Asian Journal of Healthcare Analytics (AJHA)
Vol. 3, No. 2, 2024: 69-82

Systematic Literature Review: The Effect of Breastfeeding on the Incidence of Stunting in Infants and Children

Benly Levi Andreas Sibarani[1*], Putri Utami[2]
[1]Regional Public Hospital of Muaradua, South OKU, Sumatera Selatan
[2]Medical Doctor Profession Program, Faculty of Medicine, University of Bengkulu
Corresponding Author: Benly Levi Andreas Sibarani, benlylevi07@gmail.com

A R T I C L E I N F O

Keywords: Child, Breastmilk, Nutrition, Growth, Stunting

Received : 14, October
Revised : 28, October
Accepted: 12, November

A B S T R A C T

Child malnutrition affects children's health in terms of morbidity and mortality rates. Stunting remains a persistent nutritional issue among children that has yet to be effectively addressed. This study aims to examine the impact of breastfeeding on the incidence of stunting in infants and young children. This study reviewed literature from two databases, PubMed and Google Scholar, based on predetermined criteria. The methodology was conducted using a systematic approach from the literature. The results of the study obtained nine articles that met the criteria, then continued with a systematic review. Three studies showed the role of breastfeeding as a significant protective factor. Five studies identified a link between breastfeeding and stunting incidence, while another study found no such association. The presence of a significant relationship and the protective role of breastfeeding against stunting are crucial in efforts to lower the risk of stunting among toddlers and young children.

DOI prefix: https://doi.org/10.55927/ajha.v3i2.12166
ISSN-E: 2963-9905
https://journal.formosapublisher.org/index.php/ajha

INTRODUCTION

Child malnutrition remains a significant global health problem today. Malnutrition increases susceptibility to various diseases and the risk of death; if properly addressed, it is estimated that 45% of child deaths could be prevented. The height-for-age Z score (HAZ) is a widely used metric to assess stunting, defined as a HAZ below -2 standard deviations (SD). It is calculated by subtracting the median height-for-age for a given sex in a reference population and dividing this difference by the population's standard deviation. The World Health Organization (WHO) growth standards are widely accepted as the primary reference for evaluating stunting (Leroy JL, Frongillo EA, 2019).

Stunting continues to be a significant nutritional challenge for children in Indonesia. Based on the Basic Health Research (Riskesdas) data, the prevalence of stunting and severe stunting in children under five was 37.2% in 2013, which decreased to 30.8% by 2018. Specifically, for children under five, the rate dropped from 32.8% in 2013 to 29.9% in 2018. Furthermore, the 2021 Indonesian Nutrition Status Study (SSGI), conducted across 34 provinces, reported a national decline in stunting from 27.7% in 2019 to 24.4% in 2021. Despite this decrease, the rate remains classified as high (>20%) according to WHO criteria. Furthermore, existing data in Indonesia have not differentiated between stunting caused by nutritional factors and those attributed to non-nutritional factors such as genetic, hormonal, or familial influences (Kemenkes RI, 2022).

To effectively reduce stunting prevalence, it is crucial to implement clear and well-executed prevention strategies. Exclusive breastfeeding has been shown to support optimal early childhood growth. While some studies suggest that formula feeding may result in greater weight and length gains compared to breastfeeding, the rapid weight gain associated with formula feeding is often deemed risky and may contribute to overweight infants. Moreover, in developing and emerging economies, the use of infant formula is strongly discouraged due to the risks associated with poor sanitation and possible contamination from harmful microorganisms and toxins during preparation. This emphasizes the urgent need for further research and advocacy for exclusive breastfeeding as a crucial measure to prevent stunting in young children, especially in resource-poor and diverse settings (Hadi et al., 2021).

This article delves into a specific subject, drawing on selected review papers to offer a thorough analysis of breastfeeding's pivotal role in preventing stunting. The narrative review seeks to assess the research evidence that highlights breastfeeding's contribution to reducing stunting rates in infants and children.

THEORETICAL REVIEW

In a 2022 literature review, Hayati identified a connection between exclusive breastfeeding and stunting rates. The findings suggest that a decrease in exclusive breastfeeding correlates with a rise in stunting cases among toddlers (Hayati et al., 2022).

