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Factors Associated with Accelerated Stunting Reduction among Children Under Five in Designated Quality Family Villages (Kampung KB)

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ABSTRACT

Background: The national target for 2024 is that the prevalence of stunting must be achieved at 14%. The success of Jambi Province in realising the target of accelerating stunting reduction in Muaro Jambi Regency by 8.6%. **Objective:** To determine the factors related to the accelerated reduction in stunting in children under 5 years of age in Muaro Jambi Regency. **Methods:** Cross-sectional. **Sample:** 129 parents with children under five using a purposive sampling technique. The instruments used were questionnaires, observation sheets, and focus group discussion guidelines. The research was conducted from July to November 2023. Univariate and bivariate data analysis using the Whitney test and multivariate using the multiple linear regression test. Results: Of the 129 respondents, it was found that 64 (49.6%) respondents had normal toddlers, 77 (59.7%) respondents had a good parental role, 68 (52.7%) respondents stated that the role of the Family Welfare Empowerment (PKK) mobilisation team was good, 77 (59.7%) respondents stated that the role of nurses/midwives was good and 77 (59.7%) respondents stated that the role of posyandu cadres was good. The most significant bivariate result is the relationship between the role of posyandu cadres and the reduction in stunting, (*p*-value=0.000; OR=13.192) Multivariate **Results:** Among the 129 respondents, it was found that 64 (49.6%) respondents had normal toddlers, 77 (59.7%) respondents had a good parental role, 68 (52.7%) respondents stated that the role of the Family Welfare Empowerment (PKK) mobilisation team was good, 77 (59.7%) respondents stated that the role of nurses/midwives was good and 77 (59.7%) respondents stated that the role of posyandu cadres was good. The most significant bivariate result is the relationship between the role of posyandu cadres and the reduction in stunting, (*p*-value=0.000; OR=13.192) Multivariate results: the most dominant variable in reducing stunting is the role of posyandu cadres (*p*-value=0.000; OR=13.192). **Conclusion:** The acceleration of stunting reduction is more dominant in the role of posyandu cadres and is also inseparable from the role of parents, the role of the PKK driving team, and the role of nurses/midwives.

Keywords: Parental Role; Nurse/Midwife; Stunting; Posyandu Cadres

INTRODUCTION

Stunting is caused by a combination of factors, including inadequate maternal nutrition during pregnancy, low birth weight, insufficient child stimulation and care, recurrent infections, and poor dietary intake. According to the WHO and the Ministry of Health Regulation number 002, children's nutritional status is categorised based on body length or height-for-age index. Children aged 0-60 months with a z-score of < -3 SD are classified as severely stunted, while those with a z-score between -3 SD and < -2 SD are considered stunted (Koomson *et al*., 2024). Additionally, the incidence of stunting is influenced by socio-economic factors of parents and parenting practices, particularly in relation to nutritional needs (Oyenubi & Rossouw, 2024).

Accelerating factors in reducing the incidence of stunting start from adolescence and include couples of childbearing age, pregnancy, breastfeeding, nutrition, environmental sanitation, community, and government awareness. The program that has been prepared has had a positive impact on reducing stunts in Indonesia in

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general. The WHO Conceptual Framework regarding stunting in children is a complex matter involving household, environmental, socio-economic, and cultural influences and the role of society in stunting in children (WHO, 2016). Another factor in accelerating stunting reduction is cadre knowledge and cadre skills in using anthropometry to support the acceleration of stunting reduction (Widiasih *et al*., 2025).

Stunting is a significant nutritional problem affecting toddlers worldwide, including in Indonesia and Jambi Province. In 2020 (Bahrun & Wildan, 2022), the global incidence of stunting was 55%, with Asia contributing significantly to this figure. According to the 2021 Indonesian Nutrition Status Survey (SSGI), the national stunting prevalence in Indonesia was 24.4%. In Jambi Province, the stunting rate was recorded at 22.4%. Muaro Jambi District, in particular, achieved an 8.6% reduction in stunting by 2022, surpassing the national target. However, among the 11 cities and districts in Jambi Province, only two districts have successfully reduced stunting rates. Tackling stunting in Jambi Province requires a coordinated effort from all sectors (Badan Kependudukan dan Keluarga Berencana Nasional, 2021).

