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Obesity and Poverty: A Growing Challenge

Schools can expect increasing numbers of students who are both poor and overweight in what is being called the childhood obesity epidemic.

With more than 65 percent of the adult population in America overweight or obese, it is not surprising to learn that a growing number of children and youths are joining their ranks. In fact, Brownell and Horgen (2004) warn that “American children may be the first generation in modern history to live shorter lives than their parents.”

Obesity in adults already has reached an epidemic level that is rapidly spreading to children (Baur 2004; Black 2004; Loke 2003; Schmidt 2003). In fact, childhood obesity has struck so quickly that there is no medical definition for it. We use percentile ranges to differentiate between overweight and severely overweight children, with variations based on height, weight, and gender. In most cases, children approaching the 85th percentile (especially younger children) may be facing greater probability of developing serious health risks related to obesity, and the higher the percentile, the greater the probability for related illnesses.

According to Tartamella, Herscher, and Woolston (2004), at least 16 percent of children in our schools are seriously overweight and facing health risks related to obesity. They estimate that the number of overweight children from the ages of 6 to 11 has tripled since the mid-1970s and doubled for those aged 12 to 18.

Unfortunately, children and youths from lower income and minority households are disproportionately affected by this crisis, with “the highest rates of obesity...occurring among the poorest children” (Tartamella, Herscher, and Woolston 2004). With at least one-fourth of American

schoolchildren living at or below the poverty level, principals and teachers can expect to encounter increasingly significant numbers of students who are both poor and overweight in what has been dubbed the childhood obesity epidemic.

Disparities in the Prevalence of Obesity

There are notable disparities in the prevalence of overweight and obesity in the United States. Zhang and Wang (2003) found “considerable socioeconomic inequality in obesity among the U.S. population,” noting that “minorities are more vulnerable to obesity.” Brownell and Horgen (2004) found that “African Americans have greater increases in blood pressure when they gain weight, and the years of potential life lost from diabetes is extremely high in African-American, Hispanic, and Native-American populations.”

According to the U.S. Department of Health and Human Services (2005), there are twice as many poor and obese adolescents compared with the obesity numbers of more affluent adolescents. Ogden *et al.* (in Koplan, Liverman, and Kraak 2005) support these findings, concluding that “Hispanic, non-Hispanic black, and Native-American children and adolescents are disproportionately

affected when compared to the general population.”

Consequences of Obesity

Brownell and Horgen (2004) believe there is a clear relationship between diet and academic performance and note that overnutrition and malnutrition could result in similarly adverse outcomes for children:

A body improperly nourished cannot keep the mind alert, inquisitive, and sharp. Poor diet and inactivity produce lethargy and drowsiness, so attention and ability to retain information may suffer. In addition, it is possible that the poor self-esteem engendered by obesity generalizes to academic self-esteem. It is hard to imagine the mind at the top of its game when the body is in disarray.

Obesity is not only a threat to health but “is costing schools millions of dollars each year. Because of health problems, overweight kids tend to be absent from school more often, and each time they call in sick, their school districts lose funding” (Tartamella, Herscher, and Woolston 2004).

Wechsler *et al.* (2004) state that schools have been facing “intense pressure to focus on standardized tests and consequently have placed less emphasis on the broader view of a healthy mind in a healthy body.” The National Association of State Boards of Education (2000) believes that health and success in schools are interconnected and that educators should be concerned about student health from a whole-child perspective. Noddings (2005) agrees, noting that “schools must be concerned with the total development of children,” which may include education regarding nutrition, exercise, and body image.



This research study addresses the childhood obesity epidemic, which has seen the number of overweight children from the ages of 6 to 11 triple since the mid-1970s. The authors note that there are more than twice as many poor and obese adolescents compared with more affluent youths, and examine a number of factors linking obesity and poverty.



The School's Role

The school environment is where students each day can observe principals and teachers serving as good role models for a healthy lifestyle. But many teachers, while aware of the gravity of childhood obesity, are hesitant to be key players, citing lack of training and the need for professional development as barriers to involvement (Sutherland, Gill, and Binns 2004).