METHODOLOGY

This research employs a Systematic Literature Review (SLR) approach using the PRISMA design. The methodology was designed to address the research questions through a systematic process involving the identification, analysis, synthesis, evaluation, and comparison of relevant literature related to the research problem or topic under consideration. The researcher searched electronic databases, specifically PubMed and Google Scholar, using the following keywords: ((“baby” OR “children”) AND (“exclusive breastfeeding” OR “breastfeeding”)) AND (“stunting”). The inclusion criteria for journal selection specified that studies must discuss the effect of breastfeeding on stunting in children, be published within the last 10 years, and be available in either English or Indonesian. The types of studies included were case reports, case series, cross-sectional studies, or cohort studies. Exclusion criteria consisted of journals that could not be fully accessed, were not in English or Bahasa Indonesia, or were published more than 10 years ago.

Following this, articles that met the established inclusion and exclusion criteria were gathered and reviewed. The data analysis in this study employed descriptive statistical methods. Descriptive statistics provide a comprehensive description of the data without drawing broad conclusions or attempting to generalize findings. The researcher conducted a thorough review and evaluation of the selected papers, focusing on the research findings presented in the discussion and conclusion sections. The study concluded by comparing the results across the reviewed papers and drawing final conclusions.

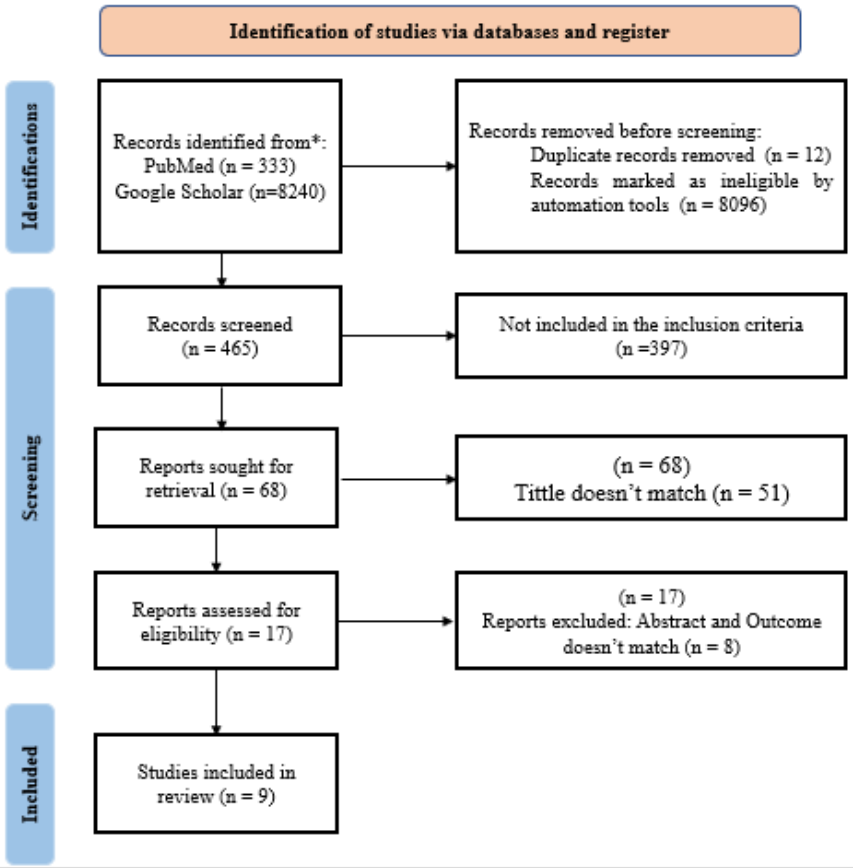

Figure 1. Flow Chart of Study Selection Method (PRISMA Flow Chart)

RESULT AND DISCUSSION

According to the PRISMA Flow Chart, nine studies were identified as meeting the inclusion criteria. The findings indicate that breastfeeding infants for a defined period significantly lowers the risk of stunting in both infants and young children. A summary of the key characteristics of the selected studies can be found in Table 1 below.

