

The Potential Role of Traditional Food in Stunting Prevention in Indonesia; An Expert Consensus

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ABSTRACT: Indonesia has projected to accelerate stunting reduction to 14% by 2024. Multiform interventions and collaboration among institutions or organizations have already been made to tackle the underlying determinants of stunting. This paper review was to explore the traditional food that may potentially help to accelerate progress towards stunting reduction. The results of an expert meeting of the "Declaration of Consensus Nutrition and Hydration based on Traditional Foods" suggested developing an innovative strategy to support the Government of Indonesia in National Strategy stunting reduction. The essential of the first 1000 days of a child's life particularly in feeding practice to infants aged 6 months with a required on rich macro and micronutrients, home-cooked and derived from traditional foods. Traditional foods have relatively acceptable and affordable with complete nutrients. Growing evidence shows the relationship between local foods and child nutrition status.

Keywords- Indonesia, stunting; traditional food, complementary feeding, nutrition

INTRODUCTION

Indonesia has projected to reduce the prevalence of child stunting to 14% by 2024 with tremendous interventions (Vice President Office, 2019). Despite the pandemic COVID-19, and disruption to the national development of health, social and the economy, the stunting rate has reduced from 31% in 2018 to 24,4 % in 2021.2 However, the disparity in stunting prevalence is wide between geographic areas, sex and socioeconomic status. According to the WHO public health problem, six provinces are in the very high prevalence of stunting category ($\geq 30\%$) moreover four provinces that have a large population of stunted children such as West Java, East Java, Banten and North Sumatra should be called to attention (Ministry of Health, 2018). Thus, strengthened efforts are needed to accelerate stunting reduction to 14%.

Stunting is multidimensional issue; hence the government of Indonesia has a strong commitment and multiform interventions to tackle stunting since 2017 by launching the National Strategy to

“The Potential Role of Traditional Food in Stunting Prevention in Indonesia; An Expert Consensus”

Accelerate Stunting Prevention (Stranas Stunting) (Vice President Office, 2017). Strategy Specific nutrition interventions such as providing supplementation and supplementary food plus nutritional interventions including sensitive nutrition interventions, improving the family's economy, access and utilization of clean water, sanitation (especially latrines and safe septic tanks), which are urgently needed to support personal hygiene behavior and the environment (Vice President Office, 2019).

Stranas Stunting ambitions to drive the convergence of national, regional, and village programs in health, nutrition and early childhood, to ensure better coordination and budget allocation to support priority intervention activities, especially to improve coverage and quality of nutrition delivery services to pregnant women and children aged 0-24 months across 23 Government Ministries and Agencies also Professional Organizations, Academicians, and Civil Society (Vice President Office, 2017).

To implement the Stranas stunting action, it is necessary to ensure the integration and synergy of program priorities by all stakeholders. Due to the availability lack of data for program monitoring and evaluation. The ambitious nutrition target is less than 2 years away. Many efforts and collaboration among institutions or organizations have already been made to tackle the underlying determinants of stunting. What has gone right and what can we do more?

Inadequate food intake is a direct factor of child stunting. A recent study revealed that inadequate of iron, zinc, calcium, vitamin C and folic acid intake among under-five stunted children in 10 stunting-priority districts in Indonesia (Fahmida et al, 2022). Indonesia is known as the archipelago country and holds multi-cultural and diversity. Each ethnicity has its own food patterns and food availability that can affect the adequacy of nutrients from local foods. This paper review was to explore the traditional food that may potentially help to accelerate progress towards stunting reduction.

RESEARCH METHODS

The conclusions of an expert meeting of “Declaration of Consensus Nutrition and Hydration Based on Traditional Foods” attended by eight expert meeting to discuss and present key consensus findings of the development and utilization of safe and traditional nutritious local complementary foods as part of strategy to prevent stunting. The experts were selected from a across a range of relevant disciplines and expertise such as policy maker, private sector, doctor, socio-anthropologist, and media expert. Several panelists (BK, AF, PST, HM, EMR, NMP, LBS, SS) delivered brief presentations that addressed the core issues on stunting. After the discussion, individual panelist wrote summary brief, which were compiled into this publication.

