Original Research

The Indonesian Journal of Public Health
Vol 19. No. 2 August 2024
p- ISSN 1829-7005 e- ISSN 2540-8836

STUNTING REDUCTION STRATEGY IN INDONESIA: MATERNAL KNOWLEDGE ASPECTS

Prima Maharani Putri[1*], Aqilla Shafa Shafira[2], Gembong Satria Mahardhika[3]
[1]Faculty of Medicine, Universitas Muhammadiyah Purwokerto. Indonesia;
Universitas Muhammadiyah Gorontalo, Indonesia
[2] Undergraduate Program. Faculty of Medicine, Universitas Muhammadiyah Purwokerto. Indonesia
[3]Faculty of Medicine, Universitas Jenderal Soedirman. Indonesia
Correspondence address: Prima Maharani Putri
Email: primamaharaniputri@ump.ac.id

ABSTRACT

Introduction: Based on an Indonesian Ministry of Health report, the incidence of stunting has decreased from 24.4% in 2021 to 21.6% in 2022. Reducing stunting rates in children is a global nutrition target in 2025. One of the causes of nutritional problems in children is inadequate intake of nutrients according to their nutritional needs. Based on the above explanation, maternal nutritional knowledge and the government's role are essential in reducing stunting in Indonesia. **Aim:** The research investigation was aimed at investigating the level of maternal nutritional awareness as well as the government's participation in reducing stunting in children under the age of five. **Methods:** This quantitative study was an analytical observational design using a cross-sectional study approach. The samples were mothers of children under five carried out using non-probability purposive sampling, while respondents for the stunting intervention program provider used the snowball sampling technique. Data collection was conducted in locations with high prevalence of stunting, comprising two distinct groups of participants. **Result:** The statistical result using chi-square shows a significant correlation between maternal nutritional knowledge and the government's role in reducing stunting in children under five, with a p-value (0.000) < α (0.05) and p-value (0.008) < α (0.05). **Conclusion:** There is a relationship between the level of nutritional knowledge of mothers under five and the role of the government in the incidence of stunting. There is a need for further and multidisciplinary management in stunting cases, especially in Indonesia.

Keywords: Stunting, Maternal Nutritional Knowledge, SDGs, MDGs, Child health national program

INTRODUCTION

Stunting is a significant problem that has enduring repercussions for both individuals and civilizations. It is linked to impaired cognitive function and academic achievement, diminished earnings in adulthood, and decreased ability to work. Children who are stunted frequently encounter setbacks in their motor and cognitive development, leading to permanent impairments in their physical and neurocognitive capacities.(De Sanctis et al., 2021; Mustakim et al., 2022; Nshimyiryo et al., 2019)

The impact on subsequent cognitive ability can be considerably influenced by the intensity and timing of stunting throughout the initial two years of an individual's life. Stunting risk factors encompass individual attributes such as age, gender, and low birth weight, as well as maternal and household attributes such as mother's height and educational attainment. Additionally, community-level factors, such as being in highlands, can contribute to the risk of stunting. Stunting poses a significant public health concern, affecting around 20% of children.(Nshimyiryo et al., 2019)

Early childhood stunting has enduring consequences for both individuals and societies, such as impaired cognitive abilities and educational achievements, diminished adult income, and a perpetuating cycle of poverty throughout generations. Stunting is a significant concern in public health since it is linked to

Cite this as: Putri, P.M., Shafira, A.S and Mahardhika, G.S, (2024). Stunting Reduction Strategy in Indonesia: Maternal Knowledge Aspects. The Indonesian Journal of Public Health, 19(2), 366-381. https://doi.org/10.20473/Ijph.v19i2.2023.366-381

illness, death, and decreased capacity for growth, education, and economic success. The attainment of effective nutrition supplementation and subsequent monitoring can be accomplished through the identification of children exhibiting low weight-for-age Z-scores, followed by the implementation of interventions that allow for an adequate duration to evaluate linear growth. Addressing the needs of children with stunted growth should be considered a top priority in public health.(De Sanctis et al., 2021; Koshy et al., 2022; Schneider, 2023)

An investigation into the initiatives aimed at addressing stunting in Indonesia has determined that there is a pressing requirement for extensive dissemination of information regarding stunting, its consequences, and a pressing need to overcome it, particularly at the local level. In 2014, the Emergency Nutrition Network (ENN) established a technical interest group (TIG) with the purpose of examining the evidence, policy, research, and programmatic implications associated with the correlation between wasting and stunting. The primary focus of this review was to underscore the necessity of implementing interventions that specifically address the needs of children aged 6 to 59 months, as well as pregnant and lactating women(Thurstans et al., 2022).

As opposed to other developing countries, the frequency of stunting among children in Indonesia is rather high. According to statistics released by the Central Statistics Agency (BPS) and the Ministry of Health, there has been a significant decrease in the prevalence of stunting between 2018 and 2019. Stunting prevalence in Indonesia exceeded 10% in 2019, reaching 27.7%. There exists a disparity when compared to the prevalence observed in the year 2018, which amounted to 30.8%. This figure implies a reduction of 3.1%.(Central Bureau of Statistics, 2019). The international objective is to reduce the prevalence of stunting in children by the decade of 2025 at a rate of 3.8% yearly.