Tabel 1. Journal Characteristics

Authors	Title	Aims	Results
Campos *et al.*, 2020 *(Cross-sectional)*	*Association Between Breastfeeding and Child Stunting in Mexico*	Examine the impact of different breastfeeding durations (not at all, less than six months, and six months or more) on stunting prevalence in children, considering individual, household, and regional factors in Mexico.	In Mexico, 94.3% of children were breastfed, with 71.1% breastfeeding for six months or more, and 12.3% showing signs of stunting. Breastfed children exhibited consistent risk and protective factors for stunting compared to those who were never breastfed (adjusted odds ratio (AOR) 0.45, 95% CI 0.20-0.99).
Tello,B., *et al.* 2022 *(Cross-sectional)*	*Breastfeeding, feeding practices and stunting in indigenous Ecuadorians under 2 years of age.*	This study seeks to assess breastfeeding and complementary feeding practices and their possible connection to stunting in Ecuadorian children under 2 years old from indigenous communities.	Stunting affected 26.8% of children, with the highest prevalence seen among those living in rural areas, from low-income families, and those with four or more siblings. The majority of children initiated breastfeeding on time (69.5% for 0-12 months and 75.5% for 13-23 months), and 78.2% were exclusively breastfed for the first six months. Children who did not receive complementary feeding alongside breastfeeding were significantly more likely to be stunting (OR 3.28; 95% CI 1.3, 8.27). On the other hand, children aged 19-23 months who consumed iron-rich foods had a significantly lower risk of stunting (OR 0.04; 95% CI 0.00, 0.51).
Sari, *et al* 2021	*Exclusive Breastfeeding History Risk Factor*	This study aims to explore the link between exclusive	Among the 193 children studied, 29.5% were stunting. Children who had not received

(*Cross-sectional)*	*Associated with Stunting of Children Aged 12–23 Months*	breastfeeding history and stunting rates in children aged 12-23 months in Banjar Margo Subdistrict, Lampung.	exclusive breastfeeding were 3.1 times more likely to experience stunting (95% CI = 1.5-6.4) compared to those who had been breastfed exclusively, even after adjusting for maternal education and employment status. The study found a significant association between the history of exclusive breastfeeding and stunting in children aged 12-23 months in Banjar Margo Subdistrict, after controlling for maternal education and employment factors.
Barir B, *et al* 2019 (*Case control)*	*The Associations between Exclusive Breastfeeding, Complementary Feeding, and the Risk of Stunting in Children Under Five Years of Age: A Path Analysis Evidence from Jombang East Java*	This research investigates the factors that impact stunting in children aged 2-3 years in Jombang, East Java.	The analysis revealed a strong correlation between breastfeeding and reduced stunting (P value <0.001, OR = 0.22). Breastfeeding served as a protective factor, with 42.3% of children not breastfed exclusively experiencing stunting, compared to only 13.9% among those who were exclusively breastfed.
Umiyah A, *et al* 2020 (*Cross-sectional)*	*Exclusive Breastfeeding With Stunting.*	This study seeks to examine how exclusive breastfeeding relates to the occurrence of stunting in toddlers residing within the Banyuputih Health Center area in Situbondo Regency.	The results revealed a significant link between exclusive breastfeeding and stunting in toddlers within the Banyuputih Health Center area, with a P value of 0.025. The odds ratio (OR) of 2.451 indicates that children who were not exclusively breastfed were 2.451 times more likely to be stunting compared to those who received exclusive breastfeeding.
Rusmil VK, *et al* 2019 (*Cross-sectional)*	*Exclusive and Non-Exclusive Breastfeeding among Stunted and Normal 6-9 Month-Old-Children in*	The aim was to compare stunting rates between children aged 6-9 months who were exclusively breastfed	Out of 110 children, 60 (54.5%) were not exclusively breastfed. The overall stunting rate was 12.7% (14 out of 110), with 10 cases found in the non-exclusively breastfed group (p

