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Stunting and Factors Affecting Toddlers in Indonesia

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ABSTRACT: Asia is the second region after Africa to have the tallest prevalence of stunting in the world. Indonesia is one of the countries in Southeast Asia with the fifth highest prevalence of stunting in the world at 37%, or nearly 9 million children who experience stunting. This study aims to examine the factors that influence and risk the occurrence of stunting in children in Indonesia. The research method uses a type of qualitative research with a traditional literature review. This study found that stunting is influenced by several complex factors not only at the individual level but also at the family and community levels. A comprehensive synthesis of the available evidence on the determinants of stunting in children in Indonesia outlines who is most vulnerable to stunting, which interventions are successful, and what new research is needed to fill knowledge gaps.

Keywords: Indonesian's toddlers, stunting factors

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1 INTRODUCTION

Malnutrition in children is an ongoing problem in many developing countries. Approximately 159 million children under the age of 5 were stunted worldwide in 2014 and this statistic is an indicator of chronic malnutrition (International Food Policy Research Institute, 2016). Stunting is a developmental disorder experienced by children due to repeated malnutrition, Infections, and inadequate psychosocial stimulation (World Health Organization, 2010). Stunting in children under five is one of the most significant barriers to human growth and development, which globally has affected 162 million children under five years of age (WHO, 2014). The most irreversible results are inadequate nutrition and backflow infection bouts in the first 1,000 days of a child (Hoddinott et al., 2013; Madan et al., 2018).

Globally the number of stunted children is 150.8 million or 22.2% (UNICEF, 2018). Asia is the second region after Africa to have the highest prevalence of stunting in the world, and Indonesia is one of the countries in Southeast Asia that has the fifth highest prevalence of stunting in the world at 37%, or nearly 9 million children who experience stunting according to Indonesia basic health research. In the national medium-term development plan 2015-2019, babies experienced nutritional problems that dropped to 17%. The prevalence of stunting toddlers (below the standard height by age) is 27.67%, down compared to the results of basic Indonesian health research, which is 37.2% although there is a decrease in the prevalence of stunting from 37.2% in 2013 to 27.67% in 2019, the prevalence of stunting is still relatively high because almost one in three Indonesian children under five experience stunting.

Stunting is still a global problem that is of worldwide concern, so it is ranked first in the Sustainable *Development Goals* (SDGs) success indicators. The limit of nutritional problems set by who is no more than 20%, so stunting in toddlers is a nutritional problem experienced by toddlers in the world. The SDGs is a sustainable development program that has 17 goals with the second goal being the target of 2030 to end all forms of malnutrition, including achieving the international target of 2025 to reduce stunting in toddlers (United Nations, 2021). Therefore, global efforts have been directed at developing policies and programs aimed at reducing stunting. Reducing childhood stunting is the first of six goals in the global nutrition target for 2025 and a key indicator in the second SDGs to achieve *zero hunger* (WHO, 2012).

Despite the strategy, childhood stunting remains at a high level and continues to be a serious problem of public health problem in Indonesia whose progress in reducing childhood malnutrition has been slow over the past decade. A previous report published in 2013 showed that more than a third (37%) of children under 5 were roughly stunted, while 18% were estimated to be *stunted* (National Team for the Acceleration of Poverty Reduction, 2017), even though Indonesia ranks fifth among the countries with the highest burden of children who are inhibited (United Nations Children's Fund, 2013).

Although many experts have researched risk factors that influence malnutrition problems in Indonesia and other developing countries, most of the research conducted so far has focused on individual-level factors that influence stunting rather than community-level factors. Stunted growth and development are influenced by the context in which a child is born and raised (Casanovas et al., 2013). These include interdependent influences such as politics, economics, health and care, education, society and culture, agricultural and food systems, water and sanitation, and the environment. Thus, this study was designed to identify factors influencing Indonesia's stunting rates.

