

The Impact of Malnutrition Problems on Children Under 5 Years Old and its Management Strategies: A Retrospective Analysis

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Abstract

Malnutrition in children under 5 years old is a critical issue affecting their growth and development. This condition, characterized by both undernutrition and overnutrition, leads to a range of health problems, including stunted growth, underweight, and obesity. The global burden of child malnutrition is severe, with millions of children facing stunted growth, wasting, and being overweight, resulting in long-term health and socio-economic consequences. The purpose of this study is to analyze the impact of malnutrition on children under 5 years and evaluate effective management strategies. A literature review methodology was employed, utilizing data extracted from six relevant articles sourced from reputable journals. Findings highlight several key strategies for addressing malnutrition, including exclusive breastfeeding for the first six months, ensuring a balanced nutrient intake, providing necessary supplements, and addressing underlying medical conditions. These strategies are essential in preventing malnutrition and improving children's health outcomes. The results underscore the need for systemic interventions that incorporate education, policy changes, and community engagement to effectively combat malnutrition. Implications for future interventions and policy development emphasize the importance of early nutrition and continuous healthcare support for young children.

Keywords: Malnutrition, Knowledge, Undernutrition, Overnutrition

INTRODUCTION

Malnutrition is one of the dangerous conditions, namely when a person experiences a nutritional imbalance in his body. As a result of this condition, sufferers can experience various health complaints related to impaired body functions. *Malnutrition* can be experienced by anyone, but generally, this condition is experienced by toddlers and the elderly. This condition is usually always associated with undernutrition, even though *malnutrition* is not just undernutrition. The condition of overnutrition can also be said to be *malnutrition* (Walson & Berkley, 2018).

The variety of types of food that can be consumed by children has caused *malnutrition* to shift, which was previously synonymous with nutritional deficiencies, to excess nutrition. *Malnutrition* in children is a serious problem that needs to be addressed.

Some serious problems that are rooted in *malnutrition* are stunted growth, problems with the eyes or vision, diabetes, and heart disease. There are now billions of people affected by *malnutrition*. In fact, some of them make *malnutrition* develop due to the influence of the environment, lifestyle, and resources they have (NesaPriya & Premraj, 2017).

Malnutrition in children is a condition when children do not get nutritional intake that suits their needs. This condition should not be taken lightly because it can have an impact on the general health condition of children and their growth and development process. The first 1000 days of a child's life are a golden period for their growth and development. During this period, children need adequate nutritional intake to optimize their growth (Rodríguez et al., 2011).

Malnutrition, or also called *nutritional imbalance*, occurs when children do not get adequate and balanced nutritional intake for a long time. This condition is divided into two types: undernutrition and overnutrition. Both need to be watched out for because they can cause various health problems in children. For example, children are often infected due to weak immunity, and they may suffer from growth and development disorders, diabetes, and hypertension. In addition to the various health problems in children mentioned earlier, *nutritional imbalance* in children can also trigger stunting or short body conditions.

According to the World Health Organization (WHO), globally in 2022, 149 million children under the age of 5 are estimated to be stunted (too short for their age), 45 million are estimated to be wasting (too thin for their height), and 37 million are overweight or live with obesity. Almost half of deaths in children under the age of 5 are due to *malnutrition* (Report, 2024). This is mostly the case in low- and middle-income countries. The impact of the global burden of *malnutrition* on development, economic, social, and medical aspects is serious and long-lasting, both for individuals and their families, societies, and countries.

Worldwide, (Group, 2024; Huybregts & et al., 2017) million children die before their fifth birthday each year, with 80% of those deaths occurring in sub-Saharan Africa and Asia (Group, 2024). Nearly half of these deaths occur in malnourished children. There is a two-way relationship between both *malnutrition* and infection; *malnourished* children are at increased risk of infection, and chronic, recurrent, or recurrent infections often lead to *malnutrition*. In addition to the increased frequency of disease transmission, *malnourished* children are at a significantly higher risk of developing more severe diseases and suffering from much more acute and long-term morbidity and mortality when infected (Walson & Berkley, 2018).

As with many health problems, preventing child *malnutrition* is more effective than treating it. Approaches to preventing acute and chronic child *malnutrition* include interventions to improve children's nutritional intake and foster optimal health, which in turn depends on households adopting optimal diet, health, and healthcare practices (Huybregts & et al., 2017). The easiest way to prevent *malnutrition* is to educate about a balanced diet, as well as to take advantage of available resources. Furthermore, improving

sanitation awareness and hygiene food preparation habits can prevent various diseases that risk worsening children's health conditions.

