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RESEARCH ARTICLE
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Prevalence of Malnutrition – Assessing its Precipitators and their Impact

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ABSTRACT

Malnutrition is defined as "a state of nutrition in which a deficiency, or excess, of energy, protein and micronutrients causes measurable adverse effects on tissue/body form (body shape, size and composition) and function (www. Omicsonline.org). Starvation, Sarcopenia and Cachexia are three primary syndromes of unintentional weight loss. In 2017, globally there were 151 million children under 5 year of age were stunted, 51 million wasted and 38 million overweight (WHO, 2017). Major causes of malnutrition include poverty and food prices, dietary practices and agricultural productivity and lack of adequate breastfeeding leads to malnutrition in infants and children, associated with the deaths of an estimated one million children annually. It is necessary for the health experts to provide treatment to the patient according to his/her general health and severity of the abnormality or deformity. The treatment for malnutrition depends on the person's general health and how severely he/she is malnourished.

Key Words : Sarcopenia, Cachexia, Syndrome, Mortality, Morbidity

INTRODUCTION

Malnutrition is defined as "a state of nutrition in which a deficiency, or excess, of energy, protein and micronutrients causes measurable adverse effects on tissue/body form (body shape, size and composition) and function (www. Omicsonline.org). When we speak of under-nutrition, this definition has not been considered as the cause of unintentional weight loss. Starvation, Sarcopenia and Cachexia are three primary syndromes of unintentional weight loss: usually happens as a result of protein-energy deficiency and is compatible with PEM (www. Omicsonline.org). The major contrast among starvation and other syndromes of unintentional weight loss is that it is back-up when adequate energy and protein intake is achieved (www.researchgate.net). In sarcopenia there is an increasing loss of muscle mass that results with common ageing, as still this area is under investigation. Dietary habits are not primarily the major cause of weight loss as sarcopenia is deemed to occur nevertheless of energy balance. Cachexia is caused by proinflammatory cytokines and is related with a number of chronic issues such as cancers, HIV/AIDS, heart failure and chronic obstructive pulmonary disease (COPD). A set of eminent researchers together build a common definition for cachexia which points that "cachexia is a complex metabolic syndrome coupled with underlying illness and characterized by loss of muscle with or without the loss of fat. Malnutrition is classified on the basis of what nutrients are absent in the diet, for how long and at what age. There are two major types of malnutrition which have been further divided as; Protein energy mal nutrition and Dietary Vitamins and minerals (www.researchgate.net).

Prevalence of malnutrition:

– Child malnutrition continues to be the leading public health problem in developing countries. Globally, there were 165 million stunted, 99 million underweight, and 51 million wasting children by year 2012. It kills 3.1

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million under-five children every year (Black, 2013). Malnutrition increases the chance of both of morbidity and mortality, child malnutrition was coupled with 54% of child deaths (10.8 million children) in developing countries in 2001 (WHO, 2004).

– In India 44% of children under the age of 5 are underweight. 72% of infants and 52% of married women have anemia. Research has conclusively shown that malnutrition during pregnancy causes the child to have increased risk of future diseases, physical retardation, and reduced cognitive abilities (http://wikipedia.org/wiki/malnutrion). Malnutrition among rural children in Ethiopia using the traditional measures was found to be underweight 27%, wasting 9.7%, and stunting 41.2%(ICF International Calverton (USA), (http://link.springer.com).

Sign and symptoms of malnutrition:

According to Viswantha *et al.* (2009) each deformity or abnormality has some sign and symptoms. Sign and symptoms give a mark to the person that they have a problem. A symptom is something that the patient feels and reports, while a sign is something that the other people, such as the doctor detects. For example, pain may be a symptom while a rash may be a sign. The author further elaborated the signs and symptoms of malnutrition as loss of fat (adipose tissue), breathing difficulties, a higher risk of respiratory failure, higher risk of complications after surgery, higher risk of hypothermia, abnormally low body temperature, higher susceptibility to feeling cold, longer healing time for wounds, for infections, for illnesses, lower sex drive, problems with fertility, reduced muscle mass, tissue mass, fatigue, or apathy and irritability, obesity and improper functioning of body parts etc. (www.alliedacademics.org). Use of nutrition varies from person to person and activity to activity. It is necessary for an individual to use diet to his/her physique and concerned activity (Kerstetteret *et al.,* 1992; www.alliedacademics.org).

Precipitators of malnutrition:

Major causes of malnutrition include poverty and food prices, dietary practices and agricultural productivity, with many specific cases being a composition of several factors (www.thepharmajournal.com). Clinical malnutrition, such as cachexia, is a major burden in developed countries. Various scales of analysis also have to be examined in order to assess the socio-political causes of malnutrition (http://en.m.wikipedia.org). For example, the population of a community that is within in appropriate governments may be at risk if the locality is not equipped with health-related services, but on a smaller scale certain households or individuals may be at an even higher risk due to differences in income levels, access to land, or levels of education (Fosto *et al.*, 2005).

Malnutrition can be a consequence of health issues such as gastroenteritis or chronic illness, especially the HIV/AIDS pandemic, Diarrhea and other infections can cause malnutrition through decreased nutrient absorption, decreased intake of food, increased metabolic requirements, and direct nutrient loss (Musaiger *et al.,* 2011). Parasite infections, in particular, intestinal worm infections (helminthiasis) can also lead to malnutrition. A leading cause of diarrohea and intestinal worm infections in children in developing countries is due to lack of sanitation and hygiene (Grover *et al.,* 2009). People may become under nourished due to abnormal nutrient loss (due to diarrhea or chronic illness affecting the small bowel). These factors may include Crohn's disease or untreated celiac disease. Malnutrition is also caused due to increased energy expenditure (secondary malnutrition) (http//:everpedia.org).