2 THEORETICAL STUDY

Stunting and malnutrition in the first 1,000 days of life are permanent and difficult to repair (Ministry of Health Republic of Indonesia, 2016, 2018). The cause of *stunting* comes from various factors, one of which is the mother factor. Maternal factors include poor nutrition in preconception, pregnancy, and breastfeeding, low maternal height, history of infection, pregnancy in adolescence, mental health, Intra Uterine Growth Restriction (IUGR), premature birth, short birth distance, and hypertension. According to the United Nations Emergency Children's Fund (UNICEF), stunting is caused by two factors: direct and indirect.

Stunting is directly influenced by two main factors, namely food consumption and a history of infectious diseases (WHO, 2012). Stunting is indirectly influenced by parenting, food availability, and socioeconomic, cultural, and political factors. Stunting can also be caused by Low Birth Weight (BBLR), non-exclusive breastfeeding, too early baby solid food, and low economic factors (Satriawan, 2018). Other factors of low maternal education, maternal employment, number of family members, maternal Body Mass Index (BMI) <18.5, and incomplete immunizations Other factors of low maternal education, maternal employment, number of family members, maternal Body Mass Index (BMI) <18.5, and incomplete immunizations (United Nations Children’s Fund, 2013). In addition, inadequate access to water hygiene, sanitation, and poor hygiene have a detrimental effect on the growth and development of children (UNICEF, 2015a). Factors that can affect stunting in toddlers are food diversity and parenting. Parenting patterns, including dietary treatments applied by the mother, can affect the growth and development of toddlers (Kimani-Murage et al., 2015). Malnutrition in toddlerhood will be irreversible so that in toddlerhood requires a variety and balanced nutritional intake (Asfaw et al., 2015). *Stunting* is also caused by the health and nutritional condition of the mother before pregnancy, during pregnancy, after giving birth, the mother's short posture, the pregnancy being too close, and the mother is still a teenager or the gestational age of the mother is too young (Black et al., 2013).

But other studies have also stated that exclusive breastfeeding and immunization status are not associated with stunting (Hendraswari et al., 2021). Therefore, educating women will be a useful step in reducing the prevalence of malnutrition, especially stunting. The theory states that the level of education is one of the sociocultural factors where this factor

does not directly affect stunting prevention behavior, for example, personal factors that include biological factors and psychological factors.

In a recent study by Worku et al., (2018), on malnutrition in extreme poverty in Ethiopia found that among 819 poor children, 325 children (39.7%) were stunted, 135 children (16.5%) were underweight, and 27 children (3.3%) were wasting. Children are the result of stunting by the complex interaction of household, environmental, socioeconomic, and cultural influences described in the WHO Conceptual Framework on stunting children (Stewart et al., 2013).

Stunting is indirectly influenced by parenting, food availability, and socioeconomic, cultural, and political factors (United Nations, 2021). The growth and development of a good child are also influenced by a balanced nutritional intake, quality, and quantity, including water, carbohydrates, fats, proteins, vitamins, and minerals to obtain enough energy. The child in question will obtain proteins that are very useful for body cell division, obtain enough vitamins for smooth metabolism of the body, and will get enough minerals for the growth of bones and teeth. The adequacy of this nutrition makes the child's growth optimal. The nutritional status of children is also related to the readiness of the child's school. Nutrition is closely related to child development including the cognitive and physical development of children's cognitive (McGregor et al., 2007) and brain function (Prado & Dewey, 2014).

A child's nutritional status is largely determined by his or her food intake, exposure to disease, and treatment ultimately influenced by individuals, households, and community factors (UNICEF, 2015). Many previous studies have emphasized the importance of socioeconomic, demographics, household, environmental factors, parental characteristics, child health, and feeding practice factors, and geographic location in a child's nutritional status (Kimani-Murage et al., 2015; Ntenda & Chuang, 2018), previous studies have shown that maternal education (Handayani et al., 2017; Kusumawati et al., 2015) poverty (Kusumawati et al., 2015), water and sanitation (Handayani et al., 2017) associated with *stunting*.