In Indonesia, there are regional inequalities that indicate that interventions targeting stunted population are only provided to the most susceptible groups, who are monitored based on their maternal nutritional knowledge, history of exclusive breastfeeding, consumption of complementary foods, and exposure to specific infections associated with the food, healthcare, and environmental sanitation systems in the areas where mothers and toddlers reside (Beal et al., 2018)

Stunting interventions are being implemented by the government, as stated in Presidential Regulation Number 42 of 2013, and these specifically addresses the National Movement for the Acceleration of Nutrition Enhancement. Nevertheless, these initiatives were found to be insufficient in effectively addressing the issue of stunting acceleration. Consequently, the government introduced Indonesia Presidential Regulation Number 72 of 2021, which focuses on the Acceleration of Stunting Reduction. This regulation aims to make a significant contribution toward enhancing the intellectual, physical, and productive capabilities of individuals, thereby enabling them to achieve their objectives. The objective is to achieve sustainable development for the nation by the year 2030, while implementing comprehensive and interconnected interventions for the benefit of future generations by reduce the occurrence of child stunting to 19% by 2024 and to 10% by 2030.

The global issue of hunger leading to stunting is a dual burden. Approximately 88% of nations globally encounter the concomitant challenges of malnutrition, with countries characterized by low to moderate income levels being disproportionately affected by this issue. This statement pertains to the correlation between malnutrition in children with stunted growth and several factors such as economic conditions, social standing, maternal educational attainment, and the surrounding environment (Ciptanurani and Chen, 2021).

An imbalanced dietary intake in children can contribute to the development of nutritional issues in this population. There is an important connection between maternal awareness of insufficient nutrition and the prevalence of stunting in children. Mothers with limited nutritional awareness often exhibit suboptimal nutritional practices, resulting in a diminished quality of nutrition provided to their children. Consequently, this has a significant impact on the child's overall growth and developmental outcomes (Murti et al., 2020). The importance of data on nutrition acquired by mothers of children under the age of five, along with the government's efforts to reduce stunting rates in Indonesia, are unquestionable, as indicated in the aforementioned description. Hence, it is imperative to conduct study that investigates the correlation between the nutritional information possessed by moms of infants and the involvement of governmental entities in endeavors aimed at mitigating stunting among this age group.

METHODS

This study employs a quantitative methodology, utilizing an analytical observational design and adopting a cross-sectional study technique. The information from respondents was gathered continuously in order to determine the relationship between the independent and dependent variables. The collection of data was conducted within locations characterized by stunting prevalence, namely in primary healthcare settings, encompassing two distinct groups of participants. The main objective of the research is to look into the relationship between the amount of nutritional knowledge that mothers of newborns have and the effect that government interventions have in preventing stunting. Data were collected regarding the provision of services at primary health facilities located in the Banyumas district of Indonesia. The process of selecting research participants, specifically mothers of infants, was conducted within the context of the primary healthcare program. This program is regularly implemented and attended by mothers with infants in the designated area of Primary Health Facilities. Participants were chosen based on established inclusion and exclusion criteria.

The research project employs a questionnaire as the major data collection instrument to evaluate the extent of maternal awareness on nutrition in toddlers, as well as the government's involvement in initiatives aimed at addressing stunting. This study will employ two distinct questionnaires: one to assess the nutritional knowledge of mothers with toddlers and another to examine the government's involvement in addressing stunting in toddlers. The validity and reliability of the questionnaire measuring the nutritional knowledge of mothers of toddlers have been assessed using a Cronbach's alpha coefficient of 0.836. Similarly, the questionnaire assessing the government's role in reducing stunting has a Cronbach's alpha coefficient of 0.636.

The questionnaire includes a question instrument consisting of 17 different types of questions. Every question contains both correct and incorrect responses. The elucidation of the inquiries in the questionnaire is as follows: If a mother experiences malnutrition throughout pregnancy, her unborn baby will not be affected by malnutrition. Pregnant women require adequate nourishment to ensure proper fetal development and the delivery of children with a healthy weight. Pregnant women require a greater quantity of nutrients compared to when they are not pregnant. 4.) Nutritious meal is limited to grains and veggies. 5.) Insufficient protein consumption does not adversely affect the developing fetus in the uterus. 6.) Staple food refers to food that mostly consists of carbs. 7.) Consuming alcohol does not have any impact on pregnancy. 8.) Insufficient consumption of vitamins and minerals does not have an impact on the development of

the fetus in the uterus. 9.) Consistently ingesting meals with high salt content can lead to the development of diseases. 10.) Nausea and vomiting can be alleviated by consuming foods such as bread, candies, and ginger. 11.) Iron deficiency in pregnant women may lead to the development of anemia. 12.) Tablets that promote blood circulation can be consumed along with tea.13.) The energy requirements throughout the third trimester are necessary to support the growth of the fetus and placenta. 14.) Pregnancy with twins is a contributing factor to the underestimation of fetal weight throughout pregnancy. 15.) Consuming a diet rich in nutrients throughout pregnancy leads to a normal predicted weight of the fetus based on the gestational age. 16.) Maternal factors contribute to the occurrence of low birth weight in infants. 17.) Malnutrition during pregnancy does not result in a decrease in birth weight. Researchers collect data in the field and subsequently analyze it using statistical methods. Respondents are classified based on various characteristics, including age, education, employment, and the nutritional status of children. A univariate analysis was conducted on the attributes of each responder, followed by a bivariate test on their characteristics.

