Contents lists available at IOCS

Science Midwifery

journal homepage: www.midwifery.iocspublisher.org

The relationship of chronic energy deficiency (CED), exclusive breastfeeding, and economic with stunting in Nagari Aua Kuning West Pasaman

Wiwie Putri Adila[1] , Roza Sri Yanti[2] , Mayetti[3]

[1] Postgraduate Midwifery Study Program, Faculty of Medicine, Andalas University, Padang, Indonesia
[2.3] Department of Obstetrics and Gynecology , Faculty of Medicine , Andalas University , Padang, Indonesia

ARTICLEINFO

Article history:

Received Feb 09, 2023
Revised Feb 15, 2023
Accepted Feb 28, 2023

Keywords:

Exclusive breastfeeding
Economy
CED
Stunting

ABSTRACT

Stunting is a chronic malnutrition problem caused by poor nutritional intake, repeated infections, and inadequate psycho-social stimulation at the first 1000 days of life, characterized by height for age below the applicable standard, Prevalence of stunting in Indonesia in 2019 was 27.7%. In 2021 it became 24.4%, and although it has decreased, Indonesia is still far from the target. Objective: This study aims to determine the relationship between CED, exclusive breastfeeding, and economic status with the incidence of stunting in children. This research is an observational analytic study with a cross-sectional design. A total of 224 respondents were selected randomly by proportional random sampling, and the study was conducted in July-September 2022. Data collection was carried out by measuring height, looking at the MCH book, interviews, and questionnaires. Bivariate analysis was performed using chi-square and multivariate using multiple logistic regression. The results showed that 50.9% of children are stunted. Chi-square results show a significant relationship between the history of CED with a p-value of 0.000, exclusive breastfeeding with a p-value of 0.020, and economic status with a p-value of 0.003 and the incidence of stunting. CED is the most dominant factor affecting the incidence of stunting. Statistically, CED has a risk of 11.278 times, affecting the occurrence of stunting. This study suggests Health agencies and related parties to collaborate in early detection, reduce the risk of stunting, and be able to run programs that the government has made.

Corresponding Author:

Roza Sriyanti,
Midwifery Faculty of Medicine,
Andalas University,
Jl. Pioneer of Independence no. 94, Padang, 25127, Indonesia,
Email: Rozasyahrial@gmail.com

INTRODUCTION

Stunting is a condition of chronic malnutrition both pre and postnatal which causes suboptimal body posture and reduced cognitive ability. According to the World Health Organization (WHO, 2016)Stunting reduction is one of the targets of the Sustainable Development Goals (SDGs) and is

included in the 2nd sustainable development goal, namely eliminating hunger and all forms of malnutrition by 2030 and achieving food security. The target set is to reduce the stunting rate by 40% by 2025 (Ministry of Health, 2018) and will reduce the incidence of stunting by 50% by 2030 (UNICEF et al., 2021).

Globally, in 2020 the number of stunted children under five is estimated at 22% (149.2 million children). Indonesia is the second country with the highest prevalence in the Southeast Asia / South-East Asia Regional (SEAR) region after Timor Leste with an average prevalence of stunting under five reaching 31.8% in 2020 (UNICEF et al., 2021). In 2021 the prevalence of stunting will decrease to 24.4%. however, this figure is still far from the standard set by WHO, which is 20 percent (TNP2K, 2018; WHO, 2018).

Based on the SSGBI survey, the proportion of stunting in West Sumatra in 2021 is 23.3% (SSGBI, 2021). One of the districts or cities that is a priority for stunting prevention in West Sumatra is West Pasaman Regency, with a stunting incidence rate 2021 of 24% (SSGBI, 2021). Nagari Aua Kuning is one of the villages with a relatively high prevalence of stunting in the West Pasaman Regency, namely 34.7% in 2020 (West Pasaman Health Office, 2021).

