



## The relationship between mothers' knowledge of food nutrition and the incidence of stunting at the Padang Rubek community health center

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### ABSTRACT

Nutritional problems in children in Indonesia are a crucial and complex public health issue, where optimal nutrition from an early age, especially during the first 1,000 days of life (HPK), is crucial to the quality of a child's growth and development. Various forms of malnutrition, such as undernutrition, severe malnutrition, and low birth weight, are still prevalent in many regions of Indonesia. This study aims to determine the level of mothers' knowledge about nutrition and its impact on stunting rates at the Padang Rubek Health Center in 2025. The type of research used in this study is quantitative research. The research design employs a cross-sectional approach. The study population consists of 297 mothers with infants. The sampling technique used in this study is accidental sampling, with a sample size of 75 individuals. Based on the results of the statistical test using the chi-square test, a p-value of 0.002 ( $p < 0.05$ ) was obtained, indicating a significant association between mothers' knowledge of food nutrition and the incidence of stunting. So, there is a significant association between mothers' knowledge of food nutrition and the incidence of stunting.

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### 1. Introduction

Nutrition issues among children in Indonesia are a crucial and complex public health issue, where optimal nutrition from an early age, particularly during the first 1,000 days of life (HPK), is crucial to the quality of a child's growth and development. Various forms of malnutrition, such as undernourishment, malnutrition, and underweight, are still commonly found in many regions of Indonesia. This situation is exacerbated by socioeconomic factors, suboptimal childcare practices, and limited access to healthcare services and nutritious food. If not addressed promptly, these issues can have long-term impacts on children's health and quality of life, including contributing to growth disorders such as stunting (KEMENKES, 2018).

The World Health Organization (WHO (World Health Organization), 2025) states that there are approximately 148.1 million children under the age of 5 who are too short for their age (stunting), 45.0 million who are too thin for their height (wasting), and 37.0 million who are too heavy for their height (overweight). The stunting rate in Indonesia remains quite high at 21.5% or 5.9 million people, according to the results of the 2023 Indonesia Health Survey (SKI). Meanwhile, the stunting prevalence in Aceh is 29.4% or 441,000 people (SKI (Survei Kesehatan Indonesia), 2023).

Based on data from the Nutrition Implementation Team (TPG) and the Community-Based Nutrition Recording and Reporting System (EPPGBM) in March 2024, there were 334 infants with stunting in Nagan Raya District, Aceh Province. These cases are spread across 15 health center work areas, including the Padang Rubek Health Center, which recorded 12 stunted infants. Meanwhile, in April 2025, data compiled from the same source showed an increase in the number of cases to 462 infants experiencing stunting (Dinas Kesehatan Nagan Raya, 2025).

According to the Ministry of Health (KEMENKES, 2020), stunting is a chronic malnutrition problem caused by inadequate nutrient intake over an extended period due to improper feeding practices. Stunting can begin while the fetus is still in the womb and becomes apparent when the child is two years old. Stunting is a condition where a child's height is below the average for their age due to prolonged nutritional deficiency. Children with stunting are at risk of having lower intelligence levels, reduced productivity in adulthood, and increased susceptibility to metabolic diseases such as diabetes and hypertension (KEMENKES, 2020).

Various factors can cause stunting, including long-term inadequate nutrition, recurrent infections, suboptimal parenting, and poor access to clean water, sanitation, and basic health services (KEMENKES, 2018). The National Population and Family Planning Agency (BKKBN (Badan Kependudukan dan keluarga Berencana), 2022) states that the period from pregnancy until a child is two years old is a critical window for determining the quality of a child's growth and development, so nutritional and health interventions during this period must be a top priority in efforts to prevent stunting.

Prevention efforts must be comprehensive, involving specific and sensitive interventions such as providing balanced nutritious food, ensuring complete basic immunizations, nutrition education for pregnant and breastfeeding mothers, and regular growth monitoring at health posts or community health centers (Rahayu et al., 2018). Mothers play a crucial role in ensuring children receive balanced nutrition. Low levels of maternal nutritional knowledge regarding the variety of food types and ingredients can disrupt the growth and development process of infants (Muniroh et al., 2024). Good nutritional knowledge among mothers is expected to enable them to provide food of the appropriate type and quantity according to the child's age and growth needs, allowing the child to grow optimally and avoid issues during their growth period (Qomah et al., 2024). Additionally, mothers with good nutritional knowledge and an understanding of balanced nutrition will prioritize the food consumed by their children to maintain their health and nutritional status. Therefore, the role of mothers is crucial in providing nutritious food to their children (Eka et al., 2020).