The collected data were then analyzed using the Statistical Package for the Social Sciences (SPSS). The Committee on Ethics within the Faculty of Medicine at Universitas Muhammadiyah Purwokerto authorized this study under license number KEPK/FK/006/I/2023.

RESULT

The present study was conducted as part of the Infant Weighing Operation Program in February 2023, involving a sample of 92 participants. The aim of the study was to examine the association between the level of nutritional knowledge and the prevalence of stunting among infants. The findings of the bivariate analysis revealed that, out of the 92 respondents, 40 mothers of infants (0-1 years) were classified as having sufficient nutritional knowledge. Among these mothers, 36 infants were classified as short and four infants were classified as very short. Additionally, the analysis showed that 16 infants in the underweight category were classified as short, while 22 infants were classified as very short. At a significance threshold of 0.05, the study revealed a p-value of 0.000, showing statistical significance. Therefore, it may be posited that a notable correlation exists between the nutritional literacy of women with infants and the prevalence of stunted growth. The data obtained from the bivariate analysis are presented in Table 1. The study included a sample of 92 participants from the group responsible for implementing the stunting intervention program. The results revealed that 49 participants classified into the poor category, while 38 participants were classified as sufficient. The insufficiency of the government's involvement in the occurrence of stunting might be evaluated. The statistical significance of this association has been identified with a p-value of 0.008, which is less than the preset significance level of 0.005. The data are presented in Table 2.

DISCUSSION

The pursuit of sustainable development by 2030 encompasses various crucial components, including the implementation of interventions aimed at ameliorating malnutrition in children suffering from stunted growth. This objective is being pursued through the enactment of Presidential Regulation Number 72 of 2021, which focuses on expediting efforts to reduce stunting. The Presidential Decree outlines the five fundamental principles of the National Strategy for Accelerating Stunting Reduction. These include the president and vice president, who possess the power to guide the implementation of interventions

and foster commitment and vision from the highest levels of leadership in the country.

Table 1. Bivariate analysis of level of nutrition knowledge and stunting incidence

Bivariate analysis		Stunting (TB/U)		Total	p-value
		Short	Very short		
The Nutritional Awareness of Mothers with Infants	Excellent	13	1	14	0.000
	Average	36	4	40	
	Poor	16	22	38	
Total		65	27	92	

Table 2. Bivariate analysis of the government's role in stunting incidents

Bivariate analysis		Stunting (TB/U)		Total	p-value
		Short	**Very short**		
Government role in terms of reducing stunting	Excellent	5	0	5	0.008
	Average	32	6	38	
	Poor	28	21	49	
Total		65	27	92	

This ensures equality across all regions, regardless of whether they are considered priority or non-priority areas for stunting reduction. The central government aims to convene an annual coordination meeting in the first pillar, which will be attended by the president, governors, and regents/mayors. The second principle entails the government's implementation of a nationwide campaign, utilizing mass media and advocacy programmes, to foster comprehension and induce behavioral modifications among families at risk of having stunted toddlers (National Team for the Acceleration of Poverty Reduction, 2017)

The central government is endeavoring to achieve cooperation and convergence with regional governments to ensure community involvement in delivering assistance, particularly to pregnant women, lactating mothers, and infants during the initial 1000 days of life. Within this third pillar, the government designates specific money to village funds in order to ensure optimal implementation of prioritized interventions aimed at reducing stunting. The central government promotes the "Nutritional Food Security" policy by supporting the provision of extra food, ensuring food hygiene to prevent contamination, and facilitating easier and more affordable access to nutritious food for the community, particularly those targeted by the stunting intervention program. Regular monitoring and assessment are essential to ensure the intended program operates ideally and achieves its objectives. The federal government must also comprehend the level of progress and success attained in stunting interventions (National Team for the

Acceleration of Poverty Reduction, 2017). The government's contribution to the strategy aimed at reducing stunting rates in Indonesia is currently seen as commendable. This study was carried out in the Regency area of Central Java, which is one of the subdivisions of the Province. The government's imposed policy is a highly significant tactic. Nevertheless, there are other issues that need to be resolved, as mentioned in the preceding paragraph.

Stunting in children is a serious condition that demands attention from multiple stakeholders, including the government as the governing body and the community, who can actively contribute to addressing stunting. Consequently, the Central Java province administration has released Governor Regulation No. 34 of 2019, which outlines the measures for expediting the prevention of stunting in Central Java Province. This regulation serves as a framework for implementing stunting prevention at the provincial level and ensuring its integration at the Regency/City level. This Gubernatorial Regulation serves as a subsequent measure to Presidential Regulation No. 42 of 2013, which pertains to the National Movement for the Acceleration of Nutrition Improvement.

The stunting prevention and control program is created with an integrated approach to effectively target certain groups who require the most attention. However, it is currently facing challenges and limits, resulting in its inadequate implementation and effectiveness. A key problem is the scarcity of critical services for pregnant women, particularly for children under the age of two. There are several challenges in implementing the program, such as a lack of prioritization of effective interventions by cross-sectoral policies, inefficient allocation of resources and funding sources, limited community involvement, and insufficient collaboration between administrative departments (as mentioned in The Regulation of the Governor of Central Java Number 34 of 2019 regarding The acceleration of Stunting Prevention in Central Java Province). Stunting in children is a serious condition that demands attention from multiple stakeholders, including government authorities and community members who can actively contribute to addressing stunting. Consequently, the Central Java province administration has released Governor Regulation No. 34 of 2019, which outlines the measures for expediting the prevention of stunting in Central Java Province. This regulation serves as a framework for implementing stunting prevention efforts at the provincial level and ensuring coordination with the Regency/City level. This Gubernatorial Regulation serves as a subsequent measure to Presidential Regulation No. 42 of 2013, which pertains to the National Movement for the Acceleration of Nutrition Improvement.