Stunting was influenced by multiple factors, including direct, indirect, and underlying causes, both of which can occur in the womb or after birth. Factors that cause stunting in the womb are associated with health conditions and the mother's nutritional status, such as KEK (Chronic Energy Deficiency)(UNICEF, 2017). After birth, stunting is caused by direct factors, namely inadequate nutritional intake (such as exclusive breastfeeding) (Stewart et al., 2013). The fundamental causes are low mothers' education, low household income, unaffordable food prices (Altmann et al., 2018), and household socio-economic status (Kien et al., 2016).

In terms of nutritional intake, 32% of young women in Indonesia in 2017 were at risk of chronic energy deficiency (CED). If the nutrition of young women is not improved, it will cause many pregnant women to have short stature and chronic energy deficiency. it will have an impact on increasing the prevalence of stunting in Indonesia. This is following the results of research conducted in Mataram Ilir Village, Central Lampung Regency shows that there is a relationship between (SEZ) pregnant women and the incidence of stunting. Toddlers with KEK mothers have 2.2 times the risk of experiencing stunting (Alfarisi et al., 2019).

Another cause is not giving exclusive breastfeeding for six months because breast milk is needed during the baby's growth and development so that their nutritional needs are met (SJMJ et al., 2020). Babies who get exclusively breastfed tend to have a higher height and fit the growth curve. Breast milk contains more calcium so that it can maximize height growth and avoid the risk of stunting. it is in line with Sulung's research (2019) in Pasaman district which stated that the incidence of stunting in toddlers was caused by non-exclusive breastfeeding ($p = 0.022$ and $OR = 2.708$) (Sulung, 2020).

Economic status is an indirect cause of stunting in children. Oktarina and Sudiarti explained that toddlers who come from families with low economic status are 1.29 times more at risk of experiencing stunting compared to toddlers who come from families with high economic status. Based on Joint Child Malnutrition Estimates data for 2018, countries with upper-middle income were able to reduce stunting rates by up to 64%, while middle and lower countries only reduced around 24% from 2000 to 2017 (UNICEF et al., 2021).

This is in line with Nakhpong's research (2021) regarding the socio-economic status and the double burden of malnutrition in Cambodia in 2010-2014, which found that socio-economic factors, especially related to household income and mother's work, were one of the driving factors for stunting. Mothers with low incomes are two times more likely to give birth to stunted children (Nakphong & Beltrán-Sánchez, 2021).

The incidence of stunting will have a short-term impact and will continue in each life cycle or the long term. The short-term effects of stunting are disrupted brain development, reduced intelligence, impaired physical growth, and metabolic disorders in the body. Meanwhile, the long-

term impact is decreased cognitive ability and learning achievement, decreased immunity so that children get sick quickly, as well as a high risk of developing diabetes, obesity, heart and blood vessel disease, cancer, stroke, and disability in old age (Directorate General of Information and Public Communications, 2019).

Research on the causes of stunting in other Nagari in West Pasaman has been studied, but the research on the relationship of KEK, exclusive breastfeeding, and the economy with the incidence of stunting in Nagari Aua Kuning has never been carried out, especially in children aged 24-59 months. People of Nagari Aua Kuning is quite diverse, and the location of Nagari Aua Kuning is quite close to urban areas but is one of the nagari which has a high enough incidence of stunting in West Pasaman so that researchers are interested in conducting research there. Researchers also combined several factors during pregnancy, namely maternal nutrition with KEK assessment, factors after birth, namely direct factors with a history of exclusive breastfeeding, and fundamental factors, namely the economy.

Based on the results of the description above, researchers are interested in knowing the relationship between Chronic Energy Deficiency (CED), Exclusive breastfeeding, and Economic Status with stunting in Nagari Aua Kuning Pasaman Barat in 2022, and also researchers are interested in seeing which factor is the most dominant or significant among the several risk factors described.

