), a branch of the USDA, governs the school breakfast program (USDA, 2009c). The program allocates cash reimbursements to participating schools for free, reduced-price, and full-price meals (USDA, 2009c). The FNS sends money to the state education departments, which then distribute the money to local school authorities (USDA, 2009c). Schools are classified as "severe-need" if 40% of their lunches are served to free or reduced-price participants (USDA, 2009c)

Program Funding and Costs. On a national level, the FNS reported that in 2008, the SBP cost the government \$2.4 billion, feeding approximately 10.5 million participants (USDA, 2009c; USDA, 2008a). Cash reimbursement rates for the 2009-2010 for "non-severe" need schools are as follows: free (\$1.46), reduced-price (\$1.16), and full-price (\$0.26). Schools classified as "severe-need" receive an additional \$0.28 per meal (USDA, 2009c). Costs for students cannot exceed \$0.30 per meal for the reduced-price category and can vary slightly depending on the school for the full-priced participation (USDA, 2009c).

Meeting the Dietary Guidelines for Americans. Federal money is not distributed to schools that serve any breakfast. Each breakfast served must meet standards in order to receive compensation (USDA, 2009c). Qualification for reimbursements mandates that the program must be operated as non-profit, must comply with set meal costs for students, and meals must meet specific dietary guidelines (USDA, 2009). The Dietary Guidelines for Americans are used to designate the appropriate nutritional content of the school breakfast provided. No more than 30% of the meal calories may come from fat, and less than 7% of calories from saturated fat (USDA, 2009). The meal must provide ¼ of the RDA for calories, protein, calcium, iron, and Vitamins A and C (USDA, 2009). This meal standardization ensures that children are getting a

nutritionally complete meal and helps the FNS accurately measure the positive impact of the program.

Student Eligibility. A family's income, depending on the household size, is the determining factor in deciding which students qualify to participate in free and reduced-price meals (USDA, 2009c). The federal poverty level is adjusted and issued annually by the U.S. Department of Health and Human Services, which determines eligibility for several types of federal aid (USDA, 2009a). Currently, to qualify for free meals, income for a family of four must fall at or below 130% (\$28,665) (USDA, 2009a). To receive reduced-price meals, income must fall between 130%-185% (\$28,665 - \$40,793) (USDA, 2009a). There is speculation that these income levels are set too low to meet the needs of hungry children; however, annual adjustments do factor into the state of the economy when the federal poverty guidelines are set (Lambert, 2007).

Reauthorization. Every five years, through program evaluation, new goals for the school meal programs are established and used to realign the program to meet evolving needs and enhance the potential of today's schoolchildren. The most recent reauthorization of the Child Nutrition Act was in 2004 and it required that all schools participating in the school feeding programs must formulate a local school wellness policy for the 2006-2007 school year (ADA, 2006a). Each school must design a policy to include: a community component that involves school staff, parents, and the local public; a student and parent nutrition education component that promotes physical activity and school wellness activities; and nutrition guidelines for reimbursable meals consistent with the USDA's. In addition, schools must construct a self-evaluation system to measure the efficacy of their wellness policy impact (ADA, 2006a). This research paper will not cover the impact of the school wellness policy because the

implementation of this program is too recent to find substantial evidence that describes success from these policies. Wellness policy research and evaluation data would allow a more rapid assessment if schools were applying the same program activities and evaluations (ADA, 2006a).

The Reauthorization Act of 2009 is currently in congressional debate (FNS, 2009). The issues driving the focus for policy adjustments were discussed at the 2009 School Nutrition Association Annual National Conference State Agency Meeting (FNS, 2009). The key considerations for the SBP reauthorization were to increase funding, eliminate the reduced-price category, and to standardize nutritional quality for all foods sold at school (FNS, 2009). The main outcomes of interest for the reauthorization are to resolve child hunger, improve dietary intake, combat the obesity epidemic, and increase participation. The expected release for the reauthorization is in the end of 2009 (FNS, 2009).

Evaluation of the School Breakfast Program

Some key processes that are essential to maximizing the benefits from the SBP are to frequently evaluate its value to school children and tailor it to meet the evolving needs of those children. The significance of this portion is to identify our national goals, develop criteria for the evaluation of the SBP, and match the outcomes of the program to our national plan. Then suggestions can propose more cost-effective ways to reach more students, in hopes of improving the overall health and learning environment for school children. This evaluation will measure the SBP's efficiency in promoting optimal health, academic performance, and psychosocial development. Also measured will be the accessibility to and participation of school-aged children. These criteria are consistent with our national goals of ending child hunger and promoting the overall potential of child development (FNS, 2009).

Potential Benefits

In 1917, the Surgeon General exclaimed, "This is an expensive stupidity...trying to educate children with half-starving bodies" (Sodexo Foundation, 2008 p. 13). The same acknowledgment was stated in The Child Nutrition Act of 1966 (2009):

"In recognition of the demonstrated relationship between food and good nutrition, and the capacity of children to develop and learn...it is hereby declared to be the policy of Congress that these efforts shall be extended, expanded, and strengthened...as a measure to safeguard the health and well-being of the Nation's children...to meet more effectively the nutritional needs of our children" (USDA, 2009e, p. 2).