The stunting prevention and control program is created with an integrated approach to effectively target specific groups who require the most attention. However, the program's effectiveness is hindered by several hurdles and restrictions, resulting in inadequate implementation on a large scale. A notable issue is the restricted availability of essential services for pregnant women and particularly for children below the age of two. The implementation of the program faces various challenges, including the lack of prioritization of proven effective interventions in cross-sectoral policies, suboptimal allocation of resources and funding sources, limited engagement of the broader community, and weak coordination between administrative levels (Central Java Governor Regulation, 2019). The Central Java Provincial Government has mandated district/city administrations to execute a stunting intervention program by adopting eight convergence activities, ensuring coordination across many sectors. The Banyumas Regency Government is now carrying out the "Rembug Stunting" program to effectively monitor and ensure

the execution of interventions to address stunting prevalence. This program involves the active participation of all sectors of society in an integrated manner.

Uncontrolled stunting can pose a significant risk. Stunting in children is closely linked to short stature and can be inherited throughout generations within a family. Mothers who undergo stunting heighten the likelihood of IUGR (Intrauterine Growth Restriction), fetal demise, maternal mortality, and malnutrition, all of which directly affect their offspring (Savanur and Ghugre, 2016).

Toddlers who experience stunting are susceptible to higher rates of morbidity and mortality due to a compromised immune system, rendering them more vulnerable to contracting a range of diseases such as pneumonia, diarrhea, meningitis, tuberculosis, and hepatitis. These health issues can have long-term consequences. Inadequate nutrition and infections contribute to a decline in nutritional status, particularly affecting the absorption mechanism in the intestine, boosting catabolism, and leading to a deterioration in both growth and immune system function. Stunting during early childhood is linked to reduced adult height and impaired brain development, leading to a lifelong decline in intellectual performance (De Onis and Branca, 2016).

Stunting is associated with several risk factors. Toddlers may have challenges in their growth and development due to various circumstances, including insufficient access to proper nutrition, resulting in a deficiency of both macronutrients and micronutrients in their diet. The consequences of insufficient nutritional consumption are commonly categorized into several nutritional status categories, such as adequate nutrition and malnutrition, as determined by anthropometric measurements. (Addawiah et al., 2020)

The nutritional status of both the pregnant woman and the fetus she is carrying is directly influenced by the nutritional intake throughout pregnancy. The nutritional adequacy rate can be compromised by various factors, including suboptimal food conditions, insufficient food intake, and inadequate hygiene and sourcing of food and beverages. These factors might impact the composition of nutrients and result in inadequate nutrition. Mothers can take food supplements to ensure that pregnant women receive sufficient nutrients, but this practice is uncommon due to various factors, such as a limited comprehension of the significance of consuming micronutrients, a lack of variety in available food sources like animal and vegetable products, and insufficient energy content in complementary foods for pregnant women. (Beal et al., 2018)

Insufficient nutrition in children is a result of chronic diseases such heart failure, congenital heart disease, cerebral palsy, and cystic fibrosis. Consequently, children with these disorders need a higher intake of calories to support their growth. Close monitoring and prompt evaluation are necessary for any deviations in a child's growth to prevent the development of more severe issues. (Savanur and Ghugre, 2016)

With the goal to preserve proper body proportions in relation to body weight and effectively perform everyday physical activities, the body requires a comprehensive array of nutrients through a well-balanced nutritional intake. In addition to promoting the growth and maturation of children from infancy to adulthood, a well-balanced diet can also enhance their cognitive abilities. During gestation, the fetus acquires nourishment from its mother. Pregnant women should consume a diet that is nutritionally balanced and tailored to their specific needs. This should be regularly assessed by checking body weight to prevent malnutrition. Optimal nutrition plays a crucial role in enhancing the nutritional status of toddlers as they undergo growth and development. Appropriate and excellent nutrition is critical for promoting children's health,

especially throughout the first 1000 days of life, a period which lasts from conception to two years of life. This period is widely recognized as a critical time for preventing chronic malnutrition, childhood obesity, and future medical issues. Acquiring knowledge about maternal and infant nutrition can promptly mitigate a range of hazards, including impaired growth, inadequate birth weight, premature birth, and insufficiencies in essential nutrients (Zerfu and Biadgilign, 2018).

A study conducted in Ethiopia reveals that malnutrition is a prominent health issue in the country, despite the implementation of numerous extensive nutritional intervention initiatives by the government. Furthermore, the understanding and perspectives of expectant mothers play a crucial role in identifying suitable dietary interventions for vulnerable population segments, including lactating mothers and pregnant women. The understanding of nutrition by mothers is a significant factor during the crucial period of children's developmental stages and can be beneficial in enhancing children's nutritional status (Zerfu and Biadgilign, 2018).

