

The Effect of Poverty on Nutritional Status of High School-Aged Students

How does poverty affect the nutritional status of high school aged students? How can students be guided towards a more complete and nutritious diet?

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Abstract

Teens face pressures from various directions in their young lives. The stress of food insecurity often leads to a lowered nutritional status for the student and his or her family. Adding to the challenges of obtaining nutritious food, urban low-income neighborhoods often are not conducive to getting proper exercise into the daily routine. Neighborhoods with high crime rates and lack of outdoor spaces are just some of the challenges faced by teens wishing to incorporate exercise into their daily routines. Students often rely on school lunch programs, which offer only partial solutions to food insecurity. Some schools are taking a proactive approach with the introduction of food pantries for students. There are still many strides that need to be made to overcome poverty and to ensure a good nutritional status for adolescents; with the help of the community and participation from local businesses, adolescents can find some relief from poverty.

Introduction

Adolescence is a time of intense psychological and physiological changes for children as they transition into adulthood. Characterized by a high rate of growth and various hormonal changes, it is not uncommon for the average teenager to have a curiosity for where the food they eat comes from along with a big appetite. The myriad of changes is of importance for the proper development of teens into adults, however, students living in poverty have additional challenges to obtaining reliable and adequate nutrition. According to the United States Census Bureau, in 2014, 15.5 million persons under the age of 18 were identified as living in poverty – this number represents 21.1% of the population defined as living in poverty. (DeNavas-Walt and Proctor, 2015). Many young adults in this population live in underserved communities including areas considered food deserts; those areas that are devoid of grocery stores and laden convenience

stores. Often the choices for nutritious foods are limited, leaving young people with a tough decision between going hungry or eating a less than optimally nutritious meal. Ultimately the physiological changes adolescents face are a driving force for their increased nutritional needs.

Growth and Nutrient Needs During Puberty

The transition from childhood to adulthood can be a daunting time for a new adolescent. The physiological changes alone bring a multitude of emotions and behavioral changes, which can be unfamiliar and frightening. For the adolescents going through puberty, the changes associated with hormones and growth lead to an increase in nutritional needs. The average male going through puberty has a larger appetite and an increased need for protein, fats, and minerals. According to the textbook *Nutrition Through the Lifecycle*, adolescent males tend to gain 20 pounds of lean mass (bone and muscle) each year and have an overall decrease in body fat by the end of puberty. (Brown, J., 2014). Since most of the weight gained is in the form of lean mass (bone and muscle), males have a higher need for protein, calcium, and minerals.

Females have a different experience in their growth and the social and nutritional consequences of these changes can have a negative impact on overall health. Throughout the course of puberty, adolescent females tend to gain both lean mass and additional fat; body fat is necessary for menarche and ovulation as young women mature. The onset of menses also brings with it a higher need for iron, which coupled with low access to fortified foods can lead to iron deficiency anemia. The importance of iron cannot be understated, as it is necessary for the proper transport of oxygen to the tissues of the body and can have serious consequences if a person becomes too deficient including shortness of breath, dizziness, fatigue, and in severe cases irregular heartbeat. (National Heart, Lung, and Blood Institute, n.d.). In addition to the increase need for nutrients overall, the normal weight gain before and during puberty can be stressful to

adolescent females. This is a sensitive time for weight issues due to influences from peers and the media, the risk of eating disorders comes to the forefront. In this time of transition social pressures and self-awareness become more prominent and some young women turn to less than optimal eating habits in order to lose weight. Although concerns over eating disorders such as anorexia nervosa and bulimia are usually first on the list of issues that can arise, adolescent obesity carries its own set of complications and has become more prevalent in recent years. The health implications and factors influencing obesity are numerous; one particular factor is a lowered socioeconomic status of the teen and his or her family.

Poverty as an Influencing Factor of Adolescent Nutritional Status

The effects of poverty on nutritional status for people of any age range from going hungry to becoming obese. In the U.S. in 2014, 3.7 million households faced the difficulty of not being able to provide nutritious food for the children in the homes. (Coleman-Jensen, Rabbitt, Gregory, and Singh, 2015). For families with the added stress of finding where the next meal will come from, Supplemental Nutrition Assistance Program (SNAP) offers income-based assistance for the purchase of groceries. Families often find the assistance offered lasts only through a portion of the month; with an average of \$4 per day, per family member, SNAP benefits are as their name implies, supplemental. With this in mind, the cookbook *Good and Cheap* offers families workable recipes to make the most out of the SNAP benefits (Brown, L. 2014). The book includes ways to use non-perishable pantry items to yield more servings and ways to use recipes in a variety of ways.

