

ASSOCIATION BETWEEN EXCLUSIVE BREASTFEEDING AND STUNTING IN CHILDREN : A SYSTEMATIC REVIEW

M. Hadi*

**Faculty of Medicine, University of Malahayati, Indonesia*

***Corresponding Author:**

mhadi.official2023@gmail.com

Abstract

Background: *Several epidemiological studies have shown that breastfeeding is not optimal, the wrong way of feeding, repeated illnesses during toddlers will affect the incidence of stunting.*

Aim: *The goal of this study is to showed the association association between exclusive breastfeeding and stunting in children.*

Methods: *By comparing itself to the standards set by the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) 2020, this study was able to show that it met all of the requirements. So, the experts were able to make sure that the study was as up-to-date as it was possible to be. For this search approach, publications that came out between 2013 and 2023 were taken into account. Several different online reference sources, like Pubmed and SagePub, were used to do this. It was decided not to take into account review pieces, works that had already been published, or works that were only half done.*

Result: *We located 672 articles in the PubMed database and 561 in the SagePub database as a result of our search. The search for the final 12 months of 2013 returned a total of 109 PubMed articles and 72 SagePub articles. 25 papers in all were compiled, with thirteen coming from PubMed and twelve from SagePub. There are four studies that made the cut.*

Conclusion: *According to the findings of research, there is a significant connection between exclusive breastfeeding and stunting.*

Keyword: *Exclusive Breastfeeding; Malnutrition; Stunting*

INTRODUCTION

Stunting is often also called stunting or stunting, a condition in which children under five years old (toddlers) fail to grow due to chronic malnutrition and repeated infections that occur in the first thousand first days of life.¹ It is of great concern that Indonesia is included in the country with the largest gap in the 2020 Global Nutrition Report.² In 2019 Indonesia is included in a region with a high prevalence of stunting. Stunting is a health problem in developing countries, an estimated 144 million children under the age of 5 are stunted.³

One of the 2025 health development targets is to reduce the prevalence of undernutrition in children under five.⁴ The World Health Assembly (WHA) targets to reduce the incidence of stunting by 40% in 2025 from the prevalence in 2013, which was around 22%.³ Stunting is a condition where height for age is < -2SD from the WHO media for children aged 0-59 months. The condition of stunting has the effect of disrupting brain development in the form of reduced capacity to be better educated so that opportunities to get a good job are reduced in the long term and in the short term it interferes with cognitive function.⁵

Stunting describes a chronic nutritional problem that is influenced by the condition of the mother/prospective mother, fetus and baby, including diseases during infancy. Stunting is not only related to health problems but is also affected by various other conditions that indirectly affect health. Specific nutrition interventions are generally carried out in the health sector, but only contribute 30%, while 70% is the contribution of sensitive nutrition interventions involving various sectors such as food security, availability of clean water, sanitation, poverty alleviation, education, social affairs, and so on.⁶

Several risk factors influence the incidence of stunting from the age of the mother giving birth, the mother's education, the pattern of the mother's health condition during pregnancy, socioeconomic conditions to the method of breastfeeding. Several epidemiological studies have shown that breastfeeding is not optimal, the wrong way of feeding, repeated illnesses during toddlers will affect the incidence of stunting.⁷⁻⁹ This study shows that the method of giving breastfeeding that is not good will increase the risk of stunting by 35.3 times.^{10,11} The goal of this study is to showed the association between exclusive breastfeeding and stunting in children.

METHODS

According to the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) 2020 criteria, the author of this study confirmed that it was current and complied with all applicable standards. This phase is essential because it ensures that the investigation's findings are accurate. This study found a correlation between exclusive lactation and childhood stunting. Reviewing previous research on the topic is the most time-efficient means of achieving this objective. In light of the essay's purpose, this section will accentuate the relevance of the stated topics.