This toddlers stage is considered a critical era of growth and development, often referred to as the first 1000 days of life. During this phase, toddlers undergo significant cognitive and motor skill training, which serves as the foundation for their future development. The growth and development process is influenced by various elements, including mother and child factors associated with psychosocial, cultural, and biological settings. Child development and growth are influenced by biological factors such as gender, age, nutritional intake, and illness risk factors. (Butchon and Liabsuetrakul, 2017)

The purpose of this study is to determine the level of nutritional literacy among mothers of young children and to analyze the government's role in preventing stunted growth in children. The study, conducted during Toddler Weighing Operation Month in February 2023, including 92 mothers of toddlers and 92 providers of stunting intervention programmes as respondents. In addition, questionnaires were distributed to providers of stunting intervention programs. The statistical test analysis demonstrates substantial associations between mothers' nutritional knowledge and the frequency of stunting (p-value <0.005), as well as the impact of government involvement in the incidence of stunting (p-value <0.005). Furthermore, it emphasizes the joint influence of government intervention and the nutritional expertise of mothers under the age of five in tackling stunting (p-value <0.005) with p-values of 0.000, 0.008, and 0.033. Prior to performing bivariate analysis on the variables, a data normality test was performed to ascertain the distribution of the research outcomes. The Kolmogorov-Smirnov test was employed due to the sample size above 50, consisting of 92 respondents. The normalcy test yielded a value of 0.856. These results indicate that the significant value (p) is 0.85 (p>0.05), indicating that the data have a normal distribution and can be analyzed further using parametric test. The results of a bivariate study of mothers with infants' nutritional knowledge and the prevalence of stunting show a statistically significant relationship between the quantity of nutritional knowledge and the prevalence of stunting. Mothers who acquired a satisfactory degree of knowledge were found to have 36 children classified as stunted in the short group, and an additional four children falling under the extremely short category. In the interim, it was observed that parents with a relatively low level of knowledge, quantified at 38, were found to have 16 infants falling inside the short category, while 22 infants were classified as very short. The findings of this study align with the research conducted by Darmini et al. (2022), which reveals an association between maternal understanding of balanced nutrition and the prevalence of stunting in infants aged 2 to 5

years. Specifically, the results suggest that infants who are not stunted are more likely to have mothers with a high level of nutritional knowledge. This implies that mothers who possess adequate knowledge about nutrition are more likely to make informed decisions regarding the balanced dietary intake of their children, thereby reducing the likelihood of stunting in this population (Darmini et al., 2022).

The level of maternal nutritional awareness is a significant determinant in the prevalence of stunting among infants. This medical condition is also related to children's nutritional status, which is managed by the complete elements of dietary intake in the manner of a well-balanced diet. The initial 1000 days following birth, commonly referred to as the golden era, provide a crucial role in determining a child's development, as it is during this time that nutrition and care significantly influence their growth trajectory. Future human resource development may be aided by focusing on the vital period of the first 1000 days after birth, throughout which the mother's awareness of nutrition, from pregnancy to the feeding phase, can have a considerable influence.(UNICEF, 2017) Individuals' educational backgrounds influence their level of dietary knowledge among mothers with children under the age of five. Mothers who having a formal educational background exert a substantial impact on their cognitive abilities. Mothers with hold limited understanding of nutrition in the context of infancy are likely to exert an influence on their daily decision-making processes in order to ensure the provision of suitable quantities of food for their children. Consequently, this influence will inevitably impact the nutritional status of their offspring. The acquisition of sound knowledge is of utmost importance in ensuring that children acquire adequate nutritional intake, hence facilitating optimal growth and development commensurate with their age (Widiyanto and Laia, 2021)/

The nutritional intake delivered during infancy has a considerable influence on the incidence of stunting and wasting illnesses. Mothers have a crucial role in the provision of nourishment for their children. The present study posits that the maternal level of nutrition knowledge is anticipated to enhance the nutritional quality of children's daily food intake. Nevertheless, the findings of this study do not show a significant relationship between maternal nutritional awareness and children's nutritional status. This lack of significance can be attributed to the presence of additional factors that influence dietary behaviors, including environmental factors, cultural influences within the community, social circumstances, and inadequate economic resources. The nutritional status of infants is impacted by a multitude of factors, both in a direct and indirect manner. The primary determinants that impact the nutritional status of infants are their dietary intake and the occurrence of viral illnesses. Indirect factors encompass various elements such as the accessibility of food, which is determined by parental employment and income levels, patterns of child upbringing, as well as the provision of health services and environmental conditions. The three aforementioned indirect factors are intricately linked to the educational attainment, information acquisition, and skill development within the familial context (Lailatul and Ni’mah., 2015).

Mothers provide a significant influence on the dietary choices made for children. As children progress through different stages of development, parents' perception and understanding of their offspring's dietary consumption undergoes a transformation. Parents demonstrate trust in their child's capacity to regulate their eating behavior throughout mealtime, including recognizing feelings of fullness and indicating when they have finished eating, even if there is uneaten food remaining. In addition to this, parents also assume a significant responsibility in

acquainting youngsters with a diverse range of nutritious and less nutritious food options. Children commonly engage in this sort of modeling as part of their growth and developmental trajectory (Scaglioni et al., 2018).

