

ANALYSIS STUNTING PREVENTION AND INTERVENTION: A LITERATUR REVIEW

Marni*, Domingos Soares², Totok Wahyudi¹, Muhammad Irfan¹, Siti Nurul¹

¹Faculty of Health Sciences, Universitas Duta Bangsa, Jl. K.H Samanhudi No.93, Sondakan, Kec. Laweyan, Kota
Surakarta, Central Java 57147

²Institute Superior Crystal, Dili, Timor Leste

*marni@udb.ac.id

ABSTRACT

The incidence of stunting in Indonesia is still high, various efforts have been made by the government to reduce stunting. Stunting is a health problem that often occurs in children which can result in decreased productivity and intelligence in adulthood. This study aims to analyze the prevention factors for stunting at the age of toddlers. Checklist Prisma has been used for registration of titles, abstracts, full texts and methodologies with the keywords Analysis AND stunting AND Prevention AND Intervention. The computerized databases that have been used to search for articles in this study are Science Direct, Pubmed, ProQuest and Google Scholar. Has used articles that report quantitative and qualitative research in journals published in the period 2017 to 2022. The method used in data analysis is thematic analysis. This literature review involved 29 selected articles. There were 8 main factors that could affect stunting, namely nutrition/nutrition, economic status, education/knowledge, sanitation/environment, geographic location, government/cross-sectoral policies, age of marriage and health education. Most of the factors that contribute to stunting prevention are the provision of macronutrient/micronutrient supplements in the form of zinc tablets to adolescent girls, pregnant women, and supplementary feeding to children under five. Most of the studies reported in these 29 articles used a qualitative, quantitative design and were conducted in Bangladesh, China, India, Indonesia, Pakistan, Peru, Nepal, USA and Zimbabwe. In all these articles it is reported that the incidence of stunting is still high in several countries and especially in Indonesia. This literature review reported using 29 articles that met the inclusion criteria from the Science Direct, Pubmed, ProQuest and Google Scholar databases. The results detect the main factors that influence the occurrence of stunting, namely malnutrition in the early 1000 days of life, while for prevention is giving blood/zinc tablets to adolescents, pregnant women.

Keywords: analysis; intervention; prevention; stunting

INTRODUCTION

Stunting is a health problem that often occurs in children. As many as 159 million children under the age of 5 years are stunted, more than a third of these children live in Africa. Sub-Saharan (Akseer et al., 2022) . The prevalence of stunting in Indonesia is still higher than other Southeast Asian countries such as Malaysia, Thailand and Singapore. The proportion of stunted children among Papuan toddlers in Indonesia is 33.1% (Wulandari et al., 2022) . If a country has a high prevalence of stunting, then the country will experience big problems, because the next generation is not productive in filling development, so it will become a country that has low human resources with low wages. Stunting causes decreased productivity in adulthood, low wages, poor cognition and education, and an increased risk of chronic disease. To overcome this problem, the Government of Indonesia is very focused on implementing the acceleration program in reducing stunting, aimed at families at risk of stunting with a focus on preparing family life, fulfilling nutrition, improving parenting patterns, increasing access and quality of health services and increasing access to drinking water and sanitation. (Presidential Decree No. 72 of 2021. This literature review aims to analyze the factors for preventing and treating stunting in children under five. Prisma checklist is

used to register titles, abstracts, full texts and methodologies with the keywords Analysis AND stunting AND Prevention AND Intervention.

METHOD

The literature review covers the factors that influence the prevention of stunting in children under five . Researchers conducted a search for journals with the research topic " Stunting Prevention and Intervention". After getting the topic, the researcher determines research questions related to the topic " How to prevent and intervene in handling stunting ". From the research topic questions, the researchers conducted a literature search based on the PICO inclusion criteria:

- P : Mother and Child with Stunting
- I : Prevention and intervention in handling stunting
- C : -
- O : Prevention and intervention for stunting

Have used the PRISMA checklist in articles published in 2017 - 2022. The databases used are Pudmed, Science direct, ProQuest, and Google Scholar . *Additional articles were identified from the reference lists and gray literature* (Saleh et al., 2021).