A popular but disconcerting belief among educators is that obesity is simply a lack of willpower. According to Brownell and Horgen (2004), many have the notion that “obese people are responsible for their condition

and that they...should be responsible for its remedy.” While it certainly is true that individuals gain weight when their energy intake consistently exceeds their energy output (National Institutes of Health 2000), obesity is a disease that involves genetics, physiology, metabolism, and appetite regulation by the brain. Environmental, psychosocial, and cultural factors also play a role.

School staff should be cautious in recommending a healthy diet to students from low-income environments. They need to recognize that families living in poverty may have limitations in what they can afford to spend on

healthier foods. Awareness of such issues is paramount for educators working in urban or rural schools.

Additionally, all school staff should be mindful regarding issues related to weight bias, stigma, and discrimination. Puhl and Brownell (2001) examined literature on discriminatory attitudes and behaviors against obese individuals and found that “clear and consistent stigmatization, and in some cases discrimination, can be documented in three important areas of living: employment, education, and health care.” Unfortunately, overweight or obese minority children may be at risk for dual stigmatization.



Grading the States

The Center for Science in the Public Interest recently graded states from A to F in how they compared in such areas as the implementation and effectiveness of policies that govern nutritional standards for school food, including sodas and snacks sold in vending machines and items sold for fundraisers and at school-related events. Although almost half of the states received the grade of F, several fared much better. Kentucky received the highest grade with an A-, followed by Alabama, Arkansas, California, and New Mexico with the grade of B+, and Arizona and Tennessee with the grade of B. Many of the states had formal policies for elementary schools, but not for middle and high schools.

Factors Related to Obesity

Female-headed households.

Obesity is especially prevalent among women with lower incomes and is more common among black and Mexican-American women than among white women (U.S. Department of Health and Human Services 2005). This is a significant concern, given that a large number of women with low incomes serve as the heads of households. Most experts agree that female-headed families are vulnerable to poverty and tend to suffer great social and economic consequences. According to Stunkard (in Swinburn and Egger 2004), "obesity leads to reduced opportunities for jobs, education, marriage, and social inclusion, and these may be more potent in women than in men."

Lack of health insurance. Lack of coverage and subsequent limited access to health care services among individuals in low socioeconomic groups has been highly correlated with obesity, especially among adolescents (Koplan, Liverman, and Kraak 2005).

Regional differences. Data from the Behavioral Risk Factor Surveillance System demonstrated that the prevalence of adult obesity was greater than 25 percent of the population in seven states: Alabama, Louisiana, Michigan, Mississippi, South Carolina, Texas, and West Virginia (Koplan,

Liverman, and Kraak 2005). In the southern states, this could be attributed to the difficulty of losing weight when eating deep-fried food, as well as a culture that equates food with love and caring (Tartamella, Herscher, and Woolston 2004).

Unlimited access to unhealthy foods. Brownell and Horgen (2004) believe that we face a "toxic environment" at birth. They explain that "the environment is distorted beyond your body's ability to cope. It will pound you with inducements to eat, make exertion unnecessary, and do little to defend you against diseases that most threaten you." Tartamella, Herscher, and Woolston (2004) note that "on any given day, about 30 percent of kids will eat fast food, and many eat it every day. With roughly 250,000 fast-food restaurants in this country...kids don't have to go long between their french fry fixes." Unfortunately, fast food, snack food, and soft drinks are also plentiful in schools as well.

Block, Scribner, and DeSalvo (2004) suspected that the number of fast-food restaurants was higher in black and low-income neighborhoods. By mapping the geographic distribution of fast-food restaurants in New Orleans' pre-Katrina Orleans Parish, they found that "predominantly black neighborhoods have 2.4 fast-food restaurants per square mile compared to 1.5 restaurants in predominately white

neighborhoods." Additionally, every increase in fast-food restaurant density corresponded to a decrease in median household income and an increase in black residents. According to the authors, this finding may indicate that the increasing rate of obesity among minorities is aided by easy access to inexpensive and fattening fast food.

Limited access to healthy foods.