	Jatinangor Subdistrict, Indonesia	and those who were not.	> 0.05). Although the non-exclusively breastfed group had a higher stunting rate, no significant difference was observed between the two groups. However, exclusive breastfeeding remains highly recommended.
Muldias man M, *et al* 2018 *(Cross-sectional)*	*Can early initiation to breastfeeding prevent stunting in 6–59 months old children?*	This research explored the role of early breastfeeding initiation (IMD)—breastfeeding within the first hour after birth—in preventing stunting in children aged 6-59 months in Jambi Province, Indonesia.	The findings showed that 27.5% (95% CI: 25.2-29.9) of children in this age group were stunting, and 54.1% (95% CI: 51.1-57.1) had not received breastfeeding within the first hour. Delayed breastfeeding initiation was significantly linked to a higher risk of stunting (p = 0.024; AOR = 1.3; 95% CI: 1.0-1.6). Factors such as water source and birth weight also played a role in stunting. After adjusting for these variables, early breastfeeding initiation was associated with a lower risk of stunting. Children aged 24-59 months had 2.5 times higher odds of being stunting compared to those aged 6-11 months. Early breastfeeding initiation offers a simple yet powerful intervention with long-lasting health benefits for children.
Lisnawat y L, *et al*. 2020 *(Case Report)*	*When mothers talk about their past habits: A case study of stunting in Kendary City, Indonesia.*	The focus of this research was to determine the factors that contribute to stunting in children under five years of age in Abeli Sub-district, Kendari City.	The findings pointed to low birth weight (LBW), lack of exclusive breastfeeding, and inadequate complementary feeding as key contributors to the high stunting rates in Abeli Sub-district. Interviews revealed that among four stunting toddlers, three had a birth weight greater than 2500 grams. None of the stunting toddlers received exclusive breastfeeding, primarily due to

			insufficient breast milk production and a lack of family support for mothers to breastfeed exclusively. Additionally, the lack of routine pregnancy check-ups was identified as a contributing factor, as it led to inadequate monitoring of fetal health.
Sari Anggrita, et al. 2017 *(Case Control)*	*Factors Affecting The Stunting Case: A Retrospective Study On Children In Banjarmasin.*	Analyzing the factors that influence stunting cases among children under five in Banjarmasin.	The analysis revealed a notable correlation between birth weight and stunting in toddlers, with a p-value of 0.032 and an odds ratio (OR) of 3.082. A significant association was also found between gestational age and stunting, with a p-value of 0.006 and OR of 3.712. Age emerged as another critical factor, with a p-value of 0.001 and OR of 5.551. However, no meaningful relationship was observed between exclusive breastfeeding and stunting, indicated by a p-value of 0.377. Similarly, basic immunization status showed no significant connection to stunting, with a p-value of 0.120.

Stunting remains a major concern for child health globally, impacting around 155 million children. It contributes to elevated mortality rates, frequent infections, and limited opportunities for cognitive and physical development. The populations most at risk are those in historically underserved areas, where limited access to healthcare, economic support, and social services has hindered progress in human development (Black RE *et al*., 2013; Da Silva *et al*., 2018).

Child growth and development begin in the womb, influenced by a range of factors that affect their nutritional status both pre- and post-birth. Maternal health is a cornerstone, directly impacting birth weight, while feeding practices—such as breastfeeding and the timely introduction of solid foods—are critical for a child's healthy development. Additional challenges include the risks posed by contaminated milk and liquids for non-breastfed children, limited access to basic services like clean water and healthcare, and the overarching impact of socioeconomic conditions. These elements can have a more significant impact

than genetic factors on a child's growth trajectory, potentially causing lasting damage. As a result, children may experience long-term consequences, including stunting adult height, reduced educational success, lower earning potential, and lower birth weights (Horta BL et al., 2013; Vaivada T et al., 2020; Victora CG et al., 2008).

In 2020, Campos conducted an analysis of secondary health and nutrition data from Mexico, collected in 2012, applying fixed-effects and mixed-effects logistic regression to control for various factors. The study included 2,089 children aged 6 to 35 months from both rural and urban regions across four areas of Mexico. The findings revealed that 94.3% of children had been breastfed, with 71.1% breastfeeding for at least six months, while 12.3% were classified as stunting. The analysis showed that children who were breastfed had a significantly lower risk of stunting compared to those who were never breastfed (AOR 0.45; 95% CI 0.20–0.99). This result aligns with a study in Pakistan, where 34.5% of infants were malnourished, and 44.7% experienced multiple forms of malnutrition. Despite over 85% of infants being breastfed, exclusive breastfeeding rates were low, and early weaning was linked to a higher risk of underweight, wasting, and stunting. In conclusion, any form of breastfeeding provided a protective effect against malnutrition in the first six months of life (Khaliq et al., 2022).