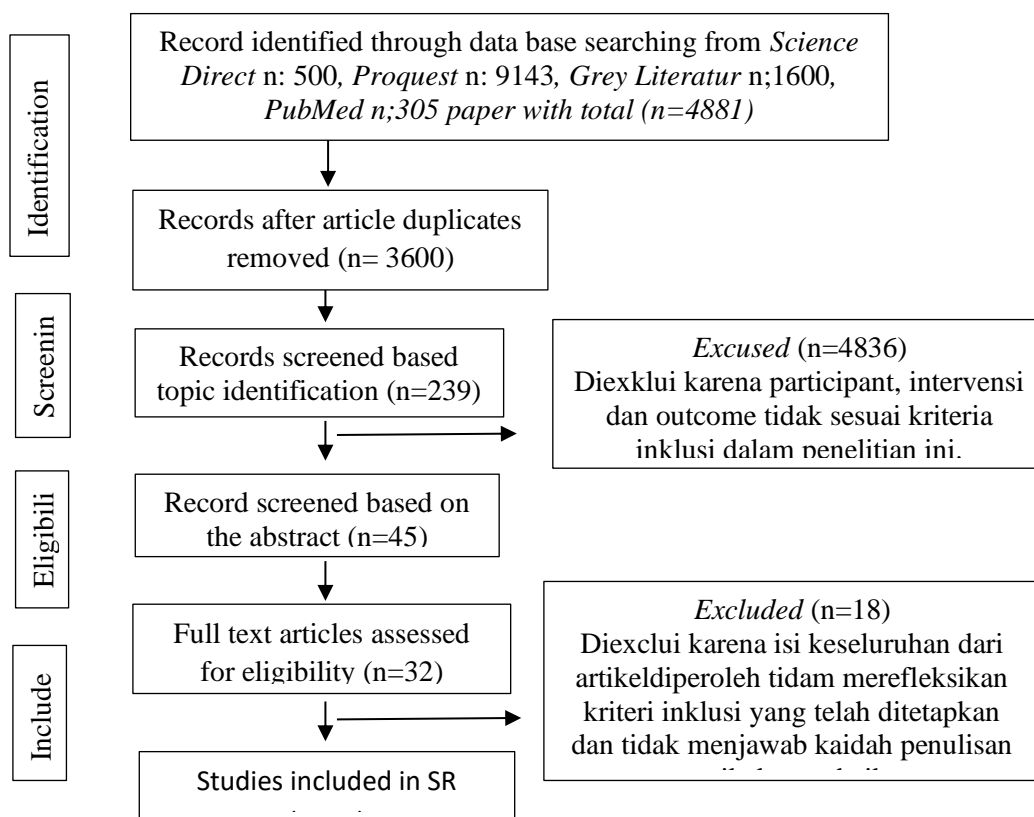


Figure 1: Diagram of PR ISMA

RESULTS AND DISCUSSION

The results of the literature review can be displayed in detail as follows.

Table 1.

Result of the literature for literature review						
language sources	year	database	N	Type of study / article		
				Quatitative	Qualitative	SR
English	2017-2022	Science Direct	500	190	210	100
		Proquest	9143	5000	4000	143
		Gray Literature	1600	900	400	300
		PubMed	305	155	125	25
Result			27	16	5	6

A total of 29 articles that meet the inclusion criteria of the literature review are divided into 4 articles as follows: Nutrition : 14 articles that discuss nutrition and stunting. Providing additional supplements for stunting prevention, however, obstacles were still found related to caregivers/families whose motivation was still low in providing nutrition and health workers had inadequate counseling skills and health workers who had low supervision (Zaidi et al., 2020) .

A quasy experiment conducted in China by (Huang & Fawzi, 2019) said that the complementary food supplement YingYang Bao (YYB) was able to increase the concentration of HB, TB and BB in children, and reduce the risk of anemia and stunting. YYB contains macronutrients and micronutrients, which function to increase brain intelligence. The incidence of anemia causes cognitive delay, with iron administration being able to reduce the incidence of anemia by 32-62% (Humphrey et al., 2019) . Pregnant women who were given zinc supplementation for 12 weeks were shown to have maternal serum zinc levels of umbilical cord blood osteocalcin and median birth length significantly higher than the placebo group, namely 55.1±9.9 to 59.1±8.6) g/dL, it was proven that zinc administration was proven to prevent stunting. . There is a significant relationship between maternal serum zinc and umbilical cord blood osteocalcin and neonatal birth time after zinc supplementation (Rohmawati et al., 2021) . Poultry production is a source of nutritious food so it is important to give it to overcome hunger and stunting in children (Hennessey et al., 2021) .

Administration of serum adipokines hormone is able to stimulate growth which can increase growth and development so that it contributes to preventing stunting (Farzandipour et al., 2021) . So far, the government has provided additional food, blood-added tablets , and the provision of additional Lipid Nutrient Supplements (LNS) to prevent stunting (Sukmawati et al., 2021) . Research conducted by Darajat et.al said that Social Behavior Changes Communication is feasible and effective in preventing the occurrence of stunting by increasing knowledge and skills in making complementary foods for breast milk by involving health cadres to provide training to all communities using various media. (Darajat et al., 2022) . Another study conducted by Sukmawati et.al stated that audiovisual education was proven to be able to convey messages easily to pregnant women, easy to understand. Education and monitoring of the diet of pregnant women need to be carried out in pregnancy classes at the posyandu to prevent stunting (Sukmawati et al., 2021) . Research conducted by Sukmawati Et.Al, the method used is a database review using pubmed, CHINAHL and Google Scholar from 2011 to 2021, that from 18 articles selected 13 articles for in-depth review with the result that education with audiovisual media can improve knowledge of