Based on stunting prevalence data collected by WHO, Indonesia is one of the third countries with the highest prevalence in the world Southeast Asia region or South-East Asia Regional (SEARO). The average prevalence of stunting under five in Indonesia from 2005 to 2017 was 36.4%. Stunting has devastating effects in both the short and long term. According to WHO 2018, the short-term impacts of stunting are increased morbidity and mortality, suboptimal cognitive, motor, and verbal development in children, and increased health costs. Long-term effects of stunting include posture that is not optimal as an adult (shorter than usual), which can increase the risk of obesity. and other diseases, as well as decreased reproductive health. In addition, stunting also leads to less than optimal learning capacity and performance during the school year as well as productivity and work capacity that is less than optimal (Black et al., 2013), impaired reproductive health, learning concentration, and decreased work productivity (Black et al., 2013).

The government has made various efforts to reduce stunting rates in Indonesia. This can be seen from the decline in the prevalence of stunting toddlers in Indonesia from 37.2% in 2013 to 30.8% in 2018. The prevalence of stunting also decreased from 32.8% in 2013 to 29.9% in 2018. (Health Research and Development Agency, 2018). However, the decline in the figure is still far from the target when compared to the WHO's cut-off point of 20%.

Stunting has future consequences in children, namely low cognition, and physical development ability so it has an impact on preventing the child's capacity as an adult, stunting can have an impact on the child's productivity after adulthood. Stunted children range from a variety of degenerative diseases. The results of the study predicted the impact of stunting on children, namely psychosocial and mental health losses in children will result in a loss of GDP of up to 300 trillion rupiahs annually.

In 2013, data showed that out of 4 babies born, there was 1 stunting baby. This means that stunting occurs before the child is born. The data also showed that after birth, children aged 12-23 months increased by almost 40%. Stunting patterns in early childhood now make the period from conception to a child's second birthday, namely the first 1,000 days of life, a window of opportunity, or a golden opportunity that is very important to prevent stunting in children. This period is the growth and development of children that need to be improved (Creswell, 2014).

Stunting has long-term effects on individuals and society, including decreased cognitive and physical development, decreased productive capacity and poor health, and an increased risk of degenerative diseases such as diabetes (Casale et al., 2018; McGregor et al., 2007; Satriawan, 2018; UNICEF, 2018). The magnitude of the problem of stunting in children today will have an impact on the future quality of the nation. If this trend continues, projections suggest that 127 million children will be restricted to growing under five by 2025. Thus, many factors cause stunting in Indonesia, including nutritional status, complementary feeding practices, and exposure to infections and related distal determinants such as education, food systems, health care, and water and sanitation infrastructure and services.

3 METHOD

This research uses a type of qualitative research with a literature review method. According to Creswell, literature studies are an illustrated analysis of research topics that aim to inform readers about the results of other research related to research conducted today, linking research with existing literature (Creswell, 2014). In this study, the WHO framework, UNICEF, and several previous research studies categorized the direct causes of stunting in children including household and family factors (maternal and home environment factors), inadequate complementary foods (poor quality food, inadequate practices, and food and water safety), and infections. Contextual factors consist of political economy, health, and health care, education, society, and culture, agricultural and food systems, water, sanitation, and the environment. Researchers present the results

in a narrative summary used in a systematic review. For more details, the systematic steps of writing a literature study can be seen in figure 1.

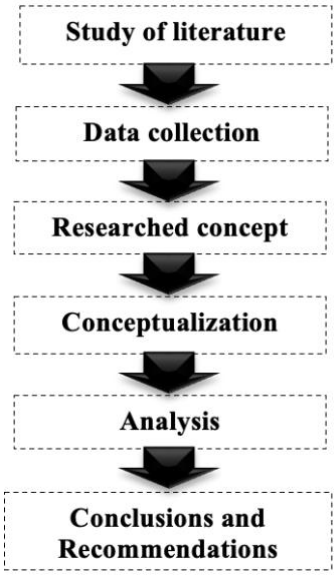

Figure 1. The stages of the literature study

4 RESULT AND DISCUSSION

4.1 *Result*

In this case, three cross-sectional studies showed a moderate association between the younger mother's age and child stunting (Best et al., 2008; Semba et al., 2007, 2011). In this study, women who were 24 years old had stunted children between 1.09 and 1.23 more than women who were 33 years old. Sari et al., (2010) found opposite relationships but not reporting relationship strength. Research Oddo et al., (2012) the double burden of mother and child occurs in older women more than in younger women, this is because a greater body mass index in older women is not necessarily a greater prevalence of stunting children.