In May 2012, the World Health Assembly, the World Health Organization's (WHO) decision-making body, agreed on a new target: to reduce the number of stunted children under the age of 5 by 40 percent by 2025. The UN Secretary-General has included the elimination of stunting as a goal of the Zero Hunger Challenge, launched in June 2012. This emphasis on stunting has led to a national review of programs and strategies to improve prevention focus and integrated programs (*History of the SUN Movement*, 2015). In addition, the Scaling Up Nutrition (SUN) Movement seeks to build a national commitment to accelerate progress to reduce stunting and other forms of *malnutrition*, such as overweight. Through SUN, countries are working to increase access to and demand for affordable and nutritious food. They are also addressing other factors that determine nutritional status, such as improved feeding and care practices, water hygiene, sanitation, health services, social protection, and initiatives to empower women (Morales, la Paz, et al., 2024).

The handling of *malnutrition* is closely related to the strategy of a nation in creating healthy, intelligent, and productive human resources. Efforts to improve the quality of human resources begin by handling children's growth as part of a family with good nutritional intake and care. With a healthy family environment, the presence of infectious infections or other community diseases can be avoided. At the community level, factors such as a hygienic environment, family food security, child care, and primary health services are very decisive in shaping children who are resistant to *malnutrition*.

On a macro level, it takes firmness in policies, strategies, regulations, and cross-sector coordination from the government and all stakeholders to ensure the implementation of important points such as community empowerment, poverty eradication, food security, and education that will indirectly change the bad culture and paradigm at the lower level in terms of nutritional care for families, including children. Adequate nutritional status plays an important role in normal growth processes, quality of life, treatment response, comorbidities, and long-term survival (Randles & Finnegan, 2023). Nutritional status can be assessed from different nutritional needs and intake in each individual. An imbalance between nutritional needs and intake can result in a cumulative deficiency or excess of energy, protein, or macronutrients or micronutrients that can negatively impact children's growth and development (Walson & Berkley, 2018).

The purpose of this research is to analyze the impact of *malnutrition* on children under 5 and explore the strategies for managing this issue. By examining various interventions, this study seeks to identify effective methods for mitigating the consequences of *malnutrition* and improving the nutritional status of children. The implications of this research are significant, as understanding the causes and potential solutions for *malnutrition* can lead to more informed policies and interventions that can reduce *malnutrition* rates and promote healthier generations in the future.

Despite the significant progress made in addressing *malnutrition* globally, the challenges persist, particularly in low- and middle-income countries. While much of the existing research focuses on individual nutritional interventions, there is a lack of comprehensive studies that address the multifaceted causes of *malnutrition*, including the socio-economic, cultural, and environmental factors that exacerbate the issue. Additionally, the integration of both undernutrition and overnutrition in the context of childhood health has not been explored in depth. This article seeks to fill this gap by providing a detailed analysis of the various *malnutrition* issues faced by children under five, with a particular focus on how these issues impact long-term health and development.

This study aims to analyze the impact of both undernutrition and overnutrition on children under the age of five, identify the primary factors contributing to *malnutrition*, including socio-economic, cultural, and environmental determinants, and examine existing *malnutrition* management strategies and their effectiveness in improving children's health outcomes. The findings of this research will offer valuable insights for policymakers and healthcare providers, helping them formulate comprehensive strategies to combat *malnutrition* in children. It will also benefit families and communities by raising awareness about the importance of balanced nutrition and proper feeding practices. Additionally, this study will provide a foundation for future research by identifying key areas where further intervention and study are needed, particularly in under-researched regions or populations.

RESEARCH METHODS

The method of writing articles used is a *literature study*, which is a series of studies involving the collection of literature data, or research whose object is traced through various literature sources (books, scientific journals, and documents) using a narrative approach. The review criteria applied are to review articles in English, both research articles and review articles. The population in this study consists of research articles or reviews obtained from search engines such as Google Scholar, PubMed, ScienceDirect, Emerald Insight, and DOAJ. The sample in this study is the key term obtained, namely the impact of *malnutrition* and its handling strategy (Gupta et al., 2021a).

RESULTS AND DISCUSSION

The success of the development of a nation is determined by the availability of quality human resources (HR), namely human resources who have a strong physique, strong mentality, excellent health, and intelligence. Empirical evidence shows that this is largely determined by good nutritional status, and good nutritional status is determined by the amount of food consumed. The problem of malnutrition and malnutrition is directly influenced by food consumption factors and infectious diseases. Indirectly influenced by parenting, food availability, socio-economic, cultural and political factors. If malnutrition and malnutrition continue to occur, it can be a factor that inhibits children's growth and development(Huybregts et al., 2017).