Even before evidence-based research was conducted, important American leaders were convinced that good nutrition is essential for effective child education and development.

Research has proven a strong relationship between eating breakfast and improvements with child health, academic performance, and psychosocial development (Nicklas et al., 1993; Derelian, 1994; Murphy et al., 1998a). Recent studies have explored the impact of the SBP on these specific outcomes. The implications are that the timing of food intake, the nutritional quality and quantity of food served, and the increased access to the breakfast meal are all factors that make the impact of the program more powerful (Vaisman et al., 1996; Crepinsek, et al., 2006).

To simplify the complexity of the research comparisons, the findings from primary research studies will be presented first, followed by a discussion of two more elaborate evaluations performed by the Food Research and Action Center (FRAC) and Sodexo Foundation

The research conducted on the potential benefits of school breakfast consumption will focus on schoolchildren, ages 5-13 years. There are two reasons to exclude the breakfast habits

of high school students. First, teenagers are psychologically capable of engaging in compensating behaviors, such as smoking, that can mask hunger symptoms (Derelian, 1994). Second, the tendency to skip breakfast grows with age. So, the inclusion of high school students' breakfast habits could skew the findings of potential benefits kids can receive from eating a school breakfast (Siega-Riz et al., 1998).

Student Health. The most noticeable improvement in health, as a result from school breakfast participation, is seen in children from low-income families. These students are less likely to consume a healthful diet due to food insecurity; therefore, improvements in health are observed more rapidly than in children who are food secure (Story, 2009).

Findings have demonstrated that school breakfast participation is associated with improvements in nutrient status. A study performed by Nicklas et al. (1993) demonstrated that 10 year-old children who ate breakfast at school had a higher average daily intake of calories (2,326 kcals) than kids who ate breakfast at home (2098 kcals) or ate no breakfast at all (1821 kcal) (Nicklas et al., 1993). Children who skipped breakfast made up for those calories by consuming more calories during lunch and dinner (Nicklas et al., 1993). Trained interviewers collected the data by administering a 24-hour recall. Another study by Kleinman, Hall, Green, Korzec-Ramirez, Patton, Pagano, and Murphy (2002) supported these results. Their study measured the students' nutrient intakes before and after the implementation of a universal free SBP (USBP) by comparing 24 hour recall data collected through child and parent interviews to the Recommended Daily Allowances (Kleinman, Hall, Green, Korzec-Ramirez, Patton, Pagano, & Murphy, 2002). They found that before the USBP, 40% of the students studied were at "nutrition risk," which was defined as consuming less than 50% of the RDA and/or two or more of the micronutrients were less than 50% of the RDA (Kleinman et al., 2002). After the USBP

was provided, 44 students increased their participation and 32% of these students showed an improvement in nutrition status (Kleinman et al., 2002).

Another finding is that regular SBP participation can be a predictor for healthy weight maintenance (Gleason & Dodd, 2009). Gleason and Dodd's (2009) found that 2/3 of the students usually ate a school lunch while 62% of students did not eat a school breakfast (Gleason & Dodd, 2009). The difference between breakfast participation, from one school to another, is typical and consistent with findings discussed later (USDA, 2009d). Usual participation was defined as eating a meal at school at least three days per week (Gleason & Dodd, 2009). The results were that for every school breakfast meal eaten per week, there was a statistically significant 0.15 point drop in body mass index [BMI] (P<0.05) (Gleason & Dodd, 2009). The participation in the NSLP was related to a higher BMI, but results were not significant (Gleason & Dodd, 2009). Research data included the SNDA-III, interviewer-hosted 24-hour recalls, and student and parent surveys (Gleason & Dodd, 2009). The researchers attributed their results to a more balanced nutrient intake throughout the day. Their study found no evidence that children who eat school breakfast had a change in diet intake that would contribute to a lower BMI (Gleason & Dodd, 2009). More research is expected to study the relationship between BMI and school meal participation in response to the nation's child obesity epidemic (Story, 2009).

Gleason and Dodd (2009) suggested that regular breakfast consumption could sculpt healthy meal patterns for children (Gleason & Dodd, 2009). More evenly distributed energy and nutrient intakes may contribute to a healthier weight maintenance and nutrient status (Gleason & Dodd, 2009). Pollitt's (1995) review established that an overnight fast followed by breakfast omission in the morning, which is a short-term lack of nutrient intake, has delaying effects on child performance because it can impair cognitive function (Pollitt, 1995).

