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A LITERATURE REVIEW ON THE RELATIONSHIP BETWEEN SCHOOL FUNDING
AND CHILDHOOD OBESITY

By

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A Capstone Literature Review
In partial fulfillment of the requirements
For Liberal Studies LS400
Senior Capstone: Review and Synthesis

California State University Monterey Bay
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ABSTRACT

This capstone literature review will aim to investigate the correlation between childhood obesity and school finances by looking at incentives, budget cuts and other relative information that may link the two together. Variables including environment, advertising, regulation, and funding are all addressed and analyzed in this literature synthesis.

INTRODUCTION

Childhood obesity has been a national epidemic and the focus of increasing attention and alarm for numerous years. Currently, the Centers for Disease Control and Prevention report that based on the results of a 1999-2002 study there are an estimated 16 percent of children and adolescents between the ages of 6-19 years that fall into the obese category (2007). The term obesity is classified as the excessive accumulation of adipose tissue to the extent that one's health becomes impaired (CDC, 2007). The existing method for determining obesity is the use of the Body Mass Index also known as the BMI. BMI values above the 95th percentile of the sex-specific BMI are considered to be in the obese or overweight range (CDC, 2007). Although obesity is a very difficult health concern to battle, it is necessary to identify which variables contribute to the growing epidemic beginning with school influences. Factors such as environment, advertising, regulation, and funding are all believed to be major contributors to the growing childhood obesity problem.

LITERATURE REVIEW

Environment

Environmental factors have been closely linked with the increasing number of childhood obesity cases. In fact, environmental conditions have wholly discouraged physical activity while at the same time explicitly encouraging increased consumption of greater quantities of energy-dense, high caloric foods (Hayne, Moran, Ford 2004). Even in schools, the United States has constructed a food environment that constantly bombards consumers with advertisements which promote and encourage the consumption of unhealthy foods. In addition, these advertisements do not properly present the consumer with adequate nutritional information (Hayne et al. 2004).

The school environments in the United States make accessing unhealthy food particularly easy for students. Purchasing sugary sodas and unhealthy a la carte foods in cafeterias has become a norm for many students across the nation. The problem with schools selling these types of food and beverages is that they are not providing a balance between the food intake of students, physical activity and ample nutrition education (Hayne et al. 2004).

Current research suggests that unhealthy food choices and obesity can impair school performance in numerous ways. One such study revealed that significantly overweight children and adolescents are four times more likely than their healthy-weight peers to report “impaired school functioning” (Story, Kaphingst, French, 2006). Additionally, the study found that overweight children are more likely to report abnormal scores on the Child Behavioral Checklist which is commonly used to measure the behavior problems of children (Story et al, 2006). What is more, those children who report abnormal scores on the Child Behavioral Checklist are twice as likely to be placed in special education or remedial classes as their peers who are of a healthy weight (Story, et al, 2006). Although there is only limited evidence that child obesity affects

academic achievement, there is no denying that nutrition clearly affects school performance. Research indicates that indeed poor nutrition in addition to hunger interferes with cognitive abilities and is closely associated with academic performance (Story et al, 2006).

Being overweight has the potential to affect the lives of children in very dramatic ways. For example, health-related absenteeism has become increasingly more common in schools across the nation (Story et al, 2006). The medical conditions for school-age children stemming from complications of being overweight include asthma, joint problems, type 2 diabetes, depression, anxiety and sleep apnea (Molnar, 2005). Not only are children affected in a physical aspect, but social problems have also been known to stand out among those who fall into the overweight category. Teasing, bullying, loneliness and low self esteem are all issues that have been shown to affect the everyday lives of children as well as their performance level in school (Story et al. 2006).

There are ways in which schools might help increase school performance and reduce the number of overweight children. Through more physical activity and intervention schools could potentially lower the health risks of their students while at the same time improving students' academic performance. However, instead of providing the necessary intervention to help reverse the childhood obesity wave, schools are encouraging a sedentary lifestyle. Pressures such as educational standards and the No Child Left Behind Act cause schools to compromise their students' health and wellbeing (Story et al, 2006). With the use of standardized testing to hold schools and students academically accountable, physical education and recess have become a much lower priority (Molnar, 2005). Likewise, issues concerning school budgets and budget cuts are further endangering the existence of physical education classes.