The low-income population is in an unfortunate situation when it comes to accessibility to fresh produce and vegetables. Block, Scribner, and DeSalvo (2004) noted that supermarkets selling "heart healthy" foods were found to be located primarily in white neighborhoods. The local convenience stores in areas with high levels of poverty were less likely to offer fresh produce and, when available, the prices were "thirty to one-hundred percent higher than those at supermarkets" (Tartamella, Herscher, and Woolston 2004). Furthermore, most families in the inner city did not have cars or could not afford the bus fare to travel to the nearest supermarket.

The impact of television. Electronic media, such as television, computers, and video games, all contribute to obesity (King and Hayes 2003; Trager 2004). Using data from a survey of 2,223 adolescents, Kaur *et al.* (2003) found "evidence for a positive linear relationship between hours of television viewed and BMI [body mass index]" and that a child's risk of being overweight doubled with more than two hours of daily television viewing. The researchers also noted that "African-American adolescents watched the most and white adolescents watched the least amount of television."

Harmful marketing. The more time children spend watching television, the more they are bombarded with commercials for candy, cereal, soda, and processed foods—as many



The Impact of Obesity

Obesity is a complex condition with detrimental social, psychological, and physical effects. Chronic conditions and diseases, such as type 2 diabetes, heart disease, stroke, breast cancer, colon cancer, gallbladder disease, and arthritis, correlate closely to an unhealthy diet and a sedentary lifestyle. Other less-threatening but debilitating conditions associated with obesity include respiratory difficulties, chronic musculoskeletal problems, skin problems, and infertility. Low self-esteem and clinical depression threaten psychosocial health. The wide range of health consequences related to obesity varies from increased risk of premature death to long-term problems that diminish the overall quality of life (World Health Organization 2003).

as 350,000 by the time they reach the age of 18 (Washington State Department of Health 2005). According to Tartamella, Herscher, and Woolston (2004), "the fast-food industry alone spends \$3 billion a year in advertising to children, nearly 1,000 times the federal government's \$3.6 million yearly budget promoting consumption of fruits and vegetables."

Some TV food commercials are aimed at certain ethnic groups. According to Tirodkar and Jain (2003), "African-American audiences may be receiving nearly three times as many advertisements for low-nutrient foods such as candy and soda" when compared with other groups.

Dangerous neighborhoods.

Being a poor kid in a dangerous neighborhood means that playing outside or in the local park is not a safe option. "In environments where gun violence is a regular occurrence, many parents feel more secure with their kids sitting safely watching TV" (Tartamella, Herscher, and Woolston 2004). While low-income parents are concerned about their overweight children, the level of worry about obesity is much less than their fear of violence, drugs, and sexually transmitted diseases (Dalton 2004).

Sleep debt. Gangwisch *et al.* (2005) demonstrated a connection between decreases in leptin (a protein hormone that signals when individuals

have had enough to eat), increases in ghrelin (a hormone that stimulates appetite), sleep deprivation, and subsequent obesity. They believe that increasing the amount and quality of sleep may be a step in the right direction when discussing obesity prevention.

Food insecurity. A major cause of stress that may impact cortisol levels, consequently increasing the risk for obesity, is food insecurity often experienced by low-income individuals. It appears to be a paradox that those who have limited access to food are at higher risks for obesity. Adams, Grummer-Strawn, and Chavez (2003) cite several studies demonstrating that food insecurity may lead to:

- Higher intake of high-calorie, low-price foods;
- Decreased consumption of fresh fruit and vegetables;
- Overeating; and
- Increased body fat.

It is interesting that the problems associated with food insecurity that put someone at risk for obesity are similar to the problems affecting chronic dieters. Reto (2003) suggests that dieting (or being chronically hungry) and the subsequent reactive overeating that ensues "deregulates" eating. "The effects of dieting and chronic hunger have a direct effect on

hormonal responses," which in turn cause "stronger urges and pressures to eat." Reto notes that when individuals begin to eat again after a period of severe restriction, they tend to eat about anything available, consuming foods faster than normal but failing to "obtain a sense of fullness or satiety."

Maternal obesity. Whitaker (2004) highlights the importance of implementing measures to prevent obesity in women before conception, during pregnancy, and in the first years of a child's life. He found that "among low-income children, maternal obesity in early pregnancy more than doubles the risk of obesity at 2 to 4 years of age."