Tello's (2022) cross-sectional analysis, using data from the 2012 Ecuador National Health and Nutrition Study, involved 625 children aged 0 to 23 months. The study found a stunting rate of 26.8%, with higher prevalence in rural areas and among families facing poverty or with four or more children. Although timely breastfeeding initiation and exclusive breastfeeding for six months were relatively common, only 32.5% of children aged 6 to 12 months received a diet with sufficient variety. This was particularly low in poorer households or among mothers with lower education levels. Children who did not meet the minimum meal frequency had a significantly higher risk of stunting (OR 3.28; CI 1.3–8.27). However, introducing iron-rich foods for children aged 19 to 23 months reduced the risk (OR 0.04; CI 0.00–0.51). These results mirror findings from a Kalimantan study, which highlighted a lower stunting risk in children whose mothers were ≥150 cm tall, had at least a high school education, breastfed exclusively, and had a higher socioeconomic status. Conversely, stunting risk was higher for children with a history of infections, poor sanitation, or low birth weight (Sugiyanto J, 2019).

Sari Nurhalina's (2021) cross-sectional study gathered data from 12 posyandu in the Banjar Margo District, Tulang Bawang, between April and May 2018. Out of 829 mothers of children aged 12 to 23 months, 193 mothers who met the inclusion criteria of possessing a health book were selected for the study. The study focused on stunting as the dependent variable, measured using Z-scores according to WHO Anthro 2005, with children categorized as stunting (Z-score < -2 SD) or non-stunting (Z-score >-2 SD). The history of exclusive breastfeeding was the primary independent variable, classified into "yes" (exclusively breastfed for up to six months) and "no" categories. Confounding factors included early initiation of breastfeeding, maternal education, and maternal

occupation, which were assessed via a questionnaire. Results revealed that 29.5% of children were stunting, with those not exclusively breastfed facing a 3.1-fold higher risk of stunting (95% CI = 1.5–6.4; $p < 0.05$) compared to exclusively breastfed children. This study emphasizes the need for health promotion targeting both mothers and the wider community. The findings are consistent with Rahayu et al.'s study, which identified a link between exclusive breastfeeding and stunting prevention, suggesting that exclusive breastfeeding helps prevent infections and supports growth in children under five, while highlighting the need for improvements in socioeconomic conditions and education to effectively combat stunting (Rahayu D et al., 2023).

Barir's 2019 case-control study in Jombang, East Java, focused on 200 children aged 2 to 3 years, examining factors influencing stunting. The study found that stunting was significantly reduced by factors such as birth length ≥48 cm ($b = -2.37$; $p < 0.001$), birth weight ≥2500 g ($b = -1.43$; $p = 0.011$), exclusive breastfeeding ($b = -1.09$; $p = 0.008$), and timely complementary feeding ($b = -1.09$; $p = 0.012$). Additionally, maternal factors like age, height >150 cm, employment, education, and knowledge indirectly impacted stunting. These results support Steven et al.'s 2022 findings in Ecuador, which showed early breastfeeding initiation significantly reduces stunting risk by ensuring infants receive vital colostrum. The review of 12 studies indicated an average early breastfeeding initiation rate of 61.82% and a stunting prevalence of 33.07% in Ecuador, highlighting the protective benefits of early breastfeeding for child growth (Steven et al., 2022).

In Umiyah's 2020 cross-sectional study, 274 toddlers from the Banyuputih Health Center area were observed, utilizing proportional random sampling. The study found a significant correlation between exclusive breastfeeding and a reduced incidence of stunting ($P = 0.025$), with an odds ratio (OR) of 2.451. This indicated that children who were not exclusively breastfed were over twice as likely to be stunting compared to those who were. A related study by Sampara further emphasized the vital role of breast milk in infant nutrition, supporting healthy growth. In a cohort of 30 infants, Sampara found that exclusive breastfeeding was linked to better weight and height outcomes, lowering stunting risk ($p = 0.023$). Infants who experienced timely breastfeeding initiation were more likely to continue exclusive breastfeeding, which significantly benefited their growth and health (Sampara et al., 2022).

Rusmil's 2019 study, conducted between August and October 2018, employed a cross-sectional analytic design and consecutive sampling, with a sample size of 110 mother-child pairs from villages served by the Jatinangor Health Center. Children aged 6 to 9 months were assessed for nutritional status based on body length-for-age z-scores in accordance with WHO standards. A questionnaire was used to determine breastfeeding practices, and chi-square tests were applied for data analysis. The findings revealed that 54.5% of the children (60 out of 110) had not been exclusively breastfed. The overall stunting rate was 12.7% (14 out of 110), with 10 stunting children not having received exclusive breastfeeding ($p > 0.05$). While the stunting rate was higher in the non-exclusively breastfed group, no significant statistical difference in stunting

between the two groups was found. Despite this, the importance of exclusive breastfeeding remains strongly recommended. A similar study by Azizah in 2022 highlighted that breastfeeding in the first 1,000 days of life significantly reduces the risk of stunting. A meta-analysis involving eight studies across Africa, Asia, and South America showed that breastfed children have a 0.62 times lower stunting risk than their non-breastfed peers, reinforcing the vital role of breastfeeding in preventing stunting (Azizah et al., 2022).