RESULTS AND DISCUSSION

Result

Stunting problem in Indonesia

President of Indonesia has set out ambitious target to reduce stunting on 14% by 2024. About 5-7 million of children in Indonesia has suffered stunting. Stunting is the multi-causal problem such as

“The Potential Role of Traditional Food in Stunting Prevention in Indonesia; An Expert Consensus”

poverty, economy, social, cultural and so on. East Nusa Tenggara is the highest stunting prevalence (43%) in Indonesia. Breastfeeding plays an important role in child growth and development where Indonesia's exclusive breastfeeding rate has been increasing steadily during the last decade from 33,7% in 2013 to 52,5% in 2018. Early initiation and exclusive breastfeeding are vital for children's immunity and protection against infections such as diarrhoea and acute respiratory disease. Growing evidence shows that breastfed children are less likely to be sick and obese or overweight and also have better intelligence tests.⁶ Despite the rise in breastfeeding rates, anaemia prevalence stands high among pregnant women. The coverage of IFA > 90 tablets among pregnant mothers was only 37.7%. The current intervention to counter anaemia starts at the adolescence age where the coverage of IFA supplementation in adolescent girls only reaches 46.56% (Ministry of Health, 2021).

By utilizing the potential of traditional foods as an intervention effort to provide protein that can contribute to accelerating a reduction in stunting rates. Traditional food contains 60% of protein that can ensure the children growth and development (Darapheak et al, 2013).

Acceleration Stunting Reduction

Eradicating stunting demands collaboration where Stranas stunting has been strengthened by Presidential Regulation No. 72, 2021 which covers specific and sensitive nutrition intervention as a reference for all stakeholders. The funds allocated for this project up to 2024 are IDR 187.1 trillion. To reinforce the stunting reduction program, it is necessary to establish an intervention framework of five pillars in Stranas stunting; 1) Political commitment and National leadership, 2) National campaign focusing on improved awareness, behaviour change, political commitment and accountability, 3) Convergent, a coordinated and consolidated national program with the regional government and community members, 4) Nutritional food security policy and 5) Monitoring and evaluation (Vice President Office, 2019; Vice President Office, 2017).

The stunting target has been set to reduce to 14% by 2024, has target to decrease 3,5% each year and National Strategy has been developed and agreed upon. The total national budget allocation for 2022 is IDR 34,10 Billion, it has been tagged and tracked by MoF and Bappenas to ensure that priority intervention and location are implemented. The program focuses on nutrition-sensitive interventions compared to specific interventions where strengthening food security, education and parenting are part of the intervention (Vice President Office, 2019; Vice President Office, 2017).

According to Presidential Regulation No. 72, 2021, highlighting the importance of adolescent health as a key to tackle stunting, inadequate nutrition and health among adolescents is a determinant of stunting health outcomes in the future.⁸ They are prone to have anemia then cause mortality during delivery and give birth to low birth weight infants. In 2021, the coverage of Iron- Folic Acid (IFA) supplementation in adolescent girls was 56% (and anemia prevalence is high), while the coverage of IFA has reached 80% among pregnant mothers (Ministry of Health, 2018; Ministry of Health, 2021) Hence, one intervention to cut the intergenerational cycle of malnutrition is to enhance better nutrition

“The Potential Role of Traditional Food in Stunting Prevention in Indonesia; An Expert Consensus”

of adolescents. Strengthen the regulation to prevent child marriage under the age of 18 and conduct nutritional counselling the First 1000 Days of Life on the prospective brides in preventing anemia.

The current prevalence of stunting in under-five children has declined from 37.2% in 2013 to 24.4% in 2021, the action to boost the First 1000 Days of Life (1000 HPK) still needs improvement and the Indonesia East Region also have an issue in the WASH program. There are still challenges in ensuring the participation and collaboration of all stakeholders to action in reducing stunting. Likewise, sets a comprehensive assessment, starting from planning, implementation, and distribution as well as monitoring and evaluation of its impact. Therefore, we should orchestra the integration and synergy of program priorities from all stakeholders (Ministry of Health, 2021; Vice President Office, 2017).