In 2006, a study titled "Dietary Effects of the Universal-Free School Breakfast: Findings from the Evaluation of the School Breakfast Program Pilot Project" had similar and contradicting results to the studies regarding dietary intake (Crepsinek, et al., 2006). A 3-year experimental study was conducted that divided the study population into two groups. Group A was the control, where students carried out their usual breakfast habits (Crepsinek, et al., 2006). Group B received the intervention, where students were provided with a free school breakfast (Crepsinek, et al., 2006). Group B was instructed to avoid eating any food in the morning before the school breakfast (Crepsinek, et al., 2006). Results showed that the overall dietary intake was not significantly different between groups A and B, but Group B was more likely to eat a nutritionally substantial breakfast. Eating breakfast was defined as any liquid or solid intake, excluding caffeine, between 5:00 a.m. and 10:30 a.m. A nutritionally substantial breakfast was defined as intake of at least 2/5 food groups and a caloric intake that exceeds 10% of the Recommended Energy Allowances (REA) (Crepsinek, et al., 2006). Dietary intake was measured as calories, macronutrients, and micronutrients (Crepsinek, et al., 2006). Data were collected through an interview-hosted 24-hr recall and a combined student and parent interview. A secondary 24-hour recall was performed on a subset of the subjects. In conclusion, the consumption of a nutritionally substantial breakfast, most commonly found at school, can lead to a wider nutrient intake at breakfast and the habit formation of a healthy distribution of nutrient intake throughout the day (Gleason & Dodd, 2009; Nicklas et al., 1993).

Another benefit of eating school breakfast is the prevention of hunger. Weinreb et al. (2002) studied the outcomes of hunger in school-aged children and found that hungry children are more likely to be chronically ill than children who do not experience hunger (3.4 for hungry children vs. 1.8 not hungry children) (Weinreb et al., 2002). Chronic illness was assessed

through maternal interview and was scored on a scale of 0-35. A higher score indicates that a child has a higher number of chronic illnesses. Symptoms of hunger, like an upset stomach, can also disrupt regular attendance and punctuality (Derelian, 1994; Weinreb et al., 2002). Therefore, reducing child hunger by providing a regular breakfast can help to reduce chronic illness, short-term symptoms from hunger, absences, and tardiness.

Academic Performance. Pollit (1995) and Weinreb et al. (2002) have proven that alleviating child hunger can improve cognitive function (Pollit, 1995; Weinreb et al., 2002). It is also safe to assume that any research that provides evidence of improved nourishment, as a result from the SBP, also supports an increase in a child's cognitive capacity (Pollit, 1995). Studies presented in this section will range drastically in measurement tools used to study academic performance and in outcome definitions. The abundance of research shows that school breakfast participation improves cognition, memory, attention, and grades.

Findings from Vaisman, Voet, Akivis, and Vakil (1996) demonstrated that schoolchildren who ate food closer to the test-taking time performed better than students who ate breakfast two hours prior to taking the test (P<0.04) (Vaisman, Voet, Akivis, & Vakil, 1996). Subjects were upper elementary students, ages 11-13 years old (Vaisman et al., 1996). On the day of the study, the children filled out questionnaires about their breakfast intake that day and were given the Rey Auditory-Verbal Learning Test between 8:55 and 9:35 a.m (Vaisman et al., 1996). Then the children were broken up into two groups where, for 14 days, Group A assumed its normal breakfast habits and Group B was instructed not to eat breakfast and was fed a sugary cereal and milk between 8:00 and 8:20 a.m. (Vaisman et al., 1996). Both groups filled out another questionnaire and were tested again (at the same time) (Vaisman et al., 1996). The Rey Auditory-Verbal Learning Test measures immediate recall, best learning, mean learning,

proactive inference, retroactive inference, delayed recall, recognition, temporal order, story, and picture (Vaisman et al., 1996). All trials showed statistically significant results except for immediate learning and proactive interference. These findings are attributed to the timing of the increase in blood glucose, which supports Pollitt's theory of preventing the stress response that disrupts normal cognition in children (Vaisman et al., 1996; Pollitt, 1993). Based on these findings, it is more likely that a student who eats breakfast at school will have a better performance than a student who eats an earlier breakfast at home (Vaisman et al., 1996).

A personal interview with Blanca Kalinowski, a second grade teacher, supported another reason of why eating breakfast closer to class time is important. She described that most teachers create lesson plans that place the more cognitively demanding classes (ie. reading and math) in the morning, while reserving less demanding classes (ie. music, physical education, and art) for after lunch. Kalinowski explained that, in her experience, children who have not eaten breakfast are more disruptive and have difficulty focusing during the morning classes (B. Kalinowski, personal communication, November 26, 2009).

A cross-sectional observation study made a case for improved math scores. Students' math scores were evaluated at base line and four months after the implementation of the USBP. Of the 42% of students that increased their participation, there were significant improvements in math grades (P<0.001) (Murphy, et al., 1998). Another study performed by Kleinman et al. (2002) also investigates the test scores before and after USBP was administered (Kleinman et al., 2002). In this study, data collection included grades for math, reading, social studies, and science. A statistically significant relationship was only found between an increased nutrient intake, as the result of eating school breakfast, and improved math scores (Kleinman et al., 2002).

Psychosocial Health. Research has shown that child hunger can cause problems such as anxiety, depression, hyperactivity, and other behavioral problems (Weinreb et al., 2002; Alaimo, Olson, & Frongillo, 2001). There are a few ways to evaluate a child's psychosocial status. The first is the Pediatric Symptom Checklist [PSC], which can be completed by the student or the parent (Kleinman et al., 2002). The Children's Depressive Inventory [CDI] measures depressive symptoms (Murphy et al., 1998). Revised Children's Manifest Anxiety Scale [RCMAS] screens for symptoms of anxiety (Murphy et al., 1998). The last measure is the Conner's Teacher Rating Scale-39 [CTRS-39], which includes the Hyperactivity Index, screens for hyperactivity and other behavioral problems (Murphy et al., 1998). Higher scores indicate a problem for the CTRS-39, RCMAS, CDI, and PSC.