Previous studies have identified a correlation between community knowledge, parental attitudes, the role of cadres, and the involvement of health workers in reducing stunting rates (Nurlaily & Agustini, 2025; Ramadhan *et al*., 2022).

METHODOLOGY

Research Design and Purposes

This research is quantitative research with a cross-sectional research design. The aim of this research is to determine the factors related to the success of accelerating stunting reduction in Muaro Jambi Regency in 2023 (Creswell, 2009).

Population, Samples and Period

The population in this study consisted of parents of children under the age of five who were affected by stunting in Muaro Jambi Regency in 2023, totaling 160 individuals. The sample included 129 respondents selected using a purposive sampling technique based on health center records. The inclusion criteria were as follows: willingness to participate, cooperation, having children under five years old suffering from stunting, and residing in a Quality Family Village. This research was conducted from July to November 2023.

Instruments

The instrument used in this research was a questionnaire, which comprised several sections: a 20-question section on the role of the family, a 12-question section on the role of the Empowerment of Family Welfare (PKK) driving team, a 21-question section on the role of nurses or midwives, and a 15-question section on the role of the posyandu cadre posyandu cadre (community health care workers). In addition, observations were made on the success of stunting reduction by assessing the height, weight, and nutritional status of children under five, as well as conducting Focus Group Discussions (FGDs) with the PKK driving team and nurses/midwives (Fowler, 2014).

Before the questionnaire was administered, validity and reliability tests were conducted in Jambi City with a sample of 16 respondents. The results of the validity test for the role of parents showed that the *r*-count values (0.503–0.904) were greater than the *r*-table value (0.497), and the reliability test yielded an alpha value of 0.960, which is greater than the acceptable threshold of 0.60. For the PKK role, the validity test *r*-count values (0.873–0.968) were also above the *r*-table value, with a reliability test alpha value of 0.988, exceeding the threshold. The validity test for the role of midwives/nurses showed r-count values (0.512–0.941) greater than the *r*-table value, with a reliability alpha value of 0.970. Similarly, the validity test for the role of posyandu cadres showed *r*-count values (0.553–0.838) above the *r*-table value, and the reliability test alpha value was 0.935.

Furthermore, the measurement of "reduction in stunting (%)" was operationalised using anthropometric

data derived from direct measurements of children's height-for-age. Height data were collected at two points in time: initial stunting status was identified based on recorded height measurements from community health centre (Puskesmas) records, and follow-up measurements were taken during the study period using standardised height meters.

Data Collection

Data collection was conducted directly with respondents, specifically parents of children under five years of age who were stunted, using a questionnaire. Structured interviews were carried out with closed questions directed at the PKK mobilisation team, nurses or midwives, and Posyandu cadres. Direct measurements of children's height were taken using a height meter, and observation sheets were completed, alongside supporting data from the health service and community health centres in Muaro Jambi Regency. The data collection process adhered to ethical principles, including confidentiality, privacy, and self-determination. Respondents provided informed consent by signing a consent form before the study commenced.

Data Analysis

Respondent characteristics were analysed using descriptive statistics. The research variables were analysed univariately to see the frequency distribution of the role of the family, the role of the PKK mobilisation team, the role of nurses/midwives, and the role of posyandu cadres. Bivariate analysis uses the Mann-Whitney U, and multivariate analysis uses a multiple linear regression test to see the dominant factors in the treatment and acceleration of stunting reduction.

Ethical Consideration

The research obtained ethical clearance from the Health Research Ethics Committee of the Ministry of Health, Jambi Polytechnic, Indonesia with reference number LB.02.06/2/962/2023 on 24th August 2023.

RESULTS

Table 1 shows the gender distribution of toddlers. Table 2 shows the average age of toddlers under 5 years.