pregnant women that ice cream and Moringa leaves and early nutrition are proven to be effective in preventing stunting. Provision of nutrition / nutritional supplements such as Moringa leaves, folic acid and iron, nutrition before pregnant women, antenatal iron and folic acid supplements and prenatal micronutrients affect the prevention of stunting. Audiovisual education can convey knowledge and facilitate the receipt of information related to the health of pregnant women, the existence of pregnant classes with continuous monitoring of the diet of pregnant women every month can prevent stunting (Sukmawati et al., 2021) . All interventions providing macronutrient and micronutrient nutritional supplements have the potential to reduce stunting (Goudet et al., 2019) . However, giving Atole +MN supplementation for 18 months with a dose of half their daily zinc and iron needs, but did not have an impact on stunting and morbidity, thus raising the question of whether large-scale micronutrients can affect stunting prevention (Alfonso Mayén et al., 2022)

Provision of Unconditional cash transfer (UCT) combined with lipid-based nutrient supplement (LNS) and/or social and behavior change communication (SBCC) will prevent stunting among children 6–23 mo of age. But if UCT + SBCC was not effective in reducing the child stunting prevalence (Soofi et al., 2022). Economic Status : Rich and Poor : The nutritional status of children under five increased between 2001 and 2016. Babies born to poor families have a higher risk of stunting than those born to rich families (AOR 1.51, 95% CI 1.23-1 ,87) (Budhathoki et al., 2020) Geography of residence 1 . Family living in the hills districts have a lower risk of stunting than districts in the Terai plains (AOR 0.75, 95% CI 0.61-0.94) (Budhathoki et al., 2020) .

Education : Education affects the incidence of stunting, where the lower the education of parents / mothers, the higher the incidence of stunting. Previous research stated that 4 babies were born to uneducated mothers had a higher risk of stunting than those born to educated mothers (AOR 1.57, 95% CI 1.28-1.92). Low maternal education is associated with the incidence of stunting 1,222 times more likely to be at risk of stunting (Wulandari et al., 2022) . Providing audiovisual education is proven to facilitate the reception of messages by health workers to pregnant women.(11) . Audiovisual education related to nutrition for pregnant women for stunting prevention has been shown to have an effect on increasing knowledge of pregnant women regarding the health of pregnant women (Sukmawati et al., 2021) . Environment sanitation : Exposure to ultraviolet B rays can increase vitamin D levels which contribute to bone growth and can prevent stunting (Mardiah et al., 2021). Exposure to cigarette smoke more than 3 hours per day increases stunting risk as big as 10.316 cal (Astuti et al., 2020)

However, sanitation is no greater in reducing the incidence of stunting in children, compared to providing additional food for infants and children (Humphrey et al., 2019) . In addition to nutritional factors, there is evidence that risk factors for stunting in children are environmental risk factors, namely foodborne mycotoxins, inadequate sanitation, soil floors, poor quality root materials for cooking, inadequate waste disposal (Vilcins et al. al., 2018). Marital status; The target of government policies to reduce stunting are unmarried women with low education. Health education: There are four most common health interventions to reduce stunting, namely health education, counseling, collaboration, and community organizing (Rahmadiyah et al., 2022).

Treatment : 5.8% (299/5172) of children had received treatment for Severe Acute Malnutrition (SAM) during follow-up (Id et al., 2021) . In Pakistan, only a few children under five who

beneficiary take full-dose supplements (Zaidi et al., 2020) . Community Health Workers (CHW) related to low program constraints motivation, multi-tasking, inadequate counseling skills and weak supervision (Zaidi et al., 2020) . Infection, diet and other exposures affect the process of releasing hormonal signals. Supplementation of serum hormone leptin-adiponectin for 3 months, and psychosocial stimulation for 6 months, and clinical care have been shown to be effective in reducing stunting (Hossain et al., 2019) .