RESEARCH METHOD

This research is an analytic study using a cross-sectional design. The research was conducted in Nagari Aua Kuning, West Pasaman Regency, from January to November 2022. The population in this study were all children aged 24-59 months and their mothers in Nagari AUA Kuning, West Pasaman Regency. The research sample comprised 224 respondents, and the sample had to meet the predetermined inclusion and exclusion criteria. The inclusion criteria of this study are mothers willing to become respondents, mothers who have an MCH book and complete MCH book filling, children who do not have congenital disabilities, and children who are born full term and single. At the same time, exclusion criteria are mothers who cannot meet three times in a row.

The sampling technique used a proportional random sampling method so that the results for each village were Pinaga Village 62 samples, Padang Tujuh Village 50 samples, Lubuk Landur Village 55 samples, and Sukamenanti Village 57 samples. The sampling technique for each village uses a simple random sampling technique.Data collection was carried out for two months, from August to September 2022. Data was collected by measuring children's height and weight and conducting interviews and observations of mothers usingquestionnaires.

The data were computerized using SPSS for univariate tests to determine frequency distribution. Bivariate analysis using chi-square and multivariate analysis using multiple logistic regression tests. This research has obtained permission to pass ethics from the Faculty of Medicine Ethics Committee, Andalas University, with number 781/UN.16.2/KEP-FK/2022.

RESULTS AND DISCUSSIONS

Results

This This research is descriptive-analytic. Data collection was carried out for two months, starting from August to September 2022 by measuring the child's height and weight, looking at the mother's MCH book, and interviewing using a questionnaire. Respondents in this study were children aged 24-59 months and their mothers who met the inclusion and exclusion criteria.

Maternal Characteristics

The characteristics of the respondents in this study included age, education, and employment status. Data collection was obtained by conducting interviews with respondents. The

frequency distribution of respondents based on the characteristics of mothers in Nagari Aua Kuning can be seen in the following table :

Table 1 Maternal Characteristics

Characteristics of Respondents	Chategories	f	%
Age	<20 and >35	42	18,8
	20-35	182	81,3
Education	No school	16	7,1
	Elementary school	44	19,6
	Junior High School	69	30,8
	Senior High School	72	32,1
	College	23	10,3
Employment status	Doesn't work	161	71,9
	Work	63	28,1
	Total	**224**	**100**

Source : Primary Data, 2022.

Table 1 shows that the subjects of this study were primarily mothers (81.3%) with an age range of 20-35 years, with the highest level of education (32.1%) being high school, and the majority of mothers were unemployed (71.9%).

Distribution of the frequency of CED in pregnantcy, exclusive breastfeeding, and economic status

Based on research conducted in Nagari Aua Kuning regarding the distribution of the frequency of CED, exclusive breastfeeding and the economic status of the mother can be seen in table 2 below :

Table 2 Distribution of the frequency of CED in pregnantcy, exclusive breastfeeding, and economic status

Factors	Category	(f)	(%)
CED	(<23,5 cm)	45	20,1
	(≥23,5 cm)	179	79,9
Exclusive Breastfeeding	No	169	75,4
	Yes	55	24,6
Economic Status	(≤ Rp. 492.467)	185	82,6
	(> Rp. 492.467)	39	17,4
	Total	**224**	**100**

Source : Primary Data, 2022.

In table 2, it can be seen that (20.1%) of mothers experienced CED during pregnancy. Most mothers (75.4%) do not give exclusive breastfeeding, and most mothers (82.6%) have low economic status.

