Malnutrition in Children: An Epic Epidemic

Over the years, malnutrition has rapidly become a major and severe problem in both developed and undeveloped countries throughout the world. The issue of malnutrition is most prevalent in underdeveloped countries that have poor economic systems and less access to nutrient-dense food and clean drinking water. However, industrialized countries such as the United States that have superior economies and increased food opportunities continue to struggle with malnutrition among a large portion of citizens. In these countries, circumstances and aspects of individuals of all ages can be negatively influenced by poor nutrition, but the physical capabilities, cognitive abilities, and behavior of children are affected the most. This is exhibited in Suzanne Collins’ famous best-selling novel *The Hunger Games*, where tributes are chosen from twelve separate districts to fight for their lives in front of the entire city of Panem. The weaker participants typically reside in the subordinate regions where food is scarce and maintaining health is a struggle. Therefore, they suffer throughout the Games and ultimately lose their lives due to malnutrition and starvation. Whether in fiction or reality, malnutrition presents many negative long-term effects in the lives of children and is viewed as a serious issue in today’s society.

According to the *Encyclopedia Britannica*, “malnutrition” is defined as “a physical condition either resulting from a faulty or inadequate diet or from a physical inability to absorb or metabolize nutrients, owing to disease” (“Malnutrition”). The rates of malnutrition have been steadily increasing over the course of time. As of 2013, a total of “842 million people in the world do not eat enough to be healthy” (FAO, 19). In result, numerous people of all ages across the globe are undernourished, which ultimately leads to the condition of malnutrition. As a disease, malnutrition accounts for “11 percent of the global burden of disease and is considered
the number one risk to health” from a worldwide standpoint (Black, Allen, Bhutta, 243-60). At some points, malnutrition takes serious tolls on the bodies of the affected people and death is a possible outcome. From this, it can be concluded that malnutrition is a serious disease throughout the world, especially when considering its impact on children. Children’s physical capabilities are affected now more than ever before.

Research has proven that proper nutrition is an essential factor in achieving optimal physical performance and overall physical fitness. According to one source, “1 in 4 of the world’s children are stunted,” meaning their bodies fail to fully develop because of malnutrition (“Facts about Malnutrition”). Eating less processed foods and consuming the correct amount of necessary vitamins and minerals increases the body’s ability to function, especially during periods of exercise when more energy and calories are used. Multiple studies have demonstrated that nutrient intake and levels of physical ability and activity are directly related. As stated in the Annals of Tropical Paediatrics, studies over the past several decades have shown a negative effect of undernutrition on physical performance (Benefice 55-66). A supportive example of this would be an observational study included in the American Journal of Clinical Nutrition indicating that undernourished adolescents have significantly higher heart rates when performing moderate amounts of work. Another inclusive study revealed that improving the nutritional status of malnourished children in turn correlates with an increase in their activity level (Satyanarayana, Naidu, Narasinga Rao 1769-1775). In The Hunger Games, Katniss Everdeen is from District Twelve, the lowliest of the thirteen districts in the nation of Panem where coal mining is the main industry. Compared to the other districts of Panem, food is not easily accessible in the twelfth district and many individuals are challenged to survive in and outside of the Games. Before traveling to the Capitol, Katniss supports this by saying:
I can’t win. The competition will be far beyond my abilities. Kids from wealthier districts, where winning is a huge honor, who’ve been trained their whole lives for this. Boys who are two to three times my size. Girls who know twenty different ways to kill you with a knife. Oh, there’ll be people like me, too. People to weed out before the real fun begins. (Collins 36)

Katniss’ statement shows the continuing struggle that is present among the citizens of her area. Obviously food and nutrition play a major role in the advantages the tributes from districts such as one, two, and four have over Katniss and Peeta. The Hunger Games favor the richer districts: those who can afford the time and training it takes to compete. This relates to the better physical capabilities well-nourished children have in the United States and other developed countries around the world. In addition to hindering physical capabilities, the cognitive abilities of children are harmed in result of malnutrition.