In Muldiasman's 2018 study, which analyzed 2,502 children aged 6 to 59 months from the 2015 National Nutrition Survey in Jambi Province using binary logistic regression, it was found that 27.5% of children in this age group were stunting. Moreover, 54.1% had not received any breast milk immediately after birth. Delayed breastfeeding initiation was found to be significantly linked to stunting, increasing the likelihood of stunting by 1.3 times ($p = 0.024$; AOR = 1.3). Furthermore, early initiation of breastfeeding helped reduce exposure to contaminated water sources, a contributing factor to stunting. These results corroborated Putra's 2022 findings, which emphasized the protective effect of exclusive breastfeeding against stunting, while non-exclusive breastfeeding raised the risk of stunting in children under five (Putra et al., 2022).

Lisnawati's 2020 study used a descriptive qualitative design with case study methodology, gathering data through in-depth interviews with key and regular informants in the Abeli Sub-district. Factors such as low birth weight, inadequate breastfeeding, and improper complementary feeding practices were identified as contributors to stunting. Notably, three out of four stunting toddlers had a birth weight under 2,500 grams, and none had received exclusive breastfeeding. Factors such as insufficient breast milk production and lack of familial support for exclusive breastfeeding were noted. Additionally, early introduction of solid foods, lacking nutritional adequacy and variety, was common. Rachmayanti et al. (2022) further supported these findings, asserting that exclusive breastfeeding strengthens the immune system, prevents infections, and promotes optimal growth, thereby reducing the risk of stunting and malnutrition (Rachmayanti et al., 2022).

Sari's 2017 case-control study with 190 toddlers (74 stunting and 116 non-stunting) revealed significant associations between stunting and factors like low birth weight ($p = 0.032$; OR 3.082), gestational age ($p = 0.006$; OR 3.712), maternal age ($p = 0.001$; OR 5.551), and maternal education ($p < 0.000001$; OR 5.551). However, exclusive breastfeeding ($p = 0.377$) and immunization status ($p = 0.120$) showed no significant correlation with stunting incidence. These findings contrasted with those of Ode et al. (2024), who found a strong association between exclusive breastfeeding and stunting ($p = 0.030$). Rudy et al. (2024) also reported that early breastfeeding initiation (IMD) and exclusive breastfeeding were significantly linked to a reduced risk of stunting, highlighting the importance of timely breastfeeding initiation for healthy growth. Lastly, a 2023 literature review by Erwani, which analyzed 10 studies, revealed that exclusive breastfeeding practices were associated with a 3.1-fold reduction in stunting risk (95% CI = 1.5–6.4). The review emphasized that optimal nutrition and exclusive breastfeeding for at least six months offer strong protection against stunting,

stressing the need for improved maternal education and promotion of healthy nutritional habits. (Erwani et al., 2023).

This analysis of multiple studies demonstrates the critical role of breastfeeding in preventing stunting, with consistent findings across different regions and contexts that highlight breastfeeding as a key protective factor for child growth and development.

CONCLUSIONS AND RECOMMENDATIONS

Breastfeeding is a key factor in preventing stunting among infants and young children. It is essential to prioritize this issue in routine health services, particularly through educational campaigns that emphasize breastfeeding's protective benefits against stunting. Based on the findings of this study, several recommendations are provided for health professionals:

- Incorporate regular education for parents in daily health services to raise awareness about the crucial role breastfeeding plays in reducing stunting risks. This will enhance public understanding and utilization of breastfeeding as a preventive measure.
- Promote increased breastfeeding practices among parents and caregivers to support optimal child growth.
- Consider additional factors contributing to stunting and develop strategies to address these issues for more effective prevention.

ADVANCED RESEARCH

While this study offers valuable insights, it also has limitations. The research relied on two journal databases, and exploring a broader range of sources may yield more diverse findings. Future studies should consider examining additional factors associated with stunting to offer a more comprehensive understanding of the issue, enabling more effective education and preventive strategies in everyday health services.