Prevalence of stunting

The distribution of the frequency of stunting in children in Nagari Aua Kuning, West Pasaman consisting of 224 respondents can be seen in figure 1 below:

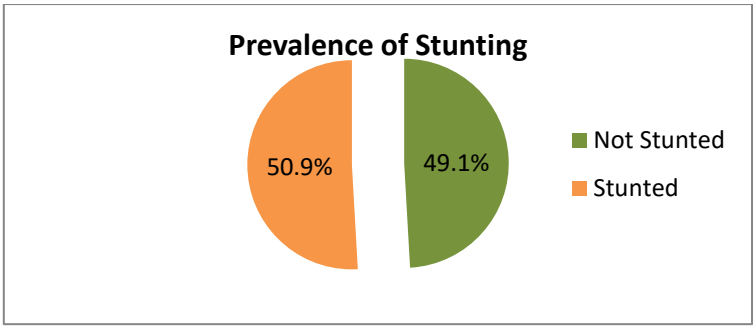

Figure 1 Prevalence of stunting

Based on figure 1, about prevalence of stunting in Nagari Aua Kuning it was found that out of 224 respondents, more than half of the respondents were stunted (50.9%) compared to those who were not stunted (49.1%).

Relation between CED, Exclusive breastfeeding, and Economic Status with stunting

Based on research conducted in Nagari Aua Kuning regarding the relationship of KEK in mothers during pregnancy, exclusive breastfeeding, and economic status with the incidence of stunting in children can be seen in table 3 below:

Table 3 Relation between CED, Exclusive breastfeeding, and Economic Status with stunting

Factors	*Stunted*		Non*Stunted*		Total		p- Value	OR	(*95% CI*)
	n	%	n	%	n	%			
CED									
CED	40	88,9	5	11,1	45	100	0,000*	11,351	(4,277-30,128)
Non CED	74	41,3	105	58,7	179	100			
Exclusive Breastfeeding									
Not Exclusive Breastfeeding	94	55,6	75	44,4	169	100	0,020*	2,193	(1,171-4,108)
Exclusive Breastfeeding	20	36,4	35	63,6	55	100			
Economic Status									
Lower	103	55,7	82	44,3	185	100	0,003*	3,197	(1,502-6,805)
Upper	11	28,2	28	71,8	39	100			
Total	114	49,1	110	50,9	224	100			

Source : Primary Data, 2022.

Table 3 shows a significant relationship between CED, exclusive breastfeeding, and economic status with the incidence of stunting in children aged 24 -59 months in Nagari Aua Kuning. The independent variables selected for multivariate analysis are independent variables with a p-value <0.025.

Multivariate Analysis

Multivariate analysis is to find out the independent variables that are most related to the dependent variable. Candidate variables that enter into the multivariate analysis stage are variables that have a p-value <0.25. for selection results, multivariate modeling can be seen in the table below.

Table 4 Multivariate Analysis Modeling

Variable	Stage 1	Stage 2
CED	*p*= 0,000	*p*= 0,000
Exclusive Breastfeeding	*p*= 0,136	
Economic Status	*p*= 0,008	*p*= 0,000

The method used for multivariate analysis uses the backward selection method by removing one by one gradually and automatically the variables with a p-value> 0.05. Based on the multivariate modeling table, it was found that in the first stage of modeling, the variable of exclusive breastfeeding had a p-value of 0.136 (p > 0.05), so the history of exclusive breastfeeding was excluded from the multivariate analysis.

Final Multivariate Analysis Modeling

The final multivariate modeling is obtained when there is no p-value> 0.05. the final modeling of multivariate analysis is seen in table 5 :

Table 5. Multivaraite Analysis

Variable	Coefficient	Wald	*p-value*	OR	95% CI	
					Lower	*Upper*
CED	2,423	22,982	0,000	11,278	4,188	30,368
Economic Status	1,150	7,465	0,006	3.157	1,384	7,201

Based on table 5 after exclusive breastfeeding was removed, there was no data with a p-value> 0.05, so in the final stage, data was obtained that the most dominant variable related to the incidence of stunting in children was CED. CED has an OR value of 11,278, meaning that mothers with CED have 11,278 times the risk of stunted children.