The expected output from specific and sensitive interventions, as explained as, 1) an increase in nutritious food consumption, 2) an increase in child care or parenting, 3) an increase in access to health services regarding the case of anaemia, low birth weight, diarrhoea, and malnutrition, 4) an increase in improvement of water, sanitation, and hygiene. One sensitive intervention that is closely related to the improvement of quality nutrition is increasing access to safe, nutritious, and adequate food with locally available foods and affordable prices for pregnant mothers and children (Vice President Office, 2017).

Stunting and Indonesia's Tradition

Indonesia holds cultural richness and diversity with more than a thousand tribes, languages and dialects. Each ethnicity has it's their cuisine, different food preparation and technique also the way to eat the food. Some regions also have a variety of nutritious foods, for example, Indonesia in the east region commonly eat corn or jagung borse, sago palm and cassava as staple foods, while in the west region were mainly eat rice. In addition, traditional foods have nutritional values and are relatively acceptable and affordable where the ingredients are obtained from local food sources. It also can prevent stunting such as nuts, soy bean, mung bean as protein source (Wijaya, 2019; Fahmida & Santika, 2016).

As established by culture and traditions, we should use cultural strategy as our approach and effort to prevent stunting in Indonesia. The reinforcement of the cultural strategy in stunting should have law endorsement, hence the action continues to the next generation. A strong generation generates a strong culture. A well-balanced traditional food which contains complete nutrition- to prevent stunting from early childhood

Traditional food derived from local food sources that integrate into community and heritage creates the unique taste, textures and eating experience that defines certain group characteristics. Regardless of tradition exists, traditional food has rich in nutrients that support health and nourish the body. It provides balance nutrition such as fish, eggs, red meat, seafood, beans, milk, cheese, yoghurt, fruits and vegetables (Wijaya, 2019; Marni et all, 2021). Nutrition investment to prevent stunting should start from the adolescents' age, to prepare their well-being and nutrition status for the future. Besides

“The Potential Role of Traditional Food in Stunting Prevention in Indonesia; An Expert Consensus”

the requirement of adequate intake, adolescents should have knowledge of stunting and healthy life balance (Marni et al, 2021). However, food products have evolved to become instant and processed foods that expose to adolescents. We need innovation in food traditional and technology use to change the way adolescents view traditional food, experience and value it.

The panel provides a gastronomy strategy to develop Consensus Nutrition and Hydration Based on Traditional Foods in a sample menu as explained below:

Table 1
Nutritious Traditional foods.

Origins	Menu
Aceh	Chicken ‘tangkap’ rich in spices, herbs and protein source
North Sumatera	Medan soup, gloriously yellow soup with chicken and meat also rich in spices
West Sumatera	Fermented buffalo milk, yoghurt called Dadih
Riau	Cencaluk Sambal- fermented shrimp sauce
South Sumatera	Gandus cake, made from dried shrimp and tapioca starch

Source: Indonesia Gastronomy Community

Role of nutrition and hydration in traditional food for stunting eradication

The government of Indonesia has demonstrated to point of convergence on the first 1000 days of life as an action to tackle stunting. Infants and young children who face impaired growth as a result of failing to reach their optimal growth and development during their second-year life can cause the short (brain, low IQ and immune) and long impairment (low productivity, short stature, risk of metabolic disease) and it is irreversible. The focus target intervention in the first 1000 days of life started from pregnant women, lactation mothers, and infants to children aged two years. In addition, the program also includes adolescent girls to prepare for their health in the future (Vice President Office, 2017; Sanin et al, 2022; Beal et al, 20218).

At the household and individual level, the importance of the first 1000 days of a child’s life includes optimal infant and young child feeding practices and improving adolescent nutrition and health. The important messages for stunting prevention such as include exclusive breastfeeding, weekly iron-folic acid supplementation program, immunization, balanced nutrition intake and hydration status for growth and development. Also, regular growth monitoring and nutrition counselling to pregnant and lactation mothers at Posyandu once a month. In addition, pre-conception nutrition counselling for bride and groom should be encouraged (Vice President Office, 2017).

UNICEF has recommendations for infant and young child feeding, complementary foods given children to infants aged 6 months with an emphasis on nutrient-rich, home- prepared and derived from locally available foods. Also, ensure complementary food textures and variation according to the age development stages. Complementary foods should contain carbohydrates, protein, vitamins and minerals and fat (UNICEF, 2019).