Table 1: Frequency Distribution of Toddler Gender

Variable	n	Percentage (%)
Gender		
Man	59	45.7
Woman	70	54.3

Table 1 Shows that the majority of children under five are female, namely 70 (54.3%) toddlers.

Table 2: Average Age of Toddlers

	Mean	SD	Minimum	Maximum
Age	28.66	13.086	6	5

The average age of toddlers is 29 months with a standard deviation of 13 months, the minimum age of respondents is 6 months, and the maximum age of respondents is 54 months (Table 2).

Univariate Analysis

Table 3 - Average Reduction in Stunting

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	Mean	SD	Minimum	Maximum
Reducing Stunting (%)	46.441	19.777	0.0	100.0

The average reduction in stunting in this study was 46.4% with a standard deviation of 19.77%.

Table 4: Frequency Distribution of Stunting Incidents and the Roles of Parents, PKK Mobilisation Team, Nurses/Midwives and Posyandu Cadres

Variable	n	Percentage (%)
Stunting Status		
Very Short	20	15.5
Short	45	34.9
Normal	64	49.6
The Role of Parents		
Less supportive	52	40.3
Supportive	77	59.7
The role of the PKK Mobilisation Team		
Less supportive	61	47.3
Supportive	68	52.7
Role of Nurse or Midwife		
Less supportive	52	40.3
Supportive	77	59.7
The Role Of Posyandu Cadres		
Less supportive	52	40.3
Supportive	77	59.7

Out of the 129 respondents, 64 (49.6%) respondents had normal toddlers, 77 (59.7%) respondents had a good parental role, 68 (52.7%) respondents stated that the role of the PKK team was good, 77 (59.7%) respondents stated that the role of nurses or midwives was good, and 77 (59.7%) respondents stated that the role of posyandu cadres was good.

Bivariate Analysis

Table 5: Correlation of Parental, PKK, Nurse/Midwife and Posyandu Cadre Roles with Stunting Reduction

	Variable	n	*p-value*
Reducing Stunting (%)	**The Role of Parents**		
	Less supportive	52	0.027
	Supportive	77	
Reducing Stunting (%)	**The role of the PKK Mobilisation Team**		
	Less supportive	61	0.006
	Supportive	68	
Reducing Stunting (%)	**Role of Nurse or Midwife**		
	Less supportive	52	0.003
	Supportive	77	
Reducing Stunting (%)	**The role of posyandu cadres**		
	Less supportive	53	0.000
	Supportive	76	

The Mann Whitney statistical test found a relationship between the role of parents and reducing stunting (p = 0.027; OR=8.132), the PKK mobilisation team (p = 0.006; OR=7.320), the role of nurses or midwives (p = 0.003; OR=11.059), and the role of posyandu cadres (p = 0.000; OR=13.192) (Table 5).

Multivariate Analysis

Analysis results. Multivariate using Linear Regression Test. The results obtained are as below:

Bivariate Selection

The variables that will be included in the multivariate analysis are variables from the bivariate results that have a p-value <0.25. The following are the results of bivariate selection:

Table 6: Bivariate Selection Results

Stunting	*p*-value
The Role of Parents	0.027
The role of the PKK Mobilisation Team	0.006
Role of Nurse or Midwife	0.003
The role of Posyandu Cadres	0.000

Table 6 shows that the four variables have a *p*-value <0.25 so that these four variables are included in the multivariate model.

Early Models

The initial model for multivariate analysis is as follows:

Table 7: Initial Model

Coefficients[a]					
Model	**Unstandardised Coefficients**		**Standardised Coefficients**	***T***	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	36.558	3.528		10.364	0.000
The Role of Parents	8.132	3.277	0.202	2.481	0.014
The role of the PKK Mobilisation Team	7.320	3.127	0.186	2.341	0.021
Role of Nurse or Midwife	11.059	3.302	0.275	3.350	0.001
The role of Posyandu Cadres	13.192	3.195	0.329	4.129	0.000

Dependent Variable: Reduction in Stunting (%)

Table 7 denotes the variables that were released first were the role of the PKK driving team, the role of parents, the role of midwives, and the role of posyandu cadres.