Kleinman et al. (2002) found through the PSC that students who improved their nutrition status by participating in the USBP had a decreased score on their self-reported PSC test (P< 0.01) (Kleinman et al., 2002). Other research found that students who increased their participation in the USBP decreased their scores on the CTRS-39 (P<0.01), CDI (P<0.01), RCMAS (P<0.05), and PSC (P<0.05) (Murphy et al., 1998).

Truancy and Tardiness. Kleinman et al. (2002) categorized truancy and tardiness as affecting academic performance, while Weinreb et al. (2002) saw these factors more related to health and mental health (Kleinman et al., 2002; Weinreb et al., 2002). If a child is absent or late due to illness or because of mental or behavioral complications, the academic performance can be compromised because if a student misses class, they miss instruction on material they will soon be tested on.

A study performed by Kleinman et al. (2002) found that children who improved their nutritional status through increasing participation in the USBP showed a significant reduction in

number of absences (P<0.01) (Kleinman et al., 2002). Another study showed that students who increased their participation in the USBP decreased their absenteeism (P<0.001) and tardiness (P<0.01) (Murphy et al., 1998). Simultaneously, researchers found that participating children also had decreased incidences of stomachaches and headaches, resulting in fewer absences, tardiness, and nurse's office visits (Sodexo Foundation, 2008; Derelian, 1994).

A Summary of FRAC's Evaluation. The Food Research and Action Center (FRAC) is a nonprofit organization that focuses on resolving national hunger and malnutrition by working with the network of government agencies of all levels to improve and innovate new policies (FRAC, 2009a). FRAC believes that the SBP can help improve children's diets and can reduce child obesity. These outcomes are attributed to the SBP's required adherence to strict regulations of the nutritional value and size of the meals served (FRAC, 2009a). The organization also rationalizes that breakfast omission causes overeating during later meals, and encourages breakfast consumption to promote the development of healthful meal habits (FRAC, 2009a). FRAC reviewed research showing that academic performance is enhanced when school breakfast is consumed (FRAC, 2009a). A nutritionally balanced breakfast can help a child achieve better scores on math tests and standardized tests (FRAC, 2009a). Improvements were also mentioned in vocabulary skills and memory (FRAC, 2009a). FRAC also supports the idea that a child's psychosocial health is dependent on the consumption of a nutritionally balanced school breakfast. They discovered that students who participate in the SBP have fewer absences, tardiness, discipline, and behavioral problems (FRAC, 2009a). FRAC concluded that the SBP is, indeed, successful in improving health status, academic performance, and psychosocial health (FRAC, 2009a).

A Summary of the Sodexo Foundation. The Sodexo Foundation is an organization that focuses on raising awareness for national hunger and poverty (Sodexo Foundation, 2008). In the Impact of School Breakfast on Children's Health and Learning (2008), Sodexo collected over one hundred research articles that they used to make inferences from (Sodexo Foundation, 2008). They found that the SBP is highly effective in preparing children for learning and retaining information, increasing the likelihood that children will eat more nutritious meals, helping children lead more healthful lives (physically and psychologically) (Sodexo Foundation, 2008). Improvements were seen attendance, punctuality, concentration, awareness, and energy. They also found participants increased scores in math, reading, and standardized tests. There were fewer complaints, in the health office, of illness related to hunger such as stomachaches, and dizziness (Sodexo Foundation, 2008). Studies also have indicated that student participation is associated with better behavior and an increased response to discipline (Sodexo Foundation, 2008). Sodexo acknowledged there were many inconsistencies with the study design in the research considered such as different assessments and data collection of school breakfast consumption and potential outcomes. Despite these variations, Sodexo concluded that collective research indicates a strong relationship between improved academic performance and health status are potential benefits from the SBP (Sodexo Foundation, 2008).

Impact on Meeting the Need: Participation

Early meal program evaluations equated a successful program with growing participation numbers (USDA, 2009b). Current evaluation needs to assess the programs competence in meeting the need of its target population. In 2008, 8.5 million students participated in the SBP, while 16.7 children were food-insecure that same year (USDA, 2008a; FRAC, 2009b). These lingering problems imply that the SBP, although successful, is not at its maximum utilization.

Evaluation of program participation can identify the growth rate of the program, the current impact it has, and areas that are open for strengthening strategies to open access to needy students and encourage overall participation.

Who is the Typical SBP Participant? Data show that children who participate in the SBP are a smaller subset of the NSLP (USDA, 2009d). Although eligibility criteria are the same for both programs, there are more reduced-price and full-price participants in the NSLP, even in schools that offer both programs (USDA, 2008 b; USDA, 2009d). The NSLP has not reached capacity of meeting 100% of the needy/eligible (USDA, 2009d). SBP has less than half the participation that the NSLP receives (USDA, 2009d). Table 1 displays the most recent student participation rates and shows the discrepancy between free and reduced-price meal participants when comparing both programs (USDA, 2008a; USDA, 2009b).

