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### Dyslipidemia in Children and Adolescents: Current Insights and Updated Treatment Approaches

Kim SE

Published online May 8, 2025  
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#### Review Article

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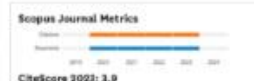
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Short Communication



# Utilizing Local Food Sources in a Sustainable Healthy Diet System and Psychosocial Care to Reduce Malnutrition

Lestari Octavia ,<sup>1</sup> Nia Novita Wirawan ,<sup>2</sup> Intan Ria Nirmala ,<sup>3</sup>  
Verawati Sudarma ,<sup>4</sup> Patricia Budihartanti Liman ,<sup>4</sup> Fitrianiingsih ,<sup>1</sup>  
Wahyu Rahardjo ,<sup>5</sup> Rahmi Nurdiani ,<sup>6</sup> and Wiralis <sup>3</sup>

OPEN ACCESS

Received: Apr 29, 2023  
Revised: Nov 27, 2024  
Accepted: Dec 16, 2024  
Published online: Mar 5, 2025

Correspondence to

Lestari Octavia

Department of Information System, Faculty of Computer and Information Technology, Universitas Gunadarma, Depok, West Java, Indonesia.

Email: lestari\_octavia@staff.gunadarma.ac.id

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ORCID iDs

Lestari Octavia

<https://orcid.org/0000-0002-2100-4700>

Nia Novita Wirawan

<https://orcid.org/0000-0002-4766-175X>

Intan Ria Nirmala

<https://orcid.org/0000-0002-1700-9074>

Verawati Sudarma

<https://orcid.org/0000-0002-9895-5571>

Patricia Budihartanti Liman

<https://orcid.org/0000-0002-3077-5566>

Fitrianiingsih

<https://orcid.org/0000-0003-2480-2801>

Wahyu Rahardjo

<https://orcid.org/0000-0001-6810-3071>

<sup>1</sup>Department of Information System, Faculty of Computer and Information Technology, Universitas Gunadarma, Depok, West Java, Indonesia

<sup>2</sup>Department of Nutrition, Faculty of Health Science, Universitas Brawijaya, Malang, East Java, Indonesia

<sup>3</sup>Department of Nutrition, Health Polytechnic, Ministry of Health, Kota Kendari, Southeast Sulawesi Province, Indonesia

<sup>4</sup>Department of Nutrition, Universitas Trisakti, Jakarta, Indonesia

<sup>5</sup>Department of Psychology, Faculty of Psychology, Universitas Gunadarma, Depok, West Java, Indonesia

<sup>6</sup>Department of Fisheries and Marine Resources Management, Faculty of Fisheries and Marine Science, Universitas Brawijaya, Malang, East Java, Indonesia

## ABSTRACT

The magnitude of the problem of stunting is high in low- to middle-income countries, including Indonesia. The government of Indonesia has implemented specific and sensitive intervention programs to reduce this problem. This public health problem requires multidisciplinary management with suitable approaches and programs. In the first 1000 days of life, the quality of life is determined by conception and delivery until two years old. The requirement and fulfillment of nutrients during this period would benefit the growth and development of children. Indonesia is an archipelago country with 100,000 km of coastline and 16,771 islands with great potential for fishing. In coastal areas, optimizing protein consumption from the sea and enhancing educational programs in psychosocial care are appropriate intervention programs that will benefit stunting eradication. The complexity of the stunting problem puts authorities and other stakeholders together to formulate and design appropriate comprehensive intervention programs to improve the quality of life of the next generation.

**Keywords:** Indonesia; Local\_food; Psychosocial\_care; Stunting; Sustainable

## INTRODUCTION

Stunting remains a severe public health problem worldwide, including in Southeast Asia. The World Health Assembly and United Nations Sustainable Development Goals target a 40% reduction in childhood stunting by 2025 worldwide. Indonesia is struggling to reduce the prevalence of this particular public health problem. The President of the Republic of Indonesia, Joko Widodo, issued the National Medium-Term Development Planning 2020–2024 to reduce the prevalence of stunting to less than 14% by 2024. Based on the *Studi Status Gizi Indonesia*

Rahmi Nurdiani   
<https://orcid.org/0000-0002-5368-419X>  
 Wiralis   
<https://orcid.org/0009-0000-6334-380X>

#### Funding

None.