Final Model

The final model of the multivariate analysis is as follows:

Table 8: Final Model

Coefficients[a]					
Model	**Unstandardised Coefficients**		**Standardised Coefficients**	***T***	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	36.558	3.528		10.364	0.000
The Role of Parents	7.320	3.127	0.186	2.341	0.021
The role of the PKK Mobilis ation Team	8.132	3.277	0.202	2.481	0.014
Role of Nurse or Midwife	11.059	3.302	0.275	3.350	0.001
The role of Posyandu Cadres	13.192	3.195	0.329	4.129	0.000

Dependent Variable: Reduction in Stunting (%)

The most dominant variable in reducing stunting is the role of posyandu cadres (*p*-value = 0.000; OR = 13.192). The group of respondents with a good posyandu cadre role had a 13.192 times higher reduction in stunting when compared to a poor posyandu cadre role (Table 8).

DISCUSSION

Frequency Distribution of Toddler Gender and Average Age of Toddlers

Most of the respondents were early adults (aged 36-45 years). Early adulthood is the period when individuals are likely to have children under five, making it a crucial time for providing proper parenting. At this stage, pregnancy and childbirth are generally not recommended. The majority of mothers of toddlers, or

respondents, had completed high school or equivalent education, which is beneficial in enabling them to receive information on preventing and accelerating the reduction of stunting. A mother's level of education plays a significant role in shaping her behaviour in managing the household, particularly regarding the family's dietary habits (Amoah *et al*., 2024).

Another key aspect is the need to focus on improving the accuracy of stunting data and ensuring sufficient financial resources to support these efforts. When public health centres prioritise maternal health and offer classes for pregnant women, babies, and young children under five, it can lead to significant improvements. Furthermore, when those in charge effectively manage important programmes and regularly evaluate their outcomes, this can contribute to a reduction in stunting rates. Most mothers of toddlers are housewives (IRT); they are able to provide good parenting and have ample time to prepare a balanced diet for their children's growth and development. In general, the employment status of mothers, whether they are working or staying at home, does not significantly impact the incidence of stunting. Working mothers do not necessarily neglect the family's diet due to their busy schedules, and non-working mothers do not always guarantee better nutritional outcomes. The impact largely depends on the individual circumstances (Gbratto-Dobe & Segnon, 2025).

The majority of children under five are female, with an average age of 28.66 months. Gender refers to the differences in form, nature, and biological functions between males and females, which determines their distinct roles in continuing the lineage. Previous research has shown that factors such as the child's gender, age (from pregnancy to five years), and nutritional intake can influence growth and development. For children aged 0 to 5, adequate care is essential for normal growth and development. Toddlers in this age group require attention and proper care to ensure they grow and develop as expected (Gusnedi *et al*., 2023).

Univariate Analysis

The research results showed a 46.4% reduction in stunting, with a standard deviation of 19.77%, and the height measurements of children under five were within the normal range. Stunting is a condition where a child's growth and development are hindered by persistent malnutrition. A child is considered stunted if their height is below the average for their age group (Ndagijimana *et al*., 2024; Supadmi *et al*., 2024).

Several Initiatives Have Been Implemented to Accelerate the Reduction of Stunting, Including:

a) Pregnancy and Maternity: Interventions during the first 1,000 days of life; aiming for integrated quality assurance in ante-natal care; increasing the number of deliveries in medical facilities; establishing programmes providing foods high in calories, protein, and micronutrients; early detection of both infectious and non-infectious diseases; deworming; accelerating the Health Care Card transformation; setting up early breastfeeding initiation and exclusive breastfeeding counselling; and offering family planning services and counselling (Agustin *et al.*, 2024).

b) Toddlers: Coordinating early child development stimulation, planning supplemental feeding activities for toddlers, monitoring their growth, and providing optimal healthcare (Supadmi *et al*., 2024).