Table 1. Summary of Participation Comparison: NSLP and SBP

	Student participation (million)	Free and Reduced-Price Total % participation
2007 NSLP	30.1	59.3
2007 SBP	10.1	80.6
2008 NSLP	31.1	60.1
2008 SBP	10.7	80.6

Recent data from FRAC (2009a) reported that in the 2007-2008 school year, 45.9 students ate a school breakfast for every 100 students who ate school lunch (FRAC, 2009a). With NSLP participation rates setting the golden standard for this evaluation, these results indicate that out of the eligible low-income students participating in the NSLP less that half of those students are participating in the SBP (FRAC, 2009a). The evaluation of the participation could end here, concluding that the program is not successful, but more facts are needed to expose the weak areas of the program's implementation and promotion.

School Participation in the SBP. The USDA (2009) reported that in 2008, more than 85,000 public and private schools, and child care facilities offered SBP (USDA, 2009d). The national school lunch program currently has 101,000 participating schools (USDA 2009f). School participation is an administrative choice made by schools to build a school breakfast program that is compliant with federal guidelines in order to obtain reimbursements (USDA, 2009c). FRAC (2008) stated that school SBP participation increased from 48.8% (1991) to 85.7% (2008), with an increase of 900 schools offering breakfast just within the last year (FRAC, 2009a). The same evaluation found that states that already had an elevated school participation rate correspondingly had high student participation (FRAC, 2009a). Forty-two out of fifty states had school SBP participation rates over 75% (FRAC, 2009a). In FRAC's (2009a) evaluation, the negative consequences of sustaining low SBC participation rates are exposed. FRAC is responsible for determining a goal value (a unit of measurement) of participation for each state to strive to meet. If these goals are met on a national level, the federal government will allocate more funds to accompany the reimbursements (FRAC, 2009a). The goal value is a ratio of SBP: NSLP participation (FRAC, 2009a). The example FRAC gives to explain how this works is that if all of states had obtained a 60:100 ratio in 2007-2008, an additional \$561 million dollars would have been disbursed amongst participating schools (FRAC, 2009a).

The problem is stated best in the School Breakfast Scorecard 2008: "Leaving federal dollars to feed low-income children untapped is fiscally irresponsible and poor public policy" (FRAC, 2009a, p. 7). This remark is a powerful illustration that shows there is still a high capacity for more SBP participation and that more time and energy needs to be spent in promoting the access to and participation in the program (FRAC, 2009a). On a side note, this type of federal incentive based on cooperative state progress begs for standardization in

implementation and promotion of the SBP. This would allow states to network strategies and mimic successful applications to instill individual state confidence that this national goal is obtainable by everyone.

Student Participation in the SBP. The USDA (2009d) characterizes the school breakfast participant as: economically vulnerable, eligible for free or reduced-price meals, and coming from rural neighborhoods. Also the participant was more likely to be nonwhite and male.

During the 2007-2008 school year, the ratio of low-income meals served was 8.5 mil SBP: 18.5 mil NSLP. The ratio for % of low-income participation was 60.1% SBP: 86% NSLP (USDA, 2009d). FRAC (2009) reported that the 2008 national ratio was 45.9 SBP/100 NSLP participants (FRAC, 2009a). In summary, less than half of the students that participate in the NSLP eat a school breakfast and 86% of the students that do eat school breakfast are low-income. Also, from 2007-2008, participation increased 3% in the SBP and 5% in the NSLP (USDA, 2008a; USDA, 2009b). The mission now, is to decide why NSLP has a more significant increase in participation, particularly in students that are not economically vulnerable, while the SBP participation remains slow growing in comparison.

The Sodexo Foundation's Evaluation of Participation. The Sodexo Foundation does not specifically state that the SBP has fallen short of meeting the needs of qualified, food-insecure children, but they do claim that there are 10 million eligible children who still do not consume school breakfast (Sodexo Foundation, 2008). Sodexo points out that the consequences of an underutilized program are more costly to the national public than realized (Sodexo Foundation, 2008). Through the failure of meeting federal SBP participation goals, states lose federal funding that is set aside for school feeding programs and local taxpayers wind up having to pick up the slack (Sodexo Foundation, 2008). The other consequence of not offering school breakfast

results in the deprivation of future generation's optimal health and academic performance, which can generate a nationwide financial burden due to future increases in food-insecurity and chronic illness (Sodexo Foundation, 2008). These two consequences both pose a "hidden" financial burden on the American population (Sodexo Foundation, 2008).

The USDA's Evaluation of Participation and Impact. The USDA (2009) performed an evaluation to determine the next step in program reform (USDA, 2009d). The USDA found that school participation has not been maximized and program implementation is inconsistent (USDA, 2009d). They also discovered that the student participation is short of what it should be, which indicates that the program is underutilized, specifically among food-insecure children (USDA, 2009d). They found that on any given day only about 18% of eligible students ate a school breakfast (USDA, 2009d). This number was compared to the 62% of students that typically participate in the NSLP (USDA, 2009d). The USDA recommended that schools with pre-existing high NSLP participation should be targeted as good candidates for the implementation of a well-developed SBP, because most of the school breakfast eaters are often the most food-insecure (USDA, 2009d).