Stunting can hinder economic growth and labor productivity. The evidence shown includes a loss of 11% of GDP and a reduction in the income of adult workers by up to 20%. Stunting also exacerbates inequality leading to a 10% drop in total lifetime income and incurring intergenerational inequalities (World Bank Group, 2016). WHO makes stunting the focus of the Global Nutrition Targets 2025 and the 2030 Sustainable Development Goals agenda, so preventing stunting is essential to achieving Quality Indonesian human resources and equitable economic growth and breaking the chain of poverty between generations. From history Horrell et al., (2001) also present data analysis from developing countries. Dao et al., (2010) states that only increased human capital through interventions in health, nutrition, and education will lead to increased productivity and hence income to lift people out of poverty. Indonesia is still ranked fifth as a country with the completion of stunting. Children with chronic malnutrition in

Indonesia have a figure of up to 30% (Titaley et al., 2013). More and more non-communicable diseases in Indonesia result in increased government spending, especially for national health insurance.

4.2 *Discussion*

Recent studies have found that boys are more prone to stunting than their female counterparts. This finding is also consistent with previous studies Akombi et al., (2017); Chirande et al., (2015); Ntenda and Chuang, (2018) which state that boys are believed to be more physically active and more energy should be channeled to increased growth (Goldstein, 2010). In addition, maternal education also affects child nutrition for example associated with the level of knowledge. Mothers with nutritional knowledge gained from the community have a wide variety of diverse and effective foods (Burchi, 2010). This knowledge can improve responsive feeding/care so that it is able to understand the health and nutrition of children (Shieh et al., 2010).

Furthermore, child stunting is also associated with the father's education level and household wealth status. This research is consistent with previous studies (Akombi et al., 2017; Chirande et al., 2015; Handayani et al., 2017; Ntenda & Chuang, 2018) that show the poverty affects a child's nutritional status through insufficient food intake, increased exposure to infection, and a lack of basic health care. A father's higher education level also means higher household income and food security (Rosiyati et al., 2019). Subsequent publications proved that children living in slums had a higher chance of becoming stunted. Children living in very dense environments without sanitation are exposed to more fecal pathogens (Budge et al., 2019). Exposure like this can inhibit a child's absorption of nutrients. This study provides an example of how malnourished childhood cannot be fully explained by individual-level factors alone. However, this makes it clear that children living in provinces with higher GDP per capita and provinces with higher ratios of professional health workers per 1,000 population ages 0 - 4 are less likely to experience stunting. An increase in GDP can also increase the provision of services relevant to nutrition and social and health infrastructure as the Government is better able to dedicate public spending to health investments (Biadgilign et al., 2016).

In line with the studies above, the residence also affects the occurrence of stunting in children. Children whose parents live in rural areas have a higher chance of stunting in childhood than those living in urban areas due to a more complete municipal healthcare system and faster access to healthcare facilities. In addition, urban residents usually have a higher level of education and economic status (Fantay Gebru et al., 2019). Only one cross-sectional study reported a link between poor childcare and stunting in urban children at 6-59 months of age but did not reveal the strength of the relationship (Bardosono et al., 2007). The same study also found a link between poor household environmental sanitation (inadequate latrines facilities) and stunting in rural children 6-59 months.

Reducing stunting in childhood and maintaining these outcomes in the face of climate change requires interventions to reduce stunting to a comprehensive and integrated consider the role of environmental risk factors. Studies conducted in South Africa, India, Panama, Guatemala, and Brazil using longitudinal data showed that children who were stunted at the age of two were confirmed to have delayed school or stayed in class for one year in school (Adair & Guilkey, 1997; Reynaldo & Young, 2012). In line with the results of research from (Fitri, 2018; Mugianti et al., 2018; Prakhasita, 2019) said that there is a significant association between nutritional intake and stunting events in toddlers.