The roles of parents, the PKK driving team, nurses or midwives, and posyandu cadres are all crucial in addressing stunting. The role of parents, in particular, can significantly influence children's development in cognitive, affective, and psychomotor domains. The findings of this research align with previous studies (Sey-Sawo *et al*., 2023), which found that when women are more empowered, it is linked to a reduction in undernutrition among children under five in Gambia. This suggests that policies and efforts aimed at empowering women could play a key role in improving child nutrition in the country (Chandra *et al.*, 2021; Ningtias, Kustanti & Sukesi, 2024).

According to research by Miranda *et al*. (2023), there is a need for integrated management between

community health workers, including midwives, nurses, and other health professionals, alongside stakeholders and community involvement. Nursing is a scientific discipline that emphasises comprehensive care. The role of skilled nurses can enhance the quality of health services, as they are integral members of the team providing care for both children and their parents (Berman, Snyder & Frandsen, 2015).

The role of posyandu cadres is crucial in accelerating stunting reduction. This finding aligns with the research conducted by Widiasih *et al*. (2025). The study revealed that the level of knowledge and skills among low-level cadres was 52%, while medium-level cadres demonstrated a knowledge and skill level of 48%, particularly in conducting anthropometric assessments. Cadre assistance is essential in accurately using and interpreting anthropometric results. Studies show that when health education is provided to cadres, it can significantly enhance their knowledge. A slight difference was observed between the control group and the treatment group.

Bivariate Analysis

The Relationship Between the Role of Parents and the Acceleration of Stunting Reduction: There is a significant relationship between the role of parents and the acceleration of stunting reduction, with a p-value of 0.027 and an odds ratio (OR) of 8.132. Parents of children with stunting play a crucial role in providing appropriate parenting, particularly by ensuring balanced nutrition. To accelerate stunting reduction, in addition to effective parenting, parents must take their children to the posyandu every month to receive services such as growth and development assessments, counselling, and active communication with healthcare workers (Supadmi *et al*., 2024). The mother, in particular, is the primary caregiver, consistently monitoring the child's growth and development. There are several actions mothers can take to prevent stunting (Manoppo & Huriah, 2022). From the pregnancy period, mothers can fulfil their nutritional needs, attend pregnancy check-ups, breastfeed their children for the first two years, provide complementary feeding along with breast milk for children over six months, ensure the child visits the posyandu for immunisations, additional food, and growth assessments, and provide developmental stimulation (Amoah *et al*., 2024).

There is a significant relationship between the role of the PKK driving team and the acceleration of stunting reduction, with a *p*-value of 0.006 and an odds ratio (OR) of 7.320. This indicates that the PKK driving team plays a key role in accelerating stunting reduction, which can be observed through stunting-sensitive interventions. Families and the general public are both subjects and objects in the implementation of these nutrition-sensitive interventions. The findings of the study suggest a correlation between undernutrition among children under five in The Gambia and the empowerment of women. This highlights that improving child nutrition in the country will be facilitated by policies and programmes designed to empower women (Sey-Sawo *et al.*, 2023).

The Relationship between the Role of Nurses or Midwives with the Acceleration of Stunting Reduction:

The research results show that there is a relationship between the role of nurses and the acceleration of stunting reduction with *p* value = 0.003; OR=11.059. The role of nurses that can be played to accelerate stunting reduction is: 1). Providing care, the focus of nursing interventions is aimed at helping children and families improve optimal nutritional status. 2). Educator. Nurses as educators provide education about exclusive breastfeeding, providing MP-ASI, monitoring children's growth and development, environmental sanitation and cleanliness, and feeding children with a balanced nutritional intake. 3). Counseling: Nurses as counselors provide counseling and support to families about healthy living and meeting the nutritional needs of toddlers in accordance with the government program for nutritionally aware families. 4). Family advocate, as a family defender in several matters such as determining their rights as a client. 5). Collaboration: Patient nursing services are not carried out independently by the nursing team but must involve other health teams such as doctors, nutritionists, psychologists, and others. 6). Preventing disease (Miranda *et al*., 2023; Andayani *et al.*,

2022). The results showed that there was a role for nurse midwives in reducing stunting.