Discussion

Characterictic

Based on the study results, it is known that the characteristics of the mother's age are mostly 20-35 years old (81.3%). This is associated with a healthy reproductive age, namely the age of 20-35 years. Pregnancy at a young age can increase the risk of malnutrition in children. Psychologically, the more mature a person's age will affect his mindset, comprehension, and behavior.

Prevalence of stunting

The results of research on the incidence of stunting in children showed that most children were stunted (50.9%). *Stunting* is a linear growth disorder experienced by children due to poor nutrition, repeated infections, and inadequate psychosocial stimulation(WHO, 2018). UNICEF defines *stunting* as height for age (months) which is <-2 SD according to the median child growth standard according to the WHO Child Growth Standard 2006 (UNICEF, 2020).

Stunted children tend to have decreased intelligence, productivity, and low immune systems, making them more susceptible to infectious diseases (Bella et al., 2020; Prakhasita, 2018). This condition resulted in increased health costs which ultimately added to the economic burden on the community and increased poverty rates (Yadika et al., 2019). Stunting is detrimental to the state because it can reduce the Gross Domestic Product (GDP) value by around 2-3% per year (Ministry of Health, 2018).

Relationship between CED and the incidence of stunting in children

CED problems need to be corrected and detected as early as possible because the child will affect the next life cycle; otherwise, this will create a prolonged vicious circle. The implementation of stunting prevention starts from upstream to downstream, so the government issues several policies related to reducing and overcoming stunting, such as specific and sensitive interventions. *Specific interventions* are actions or activities planned precisely for the 1000 HPK.The results of this study showed that mothers with a history of CED during pregnancy had a more significant percentage of causing child stunting (88.9%) compared to mothers who did not have a history of CED during pregnancy (41.3%). This difference was statistically significant (p < 0.05%). This is in line with Apriani's research (2021) in Musi Regency, which states that there is a

relationship between a history of CED and the incidence of stunting in toddlers in the moderate relationship category with a p-value of 0.000 (p <0.05%).

Maternal nutritional status before and during pregnancy can affect the growth of the fetus being conceived. Pregnant women with poor nutritional status will cause impaired fetal growth, the leading cause of short babies (stunting), and increase the risk of obesity and degenerative diseases in adulthood (Lancet, 2013). Poor nutritional status in the mother will result in a decrease in blood. Blood volume is essential for carrying nutrients or O^2 to the fetus through the placenta. If there is a decrease in blood volume, the cardiac output is inadequate, and blood to the placenta, which carries nutrients for the fetus, decreases, causing the size of the placenta to become smaller. In addition, due to O^2 circulation disorders and nutrition, it will result in stunted fetal growth or LBW.

Relationship between exclusive breastfeeding and the incidence of stunting in children

Breastfeeding has various health benefits, especially in terms of child development. The composition of breast milk contains many unsaturated fatty acids with long carbon chain polyunsaturated fatty acids (LCPUFA), which are not only a source of energy but also crucial for brain development because the dominant molecule is found in the myelin sheath. Breastfeeding also has other benefits, namely increasing children's immunity against disease. Based on research, breastfeeding can reduce the frequency of diarrhea, chronic constipation, gastrointestinal diseases, respiratory tract infections, and ear infections.

This study showed that there is a relationship between exclusive breastfeeding and the incidence of stunting in children in Nagari Aua Kuning. This study's results align with Nurfatimah's research (2021), which states that there is a relationship between exclusive breastfeeding and the incidence of stunting (p-value = 0.009). However, this is not in line with the research by (Hadi et al., 2019), which showed that exclusive breastfeeding was found not to affect the incidence of stunting.

The researcher assumes that mothers' low awareness of the importance of exclusive breastfeeding for toddlers is influenced by mothers' ignorance about what exclusive breastfeeding is and how to give it. Mothers think that giving plain water and porridge to children is normal and already exists in society. The common knowledge of mothers is allegedly caused by a lack of information, lack of clarity of information, the average level of education of respondents is low, and the socio-cultural environment that considers giving food other than breast milk when the child is six months old is a natural thing so that respondents are unable to receive information received.She was conducting health services for pregnant women and providing IEC and counseling to pregnant women regarding the importance of exclusive breastfeeding and how to give exclusive breastfeeding properly.