“The Potential Role of Traditional Food in Stunting Prevention in Indonesia; An Expert Consensus”

Relation to food culture and stunting

Food culture can influence dietary patterns and health status, it is developed by lineage, heritage, ethnicities, geographic divides, climates, social politics, and history. Stunting is related to a dietary pattern where inadequate intake can cause poor nutrition status. The diverse regions and cultures in Indonesia led to the influence of child stunting and were likely to vary geographically. Also, social and cultural belief has prompted dietary pattern for under-five children, which are related to specific food, food taboos or restrictions (Wijaya, 2019; Maeni et al, 2021). In this modern era, the dietary pattern has changed from local to instant food which contains less nutrients. Moreover, nutritious local food tends to be left behind. The urge to tackle stunting through some approaches such as culture, society, psychology, politic and economy are needed.

To increase the use of food culture in reducing stunting, it is particularly important that we ensure that; the importance of families and community support in jointly making strategic efforts to accelerate the reduction of stunting (especially minority or ethnic/distinguished community) as well as to encourage diversification in macro and micronutrient traditional food consumption. The identification of the process of traditional food preparation, ingredients, cooking methods and utensil also to diverse the selection of traditional foods (Maeni et al, 2021). We should align the local tradition and customs by creating awareness about modern health, concerning gender issues of food allocation in the household (focusing on women, girls' adolescents), the importance of the first 1000 days of life (golden period) and attitude towards pregnant mothers and lactation mothers. Lastly, an Ethnographic approach is needed including food ethnography, anthropology of culinary, social, cultural and psychological.

Food safety and hygiene and Stunting in Manufacture setting

Food safety and hygiene have associated with stunting which incorporates food preparation, production, storage and serving in ways to prevent diarrhoea or foodborne illness.⁶ In industry, the process of food safety and sanitation starts with controlling GMOs, food radiation, standard packaging, quality control, HACCP and halal certification. The value chain of the food industry should ensure availability, affordability and target consumption.

All food production has been managed and regulated by BPOM. The food technologist and nutritionists have been researching and developing products to adjust the BPOM, ensuring the macro and micronutrients are embedded and provide clear information on the nutrition label in food packaging. The nutrition claim on the product label is aim consumers to understand the product and their daily nutrient requirements. In stunting case, some foods have been fortified with essential Macro and Micro-nutrient such as salt (high in sodium), flour (vitamin, iron and zinc), cooking oil and margarine (enrich with Vit A, Vit E and Omega 3).

“The Potential Role of Traditional Food in Stunting Prevention in Indonesia; An Expert Consensus”

Role of media communication and stunting reduction

Referring to the second pillar of Stranas stunting to improve public awareness and behavior change to prevent stunting, Government of Indonesia has developed six key messages in the national communication campaign that encourage behavior change at community level. However, the stunting campaign has not achieved best target yet, the survey on community perception stunting on 2018-2019 was conducted by Ministry of Communication and Communication shows that in 2019 only 47,2% of community has aware of stunting. The communication strategy should be reformed to convey information related to stunting and the first 1000 days of life (Vice President Office, 2017).

The national campaign plays an important role to bring forward nutrition-specific and sensitive interventions. Strategy interpersonal communication through community leaders, families, and relatives has been effective in behaviour change. Local government should increase dissemination and education to improve the community's awareness and understanding regarding the importance of stunting prevention. Is highlighted by Presidential Regulation 72 of 2021 concerning the acceleration of stunting reduction, which is a national commitment and the embodiment of all citizen commitment to take action to tackle stunting (Vice President Office, 2017). Content information is a great way to get the community talking about stunting and health. The following is a guide to planning and implementing content, as detailed below:

1. Define the target community or people
2. Research and understand your audience
3. Create a strategy, it will contain all the details of what, when, where, and why that will inform and guide the content creation process.
4. Set the media platform used (medium is the message-McLuhan, 1964) such as digital media (handphone, internet, TV), traditional channels (social activity, religious activity, and art event) and community support (PKK, Posyandu).