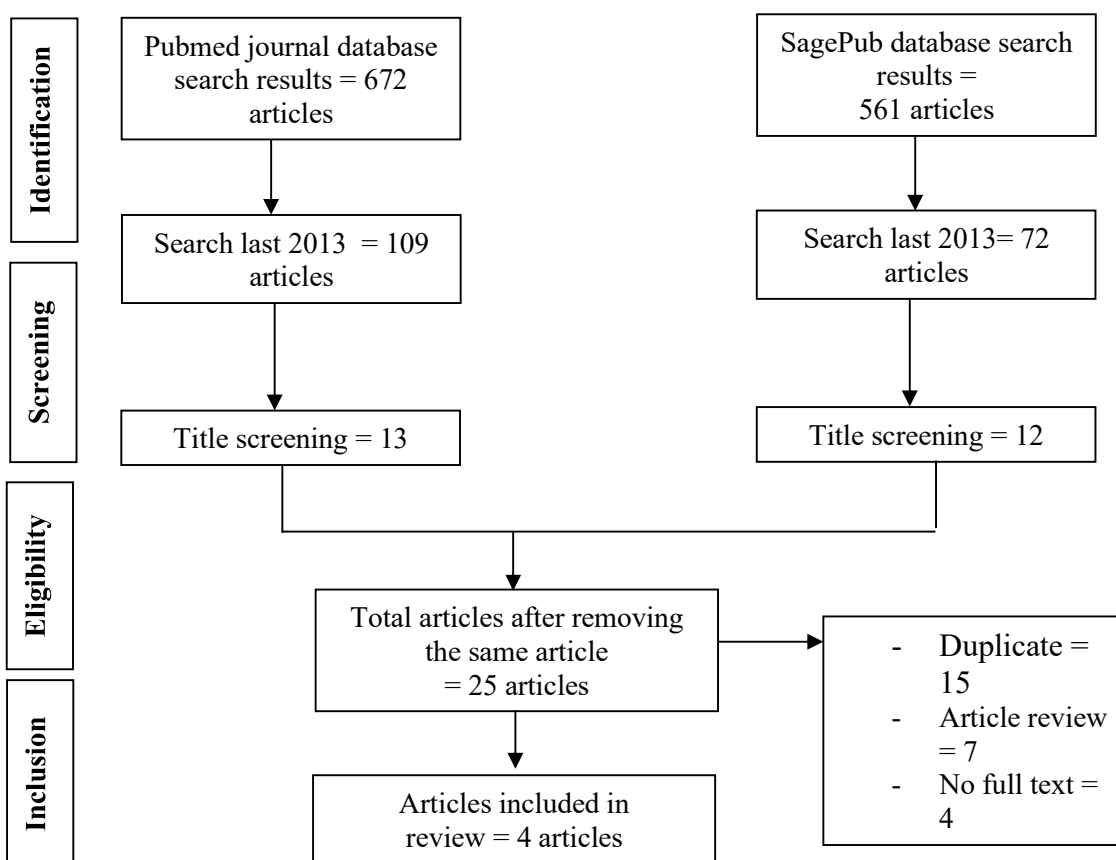


Figure 1. Article search flowchart

In order to participate in the investigation, researchers were required to provide proof that they met the following requirements: 1) To be considered for publication, the paper must be written in English and demonstrate the relationship

between exclusive lactation and childhood stunting. 2) Works published after 2013, but prior to the review period, may be considered. Editorials, applications without a DOI, previously published review articles, and submissions that are nearly identical to previously published journal articles are examples of research that cannot be published.

We used between “exclusive breastfeeding” and “stunting” as keywords. The search for studies to be included in the systematic review was carried out from June, 24th 2023 using the PubMed and SagePub databases by inputting the words: (“breast feeding”[MeSH Terms] OR (“breast”[All Fields] AND “feeding”[All Fields]) OR “breast feeding”[All Fields] OR (“exclusive”[All Fields] AND “breastfeeding”[All Fields]) OR “exclusive breastfeeding”[All Fields]) AND (“growth disorders”[MeSH Terms] OR (“growth”[All Fields] AND “disorders”[All Fields]) OR “growth disorders”[All Fields] OR “stunting”[All Fields] OR “stunted”[All Fields]) used in searching the literature.

We looked at both the abstract and the title to determine the study's reliability. They looked at a greater quantity of historical documents. A synthesis of multiple experiments using the same methodologies supports this finding. You must use previously unpublished English to comment. The systematic review considered only those works that matched the predetermined inclusion criteria. There are fewer search results returned. Inadequate inquiry and analysis. This section includes an analysis. The subjects, authors, date, place, topic, and parameters are all specified in the research paper. The article includes the author's name and the date it was published. Endnote removed any duplicates it found.