The Relationship between the Role of Posyandu Cadres and the Acceleration of Stunting Reduction:

The research results showed that there was a relationship between the role of posyandu cadres and the acceleration of reducing stunting with a *p*-value = 0.000; OR=13.192. Cadres are local community members who are elected and appointed by the community and can work voluntarily. Before being appointed as a cadre, a selection process is conducted with the requirement of being able to read and write as well as being able to gather the community during the implementation of the posyandu. The duties of the cadre on the day of the posyandu are registration and maternal and child health services. Guiding parents in recording various measurement results and monitoring the condition of toddlers, Providing counseling on toddler care patterns, Acknowledging parents who have attended the posyandu and asking them to return on the next posyandu day, Informing parents to contact the cadre if there are any issues related to their toddlers, Recording the activities carried out on the day the posyandu is open (Muslimin & Mursyidah, 2024). Posyandu cadres are people who volunteer to accelerate stunting reduction. There is a need to strengthen the role of cadres in the community in assisting families with the risk of stunting and being diagnosed with stunting (Astikasari & Sumardiyon, 2023).

Multivariate Analysis

The variable role of posyandu cadres is the most dominant factor in reducing stunting. The group of respondents who had a good cadre role showed a higher tendency to reduce stunting up to 13.192 times compared to the group who had a poor cadre role. This illustrates the positive contribution and great effectiveness of the role of posyandu cadres in tackling stunting in Muaro Jambi Regency.

The role of posyandu cadres is a key factor in reducing stunting in Muaro Jambi Regency because they carry out several key functions that significantly support efforts to prevent and overcome stunting. First, Posyandu cadres act as agents for monitoring children's growth, carrying out regular weight measurements, and monitoring the development of toddlers. With this monitoring, cadres can detect stunting cases early, enabling quick intervention. Second, Posyandu cadres function as nutrition instructors, providing education to mothers about the importance of balanced nutritional intake for children's optimal growth.

Home visits by posyandu cadres to provide additional food to stunted toddlers is an effective strategy in efforts to overcome nutritional problems at the community level. By bringing additional food rich in essential nutrients, Posyandu cadres can provide the necessary supplements to improve the nutritional status of stunted toddlers. This allows cadres to provide more appropriate and personalised solutions, such as providing practical advice regarding eating patterns that suit the needs of children and the family environment (Mustofa *et al*., 2024).

Apart from that, Posyandu cadres also play a role in providing education to pregnant women regarding the importance of adequate nutritional intake during pregnancy. Adequate nutrition during pregnancy is a key factor in avoiding stunting in children. By providing understanding to pregnant women, Posyandu cadres can help prevent stunting from occurring in the womb.Previous research entitled Efforts to Increase Cadre Capacity on Stunting Prevention showed that cadres who have been trained can increase performance mobilisation and assist families in overcoming stunting (Irdawati *et al*., 2024).

The results of the research show that the role of cadres is the most dominant variable in reducing stunting in Muaro Jambi Regency; therefore, it is hoped that the Muaro Jambi Regency Health Service will increase support and training for Posyandu cadres. More intensive and specific training related to monitoring toddler growth, nutritional education, and communication skills can strengthen the role of cadres in providing education to the community. Apart from that, it is necessary to design an incentive program or recognition of

the contribution of cadres in handling stunting as a form of appreciation for their dedication.

Limitation

The findings of this study may have limited applicability beyond the Muara Jambi Regency, as the research was context-specific. While the study has potential implications for the care and prevention of stunting in children, applying these results as policy in different regions may not fully account for local variations in resources, infrastructure, and community needs. Additionally, the complex and multifactorial nature of stunting requires coordinated efforts from multiple sectors, including government and private institutions. The absence of a comprehensive, multi-sectoral approach and structured education and health promotion strategies may hinder the broader application and effectiveness of stunting prevention initiatives.