#### Conflict of Interest

The authors have no financial conflicts of interest.

released on January 26th, 2023, the prevalence of stunting within the region was 21.6% [1]. The Government of Indonesia (GoI) has implemented several policies to eradicate malnutrition. These policies include the commitment of the GoI to actively participate in the Scaling Up Nutrition movement, known as *Gerakan Nasional Percepatan Perbaikan Gizi*. President Decree No. 72, in 2021, was about a plan to accelerate the stunting reduction in Indonesia, to be implemented at the national level to unify various programs that involve all sectors, including government, private, academic, non-government organizations, and communities, to accelerate the decrease and diminish the malnutrition problem. As a result, Indonesia has implemented specific and sensitive intervention programs to assist in stunting eradication programs. Intervention programs include improving nutrition, supplementing iron-folic acid tablets for women of childbearing age, and improving sanitation and hygiene. The complexity of the stunting problem requires a holistic approach and programmed and continuous monitoring to ensure that activities align with the goal targets set [2].

As a form of malnutrition, the complexity of the causes of stunting underlies the need for a multi-sectoral approach to deal with malnutrition issues. The conception of the fetus is the initial period of growth and development and is affected by many factors, including genetics and environmental factors [3]. In the first 1,000 days of life, the quality of an individual's life is determined from preconception until the offspring is two years old. The quality of human resources is determined by 270 days in the womb and 730 days after birth; the first 1,000 days of life are the golden period for achieving optimal growth and development [4]. Therefore, fulfilling the nutritional needs of mothers during pregnancy is mandatory to reduce the number of children born malnourished and catch up with their growth and development. Nutrition determines the fetus from the womb, and the appropriate nutritional status of the mother from the preconception period optimizes children's growth from early life. Expected body weight and length in newborns above 2,500 g and 48 cm, are early indicators of possible developmental disorders at a later stage [5]; however, community diagnosis and intervention for stunting need to be further assessed. The application of the World Health Organization (WHO) growth standard as *prima facie* initial examination for diagnosing malnutrition has been questioned [6]. Not all malnourished children develop short stature, which is not always classified as malnutrition [6].

Psychosocial care stimulation has long been a crucial issue in mother-child communication, child development from the womb to raising children, feeding children, and malnutrition management. Moreover, a study in Indonesia found that the mother's educational background and the child's birth order affected the psychosocial stimulation of the child. In various cases of child malnutrition, psychosocial care stimulation is another crucial issue in malnutrition management. Owing to the necessity of psychosocial care, the WHO has developed a standard to ensure the process and increase children's survival, including physical and emotional stimulation during early childhood development. Several studies support this statement by stating that psychosocial care can improve children's endurance and resilience in complex health situations and malnutrition. In addition, a study in Bangladesh highlighted that psychosocial care stimulation improved the nutritional status of weight-for-age Z-scores, mental development, and motor development in children [7].

Psychosocial care is related to the psychological and emotional well-being of individuals and their families or caregivers, including self-esteem, insight into adaptation to illness and its consequences, communication, social functioning, and interpersonal relationships. Psychosocial care is often associated with various types of child malnutrition. Parenting is a



form of psychosocial care that is visible in the family environment and is considered a cause of child malnutrition.

Parenting, with all economic, cultural, and educational challenges, especially in developing countries, is prone to causing stress in parents. Cultural values influence parents' perspectives on who plays the most significant role in childcare, including the culture of eating and providing nutrition. Parenting stress does not support efforts to provide excellent and nutritious food for children [8].

Meanwhile, emphasis on parenting practices in the family can refer to the obligation to eat food that has been provided and the provision of nutritious food. Some fundamental issues in parenting related to providing nutritious food are the lack of knowledge about nutrition and healthy food and poor communication skills from parents in understanding children about the importance of healthy and nutritious food [9].

## CASE REPORT

### Natural sources of macro- and micronutrient intake from local food

Children's intake should be improved to meet the nutrient requirements quantitatively and qualitatively from early life. Exclusive breastfeeding in the first six months of life is a priority in providing adequate nutrients for newborns; giving complementary foods to breast milk after six months of age is no less important. Failure to gain catch-up development often arises because complementary feeding does not accompany toddlers' growth and development needs, which can increase their susceptibility to infection and modulate growth faltering. Lack of nutrients coupled with repeated infections causes malnutrition, affecting cognition, immunity, and quality of health in adulthood [10].

Animal products contain the macro- and micronutrients required for growth and development. Failure to grow and develop in toddlers is caused by inadequate nutritional needs, infections, and environmental factors. Another problem is the prevalence of picky eaters among children, above 50%, reaching 77% among children under five years old. Picky eating habits are related to a deficient nutritional intake, which leads to a higher risk of poor growth. A cohort study showed that picky eaters in early childhood were correlated with lower height (0.8 cm shorter) than non-picky eaters in teenage years [11]. Early life exposure, as a part of the prenatal programming of food taste preference, may reduce picky eaters and develop healthy eating habits. One study showed that fish was the second most unfavorable food among picky eater children in Demak, Central Java, Indonesia [12]. This result differs from research conducted in Seoul, Korea, which showed fish as the third least disliked food [13]. These differing results could be due to the level of fish consumption in these countries. Increasing protein consumption derived from fish for pregnant women as a part of a government program called "*gemar ikan* (fond of fish)" might be needed as prenatal flavor exposure decreases children's refusal to eat fish [14]. Research on providing protein according to needs contributes to meeting the nutrient requirements of Malawi children aged 6–15 months. In addition, a study in Valencia reported that women who consumed adequate amounts of fish during pregnancy had better infant size and arterial O<sub>2</sub> pressure [15]. A European cohort study confirmed the benefit of consuming fish during gestation; the research stated that pregnant women who consumed fish >1 time/wk had a lower risk of preterm birth [16].