The titles and abstracts of the submitted articles were reviewed by two evaluators. Their extensive articles were examined to see if the research could be carried out and to create data. Other health challenges, in addition to GWAS, have been the focus of conferences and research. The conclusion was made by the assessors. Each author examined the abstracts and titles of each study before picking which papers to explore. Following that, all articles that match the inclusion criteria and are thus eligible for inclusion will be reviewed. Following the completion of the fundamentals instruction, we will select review topics. This strategy is used to choose research and review papers.

RESULT

In the PubMed database, the results of our search brought up 672 articles, whereas the results of our search on SagePub brought up 561 articles. The results of the search conducted for the last year of 2013 yielded a total 109 articles for PubMed and 72 articles for SagePub. In the end, we compiled a total of 25 papers, 13 of which came from PubMed and 12 of which came from SagePub. We included four research that met the criteria.

Campos, et al (2020)¹² showed 12.3% of children were considered to be stunted whereas 71.1% had been nursed for at least six months. In every study, the mere act of breastfeeding a child and the fact that the mother was female were found to be protective factors against childhood stunting. In contrast, low birthweight in children, short height in mothers, an increased number of children younger than 5 years old living in a family, and moderate to severe food insecurity were risk variables for child stunting that were constant across all models.

Hadi, et al (2021)¹¹ showed two-thirds (61%) of caregivers who self-identified as the biological mother breastfed their child exclusively. CU2 infants from poorer households who were exclusively breastfed were 20% less likely to be stunted than their non-exclusively breastfed counterparts. In addition, exclusively breastfed CU2 from affluent households were 50% less likely to be stunted than non-exclusively breastfed CU2 from affluent households. Several mothers were oblivious of the significance of recommended breastfeeding practices, according to FGDs. Breastfeeding exclusively may protect low-income children from malnutrition.

Table 1. The litelature include in this study

Author	Origin	Method	Participant	Result
Campos, 2020 ¹²	United State of America (USA)	Cross sectional	50,528 households	Efforts to reduce the prevalence of childhood stunting in Mexico should include prenatal strategies aimed at preventing low birthweight offspring. This is especially important for women of short stature, households with moderate to severe food insecurity, families with a higher number of children aged 0–5 years, and indigenous communities. In the postnatal phase, there should be an emphasis on the use of multi-level support measures for breastfeeding.
Hadi, 2021 ¹¹	Indonesia	Cross sectional	388 households	Children from low-income families may benefit from exclusive breastfeeding as protection against stunting. It is essential, both in the current context and moving forward, to engage in activities that promote health in order to strengthen the motivation of primary caregivers to engage in exclusive breastfeeding.
Ekholuenetale, 2022 ¹³	Nigeria, South Africa	Cross sectional	No describe	It will take concerted efforts to improve the health of children as well as good feeding practices and their chances of survival. A sustained socioeconomic improvement that is shared in equity and equality throughout the population could potentially result in a

				reduction in the prevalence of stunting and anemia. Hunger can be alleviated in part by implementing policies and programs that try to increase the availability of food, particularly in areas that are economically disadvantaged.
Zaragoza, 2018 ¹⁴	Mali	Cross sectional	One hundred eighty nine mother-child dyads	The majority of mothers did not follow WHO recommendations when it came to feeding their children. It is essential to carry out interventions in the form of nutrition education geared toward mothers in rural populations.

Zaragoza, et al (2018)¹⁴ showed 10.1% of people had stunting, which was found as early as the fourth month of life. This was accompanied by early CF close to the third month (57%) and less exclusive breastfeeding in the second month (only 30%). Children who weren't breastfed were almost twice as likely to be short as children who were (p <0.03). By age, the mean ZLA was different, with a tendency for stunting to get worse with age (p 0.05): -0.463 1.445 for ages 1-6 months, -0.669 1.225 for ages 7-12 months, and -0.985 0.917 for ages 13-24 months. MDD was higher in children who weren't breastfed (69.7%, p <0.04) and in children ages 13 to 24 months (69.7%, p <0.02).