Relationship between economic status and the incidence of stunting in children

Families with adequate income can provide for children's primary and secondary needs. Families with good economic status also have better access to health services. There is an inability of the mother to meet the nutritional needs of her child both in terms of quality and quantity, which impacts children's healthy growth. The low level of family income is an obstacle that causes families to be unable to meet both food and non-food needs in the amount needed.

The study's results showed that more than half of mothers with low economic status would cause their children to be stunted (55.7%). The statistical test results obtained a p-value of 0.003 (p <0.05%), so it can be concluded that there is a relationship between economic status and the incidence of stunting in children in Nagari Aua Kuning. This research is in line with Wulan's study (2020), which states that there is an economic relationship (income and education) with the incidence of stunting (Wulan et al., 2020). This research is in line with (Kassaw et al., 2020) in Ethiopia stating that children from households with a moderate or low wealth index/poor have a higher chance of stunting (AOR: 1.33, 95% CI 1.07, 1, 65 or AOR: 1.92, 95% CI 1.46, 2.54).

Arisman (2015) states that there is a close link between income and improved food consumption with nutritional status, but high income does not guarantee good nutrition. The results of this study also follow the results of research (Setiawan et al., 2018) in the Working Area of the Andalas Health Center, Padang Timur District, Padang City, which shows a significant relationship between the level of family income level and the incidence of stunting.

The researcher assumes that families with low income have a greater risk of their children being stunted than families with sufficient or more income. It is because the area where the researcher conducted the research is classified as rural, so development in the area has not been evenly distributed. Communities and regions of underdeveloped villages are usually relatively underdeveloped, and the results of their development have yet to bring prosperity to the community. This condition allows people to have low purchasing power, including purchasing power for food and health (Suroso, 2020).

The most dominant factors

This study showed that CED was the most dominant factor influencing the incidence of stunting in children. Statistically, the results of healthy parenting have a risk of 11,278 times influencing the occurrence of stunting in children. This research is in line with (Sukmawati et al., 2018) study, where there is a relationship between the nutritional status of mothers based on LILA and the incidence of stunting with a p-value = 0.01, however, it is different from (Ruaida & Soumokil, 2018) research which shows that pregnant women who experience CED and their children do not experience stunting (77.91%).

Maternal nutrition during pregnancy is very important for fetal growth it contains. In general, pregnant women with non-existent state of good health nutritional disorders in the pre-pregnancy period and during pregnant, will produce a giant baby and healthier than pregnant women whose condition have a nutritional disease. Chronic lack of energy will cause the birth of a child with the shape of the body "stunted" (Soetjiningsih, 2015).

The nutritional status of the mother dramatically influences newborn health during pregnancy. KEK in pregnant women should pay attention to the possibility that the mother will give birth to a baby with low birth weight, and the growth and development of the fetal brain will be severely hampered so that it will affect the child's intelligence in the future and the future (Ministry of Health, 2018).

Babies born with LBW often need help catching up with their growth (inadequate catch-up growth). Thrifty Phenotype Theory (Barker and Hales) states that babies who experience malnutrition in their womb and have made permanent metabolic and endocrine adaptations will have difficulty adapting to a nutrient-rich environment after birth (Barker and Hales) (Rahayu et al., 2018). This risk will worsen if malnutrition in the fetus is followed by inadequate food intake during the first two years of life.

Some programs that can be carried out to overcome CED, which started as a teenager, are by promoting nutritious action, a health promotion activity provided by health workers related to food consumption, administration of iron tablets, and measurement of Hb levels carried out in schools. As for the candidate bride, namely the candidate bride assistance program for three months during marriage to monitor the health of the prospective bride and groom.