The problem of malnutrition often escapes ordinary vision or observation and is often not quickly addressed, even though it can cause major problems. Malnutrition will gradually have an impact on the high mortality rate of mothers, infants, and toddlers, as well as low life expectancy. In addition, the impact of malnutrition can also be seen in low school participation, low education, and slow economic growth and of course it will be increasingly difficult to get out of the poverty (Govender et al., 2021).

To prevent malnutrition in children, parents should choose nutritious foodstuffs, easy to get and affordable, practical to give, and contain iodine. These foods are also important to meet the child's daily nutritional intake. That's various important information about the causes of nutritional imbalance in children and the treatment steps (Gupta et al., 2021b). There are several articles that have been obtained from various reference sources finding the same nutritional problems in children as in the following table:

Table 1. Literature Review

Name	Title	Journal	Result
Beulah NesaPriya.V, (2017)	Effects of Malnutrition –A Social Work Perspective	Research on Health Survey carried out in 2005 to 2006 results- child malnutrition rates in India is disproportionately high. Poor nutrition in the first 1,000 days of a child’s life can also lead to stunted growth, which is irreversible and associated with impaired cognitive ability and reduced school and work performance.	
Judd L. Walsona,b and James A. Berkley, (2018).	The impact of malnutrition on childhood infections	Wolters Kluwer Health, Inc, Volume 31 _ Number 3.	malnutrition results in increased incidence, severity and case fatality of common infections, risks continue beyond acute episodes resulting in significant post discharge mortality.
Indiran Govender, et al (2021)	Malnutrition in children under the age of 5 years in a primary health care setting	South African Family Practice, 63 (1).	Child malnutrition under the age of 5 years has a great influence on the cultural, social, economic and community food practices. Unlike adults, the nutritional status of children is directly influenced by maternal health during pre-pregnancy, pregnancy and breastfeeding
Fátima Morales (2023)	Effects of Malnutrition on the Immune System and Infection and the Role of Nutritional Strategies Regarding	Journal Nutrients, 16 (1)	Nutritional interventions have been reported as cost-effective strategies to prevent or treat the development of malnourishment, considering

Name	Title	Journal	Result
	Improvements in Children's Health Status: A Literature Review		the link between food intake and health, especially in children, and also the susceptibility of this population to diseases and how their health status during childhood might affect their long-term physiological growth.
Lieven Huybregts, et al (2017)	The impact of integrated prevention and treatment on child malnutrition and health: the PROMIS project, a randomized control trial in Burkina Faso and Mali	BMC Public Health, 17-237.	The PROMIS study assesses the effectiveness of an innovative model to integrate prevention and treatment interventions for greater and more sustainable impacts on the incidence and prevalence of AM using a rigorous, theory-based randomized control trial approach.
Ogunrinade S.A, (2014)	The Incidence of Malnutrition in Children (Age 0 – 5 Yrs)	Journal of Agriculture and Life Sciences, Vol.1, No.2.	Mothers did not give their children balanced diet, and they did not have good knowledge of breastfeeding. Some mothers lacked the knowledge of normal time for artificial feeding and have contributed to malnutrition in children.

Source: Researcher

Discussion

Causes of Malnutrition in Children

The body needs a variety of nutrients, ranging from carbohydrates, proteins, fiber, vitamins, and others to be able to perform its functions properly. If each nutrient is not met sufficiently, it is possible that malnutrition that causes health problems can occur. Poor nutrition in children usually causes children to experience poor mental development that leads to suboptimal achievement (Nimpagaritse et al., 2019). Therefore, malnutrition conditions in children cannot be underestimated. Moreover, it is still one of the major health problems in the world, especially for children in developing countries such as Timor-Leste. From the results of several international articles, it was found that malnutrition in children generally occurs when children are deficient or even over-nutritional. There are several factors that can cause children to experience malnutrition, namely:

1. Lack of parental knowledge about children's nutritional needs
2. Lack of access to adequate and affordable food
3. Social and economic factors, such as poverty, natural disasters, or wars
4. Environmental hygiene or poor sanitation

5. Certain health disorders, such as Crohn's disease, dysphagia or difficulty swallowing, celiac disease, cancer, and HIV/AIDS
6. Infections, such as diarrhea, TB, pneumonia, or worms that recur or recur frequently
7. Congenital abnormalities, such as congenital heart disease
8. Mental disorders, such as depression and eating disorders
9. Iodine deficiency when the child is still in the womb (congenital hypothyroidism).