Considerations regarding the diet for infants after birth are also important in the fight against childhood obesity. Gillman *et al.* (2001) concluded that adolescents who were fed breast milk in infancy had a lower risk of being overweight than those who were given formula, and the longer the infant was breast-fed, the less the risk of adolescent obesity.

Cultural/social differences. Juarbe (1998) found that sociocultural acceptance of overweightness results in less concern for obesity, and that being overweight can be considered a status symbol, indicating health or affluence. Juarbe's findings are supported by workers in food assistance programs who observed that in "villages or towns where thinness was equated



The Child Nutrition Act

The 2004 reauthorization of the \$16 billion Child Nutrition Act gives principals an important tool to combat childhood obesity. The law goes beyond providing nutritious school breakfast and lunch programs. It requires that all school districts develop and adopt written “wellness policies” for the 2006–2007 school year, with goals for nutrition and nutritional education. The act also provides nutritional guidelines for all foods served in schools and procedures for increasing physical activity in the classrooms. More information about the Child Nutrition Act and samples of wellness policies can be found at a Department of Agriculture Web site, <http://teamnutrition.usda.gov/Resources/makingithappen.html>.

with poverty and starvation...a fat child is a strong and healthy child” (Tartamella, Herscher, and Woolston 2004).

As more and more Americans grow taller and heavier, oversize and overweight individuals may not appear to stand out or appear different. In fact, some fear that society may begin to accept such individuals as typical.

Perceptions of low-income mothers. Jain *et al.* (2001) found that low-income mothers failed to believe their children had a problem with being overweight or obese if the child remained “active” and had a “good appetite.” Only when a child became limited in performing physical activities, or had been teased about his or her weight, did the mother show more concern about extra weight.

Low-income mothers reported that they found it “emotionally difficult” to deny food to their children, and the researchers expressed the belief that “whether parents are able to restrict or structure their child’s eating, in the face of an obesity-promoting environment, may be a measure of parenting ability—an ability that may be particularly lacking in families with limited resources.”

Food often becomes the one indulgence that poor parents can offer a child. “If you don’t have the money to take your family on vacation or send your kids to summer camp, you can demonstrate your love with a 99-cent

bag of Cheetos or a trip to Burger King” (Tartamella, Herscher, and Woolston 2004).

In dealing with childhood obesity, we are seeing adult onset diabetes and heart-related illness, usually not seen until middle age or later, appearing in children during early adolescence or even before the age of 10 in severe cases. Poor food choices and limited physical exercise are the major culprits (Schumacher and Queen 2006).

Children do not grasp the gravity of the medical issues related to obesity, and parents may not take the time to deal with the problem. In a world divided between the haves and the have-nots, it is the schools that must take on this responsibility. According to Satcher (2005), “the school setting is a great equalizer, providing all students and families—regardless of ethnicity, socioeconomic status, or level of education—with the same access to good nutrition and physical activity.”

But while we believe that schools must be expected to face the problem of obesity and assist in finding a solution, they cannot do it alone. Overworked and emotionally drained educators will find it difficult to address such a challenge, especially with children of poverty. The only hope in our society, where more than two-thirds of the population is overweight or obese, is a village approach in which

numerous agencies join schools in the many battles needed to win the war on childhood obesity and to break the cycle of obesity and poverty (Schumacher and Queen 2006). **P**

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- This article is adapted in part from *Overcoming Obesity in Childhood and Adolescence* by Donald Schumacher and J. Allen Queen, available from NAESP's National Principals Resource Center at 800-386-2377 or www.naesp.org/nprc.

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Web Resources

The U.S. Department of Agriculture's MyPyramid Web site offers practical information on food intake and physical activity levels for children.

www.mypyramid.gov

The American Heart Association's Web site includes a section on children's health.

www.americanheart.org

The Frazzled Educator's Wellness Plan describes a program focused on healthy nutrition and activities for principals and teachers.

www.frazzledteachers.com

The Quaker Oats Co. has a search box on its Web site for those seeking information on proper nutrition.

www.quakeroatmeal.com