Abstract
Childhood Obesity

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Tennessee is one of three states in the United States with an Obesity rate of greater than 30. It is the state who has the leading cause of death due to heart disease and strokes in the nation. In Tennessee, deaths from strokes are reported 43% higher in African Americans then Caucasians. The rate of death due to diabetes in Tennessee is 146% higher among African Americans than among Caucasians. Hispanic Americans are one of the fast growing minority group and they are obese at an alarming rate and suffer similar consequences.

Children and adolescents are not unscathed in this dilemma. Obesity has risen threefold in this age group. In children, the prevalence increased from 5.0% to 13.9%; aged 6-11 years increased from 6.5% to 18.8%; and those aged 12-19 years increased from 5.0% to 17.4%. These children and adolescents are at increase risk of dyslipidemia, hypertension, metabolic syndrome and type 2 diabetes. In addition, CDC reports 80% of children between the ages of 10-15 years who are overweight or obese will persist to adulthood. Yet only 25% of obese adults were overweight as children. If a child of 8 years of age is obese, they will suffer severe obesity as adult. Metabolic syndrome is a useful tool in assisting to diagnosis adults but it has not been documented to diagnosis children and adolescents at risk. A serious consequence to early obesity is the risk of early heart disease and strokes.

Children and adolescents have a multifactorial reason for there obesity. Contributing factors are environmental, behavioral, genetic, metabolic, cultural, socioeconomic status, energy imbalance (consuming more than physical activity). Other health risky behaviors also play a major role. In Tennessee, 36% of Caucasian high school students and 12% of African American students smoked in 2001. Fifty-eight percent of high school students are not enrolled in an organized physical education class, but with the high rate of crime, as kidnapping of children, outside play is also hampered. These students are prime set-up for obesity and its health consequences.

Children and adolescents need guidance in lifestyle healthy behavior. Parents need to increase their knowledge first to allow children to inherit their examples. Tennessee has multiple guidelines and plans in place to implement a change in behavior of its constituents. It is a daunting task but with everyone playing a major role the State can be successful.

Childhood Obesity

Obesity is a growing dilemma in the United States and specifically three states have the highest rate greater than 30%. They are Alabama (30.3), Mississippi (32) and Tennessee (30.1). However, the increase in health adversity is of major concern. Diseases as coronary heart disease, stoke, dyslipidemia (high blood cholesterol and triglycerides), Type 2 diabetes, some cancers (breast, colon and endometrial), osteoarthritis and sleep apnea are hallmark consequences. The National Vital Statistics report these diseases contributed $117 billion to the medical cost in the year 2000. According to the Center for Disease Control (CDC), Tennessee has the leading cause of deaths due to heart disease in this country. In 2002, 29% of the states deaths were due to heart disease and in addition, stroke ranked 3rd causing 7% of the states deaths. Cancer caused 22% of the deaths. Despite the above statistics, in 2005 the Behavior Risk Factor Surveillance System revealed adults continue to have increase in health risk factors as 30% screened reported increase blood pressure, which ultimately leads to stokes and heart disease, and 32% of those screened had high blood cholesterol. In Tennessee, deaths from strokes are reported 43% higher in African Americans then Caucasians. The rate of death due to diabetes in Tennessee is 146% higher among African Americans than among Caucasians. Hispanic Americans are one of the fast growing minority group and they are obese at an alarming rate and suffer similar consequences.

Children and adolescents are not unscathed in this dilemma. Obesity has risen threefold in this age group. In children, the prevalence increased from 5.0% to 13.9%; aged 6-11 years increased from 6.5% to 18.8%; and those aged 12-19 years increased from 5.0% to 17.4%. These children and adolescents are at increase risk of dyslipidemia, hypertension, metabolic syndrome and type 2 diabetes. In addition, CDC reports 80% of children between the ages of 10-15 years who are overweight or obese will persist to adulthood. Yet only 25% of obese adults were overweight as children. If a child of 8 years of age is obese, they will suffer severe obesity as adult. Metabolic syndrome is a useful tool in assisting to diagnosis adults but it has not been documented to diagnosis children and adolescents at risk. A serious consequence to early obesity is the risk of early heart disease and strokes.