Regulation and Federal opportunities

With more regulatory measures set in place, human food consumption and dietary behaviors can be much improved. To better understand food consumption one must understand the underlying causes of eating. The idea of food consumption is characterized by cravings, emotions, and environmental conditions which in turn create the unfounded and often unwholesome dietary behaviors (Hayne et al, 2004). As consumers, individuals learn to develop dislikes for foods which cause nausea and illness, but at the same time those same individuals respond to advertisements which promote and encourage the consumer to make irrational and unhealthy “empty calorie” food choices (Hayne et al, 2004).

Influential promotions offered by corporations are highly effective in reaching Americans and enticing them to eat more. With a world of “super-sized” options and buy-one get one-free offers, consumers are being conditioned to maintain greater appetites and thus devour more food than is necessary to maintain a healthful lifestyle. Some corporations even grab the consumers’ attention by offering incentives through vending opportunities. For example, soda corporations have been known to encourage the purchase of sodas by putting t-shirts in a few of the bottles. This encourages the consumer to purchase more sodas in the hopes that they will get the promotional t-shirt. Facing this type of food environment, it is no longer rational to act as if every consumer has given careful thought to the long-term implications of his or her diet choices (Hayne et al, 2004).

Although unhealthy food environments can be found everywhere, regulatory interventions can be successful in creating a food environment more conducive to healthy dietary practices (Hayne et al, 2004). Food regulation in the United States occurs in three levels, namely, the national, state, and local levels (Hayne et al, 2004). Such regulatory opportunities

are in existence to better mandate action and to allocate funding for promising health-promoting strategies (Hayne et al, 2004). One such government agency is The Food and Drug Administration which is known for its regulatory measures especially concerning food labeling. However, in 2003 the FDA took their first step to developing a program entitled the Obesity Working Group. The intent of the Obesity Working Group is to be checks and balances for the FDA whose roles and responsibilities in addressing the health consequences of obesity are examined (Hayne et al, 2004). Furthermore, the Obesity Working Group is looking into changing or rather adding whole package serving information in addition to the single serving information. The hope is that consumers will see the whole picture concerning how much they are consuming which gives new meaning to the phrase “food for thought.”

Regulation at the local level usually falls within the hands of school board members (Brown, Akintobi, Pitt, Berends, McDermott, Agron, Purcell, 2004). “Understanding issues they consider important, and issues about which they desire more information, are key to influencing their decision making regarding school nutrition issues” (Brown et al, 2004). First and foremost, school board members need to be aware of the obesity epidemic affecting schools. Brown et al, (2007) presented a study which found that nearly one-half of school board members are unaware of their authority over altering or implementing school nutrition policies. By creating awareness among school board members, more basic and necessary interventions are likely to occur (Brown et al, 2007).

Although many school board members are unaware of their ability to change school nutritional policy, some school board members are perfectly aware of their authority (Brown et al, 2007). Of the school board members who comprehend their authority over nutritional policy,

many remain uncommitted to the issue in part because they lack familiarity with the issue or simply the lack of priority where it is concerned (Brown, et al, 2007).

Advertising regulations for radio and television are extremely integral parts to addressing childhood obesity issues. The Federal Communications Commission has the ability to enforce regulations for both television and radio spots in an attempt to discourage the advertisement of unhealthy foods to children while including balanced information regarding healthy dietary choices (Hayne et al, 2004). Unlike the FDA which requires legislative approval before regulating fast food chains and restaurants, the FCC already regulates radio and television broadcasting (Hayne et al, 2004). However, if the FCC focused their attention strictly on prohibiting “junk food” advertisers from preying on children under a specified age, then children might be less likely to purchase or to ask their parents to purchase unhealthy food items.

Although radio and television regulations are in place to help combat childhood obesity, schools are definitely not helping matters by allowing programs such as Channel One into their educational environment. The Channel One program is put on by a company who pays schools to deliver a twelve minute “news” program to students on a daily basis. The catch is that within those twelve minutes of programming there are two minutes devoted to advertisements. There are a number of problems with schools adopting this program. For example, the program promotes tobacco and violent entertainment to students while at the same time promoting television over reading and compromising student health through “junk food” advertisements (Borzekowski, Robinson, 2001). A study from the Journal of the American Dietetic Association concluded that, “children exposed to videotape with embedded commercials were significantly more likely to choose the advertised items than children who saw the same videotape without

commercials (Borzekowski et al, 2001). This study demonstrates how companies get into the minds of children and influence their daily food and purchasing choices.