The USDA found that the SBP was extremely valuable because it enhanced food-security, decreased the prevalence of breakfast skipping, and promoted healthier meal patterns (USDA, 2009d). The USDA recognized that an extension of these benefits included improved health and cognitive status (USDA, 2009d). These improvements were more commonly seen in students from low-income families.

Through this evaluation, the USDA established a need to market the program to noneligible students, in an effort to decrease the breakfast skipping trend (USDA, 2009d). The recommended strategies to increase participation of all students were to develop a more structured program to implement, to offer free breakfast to all students (UFSP), to increase convenience for access to breakfast, to provide an appropriate amount of meal time, and to designate a location for breakfast to be served (USDA, 2009d). The most effective, specific, strategy that the USDA trialed, to improve participation, was the combination of the in-class, universal-free school breakfast program (USDA, 2009d).

USDA reported two limitations in their research. The first was that their studies were limited to third-graders (USDA, 2009d). The second was that since the parents supplied breakfast participation, the participation data might be overestimated (USDA, 2009d).

Summary of the Overall Impact. There has been a substantial improvement in school and student participation in the SBP. A timeline of total SBP student participation starts at 1.8 million in 1975, 5 million in 1993, and advances to 10.6 million in 2008 (USDA, 2008a).

Despite the success that these numbers imply, the participation does not match up to the 31.0 million students participating in the NSLP (USDA 2008b). Overall, the program has substantially grown, offering health, mental health, and academic benefits to its participants, but it has not been successful in resolving the national problems of child hunger and breakfast skipping (USDA, 2009d). The USDA (2008) reported that 8.5 low-income children participated in the SBP in 2008, while a total of 16.7 million children were reported as food insecure that same year (USDA, 2008a; FRAC, 2009b). One aspect of the national problem that the SBP is not currently confronting is the rise in breakfast skipping that ranges from 12%-34% (Rampersaud, 2005.)

Problems with Study Design

It is important to point out how much variation there is in data collection for this field of research. Only statistically significant evidence was represented in this research. One of the

biggest problems with the study design is the varying definitions of the exposures and outcomes such as breakfast, breakfast skipper, participation, and nutritional status. For example, one study defined breakfast as the intake of any non-caffeinated food or beverage, while breakfast intake can mean so many things (Crepsinek et al., 2006). This makes comparing study results very difficult (Rampersaud, 2005). Most of the studies used 24-hr dietary recalls by interviewing parents and/or students to measure nutrient intake and caloric intake (Crepsinek et al., 2006; Gleason & Dodd, 2009; Kleinman et al., 2002). Two concerns that may affect the results of this data collection method are that it does not reflect the subject's typical diet and the parent or student may respond with answers that they think the interviewer is looking for (Nelms, Sucher, & Long, 2007). Tighter experimental study designs and universal units of measurement would allow researchers make stronger cause and effect conclusions when searching for correlations between SBP and its potential benefits.

Discussion

The School Breakfast Program has evolved with the changing needs of children it serves. It has grown in participation rates and has boosted the health, academic performance, and mental health of its participants. However, these advancements have not ascended to achieve the national goals: to resolve food insecurity and to promote overall breakfast consumption. Effort should be concentrated on how we can increase the coverage of this effective program in a cost-effective way.

<u>Identifying Barriers to the SBP</u>

A conversation with a second grade teacher, Blanca Kalinowski, uncovered a barrier that affects the general participation of meal programs. She stated that many students and adults

perceive that school meal programs are only for children from low-income families. She explained how this belief creates an atmosphere of social stigma for children who want to participate. So, even children who are food-insecure may opt not to participate in fear of being rejected by their peers. Kalinowski added that parents who are embarrassed of their income might fail to complete paperwork that would grant their child eligibility to access the meals (B. Kalinowski, personal communication, November 26, 2009). The inability to find data on whether this social stigma had a heavier effect on breakfast participation than on lunch prevents the conclusion that this barrier would be a reason that NSLP growth has surpassed the growth of the SBP. The most effective way of removing this barrier is to apply the UFSB during class time. That way, no students have to qualify for meals and they all eat breakfast together (USDA, 2009d).

The offering of other foods during the school day can greatly affect the participation of the SBP. The term "competitive food" can apply to any food and beverage offered in school that is not part of the meal program (Gross & Cinelli, 2004). The government has further categorized these foods by their nutrient content or lack there of (Gross & Cinelli, 2004). For example, "foods of minimal nutritional value" (FMNV) contain less than 5% of the DRI for eight nutrients (Gross & Cinelli, 2004, p. 795). Examples of FMNV foods are candy and sodas. Schools are forbidden from selling these foods in the same location and at the same time as school meal programs. (Gross & Cinelli, 2004). These foods can be found in locations such as snack bars and vending machines (Gross & Cinelli, 2004). Even though the sale of these foods is restricted, other poor food choices are still available on campus such as donuts, chips, and cookies (Gross & Cinelli, 2004). These foods are often processed foods that are marketed towards children and contain excess amounts of sugar, calories, and fat (Gross & Cinelli, 2004). The mere existence

of these foods, in the school food environment, are obstructive to the goals of school meal programs because children often view these foods as more palatable than school provided meals (Gross & Cinelli, 2004).