(Murti et al., n.d.) research findings indicate that 68.3% of toddlers experience stunting, and only 30.8% of respondents have good knowledge about nutrition. (Maharani et al., 2023) research findings show that among mothers with high knowledge, 4 individuals (12.9%) experienced stunting, and 10 individuals (43.5%) did not. Those with low knowledge had 27 cases of stunting (87.1%), while 13 cases (56.5%) did not have stunting. Based on the research findings of (Zufriady et al., 2023), it was found that 93.3% of mothers with insufficient knowledge had infants experiencing stunting, while 6.7% of infants had normal nutritional status. Meanwhile, mothers with good knowledge had 58% of their infants in normal nutritional status.

Preliminary studies conducted by researchers found that there were 12 stunted toddlers in 2024, increasing to 14 toddlers in early 2025. Based on interviews with program managers at community health centers, various policies and programs have been implemented, including by the government. (Dinas Kesehatan Nagan Raya, 2025) has launched the "GO START" (Gerakan Orang Tua Asuh Atasi Stunting Kolaboratif) program as a collaborative effort to accelerate the reduction of stunting, targeting adolescent girls, prospective brides, pregnant/breastfeeding mothers, and children aged 0–59 months. Furthermore, in 2024, the Nagan Raya District Health Office allocated a budget of Rp16,500 per infant for 90 days for supplementary feeding (PMT) for stunted infants, managed by health centers and village health workers. However, many children still do not receive optimal nutrition, as evidenced by the ongoing occurrence of stunting. Based on interviews with the Nutrition Program Coordinator at the health center, there are efforts to educate on stunting prevention, including conducting classes for pregnant women and mothers of infants, which is one form of stunting prevention that begins from the

start of pregnancy. From interviews with mothers visiting the health center, out of 6 mothers, only 3 understood nutrition-related issues, while the other 3 understood stunting-related issues.

## 2. Methode

The type of research used in this study is quantitative research with a cross-sectional design. The research was conducted in May 2025 at the Padang Rubek Community Health Center (UPTD Puskesmas Padang Rubek). The population in this study consisted of 297 mothers with toddlers. The sample consisted of 75 people using the accidental sampling technique. The instruments used in this study were questionnaires to measure mothers' knowledge, consisting of 20 questions obtained from a combination of research by (Rachmawati et al., 2022) and (Astari et al., 2023) which had been tested for validity and reliability, and observation sheets for measuring stunting in toddlers, which included measurements of height and weight according to age. Data analysis was performed using the Chi-square test to examine the relationship between variables.

## 3. Results and Analisis

### a. Univariate analysis

Table 1.

Frequency Distribution Based on Respondent Characteristics at the Padang Rubek Community Health (n = 75)

No	Education Level	Frequency	%
1	SMP-SMA	49	64
2	DIII/S1	26	36
No	Job	Frequency	%
1	Non-Workers	15	20
2	Workers	60	80
<b>Total</b>		<b>75</b>	<b>100</b>

Source : Primary Data (Processed, 2025)

Based on the table from 75 respondents, the results show that the majority of mothers (64%) have completed junior high school or high school, and 36% have completed a D3-S1 degree. The results also show that the majority of mothers (80%) are unemployed, while 20% are employed.

Table 2.

Frequency Distribution of mothers' knowledge level about food nutrition at the Padang Rubek Community Health (n = 75)

No	Category	Frequency	%
1	Good	24	32
2	Sufficient	27	36
3	Insufficient	24	32
<b>Total</b>		<b>75</b>	<b>100</b>

Source : Primary Data (Processed, 2025)

From Table 2 above, it can be seen that 24 mothers or 32% had "good" knowledge, 27 mothers or 36% had 'Sufficient' knowledge, and 24 mothers or 32% had "Insufficient" knowledge.

Table 3.

Frequency Distribution of Stunting cases at the Padang Rubek Community Health (n = 75)

No	Category	Frequency	%
1	Stunting	63	83
2	Normal	8	10.7
3	Civil servants	4	5.3
<b>Total</b>		<b>75</b>	<b>100</b>

Source : Primary Data (Processed, 2025)

From Table 3 above, it can be seen that there were 16 toddlers (21%) categorized as stunted and 59 toddlers (79%) categorized as normal.

