

Childhood Obesity

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Abstract

Childhood obesity has reached epidemic proportions in our society. This epidemic is causing significant health problems in our youth that will remain with them into adulthood, in turn decreasing their life expectancy. Additionally, the financial cost of caring for these health problems is growing exponentially. Many answers are being sought for decreasing the rise in obesity in children and the solutions are varied and interconnected. Nurses have a role in decreasing obesity through assessment and education but their contact with the individual is limited. It appears the more likely solution is through the use of resources in daycares, schools, and communities to reduce the barriers to a healthy lifestyle and promote access to healthy nutrition and physical activity.

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Childhood obesity is reaching epidemic proportions in today's society. In an executive summary, editors for the Journal of the American Dietetic Association, Koplan, Liverman, and Kraak examine the Institute of Medicine's (IOM) report, released in 2004, regarding the growing "epidemic of childhood obesity" (p. 131). This epidemic is occurring in all 50 states, in all ages and sexes of children, "across all socioeconomic strata, and among all ethnic groups although specific subgroups, including African Americans, Hispanics, and American Indians, are disproportionately affected" (Koplan, Liverman, & Kraak, 2004, p. 131). According to the Center for Disease Control (CDC) website, the definition of obesity in children is:

- Overweight is defined as a BMI at or above the 85th percentile and lower than the 95th percentile.
- Obesity is defined as a BMI at or above the 95th percentile for children of the same age and sex. (2009)

"These definitions are based on the 2000 CDC Growth Charts for the United States and expert committee" (CDC, 2009).

Problems Associated with Childhood Obesity

The Obesity Society states that "in the past 30 years, the occurrence of overweight in children has doubled and it is now estimated that one in five children in the US is overweight" (2010). A key conclusion of a recent United Kingdom Health Committee Report was that "... today's generation of children will be the first for over a century for who life expectancy falls (2003-4)" (Hills, King, & Armstrong, 2007, p. 535). According to the article, Childhood Obesity: A Call to Action, "in February 2008, U.S. surgeon general Richard H. Carmona called the present epidemic of obesity in the United States 'the greatest threat to public health today' " (Niehoff, 2009, p 17). "Dr. David Ludwig, director of Optimal Weight for Life Program in the

Division of Endocrinology, Children's Hospital, Boston, and an associate professor of pediatrics at Harvard Medical School, has identified four phases of today's unfolding obesity epidemic" (Niehoff, 2009, p. 17). His phase one began in the 1970's with the "progressive increase in the weight of children" (Niehoff, 2009, p. 17). Dr Ludwig believes we are currently in stage two where "serious weight-related problems such as type 2 diabetes, fatty liver, orthopedic problems, anxiety, depression, and sleep apnea have become more prevalent among adolescents, with type 2 diabetes increasing tenfold" (Niehoff, 2009, p. 17). His next two stages are even more disturbing with stage three including more adult related diseases being diagnosed in children, such as cardiovascular disease, and stage four being irreversible biologic changes to hormonal pathways that will change human metabolism forever and no longer allow us to escape obesity (Niehoff, 2009, p. 18). In the same article, *Childhood Obesity: A Call to Action*, a study by Schwimmer et al. in 2003, found changes in obese children's perceptions of their quality of life likening their scores to "as bad as scores previously reported by children with cancer who were undergoing chemotherapy" (Niehoff, 2009, p. 18). So not only are the physical effects of obesity on children greater than ever, the psychological effects are also profound.

In addition to the massive health problems created by the growing trend of overweight children in this country, the financial cost is rising exponentially. "The national health care expenditures related to obesity and overweight in adults alone have been estimated to range from approximately \$98 billion to \$129 billion after adjusting for inflation and converting estimates to 2004 dollars" (Koplan, et al., 2005, p. 131). The CDC states in their web site, "obese children and adolescents are more likely to become obese as adults" (2009). At the alarming rate of the increase in weight of our children and the subsequent health problems, the next generation will

severely overtax our economy and healthcare system. Based on this, the current attention given to this complex issue is not unwarranted. On February 9, 2010, “President Obama signed a presidential memorandum to create the first-ever federal task force to provide ‘optimal coordination’ between private sector companies, not-for-profits, agencies within the government and other organizations to address the problem of childhood obesity.... The task force will be charged with coming up with a ‘long-term action plan’ after an extensive review of all federal nutrition programs” (Ferrin, 2010, “Battling Childhood Obesity”, para. 1). It is time to look for both causes and solutions to the problem of the growing obesity epidemic in our young.