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environmental sanitation (inadequate latrines facilities) and stunting in rural children 6-59 months.

Solutions to the problem of stunting include improving human resources, improving the quality of infant and child feeding, improving nutrition education, and strengthening nutritional interventions at Community health centers and integrated service post (Biadgilign et al., 2016). In addition, it also focuses on strengthening nutrition with an approach to the first 1000 days of the life cycle of life and adolescents (Fantay Gebru et al., 2019). Stunting can be prevented by meeting the nutritional needs of pregnant women, exclusive breastfeeding for six months then continuing with breast milk companion food (MPASI). Parents are also expected to bring their toddlers regularly to integrated service post, meet the needs for clean water, improve sanitation facilities, and maintain environmental cleanliness (Biadgilign et al., 2016).

Although the WHO conceptual framework effectively *identifies stunting* in Indonesia from the available literature, so it provides sufficient insight into which interventions are best. Recalling the diversity of geography and culture in Indonesia, the factors affecting *stunting* in children vary geographically, and spatial analysis of the strongest determinants will help identify where to focus the intervention and how the intervention can be adjusted regionally.

5 CONCLUSION

The study showed that stunting is influenced by complex interactions of individuals, households, and community-level factors, all of which contribute to the prevalence of undernutrition in Indonesia. The child's gender, parental education (mother and father), household wealth, type of residence (urban or rural), slum dwellings, and the number of family members are important risk factors for malnutrition in childhood. Therefore, efforts made to promote parental education and knowledge help improve the nutritional status of children by empowering women to lead to better childcare practices. In addition, by improving the economic status of the family is important for better food intake and improving the nutritional status of the child through consuming foods relevant to health and nutrition. Furthermore, increasing the number of health professionals in the community is also important to ensure the accessibility of healthcare services that can improve the nutritional status of children in the community.

6 REFERENCES

Adair, L. S., & Guilkey, D. K. (1997). Age-specific Determinants of Stunting in Filipino Children. *The Journal of Nutrition*, *127*(2), 314–320. https://doi.org/10.1093/jn/127.2.314

Akombi, B. J., Agho, K. E., Hall, J. J., Merom, D., Astell-Burt, T., & Renzaho, A. M. N. (2017). Stunting and Severe Stunting Among Children Under-5 Years in Nigeria: A Multilevel Analysis. *BMC Pediatrics*, *17*(1), 1–16. https://doi.org/10.1186/s12887-016-0770-z

Asfaw, M., Wondaferash, M., Taha, M., & Dube, L. (2015). Prevalence of Undernutrition and Associated Factors Among Children Aged Between Six to Fifty Nine Months in Bule Hora District, South Ethiopia. *BMC Public Health*, *15*(1), 41. https://doi.org/10.1186/s12889-015-1370-9

Badan Penelitian dan Pengembangan Kesehatan. (2018). *Hasil Utama RISKESDAS 2018*.

Bardosono, S., Sastroamidjojo, S., & Lukito, W. (2007). Determinants of Child Malnutrition During the 1999 Economic Crisis in Selected Poor Areas of Indonesia. *Asia Pacific Journal of Clinical Nutrition*, *16*(3), 512–526.

Best, C. M., Sun, K., De Pee, S., Sari, M., Bloem, M. W., & Semba, R. D. (2008). Paternal Smoking and Increased Risk of Child Malnutrition Among Families in Rural Indonesia. *Tobacco Control*, *17*(1), 38–45. https://doi.org/10.1136/tc.2007.020875

Biadgilign, S., Shumetie, A., & Yesigat, H. (2016). Does Economic Growth Reduce Childhood Undernutrition in Ethiopia? *PLoS ONE*, *11*(8), 1–14. https://doi.org/10.1371/journal.pone.0160050

Black, R. E., Victoria, C. G., Walker, S. P., Bhutta, Z. A., Christian, P., Onis, M. de, Ezzati, M., McGregor, S. G., Katz, J., Martorell, R., Uauy, R., & The Maternal and Child Nutrition Study Group. (2013). Maternal and Child Undernutrition and Overweight in Low-income and Middle-income Countries. *The Lancet*, *382*, 396.