CONCLUSION

This study has identified the critical role of posyandu cadres in accelerating stunting reduction in Muaro Jambi Regency. Their contributions, alongside the efforts of parents, nurses, and the PKK mobilisation team, have proven essential in improving children's health. However, further research is needed to optimise these efforts, particularly through advanced training for cadres, the integration of technology for monitoring child growth, and the development of mobile or web-based platforms for nutritional guidance. Longitudinal studies and the expansion of successful interventions to other regions could provide valuable insights into the sustainability and impact of these strategies.

Additionally, future studies should explore policy interventions that strengthen community-based health programs, empower local cadres, and integrate multisectoral approaches to address the root causes of stunting. By focusing on these areas, future efforts can continue to build upon the successes achieved, further improving the nutritional status and overall well-being of children in Muaro Jambi Regency and beyond.

Conflict of Interest

The authors declare that they have no competing interests.

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REFERENCES

Agustin, D., Noviyanti, L., Andini, S. P., & Agilia, S. (2024). Analysis of Relationship of Breastfeeding Behaviour in Working Mothers and The Incident of Stunting. *Journal of Educational Innovation and Public Health, 2*(3), 207-215. https://doi.org/10.55606/innovation.v2i3.3113

Amoah, W. W., Kobi, D., Tabong, P. T.-N., Kukeba, M. W., Alhassan, Y., Achaliwie, F., Amoah, A., & Adugbire, A. B. (2024). Factors contributing to malnutrition among children under 5 years at St. Elizabeth Catholic Hospital, Ahafo Hwidiem. *Clinical Medicine Insights: Pediatrics, 18*. https://doi.org/10.1177/11795565231222716

Andayani, S. R. D., Maulidiyah, F. K., Imaningsih, A. N., & Fitria, N. W. (2022). Upaya Pencegahan Stunting Berbasis Aplikasi Peran Penting [Perawat Dan Bidan Peduli Stunting) Di Kabupaten Jombang (Application-Based Stunting Prevention Efforts: The Important Role of Nurses and Midwives in Stunting Care in Jombang Regency]. *Jurnal Ilmiah Keperawatan Scientific Journal of Nursing,* 8(4), 592–598. https://doi.org/

10.33023/jikep.v8i4.1294

Astikasari, N. D., & Sumardiyon. (2023). Posyandu cadres on capacity building: Prevent stunting by improving nutrition during the first 1000 days of life. *Journal of Global Research in Public Health, 8*(1), 145–150. https://doi.org/10.30994/jgrph.v8i1.446

Badan Kependudukan dan Keluarga Berencana Nasional. (2021). *Rencana Aksi Nasional Percepatan Penurunan Angka Stunting Indonesia Tahun 2021–2024 [National Action Plan to Accelerate the Reduction of Stunting Rates in Indonesia 2021–2024].* Retrieved from: https://peraturan.bpk.go.id/Download/219987/Peraturan%20BKKBN%20No%2012%20Tahun%202021.pdf?utm_source=chatgpt.com. Accessed on 28th November 2023.

Bahrun, W., & Wildan, W. (2022). Stunting in Indonesian Children and Its Contributing Factors: *Study through Bibliometric Analysis, 16*(2), 1693-1602. https://doi.org/10.21009/JPUD.162.07

Berman, A. T., Snyder, S., & Frandsen, G. (2015). *Kozier & Erb's Fundamentals of Nursing: Concepts, Process, and Practice (10th) Edition*. Macmillan Heinemann, UK.

Chandra, B. R., Darwis, R. S., & Humaedi, S. (2021). Peran pemberdayaan kesejahteraan keluarga (PKK) dalam pencegahan stunting [The role of family welfare empowerment (PKK) in preventing stunting]. *Focus: Jurnal Pekerjaan Sosial, 4*(2), 107-123. https://doi.org/10.24198/focus.v4i2.35060

Creswell, J. W. (2009). Research designs: Qualitative, quantitative, and mixed methods approaches. https://www.ucg.ac.me/skladiste/blog_609332/objava_105202/fajlovi/Creswell.pdf. Accessed on 24th November 2023.