Behavioral Causes and Solutions

It is not possible to look at a single cause for childhood obesity. Advances in modern technology have made significant changes in our lifestyle, changing our diet and making incidental physical activity like walking to school uncommon (American Academy of Pediatrics Committee on Environmental Health, 2009, p. 1593). Statistics from the World Health Organization (WHO) 1997; the Office for National Statistics 2000; the Department for Environment, Food and Rural Affairs 2001; and the National Audit Office 2001 show “there is evidence that children are becoming increasingly sedentary and consuming a less healthy diet than in the past” (Licence, 2004, p. 629). Approaches involving the decrease of caloric intake are more “challenging with children because of the child’s need for sufficient caloric and nutrient intake to maintain adequate growth and development” (Topp, Jacks, Wedwig, Newman, Tobe, & Hollingsworth, 2009, p. 717). According to the AAP, children are not consuming the minimum daily requirements of fruits and vegetables with lower income households “failing to meet their nutritional needs for healthy growth and development” (Licence, 2004, p. 629). Nor are children

meeting the “ recommended one hour of physical activity with up to a quarter of American children aged 8-16 years watching more than 4h of television each day ” (Licence, 2004, p. 629). It is clear that a health promotion approach combining increased physical activity and education regarding healthy food choices seems an appropriate intervention to making improvements in the rise of childhood obesity. “It seems that environmental and societal trends have encouraged more nonphysical activity and made physical activity an almost forgotten and often ignored part of everyday life for some children. Activity is often minimal due to the use of computers and electronic games, lack of safe play areas, and lack of adult supervision for activities” (Niehoff, 2009, p. 18). Programs, such as the Tommie Smith Youth Athletic Initiative (TSYAI), a behavioral modification program, consisting of 3 days of supervised after school physical activity with a weekly addition of 45 minutes of nutritional education, are showing promise. The TSYAI “results indicate that the sample (of children) improved their cardiovascular fitness and lean body mass over the duration of the intervention” (Topp et al., 2009, p. 724). Another study in a Head Start program in Alabama found “an association between days per week that children engage in active play and their snack consumption” (Hudson, Cherry, Ratcliffe, & McClellan, 2009, p. 298) suggesting the more active children are the less likely they are to snack.

Environmental Causes and Solutions

Homework is also a “commonly reported barrier to doing physical activities after school” (Eyler, Nanney, Brownson, Lohman, & Haire-Joshu, 2006, p. 75). The amount of homework has increased as a response to increased educational standards (Eyler et al., 2006, p. 75). This is combined with “the fact that physical education requirements in many schools are decreasing and only 71% of elementary schools nationwide provide regular recess for their students (CDC,

2005)” (Eyler et al., 2006, p. 69). There needs to be a balance of physical activity and educational requirements. Physical activity can be incorporated into curriculums, such as math and science (Eyler, et al., 2006, p. 75). Authors, Eyler et al. recommend “if homework is inevitable ... suggest ‘exercise breaks’ every 20-30 minutes” to relieve the stress of homework and encourage physical activity (2006. p. 75). These authors also identified that “many parents keep their children indoors because of safety concerns and lack of space and facilities (e.g., playgrounds) near homes” (Eyler et al., 2006, p. 75).

Most obesity health promotion programs recognize the importance of parental involvement with many acknowledging less success as reported by the TSYIA if “parents were not as involved with the intervention as the team would have liked” (Topp et al., 2009, p. 727). Topp et al, state “the American Academy of Pediatrics (2003, 2007) advises that families be educated and empowered on the impact they have over their children’s physical activity and dietary habits” (2009, p. 717). “Parents should be given the primary responsibility in the management of obesity in their children, as they serve as the primary agents of change” (Kalavainen et al., 2009, p. 609).