DISCUSSION

The World Health Organization (WHO) defines malnutrition as a cellular imbalance between the supply of nutrients and energy and the body's need for them to ensure growth, maintenance and certain functions.¹⁵ Stunting is a chronic condition that describes stunted growth due to long-term malnutrition. Short toddlers (stunting) can be known if a toddler's length or height has been measured, then compared with the standard and the results are below normal.^{16,17}

The problem of stunting is an indication of an inadequate nutritional intake over a prolonged period of time due to a lack of calories and protein, in addition to a number of other micronutrients. As a result, it is essential to place an emphasis on the supply of a nutritionally balanced intake for toddlers, with particular attention paid to the fulfillment of nutritional requirements for infants aged 0 to 6 months. The prevalence of stunting increases with age, the increase occurs in the first two years of life, the growth process of past children reflects nutritional and health standards.¹⁵

Boys have a higher risk of stunting than girls. This may be due to preferences in feeding practices or other types of exposure. Nutritional status may also be explained by "biological vulnerability" since boys are expected to grow at a slightly faster rate than girls and their growth is more easily affected by malnutrition or other diseases.¹⁸ Children aged 6-23 months have a lower risk of experiencing stunted growth compared to the age group 24-59 months. High rates of exclusive breastfeeding during the first six months can provide a protective effect against stunting at an early age. One of the things that may be done to lower the chance of a child becoming stunted is to encourage breastfeeding.¹⁹

This also provides an answer to the challenge posed by the demographic bonus, which is to prepare human resources from a young age so that they can, in the future, create quality human resources that are highly competitive. Malnutrition in toddlers is a complex public health problem. The root of the problem is related to food security and nutrition, poverty, education, security, availability of clean water, environmental hygiene and sanitation, as well as related to emergency or disaster situations. These conditions will affect purchasing power, access to food, vulnerability to disease, access to information and access to services which are the underlying direct and indirect causes of malnutrition.¹⁹

Exclusive breastfeeding is very close to reducing the incidence of stunting in children. Therefore, children who are not exclusively breastfed are at risk of stunting. Two recent analyzes suggest that babies who are weaned before they are 6 months old are more at risk of stunting. Breastfeeding at the age of 0-5 months will contribute to reducing the incidence of stunting in children, a study in Ethiopia showed that children who were breastfed <2 years had a 3.2 times risk of experiencing stunting. Research in Indonesia shows that those who do not get breast milk are at risk of stunting.²⁰

The practice of breastfeeding has a beneficial effect on the expansion and maturation of a child. This is consistent with the findings of Campos et al. (2020), who conducted research on children in Mexico who ranged in age from six months to thirty-five months and found that breastfeeding for six months or longer was a protective factor against stunting.^{12,13} A developing baby needs great nutrition during the process of growth and development, when nutrition is not optimal during the first 6 months it will have an impact on growth and development, and the baby's digestive tract is only ready to accept breast milk as its intake. Exclusive breastfeeding has been shown to have positive effects on a baby's brain as well as their immune system. If children consume an adequate amount of breast milk, the nation's next generation will be better equipped to take advantage of the demographic bonus.^{21,22}

Health promotion to increase the motivation of caregivers to exclusively breastfeed is crucial in the current and future contexts.¹¹ The World Health Organization and the United Nations Children's Fund both recommend that breastfeeding begin within the first hour of a child's birth and continue continuously for the first six months of a child's life. In addition, beyond the first six months, the infant is only given complementary foods, and the breastfeeding relationship is maintained for at least another two years.²³

Breastfeeding is one method that can be utilized to increase the nutritional intake of children and prevent stunting. As a result, it is hoped that the government and the various parties who take part in accelerating stunting prevention can collaborate more in promoting and campaigning for the benefits of breastfeeding for pregnant women. It is envisaged that by 2030, a significant number of pregnant women will be more informed, be willing and able to nurse their unborn child, and that this would contribute to the achievement of the Sustainable Development Goals aim of reducing all types of malnutrition, including stunting.^{11,23}

CONCLUSION

According to the findings of research, there is a significant connection between exclusive breastfeeding and stunting.