ACKNOWLEDGMENT

This research would not have been possible without the support of our families, lecturers, and the contributions of previous researchers, whose ideas and knowledge formed the foundation of this study.

REFERENCES

Azizah AM, Dewi YLR, Murti B. Meta-Analysis: Breastfeeding and Its Correlation with Stunting. Journal of Maternal and Child Health. 2022 May 16;7(3):334–45.

Barir B, Murti B, Pamungkasari EP. The Associations between Exclusive Breastfeeding, Complementary Feeding, and the Risk of Stunting in Children Under Five Years of Age: A Path Analysis Evidence from Jombang East Java. J Matern Child Heal. 2019;4(6):486

Black RE, Victora CG, Walker SP, Bhutta ZA, Christian P, de Onis M, et al. Maternal and child undernutrition and overweight in low-income and middle-income

countries. The Lancet. 2013;382(9890):427–451. doi: 10.1016/S0140-6736(13)60937-X.

Campos, A. P., Vilar-Compte, M., & Hawkins, S. S. (2020). Association Between Breastfeeding and Child Stunting in Mexico. *Annals of global health*, *86*(1), 145. https://doi.org/10.5334/aogh.2836

Da Silva ICM, França GV, Barros AJD, Amouzou A, Krasevec J, Victora CG. Socioeconomic inequalities persist despite declining stunting prevalence in low- and middle-income countries. J Nutr. 2018;148(2):254–258. doi: 10.1093/jn/nxx050.

Erwani, Susanti D, Doni AW, Yuda RA, Yanti M. Determining the Role of Exclusive Breastfeeding and Nutritional Status in Stunting Prevention: A Literature Review. Poltekita : Jurnal Ilmu Kesehatan. 2023 Nov 30;17(3):1014–25.

Hadi, Hamam & , Fatimatasari & Irwanti, Winda & Kusuma, Chahya & Alfiana, Ratih & Asshiddiqi, M. & Nugroho, Sigit & Lewis, Emma & Gittelsohn, Joel. (2021). Exclusive Breastfeeding Protects Young Children from Stunting in a Low-Income Population: A Study from Eastern Indonesia. Nutrients. 13. 4264. Doi: 10.3390/nu13124264.

Hayati, N., Wahyuningsih, S., Musviro, M., Azizah, L., & Amalia, M. (2022). Exclusive Breastfeeding Reduces The Incidence Of Stunting In Toddlers. *International Conference On Agromedicine And Tropical Diseases, 4*(1), 1-7.

Horta BL, Santos RV, Welch JR, Cardoso AM, Dos Santos JV, Assis AMO, et al. Nutritional status of indigenous children: findings from the First National Survey of Indigenous People's Health and Nutrition in Brazil. Int J Equity in Health. 2013;12:23. doi: 10.1186/1475-9276-12-23.

Kemenkes RI. 2022. Pedoman Nasional Pelayanan Kedokteran Tata Laksana Stunting.

Khaliq A, Wraith D, Miller Y, Nambiar S. Association of Infant Feeding Indicators and Infant Feeding Practices with Coexisting Forms of Malnutrition in Children under Six Months of Age. Nutrients. 2022 Oct 1;14(20).

Leroy Jl, Frongillo Ea. Perspective: What Does Stunting Really Mean? A Critical Review Of The Evidence. Adv Nutr. 2019 Mar 1;10(2):196-204. Doi: 10.1093/Advances/Nmy101. Pmid: 30801614; Pmcid: Pmc6416038.

Lisnawaty, L., Meynanda, M., Fithria, F., Yunawati, I., & Muchtar, F. (2020). When mothers talk about their past habits: A case study of stunting in Kendary City, Indonesia. *Al-Sihah: The Public Health Science Journal*, *12*(2), 150-166. https://doi.org/10.24252/al-sihah.v12i2.15558

Muldiasman M, Kusharisupeni K, Laksminingsih E, Besral B. Can early initiation to breastfeeding prevent stunting in 6–59 months old children? J Heal Res. 2018;32(5):334–41.

Ode Novi Angreni W, Arda D, Setyawati A, Sasmita A, Aris Tyarini I, Nordianiwati N. Exclusive breastfeeding in preventing stunting in toddlers. Jurnal Edukasi Ilmiah Kesehatan. 2024 Mar 2;2(1):07–13.