“Researchers (have) found that a multifaceted approach to obesity prevention was crucial, not only on the individual level (eg [*sic*], promoting healthy food choices and increased exercise), but also on the societal level (eg [*sic*], investing in safe parks and gymnasiums)” (Dugan, 2008, p. 211). A description of environmental barriers to a healthy lifestyle is found in a policy statement by the Committee on Environmental Health of the American Academy of Pediatrics (AAP, 2009, p. 1591). These barriers are defined by the Committee as limited access to fresh fruit and vegetables and a limit of opportunities for recreational activities (2009, p.

1591). It is recommended that communities give thought to their design to improve the amount of physical activity in daily routines (AAP, 2009, p. 1591). A community program, Steps to a Healthier Arizona: A Pebble in the Pond; The Ripple Effect of an Obesity Prevention Intervention Targeting the Child Care Environment, looks at not only the obese child's environment but addresses it in a more culturally specific way (Drummond, et al., 2009). The program addressed the difficulty in providing activity time for children in the heat of Arizona, the difficulty obtaining fresh fruits and vegetables, and the scarcity of healthy drinks, like fresh water and low fat milk. A health promotion plan was initiated in rural southern Arizona to improve the health of the children focusing on child care centers. The program was culturally sensitive and offered in Spanish and English, first to the workers and then to the parents. The program was judged as highly successful and is now serving as a model for other areas in Arizona to promote healthy behaviors in young children. It is through coordination like this of medical care providers, families, schools, communities, businesses, and government, that we will be able to answer President Obama's charge to address the problem of childhood obesity.

Implications for Nurses

So what is the role of a professional nurse in working through healthcare promotion to improve childhood obesity? Pender, Murdaugh, and Parsons state "because nurses are the health professional most often in extended contact with clients, they are a valuable resource to individuals, families, and communities in providing information and assistance in regard to healthy nutrition" (2006, p. 173). The nurse needs to be able identify obesity, assess family behavior, detect barriers to a healthy lifestyle and promote physical activities that are enjoyable and fun for children (Pender et al., 2006, p. 160). Talking to parents about obesity can be

difficult and is viewed differently by diverse educational backgrounds, cultures and socio-economic groups (Mikhailovich & Morrison, 2007, pp. 315-317). Many mothers of lower educational backgrounds do not recognize obesity in their children and others have difficulty with the concepts of viewing obesity as a health risk, instead looking at being overweight as a psychological and social stigma (Mikhailovich & Morrison, 2007, p. 314). Healthcare professionals also need to be aware of the biases they bring with them to the discussion. “Many healthcare professionals believe that these patients are responsible for their obesity There is still a tendency to blame the patient for their failure to be thin (Pryor, 2002)” (Mikhailovich & Morrison, 2007, p. 315). But even nurses have limited contact with these families and feel “that time pressures, a lack of treatment options and parental reluctance to address weight problems prevented them from helping obese children to lose weight” (Robinson, 2009, p. 10). A study in England by Turner, Sheld, and Salisbury in 2009 concludes “that brief physician–led primary care intervention produced no long term improvement in children’s BMI, physical activity, or nutrition.... that resources may be better divided between primary prevention in the community and specialized treatment options for children with established obesity” (Robinson, 2009, p. 10).

Implications

The solution for childhood obesity lies in a multidimensional approach. It begins with healthcare providers addressing the problem with their clients, educating families, and broadens to culturally appropriate education of families and workers in daycares, schools and communities on the medical risks of childhood obesity and the importance of healthy behaviors. Communities then need to become more responsible in using resources to promote healthy behavior, to provide safe and conducive environments for physical activity and to support the availability of low cost

healthy food choices for families. “Because physical activity and eating habits are shaped early in life, the childcare setting is an ideal place to help young children develop health behaviors that can be carried into adulthood and decrease the risk of chronic disease” (Drummond et al., 2009, p. 157). “Neighborhoods and communities can provide opportunities for recreational physical activity with parks and open spaces, and policies must support this capacity (AAP, 2009, p. 1591). In a 2004 report, the Institute of Medicine (IOM) states, “we must view childhood obesity as a societal problem, reflective of the influences of environment, genetics and behavior rather than an individual medical illness” (Niehoff, 2009, p. 18). It takes a village to raise a child (ancient African proverb, n. d.). (Clinton, 1996) By participating in comprehensive initiatives to reduce childhood obesity in our society, we can improve the health of future generations.

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