Cognitive development and mental performance are directly related to malnutrition and its effects. Grantham-McGregor et al. conducted research that outlined the evidence linking malnutrition to mental development. In Public Health Nutrition, it is stated that early childhood malnutrition has been related to poorer cognitive function, school performance and IQ scores in both the short and long term (Grantham-McGregor, Baker-Henningham 1191-1201). According to the Third National Health and Nutrition Examination Survey, 6 to 11-year-olds that were food insufficient had significantly lower scores on tests of proficiency in mathematics and were more likely to have repeated a grade (Alaimo, Olson, Frongillo 44-53). Additionally, numerous studies have been conducted that demonstrate skipping breakfast diminishes mental performance by a variety of measures in malnourished children (Cueto 1429-1431). These studies and findings suggest that specific nutrients in foods are responsible for boosted brain function and
without them, a human brain will operate at a significantly lower level. In all, it is extremely easy to see the correlation between essential food and cognitive ability. In *The Hunger Games*, it is stated, “stupid people are dangerous” when Katniss discovers her conspicuous location in a towering tree may be revealed by the rookie mistake of a careless fellow tribute (Collins 159). This situation suggests various levels of intelligence are present within the many tributes participating in the treacherous Games. Miss Everdeen proves that in order to prevail and be the last member standing, one must be clever and keen when facing other contestants and obstacles.

Without proper nutrition and planning prior to and during time in the vast arena, winning is no longer an option. This is due to lack of energy and decent health. Out of many long-term effects of malnourishment, behavior is affected in addition to physical and cognitive abilities.

Children from families that report multiple episodes of hunger and food insufficiency have been shown to be more likely to show behavioral and emotional problems. These complications cover a very broad spectrum. Emotions and behaviors are controlled due to certain signals within the brain that can be regulated by things such as vitamins, minerals and exercise. Protein, iron and zinc are three of these controllers. “Protein malnutrition and iron and zinc deficiency are associated with increased aggression, hyperactivity, and conduct disorder in children” (Liu, Raine 565-570). In addition to these types of behaviors and reactions, malnutrition has been proven to be the cause of elevated symptoms of depression between the ages of 11 and 17. Some reasons for these feelings of depression are because the children are overly concerned about their weight or physical appearance when compared to others. In result, they have less energy and motivation to play and interact with children their age. Therefore, they become anti-social and spend a great amount of time in isolation. This is a specific example of how depression becomes a serious issue for most children who suffer from malnutrition (Galler
For the participants in *The Hunger Games*, behavior is also affected by the desire for food and extent of starvation they endure. The tributes may not suffer from emotional disorders like depression or hyperactivity, but they are willing to put their lives in danger or at risk for the opportunity to gain food and protect themselves. Feelings of greed surface throughout the later parts of the novel and are demonstrated by the actions of certain tributes in the Games. For example, Claudius Templesmith invites the remaining children to the cornucopia in the arena for a feast when only five of the original tributes remain living. At this feast there will be unfathomable amounts of cuisine from the Capitol and one particular item that each tribute desperately needs. Out of hunger, greed, and inquisitiveness, Katniss, Thresh, Foxface and Clove make their way out of the security of the forest to the open area of the dinner. From this, one can conclude that their behavior was completely influenced by their starvation and overall state of malnutrition.

For many Americans, a cornucopia is a horn-shaped container that often shows productivity by overflowing with grain and produce. The *Encyclopedia Britannica* directly describes a cornucopia as a “horn of plenty” ("Cornucopia"). This object is a common symbol of abundance and nourishment, which is one reason why the tributes in *The Hunger Games* were so drawn to the feast. In reality, it’s unusual for individuals to have access to a “cornucopia” of their own filled with nutritious food. Similar to the families in the distant districts of Panem, food is not easily available to the underprivileged citizens of the United States today. Their desired “cornucopia” is unfortunately out of their grasp and in turn, the quality of their lives has decreased. In conclusion, malnutrition has both emotional and physical effects on our youth in the world as a whole. Physical capabilities, cognitive abilities, and behavior are all detrimental
outcomes of malnutrition. In all, this issue should not be taken lightly and must be viewed for its negative long-term consequences along with solutions to this continuously developing disease.
Works Cited


http://www.britannica.com/EBchecked/topic/138081/cornucopia