The government's involvement in mitigating stunting is facilitated through various programs, such as the implementation of providing supplementary food to pregnant women and infants, the distribution of blood supplement pills to pregnant women and adolescent females of reproductive age, as well as the administration of complete basic immunization and vitamin A to infants. In this study, the community health center has successfully implemented various government programs at different levels of governance, including the central government, provincial government, and regency government. The primary objective of these programs, facilitated by the district health service, is to effectively reduce the prevalence of stunting. This is achieved through several interventions, such as regular anthropometric assessments of young children, provision of supplementary food, administration of blood supplement tablets to pregnant women, and monitoring the growth and development of infants through weighing and maintaining a health cadre (Saputri, 2019).

The efficacy of the government's involvement at the community health center level in this particular example is widely seen as satisfactory. The involvement of the government in various industries is subject to specific parameters. The government has prioritized enhancing nutrition through many initiatives. As an example, the government has doubled its expenditure on treatments that specifically target stunting, such as deworming, providing additional iron folic acid through supplementary food, prenatal care, immunization, and growth monitoring activities. In addition, the government has placed significant emphasis on the significance of child nutrition and has urged the community to actively support initiatives aimed at reducing stunting. The government's endeavors to mitigate stunting extend beyond health initiatives. The government has acknowledged the influence of socio-economic variables on stunting and has endeavored to tackle them through initiatives like the Governmental Medium-Term Growth Strategy (RPJMN) 2020-2024, which sets goals for poverty reduction and education enhancement. The government has also promoted the involvement of the business sector in initiatives to reduce stunting. This is exemplified by the case of Kampar regency, where firms have actively participated in providing care for children affected by stunting (Labolo, 2021).

However, upon closer examination in the field, namely through the lens of health cadres who actively engage with the community, particularly within integrated healthcare center, it is perceived as deficient. Throughout general, the Indonesian government's efforts to decrease stunting are diverse and thorough, using many health and socio-economic measures to tackle the intricate factors contributing to stunting in the nation.

The phenomenon above has resemblance to the limited understanding among health personnel and exhibits a strong correlation with the prevalence of stunting (p-value <0.005). There is an expectation that the government, in collaboration with the district health Service and the community health center as the program implementer, will increase their level of engagement in training health cadres. This will enable them to effectively contribute to various health initiatives at the local level.

Mediani et al. (2022) elucidate the significance of health cadres in bridging the divide between health-care providers and the community as an essential source of health-related information, especially regarding child growth and development. The engagement of healthcare personnel in addressing stunting by means of early

identification and promotion of growth and development in children at integrated health care. The proactive involvement of health cadres in implementing these activities has the potential to enhance public health outcomes, particularly in addressing the issue of stunting (Mediani et al., 2022).

The integrated healthcare cadres, serving as representatives of the community, serve a crucial role in implementing intervention programs. This knowledge base has been found to exert an impact on the prevalence of stunting within the territory of West Java Province. Consistent with the findings of this study, the research sample was primarily composed of health cadres, totaling 56 individuals, accounting for 60.9% of the total. These health cadres possessed a high school level of education (Mediani et al., 2022).

The government aims to achieve a countrywide stunting rate of 14% by 2024. This achievement can be attained through diverse endeavors and contributions from multiple entities. The bivariate analysis revealed significant results (p-value 0.003) on the relationship between the role of government and the level of nutritional knowledge among mothers of toddlers. This demonstrates a correlation between the government's role and the extent of nutritional education among moms of children under the age of five. The government's insufficient involvement has a direct influence on the limited nutritional awareness among moms of toddlers. Mothers' understanding of nutrition for children under the age of five is crucial for the prevention and resolution of stunting. Hence, it is imperative for policy makers at all levels of government to engage in follow-up activities when making decisions.

The government enhances the nutritional knowledge of mothers with children under five through a multisectoral approach. This involves implementing eight convergence actions, including planning, implementation, monitoring, and evaluation. The governor directly facilitates, provides guidance, and monitors the process. Frequently, the execution of these interventions encounters impediments that necessitate the cooperation of both municipal governments and lower-level sectors. According to Article 3 of Presidential Regulation Number 72 of 2021, the target group for executing the accelerated reduction of stunting includes not only mothers of toddlers and children aged 0-59 months, but also teenagers, prospective brides, and pregnant women. Efforts to educate mothers should commence from adolescence and prior to marriage, serving as a fundamental preparation for the process of becoming a mother, encompassing the stages of childbirth and breastfeeding. This is the responsibility that health program implementers can fulfil in order to achieve a stunting-free Indonesia.

The government should adopt the Nutrition Aware Family Empowerment Program, commonly known as KADARSI, for health cadres who have direct interaction with the population, particularly mothers of toddlers. In addition, this research highlights the limitation of government funds in fully optimizing program execution. The funding allocated in the Regional Revenue and Expenditure Budget (APBD) falls short of the optimal amount required to address malnutrition in the Yogyakarta region. Ideally, it should account for 0.3% of the entire APBD, but only 0.1% is being allocated. This statistic has failed to mitigate dietary issues in youngsters. If the prevalence of nutritional issues experienced by the government continues to increase, it can be concluded that the government has not succeeded in enhancing the well-being of individuals through the healthcare domain. Inadequate government financing can exacerbate the condition of children affected by stunting and malnutrition, due to a lack of assistance for the community's financial circumstances (Sari, 2013).