REFERENCE

- [1]. Kemenko PMK RI. Strategi Nasional Percepatan Pencegahan Anak Kerdil (Stunting) Periode 2018-2024. Strateg Nas Percepatan Pencegah Anak Kerdil Periode 2018-2024. 2018;
- [2]. Mannar VM., Micha R, Allemendi L, Afshin A, Baker P, Battersby J, et al. Action on equity to end malnutrition. The Global Nutrition Report. 2020.
- [3]. UNICEF, WHO, World Bank. Levels and trends in child malnutrition: Key findings of the 2020 Edition of the Joint Child Malnutrition Estimates. Geneva WHO. 2020;24(2).
- [4]. Presiden Republik Indonesia. Peraturan Presiden Republik Indonesia Nomor 18 Tahun 2020 Tentang Rencana Pembangunan Jangka Menengah Nasional 2020-2024. Rencana Pembang Jangka Menengah Nas 2020-2024. 2020;
- [5]. Kemenkes RI. Situasi Balita Pendek (Stunting) di Indonesia. Kementerian Kesehat RI. 2018;301(5).
- [6]. Kementerian Kesehatan Republik Indonesia. Infodatin: stunting. Jakarta; 2016.
- [7]. Prendergast AJ, Humphrey JH. The stunting syndrome in developing countries. Paediatr Int Child Health. 2014;34(4):250–65.
- [8]. 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. Vol. 382, The Lancet. 2013.
- [9]. Nshimiyiryo A; Gauthier BH; Mutaganzwa C; et al, Nshimiyiryo A, Hedt-Gauthier B, Mutaganzwa C, Kirk CM, Beck K, et al. 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. 2019;19(175):22–7.
- [10]. Triana NY, Haniyah S. Relationship of Exclusive Breastfeeding, Complementary Feeding and Nutritional Intake with Stunting in Children in Karanglewas Health Center. 2020;20(Icch 2019):74–8.
- [11]. Hadi H, Fatimatasari F, Irwanti W, Kusuma C, Alfiana RD, Ischaq Nabil Asshiddiqi M, et al. Exclusive breastfeeding protects young children from stunting in a low-income population: A study from eastern indonesia. Nutrients. 2021;13(12):1–14.
- [12]. Campos AP, Vilar-Compte M, Hawkins SS. Association Between Breastfeeding and Child Stunting in Mexico. Ann Glob Heal. 2020 Nov;86(1):145.
- [13]. Ekhlouetale M, Okonji OC, Nzopotam CI, Barrow A. Inequalities in the prevalence of stunting, anemia and exclusive breastfeeding among African children. BMC Pediatr. 2022 Jun;22(1):333.
- [14]. Zaragoza Cortes J, Trejo Osti LE, Ocampo Torres M, Maldonado Vargas L, Ortiz Gress AA. Poor breastfeeding, complementary feeding and dietary diversity in children and their relationship with stunting in rural communities. Nutr Hosp. 2018 Feb;35(2):271–8.
- [15]. Nix S. William's Basic Nutrition & Diet Therapy. New York: Elsevier Mosby; 2012.
- [16]. Almatsier S. Pedoman Ilmu Gizi. Jakarta: Gramedia Pustaka; 2012.
- [17]. Soetjningsih G. Tumbuh Kembang Anak. Jakarta: EGC; 2015.
- [18]. Condo JU; Gage A; Mock N; et al. Sex differences in nutritional status of HIV-exposed children in Rwanda: a longitudinal study. Trop Med Int Heal. 2015;20(1):17–23.
- [19]. Black R, Victora C, Walker S. Maternal and child undernutrition and overweight in low-income and middle-income countries. Lancet. 2013;382:427–51.
- [20]. Budiastutik I, Rahfiludin MZ. Faktor Risiko Stunting pada anak di Negara Berkembang. Amerta Nutr Vol 3, No 3 AMERTA Nutr - 1020473/amnt.v3i32019122-129 [Internet]. 2019 Sep 9; Available from: <https://e-journal.unair.ac.id/AMNT/article/view/14301>
- [21]. Elis A, Mustari R, Marlina M. The Role of Presenting Exclusive Breastfeeding for The Prevention of Stunting Based on The Culture of Tudang Sipulung. Str J Ilm Kesehat. 2020;9(2):1230–7.
- [22]. Raju TNK. Breastfeeding is a dynamic biological process--not simply a meal at the breast. Breastfeed Med Off J Acad Breastfeed Med. 2011 Oct;6(5):257–9.
- [23]. Asbar R, Tamrin A. Breastfeeding practices can potential to prevent stunting for poor family. Enferm Clin. 2020;30:13–7.