Limitation

The limitation of this study is that this study did not examine other variables that can cause stunting in children, such as infectious diseases, children's nutritional intake, and others. In this study, researchers only focused on linear growth by measuring height/age without seeing whether there were developmental abnormalities in children, so researchers could not distinguish between stunting and short stature.

CONCLUSION

There is a relationship between CED,exclusive breastfeeding, and economics with the incidence of stunting in children. The most dominant factor affecting stunting is CED. Statistically, CED has a risk of 11.278 times, affecting the occurrence of stunting. This study suggests Health agencies and related parties collaborate in early detection, reduce the risk of stunting, and be able to run programs that the government has made such as maternal nutrition intake during pregnancy and child nutrition, and economic improvement. Future researchers can develop this research by examining other factors that have not been studied such as infectious diseases, children's food intake, genetic factors, etc. Uses a qualitative research approach to find the root causes of stunting in children in Nagari Aua Kuning from the perspective of health workers, related governments, and families.

ACKNOWLEDGEMENTS

Thank you to the supervising lecturers, study program secretariat, research informants, comrades in arms and related parties who have helped a lot in completing this thesis research that i cannot mention one by one.

References

Alfarisi, R., Nurmalasari, Y., & Nabilla, S. (2019). Status Gizi Ibu Hamil Dapat Menyebabkan Kejadian Stunting Pada Balita. Jurnal Kebidanan Malahayati, 5(3), 271–278. https://doi.org/10.33024/jkm.v5i3.1404

Altmann, M., Altare, C., Spek, N. Van Der, Barbiche, J., Dodos, J., Bechir, M., Aissa, M. A., & Kolsteren, P. (2018). Effectiveness of a Household Water , Sanitation and Hygiene Package on an Outpatient Program for Severe Acute Malnutrition : A Pragmatic Cluster-Randomized Controlled Trial in Chad. 98(4), 1005–1012. https://doi.org/10.4269/ajtmh.17-0699

Bella, F. D., Fajar, N. A., & Misnaniarti, M. (2020). Hubungan antara Pola Asuh Keluarga dengan Kejadian Balita Stunting pada Keluarga Miskin di Palembang. Jurnal Epidemiologi Kesehatan Komunitas, 5(1), 15–22. https://doi.org/10.14710/jekk.v5i1.5359

Hadi, M. I., Kumalasari, M. L. F., & Kusumawati, E. (2019). Faktor Risiko yang Berhubungan dengan Kejadian Stunting di Indonesia: Studi Literatur. Journal of Health Science and Prevention, 3(2), 86–93. https://doi.org/10.29080/jhsp.v3i2.238

Kassaw, M. W., Bitew, A. A., Gebremariam, A. D., Fentahun, N., Açik, M., & Ayele, T. A. (2020). Low Economic Class Might Predispose Children under Five Years of Age to Stunting in Ethiopia: Updates of Systematic Review and Meta-Analysis. Journal of Nutrition and Metabolism, 2020. https://doi.org/10.1155/2020/2169847

Kien, V. D., Lee, H. Y., Nam, Y. S., Oh, J., Giang, K. B., & Van Minh, H. (2016). Trends in socioeconomic inequalities in child malnutrition in Vietnam: Findings from the Multiple Indicator Cluster Surveys, 2000-2011. Global Health Action, 9(1). https://doi.org/10.3402/gha.v9.29263

Ministry of Health. (2018). Situasi Balita Pendek (Stunting) di Indonesia. Pusat Data dan Informasi (ISSN 2088-). Buletin Jendela.

Nakphong, M. K., & Beltrán-Sánchez, H. (2021). Socio-economic status and the double burden of malnutrition in Cambodia between 2000 and 2014: Overweight mothers and stunted children. Public Health Nutrition, 24(7), 1806–1817. https://doi.org/10.1017/S1368980021000689

Rahayu, A., Yulidasari, F., Putri, A. O., & Anggraini, L. (2018). Study Guide - Stunting dan Upaya Pencegahannya. In Buku stunting dan upaya pencegahannya.