There are many other reasons, however, why SBP participation might be slow growing. Not all schools offer a school breakfast program (USDA, 2009d). Timing conflicts and school arrival time variance can interfere with access to a school breakfast program (FRAC, 2009a). Some children may routinely eat breakfast at home with their family. Modern day adult attitudes towards breakfast consumption may influence similar habits in children (Reddan, Wahlstrom, & Reiks, 2002; Lambert, Raidl, Carr, Safaii, & Tidwell, 2007). A change in students' attitudes towards eating breakfast and education to promote the benefits of breakfast could dramatically improve participation in the program (Reddan et al., 2002).

Student Perceived Barriers. Reddan et al. (2002) exposed the top reasons why schoolchildren do not participate in school breakfast when they performed a study that involved 1,442 fourth, fifth, and sixth graders (Reddan et al., 2002). The first, most obvious barrier reported was that the school administrations did not offer breakfast (Reddan et al., 2002). Particularly in these schools, the implementation of the USBP pilot dramatically led to increased participation for low-income children (Reddan et al., 2002; Rampersaud et al., 2005; Tapper et al., 2008). Because students did not report low finances as a barrier, it can be speculated that the USBP, in this case, alleviated the social stigma by making the breakfast free for everyone; therefore, resulting in improved participation (Tapper et al., 2008).

The second barrier students reported was not feeling hungry in the morning (Reddan et al., 2002). The study revealed that 157/1442 students skipped breakfast often because they weren't hungry (Tapper, et al., 2002). This comment may be a reflection of the child's parents'

breakfast behaviors and attitudes that have influenced the childrens' meal patterns and internal cues of hunger (Tapper et al., 2007).

The third barrier exposed student concern about breakfast eating and weight maintenance (Reddan et al., 2002). This finding is a possible reason why boys are more likely to participate in SBP than girls (USDA, 2009d). Study results showed in an age range of 1/3 of students reported dieting often or sometimes. Part of the dieting practice, for these students, was omitting breakfast (Reddan et al., 2002).

The fourth barrier was the student's general attitude toward breakfast. This could be a result from the social stigma involved in being seen eating school breakfast, the desire to eat a meal with friends, or the tendency to only eat breakfast if their friends choose to eat breakfast (Reddan et al., 2002). Timing conflicts are the last reported barrier that has the biggest impact on the likelihood of a child eating a school breakfast, so it deserves a more thorough discussion (Reddan et al., 2002; USDA, 2009d; Tapper, 2007).

There are many reasons and events that interfere with a child's ability to eat a school breakfast that are out of their power to control (Reddan et al., 2002; USDA, 2009d; Tapper, 2007). A list of student reported timing conflicts that interfere with SBP participation are sports practice and other pre-class activities, school arrival time, bus schedules, and inadequate mealtime (Reddan et al., 2009). This area has become a primary focus and a reason for launching pilot projects, which trial new ways for schools to overcome these barriers. For example, school districts in Kentucky and Kansas require that bus schedule operate in allowance for school children enough time to engage in the breakfast mealtime (FRAC, 2009a; USDA, 2009d).

School Food Authority Perceived Barriers. An even more enlightening perspective is that of the teachers' and school nutrition directors' (SND) perceived advantages, disadvantages, and barriers to participation. A study by Tapper et al. (2007) brought together representatives from these two professions to form focus groups that explored ways to promote school breakfast consumption (Tapper et al., 2007). The advantages of the SBP they agreed upon were that students could eat a palatable, nutritious meal in a safe and social environment (Tapper et al., 2007). SND's and teacher's perceived disadvantages and barriers differently because of the level of program complications they were exposed to (Tapper et al., 2007). SND's reported frustration when trying to coordinate adequate meal times with the pre-class activities that students participate in and bus schedules (Tapper et al., 2007). Also complained of was a lack of support from the school staff in implementation and promotion of the program (Tapper et al., 2007). Teachers commented on the lack of quality and palatability in the meals provided affected the likelihood of participation (Tapper et al., 2007). Many teachers also complained of the low nutritional value of the meals served due to high sugar, fat, and sodium content (Tapper et al., 2007). Teachers agreed that some students did not participate because they were afraid of being labeled "low-income" (Tapper et al., 2007).

The most effective way to evaluate a program's efficacy and to identify its shortcomings is to collect opinions from people who administer the program and from the children who are the population that it serves. The next step is to tailor the program to be more practical for school meal providers and more accessible for students.

Strategies to Improve the Accessibility and Utilization

There are three strategies worthy of mention. The most sensible SBP project proposals have been the grab-and-go breakfast, the in-class breakfast, and the universal-free breakfast. The intentions of these strategies are to better meet our national goals of reducing child hunger by improving access and through the promotion of regular consumption of breakfast for all students.

The Grab-and-Go. A practical way to overcome the time conflict barrier is to hand out a quick breakfast on the bus or the way in to school (Tapper et al., 2007). The contents would be a nutritionally balanced meal that is conveniently designed to be eaten while on the bus, walking to class, or to be snacked on during class (Tapper et al., 2007).