Dr. Nicolas Stittler out of the University of Pennsylvania School of Medicine “hypothesized rapid weight gain during early infancy is associate with obesity in African American young adults, a group at increase risk of obesity.” The critical period that he proposes, is between birth and 4 months where there is a rapid increase in weight for age greater than one standard deviation. Of the 29% patients with rapid weight gain, 8% were obese by age 20 years. This proposal requires further investigations.

Contributing factors are multifactorial, environmental, behavioral, genetic, metabolic, cultural, socioeconomic status, energy imbalance (consuming more than physical activity). Other health risky behaviors also play a major role. In Tennessee, 36% of Caucasian high school students and 12% of African American students smoked in 2001. Fifty-eight percent of high school students are not enrolled in an organized physical education class, but with the high rate of crime, as kidnapping of children, outside play is also hampered. These students are prime set-up for obesity and its health consequences.

In addition to behavioral and risky behaviors, socioeconomic status has shown a relationship to obesity. "For all racial and ethnic groups combined, women of lower socioeconomic status (income <130% of poverty threshold) are approximately 50% more likely to be obese than these of higher socioeconomic status. African American girls from lower SES experience a higher prevalence of overweight/obesity than those from higher SES families (American Journal of Clinical Nutrition 2006 October; 84(4) 707-16). The exact etiology is not known, but the high cost of nutritious fresh foods as fruits and vegetables and lean meats prohibit the possibility to improve eating habits. In the past, the increase in television viewing or use of electric games was proposed as key factors. These items may play a role but it is not the total answer. (McMurray et al, 2000).

Tennessee has mounted a tremendous response to assist its constituents to decrease their risk of heart disease and stroke. It has partnered or collaborated with multiple agencies to improve the quality of care and institute preventive measures. The state is apart of the Delta States Stroke Consortium which is led by Arkansas Department of Health; the State formed a Heart Disease and Stroke Prevention Program (HDSP) Advisory Council Taskforce which has implemented guidelines for treatment of strokes, heart failure and coronary heart disease in 40 hospitals, as well as a comprehensive preventive plan for the entire state. HDSP has collaborated with Joint Commission on Accreditation of Healthcare Organization JACHO) to certify hospitals as primary stroke centers. HSDP has also partnered with American Heart Association to increase awareness of signs and symptoms and institute ways to decrease Tennesseans risk factors of heart disease and stroke.

Meharry Medical College has two programs underway to address some of theses issues. One is in Obstetrics and Gynecology where Dr. Sandra Torrente is the Project Investigator. She is investigating over weight and obese women who are pregnant to denote if they can safely go on a diet and have a good birthing outcome. Dr. Xylina Bean is beginning a project on overweight and obese adolescents by providing a mentor in addition to nutritional counseling and exercise to improve a successful outcome. Dr. Tropez-Sims has completed a study reviewing if overweight or obese mothers during pregnancy transfer their poor eating habits and produce overweight and

obese infants during the first year of life. The conclusion of this study is there is no clear relationship in the first year of life.

In conclusion, thus far, we have learned that obesity is a multifactorial issue and it will take everyone to become a part of the solution. As we see from some studies the battle against obesity and its consequences begins as soon as we are born. It must be stated that not only overweight and obese children and adolescents are at risk for theses consequences but even non obese individuals run similar outcomes albeit lower rates secondary to inappropriate dietary consumptions, smoking and lack of physical activity. In our schools not only the three “R” must be taught but preventive and healthy life styles must be integrated as a life long learning experience. Good nutrition is not a diet and changing the mindset of the population of this issue is required. Research must continue to look at all aspects of obesity including the psychological aspects, which is mostly overlooked. Going back to basics as growing ones own vegetables and fruits even in a city can assist in improving ones health. Children and adolescents need guidance in lifestyle healthy behavior. Parents need to increase their knowledge first to allow children to inherit their examples. Tennessee has multiple guidelines and plans in place to implement a change in behavior of its constituents. It is a daunting task but with everyone playing a major role the State can be successful.

Submitted by

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