## b. Bivariate analysis

Tabel 4.  
The Relationship Between Knowledge Level and Stunting Incidence in the Working Area of the Ingin Jaya Community Health Center, Aceh Besar Regency (n = 75)

Knowledge	Stunting Incidence				Total	P-value
	Stunting		Normal			
	F	%	F	%		
Insufficient	11	21.3	13	0	24	32
Sufficient	3	18.7	24	5.3	27	36
Good	2	5.2	22	2.6	24	32
<b>Total</b>	16	21	59	79	75	100

Source : Primary Data (Processed, 2025)

Table 4 above shows that out of 75 mothers of toddlers with “good” knowledge, there were 2 cases (3%) of stunting among toddlers and 22 cases (29%) in the non-stunting category. Then, among mothers of infants with “sufficient” knowledge, there were 3 cases (4%) of stunting among toddlers and 24 cases (32%) in the non-stunting category. And, among mothers with “insufficient” knowledge, there were 11 cases (14%) of stunting among toddlers and 13 cases (18%) in the non-stunting category.

The chi-square test results showed that there was a relationship between mothers' knowledge of food nutrition and the incidence of stunting, with an Asymp. Sig. (2-sided) value of  $0.002 < 0.05$ . Based on the chi-square value, the calculated value was  $12.682 >$  the chi-square table value of  $5.991$ .

## c. Analysis

### 1. Mother's knowledge

The results of the researcher's study show that 24 mothers or 32% had “good” knowledge, 27 mothers or 36% had ‘sufficient’ knowledge, and 24 mothers or 32% had “insufficient” knowledge. Knowledge is generally acquired through formal education, life experiences, and information obtained through the media. An individual's attitudes and perceptions can be influenced by their level of knowledge (Lestari et al., 2024).

Improving mothers' knowledge plays a crucial role in efforts to address stunting issues. Adequate knowledge enables mothers to make choices about nutritious foods, ensuring children's food intake and contributing to improved child nutrition status, thereby helping to achieve healthy growth (Ekawidyaning et al., 2022).

Education is the process of changing the attitudes and behavior of an individual or group of people in an effort to mature humans through teaching and training. The level of parental education greatly influences the growth of toddlers. The level of education will influence food consumption through the selection of food ingredients. Additionally, mothers with lower levels of knowledge about nutrition and child care are also at greater risk of having children who experience stunting. Conversely, the mother's formal education level does not show a significant association with stunting, indicating that formal education does not necessarily reflect the mother's understanding of stunting prevention (Saputra et al., 2025).

Based on educational level, the majority of respondents had a junior high school to high school education, totaling 49 respondents (64%). This data demonstrates that knowledge can be influenced by a mother's education. Preventive behaviors against stunting should always be supplemented by seeking information and sharing experiences in preventing stunting for their children, as differences in nutritional status have varying effects on each child's development. If balanced nutritional needs are not adequately met, the child's growth and development will be hindered (Wardita et al., 2021).

Inadequate mother's nutritional knowledge can be one of the determinants of an infant's nutritional status, as it influences the mother's attitude or behavior in selecting foods for the infant to consume (Murti et al., n.d.). Mothers with inadequate nutritional knowledge tend to provide insufficient nutritional intake for their children, which can lead to nutritional issues such as stunting.

This study aligns with research by (Fitri et al., 2021) which shows that the incidence of stunting in infants aged 12–59 months is closely associated with the mother's level of knowledge. The study results indicate that stunting in infants categorized as very short is predominantly found among mothers with insufficient knowledge, accounting for 70%. The incidence of stunting is dominated by infants categorized as very short. The study results obtained a value of 52 with  $p = 0.02$ . This indicates that the  $p$ -value is smaller than  $\alpha$  (0.05).

In line with the study conducted by (Aghadiati et al., 2023) it also shows that maternal knowledge is associated with stunting in infants. This is demonstrated by the results showing that infants with mothers having insufficient knowledge fall into very short category. According to Puspasari and Andriani, mothers' knowledge of nutrition and child care can influence infants' eating patterns and parenting styles, which in turn can affect infants' nutritional status. If mothers have good understanding, they can choose and provide food for infants that meets both the quantity and quality requirements needed to meet the infants' nutritional needs, ultimately influencing the infants' nutritional status.

## 2. Stunting

Based on the results of the study, it can be seen that 16 toddlers or 21% were categorized as stunted, while 59 toddlers or 79% were categorized as not stunted. Stunting is a condition where a person's height is shorter than the average height of others of the same age. Stunting (short stature) or low height/length for age is used as an indicator of chronic malnutrition, reflecting a history of inadequate nutrition in infants over an extended period (Rahayu, 2018). Various factors can cause stunting, including inadequate long-term nutrient intake, recurrent infections, suboptimal childcare practices, and limited access to clean water, sanitation, and basic healthcare services (Dinas Kesehatan Nagan Raya, 2025).

Preventing stunting is crucial during the golden period, which spans the first 1,000 days of life—from conception until the child is two years old. The role of the family is also highly significant during this phase. This is a critical period that determines how the child will grow and develop into a healthy, intelligent, and optimally developed individual (KEMENKES, 2018).