Discussions

Traditional foods, locally contextual food-based recommendations to reduce stunting

One of pillar of Stranas stunting is Food security and nutrition. Improving children health and nutrition is an essential component in prevent stunting. Government of Indonesia has strategies to increase access to nutritious food, 1) access to food and nutrition, 2) provide social cash transfer assistance and Sembako/food assistance for poverty households, 3) fulfilling food and nutritional needs of families, and (4) strengthening regulations regarding labels and food advertisement. Also the emphasize the importance of the first 1000 days of life (Vice President Office, 2017).

Poor quality foods, inadequate feeding practices and WASH, including water safety, correlate with stunted growth and development of children. A previous study in Indonesia identified that fortified complementary foods (FCF) and infant formula gave the nutrient gap in optimized nutrient intake and requirements. Under two children in low socioeconomic households have more nutrient problems

“The Potential Role of Traditional Food in Stunting Prevention in Indonesia; An Expert Consensus”

compared with middle socioeconomic households when their CFC is taken from the feeding intake. Other findings in Indonesia show that CFC has reduced dietary diversity, even increasing the micronutrient intake among children aged 6-23 months old (Fahmida et al, 2022; Fahmida & Santika, 206). The emergence to develop strategic efforts to fulfil the nutritional needs for under-five children is needed.

The panel acknowledge the increased role of traditional foods in stunting prevention. The recommendation of WHO/UNICEF for Infant and Young Child Feeding has the urge to prepare complementary foods with use locally nutritious foods, home-prepared and low cost. A recent finding in Indonesia shows that problem nutrients among under-five children in 10 stunting-prioritized districts such as Brebes, Cianjur, Gorontalo, Lampung Tengah, Lanny Jaya, Lombok Tengah, Maluku Tengah, Pemalang, Rokan Hulu, and Ketapang. Most of the 10 stunting-prioritized districts have similar stunting prevalence however the type of problem nutrients is varied. The food patterns were varied as reflected by the number of food items. Infants and young children in the Lanny Jaya district (Papua) has less diverse in the number of food items (20 food items) than in other districts. The highest number of food items was in Lampung Tengah district (171 food items). The findings emphasized that the limited variety of food items has prone to the risk of problem nutrients compared with the district with more food selection to complementary foods. The findings also revealed that dietary intake among under-five children in 10 stunting-prioritized districts cannot meet nutrient requirements for iron, zinc, folic acid and calcium. It is important to emphasize nutrient-rich complementary food prepared with locally available ingredients. Especially local foods that contain high protein e.g. fish, eggs, tempeh and tofu were essential to child growth and development (Fahmida et al, 2022).

Growing evidence in Indonesia found there was a relationship between knowledge of traditional food and child nutrition status, whereas similar found in Malaysia, the nutrition knowledge, and practice of traditional food was positively associated with child growth (Simanjuntak et al, 2019). It encouraged us to develop innovation in preparing complementary foods from locally available food. As mentioned in the Local Menu Complementary Foods book, the menu of complementary foods is derived from 9 Provinces DKI Jakarta, West Java, Central Java, DIY, East Java, West Kalimantan, Bali, NTB and NTT. The books consist of recipes and food preparation. Several traditional foods are identified as rich in nutrients, for example, moringa leaves, tuna/cakalang fish, coconut milk, tempeh, purple yam, anchovy, lemongrass, green beans and so on (FK-KMK UGM, 2022).

Despite the limited evidence of social and cultural food systems contribute to child stunting, the diversification of food made from local ingredients can boost national food sovereignty amid fluctuations in global commodity prices. The key consensus results suggest that in settings such as these more comprehensive or innovation strategy interventions may be needed to eliminate stunting. The disparity gap stunting prevalence in Indonesia should allow intervention to vary geographically and target provinces according to the local context. Therefore, promoting locally traditional food is likely to be an innovative strategy for improving a child’s dietary intake to prevent stunting.

CONCLUSION

The significant disparity in stunting prevalence across Indonesia highlights the necessity for a comprehensive set of interventions that are customized to tackle the specific nutritional challenges and burdens faced by each region. Introducing and promoting locally available traditional foods emerges as a potentially innovative approach to enhance children's dietary intake and mitigate the risk of stunting. By incorporating such foods into the diet, it becomes possible to address nutrient deficiencies more effectively and contribute to the prevention of stunting.

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“The Potential Role of Traditional Food in Stunting Prevention in Indonesia; An Expert Consensus”

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