Advertising

Sadly, children make a very attractive marketing target for corporations associated with food industries (Borzekowski et al, 2001). Young children and teenagers hold the buying power that the food industries crave mostly due to the influence they have on goods purchased for their greater family household (Hayne et al, 2006). According to another study in the Journal of the American Dietetic Association, “high exposure of children to foods high in fat and sugar are major contributors to obesity (Borzekowski et al, 2001). Surprisingly, eight out of ten adults are in agreement that business marketing and advertising exploit children by targeting them and by convincing them to buy things that are terrible for them or that they don’t necessarily need (Borzekowski et al, 2001). Since adults heavily influence children and teenagers, it is a great sign that they realize companies are targeting children so that they as parents and mentors can advocate for the health of children and their well being. Nutritionists and school officials have been advising parents to limit their children’s exposure to television advertisements as a way to help cut back on the brand loyalty children develop from viewing the commercials (Borzekowski et al, 2001).

With the funding of advertisements beating out the funding for health investments it is no wonder that the health of the United States youth is at risk. In the United States alone, food industries spend approximately \$11 billion annually on advertisements for their products while another \$22 billion is spent on promotions that play to the weaknesses of consumers (Hayne et al, 2001). In comparison, the National Cancer Institute only invests a measly \$1 million on its

education “5 A-Day” campaign which promotes an increase in vegetable and fruit consumption while the National Heart, Lung, and Blood Institute’s National Cholesterol Education Campaign contributes another \$1.5 million to their cause (Hayne et al, 2001). These comparisons demonstrate how costly advertising is and how it has the ability to increase the obesity epidemic.

Regulatory actions such as those being put in practice by the United Kingdom to reduce the level of childhood obesity could be used as an example for regulatory actions in the United States. In the past few years, the United Kingdom has set up the Food Standards Agency in an attempt to defend the public’s health and general consumer interests in relation to food (Hayne et al, 2001). The Food Standards Agency of the UK promotes the “banning of all food advertisements aimed at pre-school children, setting strict regulations on how much advertising of less-healthy foods is allowed, banning the use of children’s television personalities and cartoon characters in food advertising, and establishing a tax on all food advertising to children, with the funds benchmarked for nutritional education” (Hayne et al, 2001). So far the program in the UK has had promising results and if the United States could develop a program similar to the one described it may be an effective way to combat lethal advertisements while at the same better addressing the growing childhood obesity issue facing this nation.

School Influence

Schools today play a very significant role in the dietary habits of children. Because children spend such a high percentage of their time at school, a healthy school environment can be an important variable in teaching children healthy eating and fitness habits for years to come (Hayne et al, 2001). The National School Lunch Program, which first began in 1946 as a response to poverty and malnutrition among school children, is supported by the United States

Department of Agriculture. Presently, the program caters low priced or free nutritious meals to approximately 27 million children in over 97,000 schools (Harris, 2002). In order to qualify for the free or reduced priced meals, students must meet low income status by falling between 185 percent and 130 percent of the Federal Poverty Level (Harris, 2002).

In 2005, an estimated \$7.9 billion was invested in the NSLP by the federal government to supply food to American children in schools (Fleischhacker, 2007). The NSLP is intended to provide students with one third of the Recommended Dietary Allowance for specific nutrients (Fleischhacker, 2007). Due to the childhood obesity epidemic, concerns have increased regarding the nutritional quality of prepared NSLP lunches. Shockingly, state and local educational officials are responsible to ensure that their school facilities and school food service staff are capable of providing child nutrition benefits and nutritional quality through the prepared meals (Fleischhacker, 2007).

The NSLP has been given credit for improving school academic performance and attentiveness, but in the face of the widespread obesity epidemic Americans are beginning to realize that societal changes are necessary for improving health and nutrition (Harris, 2002). In order for the program to be funded, the meals provided by the NSLP are required to meet federal nutritional guidelines. However, the problem which the NSLP is now facing is that federal nutritional guidelines have changed which makes the original nutritional guidelines inadequate and thus schools are actually contributing to childhood obesity (Harris, 2002).