One of the risk factors that play an important role is infectious diseases and micronutrient deficiencies. Malnutrition in toddlers has an impact on growth and development. Visible growth disorders are weight and height that is less than normal (Huybregts et al., 2017). Meanwhile, developmental disorders can be in the form of psychomotor developmental disorders, intelligence disorders, and mental disorders. Prevention and control of malnutrition in toddlers can be done by supplementing micronutrients such as vitamin A, zinc, and iron (Saghir Ahmad, 2015). The results of the study have proven that zinc and iron supplementation can improve the nutritional status of toddlers, appetite, and intellectual intelligence of toddlers.

Nutritional advantages and disadvantages

It is important that we understand the symptoms and differences between nutritional deficiencies and overnutrition in children in order to recognize this condition and take appropriate steps to overcome it. A malnourished condition is a condition in which the body does not get enough protein, calories, or other nutrients (Govender et al., 2021). Due to malnutrition, the body becomes underweight according to height (*wasting*), height by age (*stunting*), and weight by age (*overweight*). In contrast to malnutrition, in this condition the body receives excess nutrients due to uncontrolled consumption. These nutrients are proteins, calories or fats, which can actually also cause malnutrition. Malnutrition can lead to overweight or obesity (Ogunrinade SA, 2014). People who are malnourished usually suffer from vitamin and mineral deficiencies. Such as iron, zinc, vitamin A, and iodine. But, people with overnutrition or obesity, can also experience deficiencies in these vitamins and minerals. This is due to the possibility that obesity is caused by excessive calorie consumption, but at the same time, also not getting enough vitamins and minerals. This can happen because the food consumed is a food that is high in calories and fat, but low in other nutrients. Like fried and sugary foods (Morales, Montserrat-de la Paz, et al., 2024).

How to Overcome Nutritional Imbalance or Malnutrition in Children

Malnutrition in children is a condition when children do not get nutritional intake that suits their needs. This condition should not be taken lightly because it can have an impact on the general health condition of children and their growth and development process. Therefore, there is a need for intervention to overcome the incidence of malnutrition in children under the age of 5 years (Duggan, 2014). The way to prevent malnutrition in children, whether undernourished or overnourished, tends

to be the same, namely consuming healthy and nutritious food. In addition, there are several things to consider such as:

1. **Education on the Importance of Nutrition for Growth**
Providing education about the importance of nutrition for children's growth to parents is one of the most important things and must be done to prevent children from malnutrition. By knowing how important nutrition is, parents will be aware and try to provide good nutrition for their children.
2. **Providing Exclusive Breastfeeding**
Providing education about the importance of nutrition for children's growth to parents is one of the most important things and must be done to prevent children from malnutrition. By knowing how important nutrition is, parents will be aware and try to provide good nutrition for their children.
3. **Meet Balanced Amounts of Nutrients**
Meeting a balanced amount of nutrient intake is the most important step in addressing the prevention of malnutrition. Nutritional intake also plays an important role in supporting children's growth and development.
4. **Providing Supplements**

Supplements such as vitamins and iron are one of the things that can prevent nutritional imbalances in children. Some types of supplements that can be given are vitamins A, B, C, E, K, and certain minerals such as folic acid and zinc. Before giving supplements, it would be good to consult with a doctor to give the right supplements.

1. **Meeting Iodine Needs**
Iodine is a type of nutrient that has benefits for the health of the mother and fetus as well as the child's growth and development process. When iodine is deficient, children are at risk of developing growth and development problems, such as being short, having a low level of intelligence (IQ), and others.
2. **Monitoring Children's Physical Growth**

One of the most important things in preventing malnutrition is to monitor the physical growth of a child. By knowing your weight, length, head circumference, and others on a regular basis, it can be adjusted to the nutrition table according to the provisions. Taking these steps can help children get malnutrition. If the child has malnutrition then it is likely to become more dangerous complications for health such as growth disorders, chronic diseases, and even death(Roy et al., 2007). Therefore, it is very important to always monitor the growth and development of children.

To prevent malnutrition in children, parents should choose nutritious foodstuffs, easy to get and affordable, practical to give, and contain iodine. These foods are also important to meet the child's daily nutritional intake. Causes of nutritional imbalance in children and treatment steps. To ensure the child's nutritional status is normal, don't forget to regularly weigh and measure the child's height. If your little one shows signs or symptoms of malnutrition in children, you can consult a doctor to check the condition of

your little one. After that, the doctor can provide treatment that is appropriate to the health problems experienced by your little one.

CONCLUSION

The problem of *malnutrition* in children under the age of 5 refers to the condition of deficiency or overnutrition consumed by children. This imbalance manifests itself in cases such as stunted growth, underweight, and overweight, which hinder children from growing up healthy and enjoying life to the fullest. The inability to provide nutritious food for children must be understood and addressed systemically to create meaningful progress in ending this problem.

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