Budge, S., Parker, A. H., Hutchings, P. T., & Garbutt, C. (2019). Environmental Enteric Dysfunction and Child Stunting. *Nutrition Reviews*, *77*(4), 240–253. https://doi.org/10.1093/nutrit/nuy068

Burchi, F. (2010). Child Nutrition in Mozambique in 2003: The Role of Mother's Schooling and Nutrition Knowledge. *Economics and Human Biology*, *8*(3), 331–345. https://doi.org/10.1016/j.ehb.2010.05.010

Casale, D., Espi, G., & Norris, S. A. (2018). *Estimating the pathways through which maternal education affects stunting: Evidence from an urban cohort in South Africa*. *21*(10), 1810–1818. https://doi.org/10.1017/S1368980018000125

Casanovas, M. del C., Lutter, C. K., Mangasaryan, N., Mwadime, R., Hajeebhoy, N., Aguilar, A. M., Kopp, C., Rico, L., Ibiett, G., Andia, D., & Onyango, A. W. (2013). Multi-sectoral Intervensions for Healthy Growth. *Matern Child Nutrition*, *2*, 46–57. https://doi.org/10.1111/mcn.12082

Chirande, L., Charwe, D., Mbwana, H., Victor, R., Kimboka, S., Issaka, A. I., Baines, S. K., Dibley, M. J., & Agho, K. E. (2015). Determinants of Stunting and Severe Stunting Among Under-Fives in Tanzania: Evidence from The 2010 Cross-sectional Household Survey. *BMC Pediatrics*, *15*(1), 1–13. https://doi.org/10.1186/s12887-015-0482-9

Creswell, J. W. (2014). *A Concise Introduction to Mixed Methods Research*. SAGE Publications Inc.

Dao, D., Thang, V. Van, & Hoa, D. T. (2010). Malnutrition Status and Related Factors Within Ethnic Minority Children Under 5 Years Old in North Tra My District, Quang Nam Province in 2010. *Journal of Science*, *61*.

Fantay Gebru, K., Mekonnen Haileselassie, W., Haftom Temesgen, A., Oumer Seid, A., & Afework Mulugeta, B. (2019). Determinants of Stunting Among Under-Five Children in Ethiopia: A Multilevel Mixed-Effects Analysis of 2016 Ethiopian Demographic and Health Survey Data. *BMC Pediatrics*, *19*(1), 1–13. https://doi.org/10.1186/s12887-019-1545-0

Fitri, L. (2018). Hubungan BBLR dan ASI Eksklusif Dengan Kejadian Stunting di Puskesmas Lima Puluh Pekanbaru. *Jurnal Endurance*, *3*(1), 131–137.

Goldstein, H. (2010). *Multilevel Statistical Models, 4th Edition*. Wiley.

Handayani, F., Siagian, A., & Aritonang, E. (2017). Mother's Education as A Determinant of Stunting among Children of Age 24 to 59 Months in North Sumatera Province of Indonesia. *IOSR Journal of Humanities and Social Science*, *22*, 58–64. https://doi.org/10.9790/0837-2206095864

Hendraswari, C. A., Purnamaningrum, Y. E., Maryani, T., Widyastuti, Y., & Harith, S. (2021). The Determinants of Stunting for Children Aged 24-59 Months in Kulon Progo District 2019. *Kesmas: Jurnal Kesehatan Masyarakat Nasional*, *16*(2), 71–77. https://doi.org/10.21109/kesmas.v16i2.3305

Hoddinott, J., Alderman, H., Behrman, J. R., Haddad, L., & Horton, S. (2013). The Economic Rationale For Investing In Stunting Reduction. *Maternal & Child Nutrition*, *9*, 69–82. https://doi.org/10.1111/mcn.12080

Horrell, S., Humphries, J., & Voth, H.-J. (2001). Destined for Deprivation: Human Capital Formation and Intergenerational Poverty in Nineteenth-Century England. *Explorations in Economic History*, *38*(3), 339–365. https://doi.org/10.1006/exeh.2000.0765

International Food Policy Research Institute. (2016). *Global Nutrition Report 2016: From Premise to Impact: Ending Malnutrition by 2030*.