Although the NSLP was created with the best of intentions, there are ways in which it can be improved. The NSLP can help combat obesity by expanding authority to better regulate a la carte sales and vending machine sales (Hayne et al, 2001). This improvement would better help control the different types of foods currently being offered to students. Furthermore, with the

influence of a higher authority it would be more likely to replace high-fat and high-sugar food items with more nutritious dietary selections (Hayne et al, 2001).

Besides prepared school lunches, meals at school are made available through “competitive foods” which are sold a la carte in cafeterias, vending machines and snack bars (Story et al, 2006). A la carte foods are a very popular commodity, especially among middle and high school students. The popularity is mostly because the foods offered a la carte are exempt from federal nutrition standards which mean foods such as chips, soda, candy, cookies, ice cream, pizza and burgers among other things are offered. Foods classified as “competitive foods” comprise all foods offered for sale at school except federal school meals (Story et al, 2006). Competitive foods are inclusive of a la carte foods offered in school cafeterias in addition to snack bars, vending machines, student stores and the classic school fund-raisers (Story et al, 2005).

Because the Agricultural Department’s authority to regulate competitive foods is limited due to tight federal law, competitive foods fall within two separate categories. The first competitive food category is designated for foods containing minimal nutritional value. Foods with minimal nutritional value are defined in federal regulations as, “foods which provide less than 5 percent of the RDA (Recommended Dietary Allowance) per serving for each of eight key nutrients” (Fleischhacker, 2007). Products falling into this first category include soft drinks, chewing gum, and select candies such as hard candies and jelly beans (Fleischhacker, 2007). With the USDA regulating this competitive food category, schools are barred from selling these foods in meal service areas during school meal periods. However, the first category competitive foods can be sold at any time anywhere else in the school (Fleishhacker, 2007).

The second competitive food category, which is not monitored by the USDA, is made up of all other foods labeled for individual sale. Competitive foods in this category include candy bars, potato chips, cookies, and doughnuts which in contrast to the first category, may be sold anywhere on campus even in cafeterias during school meal periods (Fleishhasker, 2007). Studies, such as one done in Minnesota, have shown that these types of competitive foods sold a la carte lack nutritional value, yet comprise a good portion of students' daily dietary intake. "Researchers studying 20 Minnesota secondary schools found that high-fat foods such as chips, crackers, and ice cream constituted 21.5% of the available a la carte items; while a mere 4.5% of the a la carte items were fruits and vegetables" (Hayne et al, 2004). Thus, the sale of competitive foods can be construed as a poor judgment call on the part of schools for further contributing to the unhealthy state of their students.

Funding

Whether schools choose to believe it or not, their institutions are greatly influencing the health and lifestyles of their students. The main underlying issue behind the unhealthy food being served in schools is funding. Schools are facing severe budget cuts and pressures which in turn force them to sell well-liked, nutritionally poor food commodities in cafeterias and a la carte (Story et al, 2006). Additionally, schools have enlisted the help of well known corporations and private entities in an effort to help boost funding shortfalls (Almeling, 2003).

Ninety-nine percent of United States public schools currently participate in the National School Lunch Program (Grainger, Benjamin, Runge, 2007). Under the NSLP, schools agree to purchase and supply each child with a well balanced-lunch. However, schools are still serving meals under outdated dietary guidelines (Harris, 2002). School cooks and food service directors

often cut corners and focus on easy preparation instead of healthy options because they lack both skilled, trained staff in addition to the proper facilities necessary to create healthy meals. Many schools are now turning to food service vendors to provide highly processed foods that only require minimal heating to prepare (Grainger et al, 2007).

In return for providing “well-balanced” meals to students, schools participating in the NSLP are offered federal reimbursements for meals served (Harris, 2002). Participating schools receive cash subsidies and commodities provided by the U.S. Department of Agriculture (Grainger et al, 2007). The reimbursement rate for free, reduced-price, and paid lunches in the 2004-2005 school year was \$2.24, \$1.84, \$0.21 (Grainger et al, 2007). Schools have become very dependent on these revenues over the last decade and even consider them their principle source of funding. Schools can improve revenues through three different methods which include increasing the number of students who eat federal meals, increasing prices for full-price meals and by further expanding a la carte sales which is another variable contributing to school obesity rates (Story et al, 2006).