Further elucidated the necessity of a robust commitment from multiple stakeholders in order for the government to effectively implement stunting prevention and management. This is because addressing stunting is a collective responsibility, and the Banda Aceh City Government's actions are still governed by Governor Regulations (Pergub). The findings of this study highlight the necessity for the Banyumas Regency Government to enact a Regent's Regulation, which would enable the implementation of the "Rembug Stunting" program to be extended beyond certain groups and encompass the whole community in Banyumas Regency. This study shows that the government's efforts to alleviate stunting are hampered by a variety of difficulties, including a lack of community engagement and comprehension. The government should adopt a proactive approach in promoting community engagement in regular programmes and other health screenings. Additionally, it is crucial for the community to be receptive to the needs of children afflicted by stunting, even at the village level (Rahmah et al., 2022).

According to Central Java Governor Regulation Number 34 of 2019, the Central Java Provincial Government, must not only initiate an eight-fold convergence program for stunting prevention, but also conduct regular monitoring and evaluation of the implementation of the stunting intervention program. This is crucial in order to effectively target specific groups and achieve optimal outcomes. Hence, it is imperative to establish comprehensive regulations officially promulgated by the Banyumas Regency Government. In their study the necessity for sub-district and village administrations to establish their own rules as comprehensive policy directives, which can be utilized by the community to independently carry out interventions to address stunting. The collective endeavors of several stakeholders have been effective in diminishing the occurrence of new cases of stunting. This is mostly achieved through educational initiatives led by well-informed healthcare professionals, aimed at disseminating essential knowledge to the community.(Amalia et al., 2021; Apriliani et al., 2023)

CONCLUSIONS

The present analysis suggests a correlation between the extent of nutritional information possessed by mothers of infants and the influence of governmental intervention on the prevalence of stunting. It is anticipated that in the future, there would be an increased emphasis on the frequent monitoring and evaluation of programs pertaining to the prevention and control of stunting, particularly within health agencies, with a specific focus on primary health facilities. Furthermore, it is imperative to offer comprehensive training to healthcare personnel on the proper execution of anthropometric measures on infants. Furthermore, it is imperative to impart education to healthcare professionals in order to enhance their comprehension of stunting, nutrition, and parenting practices, so enabling them to effectively implement this knowledge within the broader community. The provision of socialization and education through extensive community outreach plays a crucial role in enhancing awareness of stunting, ensuring sufficient nutritional intake, and promoting positive parenting practices for children. Throughout addition to engaging professionals from many disciplines, such as doctors, in the process of deliberating on the development of dietary therapies for stunted infants.

This study elucidates the correlation between the nutritional knowledge of mothers with children under the age of five and the influence of government intervention on the prevalence of stunting. This research can serve as a foundation for formulating policies, particularly those pertaining to the prevention of stunting. Regarding future studies, it is

recommended that additional study be conducted to explore the government's involvement in the prevention of stunting. This might involve exploring strategies such as the provision of complementary nutrition for nursing and the implementation of weighing procedures.

CONFLICT OF INTEREST

None declared

REFERENCES

Addawiah, R., Hasanah, O. and Deli, Addawiah, R., Hasanah, O. and Deli, H. (2020). Overview of Incidents of Stunting and Wasting in Infants and Toddler in Tenayan Raya Pekanbaru. *Journal of Nutrition College*, 9(4), pp. 228–234. https://doi.org/10.14710/jnc.v9i4.28482

Amalia, I.D., Lubis, D.P.U. and Khoeriyah, S.M. (2021). The Relationship Of Mother's Knowledge About Nutrition And The Incident Of Stunting In Toddler. *Samodra Ilmu Health Journal*, 12(2), pp. 146–154. https://doi.org/10.55426/jksi.v12i2.153

Apriliani, C., Sadhana, K. and Fristin, Y. (2023). The Role of Government Policies in Preventing and Reducing Stunting. E*AS Journal of Humanities and Cultural Studies*, 5(01), pp. 9–17. https://doi.org/10.36349/easjhcs.2023.v05i01.002

Beal, T., Tumilowicz, A., Sutrisna, A., Izwardy, D. and Neufeld, L. M. (2018). A review of child stunting determinants in Indonesia. *Maternal & Child Nutrition*, 14(4), p. e12617. https://doi.org/10.1111/mcn.12617

Butchon, R. and Liabsuetrakul, T. (2017). The Development and Growth of Children Aged under 5 years in Northeastern Thailand: a Cross-Sectional Study. *Journal of Child and Adolescent Behaviour*, 5(1). https://doi.org/10.4172/2375-4494.1000334

Central Bureau of Statistics (2019). *Health Statistics Profile 2019*.

Central Java Governor Regulation (2019). *Central Java Governor Regulation Number 34 of 2019 concerning Acceleration of Stunting Prevention in Central Java Province.*

Ciptanurani, C. and Chen, H.J. (2021). Household structure and concurrent stunting and overweight among young children in Indonesia', *Public Health Nutrition*, 24(9), pp. 2629–2639. https://doi.org/10.1017/S1368980021001385

Darmini, N.W., Fitriana, L.B. and Vidayanti, V. (2022). The Relationship of Mother's Level of Knowledge About Balanced Nutrition and The Incident of Stunting in Toddler Ages 2-5 Year, *Coping: Community of Publishing in Nursing*, 10(2), p. 160. https://doi.org/10.24843/coping.2022.v10.i02.p06

De Onis, M. and Branca, F. (2016). Childhood stunting: a global perspective. *Maternal & Child Nutrition*, 12(S1), pp. 12–26. https://doi.org/10.1111/mcn.12231

De Sanctis, V., Soliman, A., Alaaraj, N., Ahmed, S., Alyafei, F., Hamed, N., (2021). Early and Long-term Consequences of Nutritional Stunting: From Childhood to Adulthood: Early and Long-term Consequences of Nutritional Stunting. *Acta Bio Medica Atenei Parmensis*m 92, 11346.