The results of this study shows that out of 75 mothers of toddlers with “good” knowledge, there were 2 cases (3%) of stunting among toddlers and 22 cases (29%) in the non-stunting category. Then, among mothers of infants with “sufficient” knowledge, there were 3 cases (4%) of stunting among toddlers and 24 cases (32%) in the non-stunting category. And, among mothers with “insufficient” knowledge, there were 11 cases (14%) of stunting among toddlers and 13 cases (18%) in the non-stunting category. From the chi-square test results, it was found that there was a relationship between mothers' knowledge of nutrition and stunting incidence, with an Asymp. Sig. (2-sided) value of  $0.002 < 0.05$ . Based on the chi-square calculated value of  $12.682 >$  chi-square table value of 5.991.

This study aligns with the findings of (Maharani et al., 2023), which reported a  $p$ -value of  $0.000 < 0.05$ , indicating a significant association between mothers' knowledge of nutrition and stunting among infants in the Leuwisari Health Center area of Tasikmalaya District in 2023. The results of (Palupi et al., 2023) study align with this study, where there is a significant association between mothers' knowledge and stunting incidence at the Kawangkoan Health Center, with a  $p$ -value of  $p = 0.01 < 0.05$ . The study conducted by (Hasnawati et al., 2021) also aligns with this study, as the  $p$ -value was  $0.02 < 0.05$ , indicating a significant association between mothers' knowledge and stunting incidence at the Lawawoi Health Center in Sidrap District in 2021.

## 4. Conclusion

Based on the analysis of data and discussion of the results of the study conducted on the relationship between mothers' knowledge of food nutrition and the incidence of stunting at the Padang Rubek Community Health Center in 2025, the following conclusions can be drawn: There is a relationship

between mothers' knowledge of food nutrition and the incidence of stunting at the Padang Rubek Health Center in 2025, with an Asymp. Sig. (2-sided) value of  $0.002 < 0.05$ . Additionally, the calculated chi-square value is 12.682, which is greater than the table chi-square value of 5.591.