Competitive a la carte sales are an important source of revenue for schools in an increasing climate of budget constraints. Numerous public schools in the United States rely heavily on supplemental profits brought in by competitive food sales. These extra food sales go to support food service operations, educational programs, extracurricular activities and other after school programs (Story et al, 2006). When schools find themselves enduring grueling financial pressures, they are more likely to make low-nutrition type foods and beverages readily accessible to students. In a 2005 Government Accountability Office report, findings illustrated that, “many schools, particularly high schools and middle schools, generated substantial revenues through competitive food sales—more than \$125,000 apiece each year for the top 30 percent of

high schools” (Story et al, 2006). This report brings to light the idea that schools are putting their students’ health at risk for the sake of additional school funding. It is no wonder that obesity in children has tripled in the last two decades.

In addition to NSLP and competitive food revenues, commercialism in the classroom is another popular source of supplemental funding. Although commercialism in schools is nothing new, over the last two decades corporations have dramatically increased their presence in education (Molnar, 2005). Surprisingly, almost every large well-known corporation has a monetary investment in some type of in-school or school-related marketing program. These marketing programs can range from advertisements on school buses, scoreboards, in lunchrooms, to the creation of curriculum materials such as textbooks for science, government, history, math, and current events classes (Molnar, 2005). When commercialism makes its way into schools, it often relays content that encourages the consumption of unhealthy food which can harm the health and nutrition of young people.

One of the most well-known school-based marketing campaigns is probably Channel One. Channel One, the television news program which is intended mainly for middle and high school students, is laced with advertisements for candy, fast food and soft drinks (Molnar, 2005). Other examples of lesser known marketing campaigns include a geography lesson intended for third graders in which students are to locate major cities according to where Tootsie Rolls are produced and sold while another example is labeled as the “Chocolate Dream Machine” which is a nutrition guide and video which promotes Hershey’s chocolate to middle school and high school students (Molnar 2005). Marketing campaigns, such as these, pay schools to show or implement their programs and in turn create brand loyalty among students.

Pouring rights contracts are another more popular method of gaining supplemental school funding. Schools enter into these exclusive contracts with soft drink companies which allow beverage sales in the school environment. The revenue, which is generated from the pouring rights, is subsequently used to support a wide range of school related activities (Molnar, 2005). The schools are usually compensated in lump-sum payments over a period of five to ten years in return for exclusive sales of one company's products in vending machines and at all school events and activities (Story et al, 2006). Above all, these companies and their contracts cause several problems. Most noticeably, these types of contracts harm students by encouraging the frequent mass consumption of sugar-sweetened beverages. Moreover, the agreements to establish pouring rights in schools weaken the overall integrity of public education by utilizing essential education laws to expose children to unhealthy soft-drinks (Almeling, 2003).

CONCLUSION

Based on the overwhelming studies and facts depicted in several sources, it can be concluded that schools do in fact contribute to the childhood obesity epidemic. Since budget woes can cause schools to feel underfunded and understaffed, they are in turn compelled to offer competitive foods to offset their financial needs. These additional revenue sources allow schools to financially support under funded programs and essential school activities that otherwise would be non existent without the backing of major corporations.

With the current and impending budget cuts, public schools are making some regrettable cutbacks to physical education and nutrition education. A survey taken by the CDC shows that state physical education mandates are usually general and only include the minimum recommendations (Hayne et al, 2004). This suggests that physical education needs are open for interpretation by individual schools and thus some schools decided to cut back on physical education to make accommodations for other more necessary academic classes.

Schools play a very significant role in the national effort to curb childhood obesity. Currently, more that 95 percent of American youth within the age range of five to seventeen are enrolled in school which means that there is no other institution that has as much uninterrupted and extensive contact with children during their initial 18 years of life (Story et al, 2006). With factors such as environment, advertising, regulation, and funding, schools need to be more educated on the implications of their choices and how it affects the daily lives of the children attending their schools. Therefore, it is essential for schools to be dedicated role models and advocates for the health and values of their students as it will depict the lifestyle choices they make in the years to come.

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