Kementerian Kesehatan Republik Indonesia. (2016). *InfoDATIN: Situasi Balita Pendek*.

Kementerian Kesehatan Republik Indonesia. (2018). *Warta KESMAS: Cegah Stunting itu Penting*.

Kimani-Murage, E. W., Muthuri, S. K., Oti, S. O., Mutua, M. K., Van De Vijver, S., & Kyobutungi, C. (2015). Evidence of A Double Burden of Malnutrition in Urban Poor Settings in Nairobi, Kenya. *PLoS ONE*, *10*(6), 1–17. https://doi.org/10.1371/journal.pone.0129943

Kusumawati, E., Rahardjo, S., & Sari, H. P. (2015). Model Pengendalian Faktor Risiko Stunting pada Anak Usia di Bawah Tiga Tahun Model of Stunting Risk Factor

Control among Children under Three Years. *Kesmas: Jurnal Kesehatan Masyarakat Nasional*, *9*, 249–256.

Madan, E. M., Haas, J. D., Menon, Purnima., & Gillespie, Stuart. (2018). Seasonal Variation In The Proximal Determinants Of Undernutrition During The First 1000 Days Of Life In Rural South Asia: A Comprehensive Review. *Global Food Security*, *19*, 11–23. https://doi.org/10.1016/j.gfs.2018.08.008

McGregor, S. G., Cheung, Y. B., Cueto, S., Glewwe, P., Ritcher, L., Strupp, B., & International Child Development Steering Group. (2007). Developmental Potential in The First 5 Years for Children in Developing Countries. *The Lancet*, *369*, 60–70. https://doi.org/10.1016/S0140-6736(07)60032-4

Mugianti, S., Mulyadi, A., Anam, A. K., & Najah, Z. L. (2018). Faktor Penyebab Anak Stunting Usia 25-60 Bulan di Kecamatan Sukorejo Kota Blitar. *Jurnal Ners Dan Kebidanan (Journal of Ners and Midwifery)*, *5*(3), 268–278. https://doi.org/10.26699/jnk.v5i3.art.p268-278

Ntenda, P. A. M., & Chuang, Y.-C. (2018). Analysis of Individual-level and Community-level Effects on Childhood Undernutrition in Malawi. *Pediatr Neonatol*, *59*(4), 380–389. https://doi.org/10.1016/j.pedneo.2017.11.019

Oddo, V. M., Rah, J. H., Semba, R. D., Sun, K., Akhter, N., Sari, M., De Pee, S., Moench-Pfanner, R., Bloem, M., & Kraemer, K. (2012). Predictors of Maternal and Child Double Burden of Malnutrition in Rural Indonesia and Bangladesh. *American Journal of Clinical Nutrition*, *95*(4), 951–958. https://doi.org/10.3945/ajcn.111.026070

Prado, E. L., & Dewey, K. G. (2014). Nutrition and brain development in early life. *Nutrition Reviews*, *72*(4), 267–284. https://doi.org/10.1111/nure.12102

Prakhasita, R. C. (2019). *Hubungan Pola Pemberian Makan Dengan Kejadian Stunting Pada Balita Usia 12-59 Bulan di Wilayah Kerja Puskesmas Wedi Surabaya*. Universitas Airlangga.

Reynaldo, Martorell., & Young, M. F. (2012). Patterns of Stunting and Wasting: Potential Explanatory Factors. *Advances in Nutrition*, *3*(2), 227–233. https://doi.org/10.3945/an.111.001107

Rosiyati, E., Pratiwi, E. A. D., Poristinawati, I., Rahmawati, E., Nurbayani, R., Lestari, S., Wardani, P. S., & Nugroho, M. R. (2019). Determinants of Stunting Children (0-59 Months) in Some Countries in Southeast Asia. *Jurnal Kesehatan Komunitas*, *4*(3), 88–94. https://doi.org/10.25311/keskom.vol4.iss3.262