## References

- Aghadiati, F., Ardianto, O., & Wati, S. R. (2023). Hubungan Pengetahuan Ibu Terhadap Kejadian Stunting di Wilayah Kerja Puskesmas Suhaid. *Journal of Healthcare Technology and Medicine*, 9(1), 130–137. <https://doi.org/https://doi.org/10.33143/jhtm.v9i1.2793>
- Astari, D. W., Sari, D. K., Hakim, D. R., & Apriliani, F. (2023). Disparitas Stunting di Wilayah Pedesaan dan Perkotaan : Systematic Review. *Health Information : Jurnal Penelitian*, 15(3), 1–15. <https://doi.org/https://myjournal.poltekkes-kdi.ac.id/index.php/hijp/article/view/1320>
- BKKBN (Badan Kependudukan dan keluarga Berencana). (2022). *SSGI 2022 dan Program Percepatan Penurunan Stunting*. <https://warta.bkkbndiy.id/ssgi-2022-dan-program-percepatan-penurunan-stunting/>
- Dinas Kesehatan Nagan Raya. (2025). *Laporan Dinas Kesehatan Nagan Raya*. <https://dinkes.naganrayakab.go.id/>
- Eka, A., Yuneta, N., & Yunita, F. A. (2020). HUBUNGAN ANTARA TINGKAT PENGETAHUAN IBU DENGAN STATUS GIZI BALITA DI KELURAHAN WONOREJO KABUPATEN KARANGANYAR. *Placentum : Jurnal Ilmiah Kesehatan Dan Aplikasinya*, 7(1), 5–10. <https://doi.org/https://doi.org/10.20961/placentum.v7i1.26390>
- Ekawidyani, K. R., Khomsan, A., Dewi, M., Thariqi, Y. A., & Khomsan, A. (2022). *Nutrition Knowledge , Breastfeeding and Infant Feeding Practice of Mothers in Cirebon Regency*. 6(2). <https://doi.org/10.20473/amnt.v6i2.2022.173-182>
- Fitri, N., Didah, Sari, P., Astuti, S., & Nirmala, S. A. (2021). GAMBARAN PENGETAHUAN IBU TENTANG PEMBERIAN ASI DAN MP-ASI PADA BALITA STUNTING USIA 24-59 BULAN. *Jurnal Kebidanan*, 7(1), 37–45. <https://doi.org/10.33024/jkm.v7i1.3096>
- Hasnawati, Latef, S., & Purnama, J. (2021). Hubungan Pengetahuan Ibu dengan Kejadian Stunting pada Balita Usia 12-59 bulan. *Jurnal Pendidikan Keperawatan Dan Kebidanan*, 01(1), 7–12. <https://doi.org/https://doi.org/10.58901/jpkk.v1i1.224>
- KEMENKES. (2018). *Buletin Stunting*.
- KEMENKES. (2020). *Keluarga Bebas Stunting*.
- Lestari, A., Harahap, D. A., & Dhilon, D. A. (2024). Description of Mother ' s Knowledge About Balanced Nutrition in Preventing Stunting in Toddlers in Tanjung Harapan Wilayah Kerja UPT Puskesmas Lipat Kain Tahun 2023. *Evidence Midwifery Journal*, 3(2). <http://repository.universitaspahlawan.ac.id/id/eprint/3014%0A>
- Maharani, C., Shabariah, R., Sari, T. prawita, & Utami, M. D. (2023). Hubungan Pola Pemberian Makan dengan Kejadian Stunting pada Anak Usia 12-36 Bulan di Wilayah Kerja Puskesmas Tegal. *Prosiding Seminar Nasional Penelitian LPPM UMJ*. <https://jurnal.umj.ac.id/index.php/semnaslit/article/view/23770>
- Muniroh, L., Sulistyorini, Y., & Abihail, T. C. (2024). Influential Factors on Maternal Self-Efficacy in Exclusive Breastfeeding Among Tengger Tribe Toddlers. *Jurnal Kesehatan Masyarakat*, 19(4), 550–559. <https://repository.unar.ac.id/jspui/handle/123456789/11260>
- Murti, L. M., Budiani, N. N., Widhi, M., & Darmapatni, G. (n.d.). HUBUNGAN PENGETAHUAN IBU TENTANG GIZI BALITA DENGAN KEJADIAN STUNTING ANAK UMUR 36-59 BULAN. 05, 3–10.
- Palupi, H., Renowening, Y., Mahmudah, H., & Hartono, I. S. (2023). Pengetahuan Ibu Tentang Gizi Berhubungan Dengan Kejadian Stunting Pada Balita Umur 24-36 Bulan. *Jurnal Kesehatan Mahardika*, 10(1), 2–7. <https://doi.org/10.54867/jkm.v10i1.145>
- Qomah, I., Tazkiah, M., & Rahmayanti, R. (2024). The Relationship Between Mother's Knowledge and The Incidence of Stunting in Toddlers in Polindes, Mundar Village South Labuan Aman District, Hulu Sungai Tengah Regency in 2024. *Journal of Health Management and Pharmacy Exploration*, 2(2), 33–42. <https://doi.org/https://doi.org/10.52465/johmpe.v2i2.383>
- Rachmawati, F., Sihombing, Y. A., Septiyani, T., Putri, K. M., Widia, C., Yunike, & Kusumaningrum, A. E. (2022). *Digitalisasi Dalam Perawatan Kesehatan*. Widina Bhakti Persada Bandung.
- Rahayu, A., Yulidasari, F., Putri, A. O., & Anggraini, L. (2018). *STUDY GUIDE - STUNTING DAN UPAYA PENCEGAHANNYA*.
- Saputra, M. R., Rahmaddian, T., & Irwadi. (2025). THE LEVEL OF KNOWLEDGE, ATTITUDES AND PRACTICES OF MOTHERS ON STUNTING IN NAGARI BUKIK KACIAK LUMPO, PESISIR SELATAN DISTRICT. *Nusantara Hasana Journal*, 5(1), 161–169. <https://doi.org/https://doi.org/10.59003/nhj.v5i1.1489>
- SKI (Survei Kesehatan Indonesia). (2023). *Survei Kesehatan Indonesia (SKI) 2023*. <https://www.badankebijakan.kemkes.go.id/hasil-ski-2023/>
- Wardita, Y., Suprayitno, E., & Kurniyati, E. M. (2021). Determinan Kejadian Stunting pada Balita. *Journal of Helath Science*, VI(1), 7–12. <https://doi.org/https://doi.org/10.24929/jik.v6i1.1347>
- WHO (World Health Organization). (2025). *Global Nutrition Targets 2025 Stunting Policy Brief*. 9.

Zufriady, Marconi, A. P., Adam, B. I. F., Zikri, K., Darmane, N. R., Azizah, N. R., Limbong, P., Febrianti, R., Fadila, S., Sahbani, V., & Juwita, Z. (2023). Pengabdian Masyarakat Melalui Sosialisasi Pencegahan Stunting Di Desa Lubuk Agung. *Jurnal Pengabdian Multidisiplin*, 3(2022), 1–5.