There are 3 main phases of the mother's role to prevent stunting during the golden phase, namely the preconception phase, the prenatal phase, and the infant toddler phase. Mothers play a role in fulfilling the nutrition of mothers, fetuses, infants and children. Initiating Early Breastfeeding, Providing Exclusive Breastfeeding complementary foods, optimizing the environment for child development, optimizing family support, avoiding various psychosocial factors that are detrimental to pregnancy and child growth and development. Early nutrition must be done so that the mother's body is ready to undergo the prenatal phase for fetal development, then infants and toddlers to adolescence (Saleh et al., 2021)

Mothers who have low education have a higher risk of stunting than mothers who have higher education (Budhathoki et al., 2020) . Babies born to poor families are at a higher risk than babies born to rich families suffering from stunting. The target of the stunting prevention policy is for mothers with low education and single mothers (Wulandari et al., 2022) . In Nepal, babies born to poor families have a greater risk of stunting compared to babies born to mothers with low education, smoking and not attending Ante Natal Care visits to health workers. Poverty is a determinant of malnutrition and food security. The Nepalese government has provided direct cash assistance but it has not been evenly distributed, so there are still many poor families. Furthermore, the education status of the mother which dominates the cause of stunting in Nepal (Budhathoki et al., 2020) .

How to contact with smoke cigarettes have a strong relationships significant in children aged 25-59 months. The research recommend that health policy in Indonesiato overcome stunting only notice issues nutrition, sanitation, education, service health, and social protection, but also family member care who smoke, provide education for the community and family about the impact of smoke cigarettes to increase risk stunting in children (Astuti et al., 2020)

Children who suffer from stunting will experience long-term impacts, namely irreversible physical growth, low educational/cognitive attainment, productivity and low wages/income (Akseer et al., 2022) .

Children who live with grandparents (Grandparents) have a lower risk of stunting than children who do not live with grandparents, because the grandparents are able to help raise their grandchildren (Schrijner & Smits, 2018) . Research conducted by Wahyuningsih et.al said that there are several programs that can be used to reduce and control the incidence of stunting, namely caring trials , counseling on hand washing with soap and total sanitation, community-based nutrition promotion programs, community-based growth and development promotion (Wahyuningsih et al. al., 2022) .

A study conducted in Peru in 2021 using a cross sectional design on 380 families to determine a stunting prediction model through the Chi Square test and bivariate logistic regression, the result of stunting presentation was 40.3. The most suitable model is a model that considers maternal education level, timely consumption of colostrum, birth weight and guinea pig rearing, has high reliability ($P < 0.05$). Effective policies need to be made to improve maternal nutrition, breastfeeding, and promote guinea pig rearing for own consumption and improve the nutritional status of children (Castro-Bedriñana et al., 2021). From the results of the research identification, Wahyuningsih Et. Al 2022, said that there are several programs and interventions that have been proven to reduce stunting prevalence, namely Caring trial, The Lulun Project, Rang-Din Nutrition Study, Tubaramure, Preparing for Life, Integrated Child Development, handwashing with soap, total sanitation and satination marketing, community-based participation in nutrition promotion programs, promotion of child development, monitoring of community-based growth and development, nutritional supplementation, working women's health programs, ready-to-use food supplementation, supporting father involvement, positive thinking. Stunting prevention and control efforts have a significant effect between the intervention group and the control group (Wahyuningsih et al., 2022).

Research conducted by Mardiah, Et. Al., 2021, the method used by collecting articles through the Google Scholar, PubMed, Proquest, and EBSCO databases using the keywords Vitamin D and Stunting, that Vitamin D plays a role in regulating immunity during pregnancy regarding fetal and maternal interactions, Micronutrient needs such as vitamin D as bone metabolism and increasing the body's defenses to prevent infectious diseases in children, intake of micronutrients such as vitamin D is able to prevent stunting (Mardiah et al., 2021). The use of android applications has proven to be effective for counseling stunting prevention innovation programs (Friska & Andriani, 2022).

An evidence-supported strategy for the prevention of stunting in the first 1000 days of life is from pregnancy to 2 years of age. During pregnancy is the provision of micronutrient supplements, health education / nutrition counseling for pregnant women and newborns, followed by antenatal care and adequate maternal weight gain. From birth to 6 months of age, studies on prevention of stunting by means of breastfeeding practices, counseling on breastfeeding and nutrition, and control of growth and development, at the age of 6 to 24 months, research that discusses stunting prevention is mostly the provision of complementary foods to breast milk, nutrition counseling, micronutrient supplements. Zinc is an essential micronutrient for humans that greatly affects its growth and development. Giving zinc supplements is beneficial on the nutritional status of children with Chronic Kidney Disease (Escobedo-Monge et al., 2019). In addition, 122 studies report that cross-sectoral collaboration for stunting prevention and nutrition intervention during pregnancy, until the child is born at the age of 2 years (Rueda-Guevara et al., 2021)

CONCLUSION

This research is in the form of a literature study on published articles from 2017- to 2022 with the research variable being the prevention and treatment of shunting in infants. So the results of this literature review detect that the factors that influence the occurrence of shunting include: nutrition, economic status, geography of residence, parents' education, environmental sanitation, age of

parents, marital status, health education provided by health workers and treatment given to parents of their own babies.

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