Koshy, B., Srinivasan, M., Gopalakrishnan, S., Mohan, V.R., Scharf, R., Murray-Kolb, L., John, S., Beulah, R., Muliyil, J. and Kang, G., (2022). Are early childhood stunting and

catch-up growth associated with school age cognition?—Evidence from an Indian birth cohort. *PLoS ONE*, 17, e0264010. https://doi.org/10.1371/journal.pone.0264010

Labolo, M. (2021). Government Policy in Handling Stunting and Malnutrition in Children during the COVID-19 Pandemic. AYER , 28 (1),pp,80- 99. http://eprints2.ipdn.ac.id/id/eprint/4 32

Lailatul, M. and Ni'mah, C. (2015). The Relationship between Education Level, Knowledge Level and Mother's Parenting Patterns with Wasting and Stunting in Toddlers in Poor Families. *Media Gizi Indonesia*, 10(2015), pp. 84–90. https://doi.org/10.20473/mgi.v10i1.84-90

Mediani, H. S., Hendrawati, S., Pahria, T., Mediawati, A. S. and Suryani, M. (2022). Factors Affecting the Knowledge and Motivation of Health Cadres in Stunting Prevention Among Children in Indonesia. *Journal of Multidisciplinary Healthcare*, 15, pp. 1069–1082. https://doi.org/10.2147/JMDH.S356736

Murti, L.M., Budiani, N.N. and Darmapatni, M.W.G. (2020). The relationship between maternal knowledge about toddler nutrition and the incidence of stunting in children aged 36-59 months in Singakerta Village, Gianyar Regency. *Jurnal Ilmiah Kebidanan*, 8, pp. 63–69.

Mustakim, M.R.D., Irawan, R., Irmawati, M. and Setyoboedi, B., (2022). Impact of Stunting on Development of Children between 1-3 Years of Age *Ethiopian Journalof Health Sciences*, 32(3), pp. 569-578

National Team for the Acceleration of Poverty Reduction (2017). *100 Priority Districts/Cities for Stunting Child Intervention. Central Jakarta: National Team for the Acceleration of Poverty Reduction.* [Preprint].

Nshimyiryo, A., Hedt-Gauthier, B., Mutaganzwa, C., Kirk, C.M., Beck, K., Ndayisaba, A., Mubiligi, J., Kateera, F. and El-Khatib, Z. (2019). Risk factors for stunting among children under five years: a cross- sectional population-based study in Rwanda using the 2015 Demographic and Health Survey. *BMC Public Health*, 19, 175. https://doi.org/10.1186/s12889-019-6504-z

Rahmah, M. and Dahlawi, D. (2022). The Role of The Banda Aceh City Government in Integrated Stunting Prevention and Management. *Jurnal Ilmiah Mahasiswa*, 7(3).

Saputri, R.A. (2019) 'Regional Government Efforts in Combating Stunting. *Jdp (Jurnal Dinamika Pemerintahan)*, 2(2), pp. 152–168. https://doi.org/10.36341/jdp.v2i2.947

Sari, M.E.P. (2013). *The Role of City Government in Overcoming Bad Nutrition in Yogyakarta*. DOI : 10.33373/dms.v2i2.142

Savanur, M.S. and Ghugre, P.S. (2016). BMI, body fat and waist-to-height ratio of stunted v. non-stunted Indian children: a case–control study. *Public Health Nutrition*, 19(8), pp. 1389–1396. https://doi.org/10.1017/S1368980016000215

Scaglioni, S., De Cosmi, V., Ciappolino, V., Parazzini, F., Brambilla, P. and Agostoni, C. (2018). Factors influencing children's eating behaviours, *Nutrients*, 10(6), pp. 1–17.

https://doi.org/10.3390/nu10060706

Schneider, E.B. (2023). The determinants of child stunting and shifts in the growth pattern of children: A long-run, global review. *Journal of Economic Surveys* (Preprint) https://doi.org/10.1111/joes.12591

Thurstans, S., Sessions, N., Dolan, C., Sadler, K., Cichon, B., Isanaka, S., Roberfroid, D., Stobaugh, H., Webb, P. and Khara, T. (2022). The relationship between wasting and stunting in young children: A systematic eview.*Maternal & Child Nutrition*, 18, e13246. https://doi.org/10.1111/mcn.13246

UNICEF (2017). *First 2000 Days: The critical window to ensure that children survive and thrive*.

Widiyanto, J. and Laia, F.S. (2021). Mother Knowledge of Nutrition and Effect on Nutritional Status of Children in Community Health Center. Homes *Journal*, 2(1), pp. 2746–8798. DOI : 10.24252/hmsj.v2i1.18871

Zerfu, T.A. and Biadgilign, S. (2018). Pregnant mothers have limited knowledge and poor dietary diversity practices, but favorable attitude towards nutritional recommendations in rural Ethiopia: evidence from community-based study. *BMC Nutrition*, 4(1), p. 43. https://doi.org/10.1186/s40795-018-0251-x