Dietary practices:

Under nutrition:

A lack of adequate breastfeeding leads to malnutrition in infants and children, associated with the deaths of an estimated one million children annually. Illegal advertising of breast milk substitutes contributed to malnutrition and continued three decades after its 1981 prohibition under the WHO International Code of Marketing Breast Milk Substitutes (Brady, 2012; http://www.upcscavenger.com). Maternal malnutrition can also factor into the poor health or death of a baby. Over 800,000 neonatal deaths have occurred because of deficient growth of the fetus in the mother's womb (WHO, 2001).

Deriving too much of one's diet from a single source, such as eating almost exclusively corn or rice, can cause malnutrition. This may either be from a lack of education about proper nutrition, or from only having access to a single food source (Burchi, 2011). It is not only the total amount of calories that issue, but peculiar nutritional deficiencies like vitamin A deficiency, iron deficiency or zinc deficiency might also increase risk of death (UNICFF).

Over nutrition:

Over nutrition caused by overeating is also a manifestation of malnutrition. In the United States, more than half of all adults are now overweight—a condition that, like hunger, increases susceptibility to disease and disability, lowers worker productivity, and decreases life expectancy. Overeating is much more usual in the United States, where for the majority of people, access to food is not an issue. Many parts of the world have access to a surplus of non-nutritious food, in addition to increased sedentary lifestyles. Yale psychologist Kelly Brownell calls this a "toxic food environment" where fat and sugar laden foods have taken precedence over healthy nutritious foods (Grandr *et al*., 2000). Much fast food is devour per capita in the United States than in any other country. The cause for this is the mass consumption of fast food is due to inexpensiveness and accessibility (http://en.wikipedia.org). Many times fast food is low in cost and nutrition and is high in calories and heavily stimulated Obesity is not only seen in developed countries, it can also be viewed in some places in developing countries where income is more. This can also be seen in countries where hunger and poverty persist (http://www.worldwatch.org).

Poverty and food prices:

In Bangladesh, poor socio-economic position was associated with chronic malnutrition since it inhibits purchase of nutritious foods such as milk, meat, poultry, and fruits. As much as food shortages may be a contributing factor to malnutrition in countries with lack of technology, the FAO (Food and Agriculture Organization) has estimated that eighty per cent of malnourished children living in the developing world live in countries that produce food surpluses. There is a controversial argument that commodity speculators are increasing the cost of food. Due to the collapse of the real estate boom in the United States, a wave of investing trillions of dollars was moved to invest in food and primary commodities, which led to the 2007–2008 food price crisis. The drift from traditional fuels to bio-fuels raised the price of food. The United Nations special rapporteur on the right to food, Jean Ziegler proposes that agricultural waste, like corn cobs and banana leaves, other than crops themselves be used as fuel.

Treatments for malnutrition:

It is necessary for the health experts to provide treatment to the patient according to his/her general health and severity of the abnormality or deformity. The treatment for malnutrition depends on the person's general health and how severely he/she is malnourished (http://www.researchgate.net). The first dietary advice is usually:

1. The use foods that are high in calories and protein
2. Snacking between meals
3. Having drinks that contain lots of calories
4. Avoid Excessive intake of food
5. Use diet when needed

Malnutrition and its impact on the body:

According to Morley *et al.* (1995) Malnutrition caused improper growth and development, weakness and different kind of abnormalities and deformities among the children. The author further classified the malnutrition that adversely affect the health problems. These problems may be classified or categorized in the form of Short-term implications and long-term complications.

In early childhood the child grow so fast. Nutrient deficiencies can have short-term implications such as; Improper functioning of immune system and Improper growth of the body. The short-term implications of malnutrition eventually give way to long-term complications, such as; Slow body growth and Slow cognitive development

As of 2016, it is estimated that about 8,23,000 deaths of children below five years old could be prevented globally per year through more widespread breastfeeding. In addition to reducing infant death, breast milk feeding provides an important source of micronutrients, clinically proven to bolster the immune system of children, and provide long-term defenses against non-communicable and allergic diseases (Belgaum *et al.*, (2015). Breastfeeding has also been shown to improve cognitive abilities in children, with a strong correlation to individual and educational achievements. As previously noted, lack of proper breastfeeding is a major factor in child mortality rates, and a primary determinant of disease development for children. The medical community recommends exclusively breastfeeding infants for 6 months, with nutritional and whole food supplementation along with continued breastfeeding up to 2 years or older for overall optimal health outcomes. Exclusive breastfeeding is defined as only giving infant breast milk for six months as a source of food and nutrition. This means no other liquids, including water or semi-solid foods (Cai, Xiaodong;

et al. (2012).

Conclusion:

To sum-up, it is identified that lack of proper awareness among the people on the causative factors of malnutrition among the children and its adverse impact on their health and family conditions is the major cause that resulted in mortality and morbidity. It is the utmost duty of the Governmental and Non-governmental organizations to develop a schematic pattern of educating the public regarding the serious states of malnutrition which may ultimately combat the problem and throws light in their lives. Pre-Marital Counseling, Pre-Natal Counseling and Post-Natal Counseling will help in understanding the forthcoming problems regarding the child's health and motivate the people to take precautionary measures to provide a healthy and happiest life to their children.

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