Sari, M., De Pee, S., Bloem, M. W., Sun, K., Thorne-Lyman, A. L., Moench-Pfanner, R., Akhter, N., Kraemer, K., & Semba, R. D. (2010). Higher Household Expenditure on Animal-Source and Nongrain Foods Lowers the Risk of Stunting Among Children 0-59 Months Old in Indonesia: Implications of Rising Food Prices. *Journal of Nutrition*, *140*(1), 195–200. https://doi.org/10.3945/jn.109.110858

Satriawan, E. (2018). *Strategi Nasional Percepatan Pencegahan Stunting 2018-2024*. [National Strategy for the Acceleration of Stunting Prevention]

Semba, R. D., Kalm, L. M., De Pee, S., Ricks, M. O., Sari, M., & Bloem, M. W. (2007). Paternal Smoking is Associated with Increased Risk of Child Malnutrition Among Poor Urban Families in Indonesia. *Public Health Nutrition*, *10*(1), 7–15. https://doi.org/10.1017/S136898000722292X

Semba, R. D., Moench-Pfanner, R., Sun, K., De Pee, S., Akhter, N., Rah, J. H., Campbell, A. A., Badham, J., Bloem, M. W., & Kraemer, K. (2011). Consumption of Micronutrient-fortified Milk and Noodles is Associated with Lower Risk of Stunting in Preschool-Aged Children in Indonesia. *Food and Nutrition Bulletin*, *32*(4), 347–353. https://doi.org/10.1177/156482651103200406

Shieh, S. J., Chen, H. L., Liu, F. C., Liou, C. C., Lin, Y. in H., Tseng, H. I., & Wang, R. H. (2010). The Effectiveness of Structured Discharge Education on Maternal Confidence, Caring Knowledge, and Growth of Premature Newborns. *Journal of Clinical Nursing*, *19*(23–24), 3307–3313. https://doi.org/10.1111/j.1365-2702.2010.03382.x

Stewart, C. P., Iannotti, L., Dewey, K. G., Michaelsen, K. F., & Onyango, A. W. (2013). Contextualising Complementary Feeding in a Broader Framework for Stunting Prevention. *Matern Child Nutrition*, *9*(2), 27–45. https://doi.org/10.1111/mcn.12088

Tim Nasional Percepatan Penanggulangan Kemiskinan. (2017). *100 Kabupaten/Kota Prioritas Untuk Intervensi Anak Kerdil (Stunting)*.

Titaley, C. R., Ariawan, I., Hapsari, D., Muasyaroh, A., & Dibley, M. J. (2013). Determinants of the Stunting of Children in Indonesia: A Multilevel Analysis of the 2013 Indonesia Basic Health Survey. *Nutrients*, *11*, 1160.

UNICEF. (2015a). UNICEF' s Approach to Scaling Up Nutrition for Mothers and Their Children. *Programme Division*, *February* 9.

UNICEF. (2015b). *UNICEF's Approach to Scalling Up Nutrition For Mothers and Their Children*.

UNICEF. (2018). *Progress For Every Child in The SDG Era*.

United Nations. (2021). *United Nations Sustainable Development Goal 2: Zero Hunger*. https://sdgs.un.org/goals/goal2

United Nations Children's Fund. (2013). *Improving Child Nutrition: The Achievable Imperative for Global Progress*.

Worku, B. N., Abessa, T. G., Wondafrash, M., Vanvuchelen, M., Bruckers, L., & Kolsteren, P. (2018). The Relationship of Undernutrition/Psychosocial Factors and Developmental Outcomes of Children in Extreme Poverty in Ethiopia. *BMC Pediatrics*, *18*(1), 1–9. http://dx.doi.org/10.1186/s12887-018-1009-y

World Bank Group. (2016). *World Development Report 2016: Digital Dividends*.

World Health Organization. (2010). *Nutrition Landscape Information System (NLIS) Country Profile Indicators: Interpretation Guide*.

World Health Organization. (2012). *The Sixty Fifth World Health Assembly: Maternal, Infant, and Young Child Nutrition*.

World Health Organization. (2014). *Global Nutrition Targets 2025: Stunting Policy Brief (No.WHO/NMH/NHD/14.3)*.