Ruaida, N., & Soumokil, O. (2018). Hubungan Status Kek Ibu Hamil Dan Bblr Dengan Kejadian Stunting Pada Balita Di Puskesmas Tawiri Kota Ambon. Jurnal Kesehatan Terpadu (Integrated Health Journal), 9(2), 1–7. https://doi.org/10.32695/jkt.v2i9.12

Setiawan, E., Machmud, R., & Masrul, M. (2018). Faktor-Faktor yang Berhubungan dengan Kejadian Stunting pada Anak Usia 24-59 Bulan di Wilayah Kerja Puskesmas Andalas Kecamatan Padang Timur Kota Padang Tahun 2018. Jurnal Kesehatan Andalas, 7(2), 275. https://doi.org/10.25077/jka.v7i2.813

SJMJ, S. A., Toban, R. C., & Madi, M. A. (2020). Hubungan Pemberian ASI Eksklusif Dengan Kejadian Stunting Pada Balita Pendahuluan. 11(1), 448–455. https://doi.org/10.35816/jiskh.v10i2.314

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. Maternal and Child Nutrition, 9(S2), 27–45. https://doi.org/10.1111/mcn.12088

Sukmawati, Hendrayati, Chaerunimah, & Nurhumairah. (2018). Status Gizi Ibu Saat Hamil, Berat Badan Lahir Bayi Dengan Stunting Pada Balita. Media Gizi Pangan, 25, 19.

Sulung, N. (2020). Kajian Penyebab Stunting Anak Usia 24 - 59 Bulan Diwilayah Kerja Puskesmas Padang Gelugur Kabupaten Pasaman. Jurnal Pembangunan Nagari, 5(1), 1. https://doi.org/10.30559/jpn.v5i1.165

Suroso, S.-. (2020). Kebijakan Pembangunan Desa Tertinggal Berbasis Indeks Desa Membangun (IDM) dan Potensi Lokal. Jurnal Litbang: Media Informasi Penelitian, Pengembangan Dan IPTEK, 16(1), 47–62. https://doi.org/10.33658/jl.v16i1.167

TNP2K. (2018). Strategi Nasional Percepatan Pencegahan Anak Kerdil (Stunting). Kementrian PPN/ Bappenas.

UNICEF. (2017). Reducing Stunting in Children Under Five Years of Age: A Comprehensive Evaluation of UNICEF's Strategies and Programme Performance – Cambodia Country Case Study. Globalization and Development in the Mekong Economies, April, 152–166. https://doi.org/10.4337/9781849806954.00020

UNICEF. (2020). LEVELS AND TRENDS IN CHILD MALNUTRITION UNICEF / WHO / World Bank Group Joint Child Malnutrition Estimates Key findings of the 2020 edition 144. Asia-Pacific Population Journal, 24(2), 51–78. https://doi.org/10.18356/6ef1e09a-en

UNICEF, WHO, & WORLD BANK. (2021). Levels and trends in child malnutrition; UNICEF/WHO/World Bank Group-Joint child malnutrition estimstes 2021 edition. World Health Organization, 1–32. https://data.unicef.org/resources/jme-report-2021/

WHO. (2016). Stunting Policy Brief. 9.

WHO. (2018). Reducing Stunting. https://www.who.int/nutrition/publications/severemalnutrition/reducing-stunting-children-equity/en/ (diakses pada tanggal 31 Maret 2020)

Wulan, D., Rengganis, S., & Wulandari, M. (2020). Hubungan Faktor Sosial Ekonomi dan Ketahanan Pangan terhadap Kejadian Stunting pada Balita Relationship of Social Economic and Food Security Factors on Stunting Incidence in Children under Five Years. 10.