Putra Pratama RS, Dasuki MS, Agustina T, Soekiswati S. ASI Eksklusif Sebagai Faktor Protektif Terhadap Kejadian Stunting Pada Balita 24-59 Bulan. Jurnal Ilmiah Kesehatan Sandi Husada. 2022 Jun 1;11(1):262–70.

Rachmayanti RD, Kevaladandra Z, Ibnu F, Khamidah N. Systematic Review: Protective Factors from the Risks of Stunting in Breastfeeding Period. Jurnal Promosi Kesehatan Indonesia. 2022 May 31;17(2):72–8.

Rahayu D, Fresty Africia, Zauhani Kusnul H, Erwin Yektiningsih. Exclusive Breast Feeding As An Effort To Overcome Stunting In Toddlers With The Family Empowerment Strategy Approach. Journal for Quality in Women's Health. 2023 Sep 27;6(2):120–6.

Rudy Hartono K, Nurani Putri Y, Amir A, Ikhtiar M, Horax R, Selatan S. Incidence of Stunting: Early and Exclusive Breastfeeding in Two-Year-Old Children. Jurnal Kesehatan. 2024;07(03):256–63.

Rusmil, Viramitha & Prahastuti, Tri & Dimas, Erlangga & Luftimas, Dimas & Hafsah, Tisnasari. (2019). Exclusive and Non-Exclusive Breastfeeding among Stunted and Normal 6-9 Month-Old-Children in Jatinangor Subdistrict, Indonesia. Althea Medical Journal. 6. 35 - 41. 10.15850/amj.v6n1.1598.

Sampara N, Saleng H. International Journal of Health Science The Effectiveness of the Implementation of Exclusive Breastfeeding on the Measurement of Body Weight and Body Length at 6 months of Age as an Effort to Prevent Stunting. 2022;2(1).

Steven Christian Susianto, Nina Rini Suprobo, Maharani. Early Breastfeeding Initiation Effect in Stunting: A Systematic Review. Asian Journal of Health Research. 2022 Mar 4;1(1):1–5.

Sugiyanto J, Raharjo SS, Lanti Y, Dewi R, District B, Office H, et al. The Effects of Exclusive Breastfeeding and Contextual Factor of Village on Stunting in Bontang, East Kalimantan, Indonesia. Journal of Epidemiology and Public Health [Internet]. 2019;4(3):222–33. Available from: https://doi.org/10.26911/jepublichealth.2019.04.03.10

Sari, Anggrita & M.Kom, Mambang & Putri, Karolina & Haryono, Ika & Lestari, Yayuk & Sari, Mega. (2017). Factors Affecting The Stunting Case: A Retrospective Study On Children In Banjarmasin. 10.2991/smichs-17.2017.3.

Sari, Nurhalina & Manjorang, Marlida & Zakiyah, Zakiyah & Randell, Madeleine. (2021). Exclusive Breastfeeding History Risk Factor Associated with Stunting of Children Aged 12–23 Months. Kesmas: National Public Health Journal. 16. 10.21109/kesmas.v16i1.3291.

Tello, B., Rivadeneira, M.F., Moncayo, A.L. *et al.* Breastfeeding, feeding practices and stunting in indigenous Ecuadorians under 2 years of age. *Int Breastfeed J* **17**, 19 (2022). https://doi.org/10.1186/s13006-022-00461-0

Umiyah, A., & Hamidiyah, A. (2020). Exclusive Breastfeeding With Stunting. *STRADA Jurnal Ilmiah Kesehatan*, *9*(2), 471–477. https://doi.org/10.30994/sjik.v9i2.454

Vaivada T, Akseer N, Akseer S, Somaskandan A, Stefopulos M, Bhutta ZA. Stunting in childhood: an overview of global burden, trends, determinants, and drivers of decline. Am J Clin Nutr. 2020;112(Suppl 2):777S–791S. doi: 10.1093/ajcn/nqaa159.

Victora CG, Adair L, Fall C, Hallal PC, Martorell R, Richter L, et al. Maternal and child undernutrition: consequences for adult health and human capital. The Lancet. 2008;371(9609):340–357. doi: 10.1016/S0140-6736(07)61692-4.

World Health Organization. World Health Statistics. Departement Of Nutrition For Health. 2022