In-Class School Breakfast. The in-class school breakfast seems to be the most effective and practical of the proposed solution (USDA, 2009d). This would require cooperation from the teachers to sacrifice a portion of their instruction time to have the meal administered (Tapper et al., 2007). President Obama recently suggested an extension of the school day and year length (Metha, 2009). The enforcement of a policy like this, teachers may be more welcoming to the in-class breakfast concept because it would take time away from their lesson plan. This solution would reduce the timing conflicts, the social stigma, and omission of breakfast (Tapper et al., 2007; USDA, 2009d). This project could pose a conflict for parents for two reasons: they don't value the breakfast meal or they prefer to have breakfast with their children at home (Tapper et al., 2007). Parents may also be concerned, since overeating is a problem among children, that their child might eat two breakfasts (Tapper et al., 2007). Special exceptions may have to be made for these instances if an in-class SBP is mandated.

Universal Free School Breakfast. The most tested and successful solution is the USBP. The concept was initially used to test the relationship between income and participation and

beneficial outcomes and participation. Because the UFSB increase student participation and reimbursements are based on this value, the UFSB pilot program was changed from an evaluation tool to a possibly mandated solution (USDA, 2009d; Crepsinek et al., 2006; Murphy et al., 1998; Kleinman et al., 2002). The highest increases in participation of the SBP have been seen through implementation of the UFSB (USDA, 2009d; FRAC, 2009a; Sodexo, 2008). In fact, five states are currently allocating money for the implementation of the UFSB to increase access to all students (FRAC, 2009a). Cost-benefit analysis and careful planning will be required to make UFSB a reality on a nationwide level. Currently the funding might be low, but if participation goals are met on a national level, the monetary rewards may produce a sustainable breakfast program (FRAC, 2009a).

Recommendations

School Meal Programs: An Opportunity for Educating Children. Many publications that discuss child nutrition mention the problems with the food choice choices that children make and report on the consequences of these choices. What is not advertised is the pressure we should put on schools to encourage better food choices. Children should be provided with a school food environment that offers food choices that are consistent with what children are taught to be healthful for them (Gross & Cinelli, 2004). The school meal programs should be viewed as an opportunity to educate and eventually change the way Americans eat through continuous child exposure to smart food choices, balanced meals, and healthful meal patterns (Gross & Cinelli, 2004).

The problem is that many school districts resort to signing contracts with outside food companies (competitive foods) because these companies offer large amounts of money to the administrations (Gross & Cinelli, 2004). School meal service in a nonprofit operation and

selling outside foods can provide an opportunity to generate revenue for the school (Gross & Cinelli, 2004). These competitive foods often contain a lot of sugar, fat, and calories and are very popular among children because they like the taste (Gross & Cinelli, 2004). The act of restricting FMNV availability during meals times is admitting that these foods are disruptive to school meal participation and are not considered acceptable food alternatives to meals (Gross & Cinelli, 2004). Any further school administration acceptance of these contracts with outside companies should be viewed as favoring profits over child health (Gross & Cinelli, 2004). We cannot change how the nation's children eat unless we stop providing them with food that we routinely teach them is bad for them.

Some reasons why schools are a perfect environment for changing American eating patterns are as follows: most (95%) of children under the age of 17 years are enrolled in school, "less than ½ of students eat one meal at school," "less than 10% of students eat two meals at school," and children spend an average of 6.7 hours of their day in school (Gross & Cinelli, 2004, p. 795; National Center for Education Statistics, 2004). This is a perfect opportunity to teach children how to be aware of marketing schemes and instill the importance of healthy meal consumption (Gross & Cinelli, 2004).

Recommendations for SBP. Based on the success of the universal-free school breakfast program, particularly when meals are served in-class, this strategy assumes the most effectiveness in increasing participation in all children because it works past multiple barriers (USDA, 2009d; Sodexo Foundation, 2008). Further research will be required to evaluate methods that will help this approach utilize the federal funds more responsibly (FRAC, 2009a). Synchronizing SBP applications and promotion efforts can, perhaps, provide more consistency in response to the findings of the USDA (2009) evaluation (USDA, 2009d). However, some room

should be left for tailoring each program to each school because some student bodies might respond better to certain applications than others. This concept is exemplified through the reauthorization of 2004 (ADA, 2006a; Gross & Cinelli, 2004). Lastly, in support of the 2004 reauthorization, community, staff, faculty, parental, and student involvement are all part of the symbiotic equation that is crucial to the effectiveness of the SBP (ADA, 2006a).

Conclusion

Since the initiation of the SBP, low-income students have benefited from the increased access to the breakfast meal, which has lead to an increase in participation among this population. However, efforts must be made to extend these benefits to all children (USDA, 2009d). Participation in the SBP can improve a child's health, academic performance, and psychosocial development. It can also reduce the prevalence of child hunger and breakfast skipping in children from low-income families (Rampersaud, 2005). Although effective in these areas, the program does not currently meet the demand for resolving food insecurity and is not reducing breakfast skipping among all students (USDA, 2009d; FRAC, 2009a). Program modifications such as providing a free breakfast to all students during class time, are necessary amendments to promote its participation so that all U.S. children can access the positive benefits from which the school breakfast program has to offer.

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