Sustainable local food production meets local food needs included in sustainable production. Indonesia is a developing country experiencing a double nutritional burden. There is still a high malnutrition rate, but there has also been an increase in the more-nourished group and those with degenerative diseases. Therefore, efforts can be made to achieve balanced healthy nutrition according to age group by seeking sources of nutritional needs sustainably and independently.

Indonesia has a coastline of 100,000 km and a tremendous potential for fisheries. For a long time, Indonesia's ocean has been well known for its source of marine products, which contribute significantly to consumption, and it has become the top country for tuna landings [17]. On the island of Sulawesi, Southeast Sulawesi Province is one of the second largest fish producers. However, the utilization of ocean catch is low. The potential for pelagic catches from Indonesia reached 6.5 million tons annually, while consumption was low at 33.86 kg/per capita/year by 2012.

North Sulawesi includes a fishery management area (*wilayah pengelolaan perikanan*/WPP-RI 714) around Tolo Bay and the Banda Sea. WPP-RI 715 has potential fishery resources, especially for large and small pelagic fish (with a total landed catch of 210.6 thousand tons/year and 511.4 thousand tons/year, respectively, in 2011). In addition, the two major islands in Southeast Sulawesi, Muna and Buton, have three island groups of Wakatobi, the Tiworo Islands, and Padamarang, which hold great potential for catching fish and marine fish farming for large pelagic, small pelagic, and demersal fish.

#### Food self-sufficiency is part of supporting the stunting eradication program

It is necessary to utilize and optimize local food sources to assess stunting problems in the community, especially in areas prone to malnutrition. Stunting is a complex problem that requires multiple approaches to managing the issue. Stunting eradication programs promote a sustainable diet by emphasizing the consumption of local foods and encouraging various types of food to ensure that a balanced, healthy diet is fulfilled at the individual level. During the pandemic, activities in the community for sustainably grown food should be appreciated, as they can be beneficial for health and the environment. This activity also increased the ability to access nutritious foods because we could find them in our neighborhood [18].

Therefore, it is necessary to introduce and highlight diverse nutritious foods in coastal areas. It is important to consume fish as a protein source and other nutrient-dense foods such as vegetables, fruits, and several grains. In addition, providing nutritional education is essential. Nutritional material for education includes knowledge of a healthy, sustainable diet by raising awareness of the importance of a healthy diet and sustainable food production, and individuals can be empowered to make better food choices in daily consumption to prevent malnutrition.

Local food sources are also relevant to food security issues [18]. Ensuring adequate nutrition at the household level is crucial for empowering local food to meet nutritional needs [19]. For a healthy and balanced diet, more traditional foods may be consumed in coastal areas. Nutrition education involving community health centers, cadres, and health officers might help the program improve diet quality.

A comprehensive approach, including water and sanitation improvements, can reduce the risk of infectious diseases that exacerbate malnutrition in stunting eradication programs [20].

Moreover, the supplementation program for vulnerable groups includes vitamin A supplementation for children under five years old and iron-folic acid supplementation for pregnant women and women of reproductive age.

Engaging with the local community leader and other stakeholders is mandatory for delivering a crucial nutrition program [21]. Cooperation among authorities, local leaders, and health workers will strengthen the program by accommodating the local context to ensure that it is culturally deliverable and applicable.

In Southeast Sulawesi and other coastal areas, catch fish management should warrant livestock until the next generation. Fish and other products from the sea provide essential macro- and micronutrients for proper growth and development, such as proteins, zinc, vitamin A, calcium, iron, and other minerals.

### Conclusion

Nutrition and psychosocial care are integrative approaches for eradicating malnutrition in Indonesia. As an archipelago nation, Indonesia can optimize its intake from the ocean to meet its macro- and micronutrient requirements. Psychosocial care also needs to be provided to support the growth and development of children. The sustainability of the program can be ensured by utilizing local natural resources to maintain the supply and consumption of the population. Regarding this issue, all stakeholders must encourage the community to contribute to the stunting eradication program because it contributes to the magnitude of public health problems worldwide.

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