Obesity and poverty. Living in poverty is not always a recognizable situation from appearances alone, some adolescents who face food insecurity are not receiving adequate nutrients and calories. This same difficulty of food insecurity has also led to obesity among

families in lowered socioeconomic states. Obesity is a nationwide epidemic, which affects lower income families disproportionately. Adolescents, especially those whose sole focus is education and therefore do not hold a job, already have limited money to purchase anything from snacks to a whole meal. The adolescents living in poverty have the obstacle of facing food insecurity at home in addition to having limited access to fresh fruits and vegetables. The areas known as food deserts are located generally in urban areas with low or no local access to grocery stores. These areas usually have fast food and liquor stores to rely on for nourishment. Many high school students choose to participate in athletic teams and individual exercise for a variety of reasons: staying physically active, camaraderie with classmates, and non-academic opportunities for higher education. A lowered socioeconomic status can be a hurdle for some of these athletes, particularly when nutritious food and a safe place to be physically active are not readily available.

Barriers to Physical Activity

Exercise is an important aspect of overall health beyond that of maintaining a healthy weight. Regular exercise among adolescents promotes growth through strengthening muscles and bones, lowered anxiety and higher self-esteem, and developing a positive view of physical activity. There are many social and environmental factors that impact an adolescent's ability to participate in organized sports or outdoor recreation (Brown, 2014). In his review, *Stuck in Unhealthy Places*, Adam M. Lippert notes adolescents living in underserved communities are discouraged from participating in outdoor activities due to high crime and low safety. Lippert also notes impacts to health and exercise during adolescence leads to poor health outcomes later in life. (2016). Not developing good exercise habits during formative years can ultimately lead to a mentality where exercise means risking personal safety and remaining sedentary becomes the

path of least resistance; remaining indoors where it is safer. Participating in team sports at school or in city leagues can offer a safer environment to incorporate physical activity, however some communities have schools with limited budgets. These restrictive budgets ultimately lead to the cutting of extracurricular activities deemed non-essential. Athletic teams provide students with an avenue to not just get exercise, but to build positive relationships with their classmates and coaches. Participation in team sports can also help a student become more aware of their increased nutritional needs. If a coach seeks out good nutritional advice to disseminate to the athletic team, he or she will be an asset to improving the nutritional status of students. An interest in food and the health benefits are a positive outcome of participation, however, the higher nutritional needs are an added challenge for families. Some may face the question of how to provide even more nutritious food for the active teenager.

Recommendations and Conclusion

Adolescents have a challenging time in their lives, as they become more independent adults. Teens living in poverty are faced with the question of where the next meal may be coming from and a lowered availability of nutritious foods. Social programs providing additional nutrition assistance to families in underserved communities should be encouraged. Individuals in these communities should also be encouraged to be advocates for their wellbeing. With high crime rates in some neighborhoods, additional police presence may help pave the way for an accessible outdoor recreation location. In locations where this is not a viable option, cooperation with local schools or facilities such as the YMCA may help provide a location for adolescents and other community members to work on their physical fitness and even provide an opportunity to meet other members of the public – this could lead to increased trust between neighbors and a more positive environment for teens.

Food deserts pose a big challenge for members of these communities; there are few incentives for convenience stores to carry fresh fruits and vegetables. Grocery stores are ultimately corporations, which open new locations where they are profitable. A potential solution to this includes encouraging farmers to come together to host farmers markets in these locations. Many farmers markets have begun accepting SNAP benefits in exchange for reduced priced fresh fruits and vegetables. For communities where weather poses a challenge, collaboration with schools to open their gyms for these types of markets would potentially allow them to continue during the unfavorable winter months. Schools themselves are proving to be a location where students living in poverty can secure food. Beyond the school lunch program, which can provide two meals per day and in some locations one meal during the summer months when school is out, there are schools taking initiative and setting up food pantries on campus so students can retrieve food for their homes. These pantries, like the one at Washington High School in North Carolina, offer more than just food: necessities such as toothpaste, feminine products, and even clothing. (Keady, 2015) The psychological benefits of the ability to rely on school as a source for items which, may otherwise be out of reach for students, can be very positive and perhaps influence a better educational experience for teens. Having a positive outlook is encouraging to individuals and can drive a desire to learn more about personal health and nutrition.

Further support from community and government, of programs offering nutrition education and assistance to adolescents is necessary to help break a cycle of poverty. Educating students on the importance of consuming nutritionally sound foods as well as the programs where they can receive these foods will ultimately improve the nutritional status of adolescents. The nutritional status improvements can lead students to educate their families on the importance

of healthy eating and exercise habits – education from within a family circle may be more effective than reading from pamphlets.

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