Fowler Jr, F. J. (2013). *Survey research methods*. Sage Publications, USA.

Gbratto-Dobe, S. A., & Segnon, H. B. (2025). Is mother's education essential to improving the nutritional status of children under five in Côte d′ Ivoire?. *SSM-Health Systems, 4*. https://doi.org/10.1016/j.ssmhs.2025.100056

Gusnedi, G., Nindrea, R. D., Purnakarya, I., Umar, H. B., Andrafikar, Syafrawati, Asrawati, Susilowati, A., Novianti, Masrul, & Lipoeto, N. I. (2023). Risk factors associated with childhood stunting in Indonesia: A systematic review and meta-analysis. *Asia Pacific Journal of Clinical Nutrition, 32*(2), 184–195. https://doi.org/10.6133/apjcn.202306_32(2).0001

Irdawati, I., Arifah, S., Muhlisin, A., Kusumawati, Y., Siti Zulaekah, A., Nugrahwati, E., Putri, N. F., & Syaiful, A. A. (2024). Efforts of Increase Cadre Capacity about Stunting Prevention. *MethodsX, 13*(April), 1–6. https://doi.org/10.1016/j.mex.2024.102720

Koomson, I., Afoakwah, C., & Twumasi, M. A. (2024). Racial diversity, child stunting and underweight: Policies design and promotion in South Africa. *Journal of Policy Modeling, 46*(6), 1243–1262. https://doi.org/10.1016/j.jpolmod.2024.05.009

Manoppo, M. W., & Huriah, T. (2022). Nutrition intervention to prevent stunting in children aged 6-59 months. *Jurnal Aisyah: Jurnal Ilmu Kesehatan, 7*(S2), 147–154. https://doi.org/10.30604/jika.v7is2.1422

Miranda, A. V., Sirmareza, T., Nugraha, R. R., Rastuti, M., Syahidi, H., Asmara, R., & Petersen, Z. (2023). Towards stunting eradication in Indonesia: Time to invest in community health workers. *Public Health Challenges, 2*(3), 1–6. https://doi.org/10.1002/puh2.108

Muslimin & Mursyidah, L. (2024). The Role of Posyandu Cadres in Reducing Stunting in the Community. *Indonesian Journal of Cultural and Community Development, 15*(3). https://doi.org/10.21070/ijccd.v15i3.1117

Mustofa, M. Z., Mukhlisin, M., Suryana, Y., Kamal, M. A., Humairoh, L. N., Syiami, A. R., ... & Wijayanti, I. (2024). Peran Posyandu Dalam Upaya Penurunan Angka Stunting di Desa Sidomulyo [The Role of Integrated Health Posts (Posyandu) in Efforts to Reduce Stunting Rates in Sidomulyo Village]. *Inovasi Sosial: Jurnal*

Pengabdian Masyarakat, 1(4), 74-85. https://doi.org/10.62951/inovasisosial.v1i4.758

Ndagijimana, A., Nduwayezu, G., Kagoyire, C., Elfving, K., Umubyeyi, A., Mansourian, A., & Lind, T. (2024). Childhood stunting is highly clustered in Northern Province of Rwanda: A spatial analysis of a population-based study. *Heliyon, 10*(2). https://doi.org/10.1016/j.heliyon.2024.e24922

Ningtias, I. S., Kustanti, A., & Sukesi, K. (2024). The role and participation of family welfare empowerment cadres (PKK) in stunting prevention: A case study in Bojonegoro. *International Journal of Community Service Learning, 8*(1), 1-8. https://doi.org/10.23887/ijcsl.v8i1.76160

Nurlaily, S., & Agustini, R. D. (2025). Stunting Among Children Aged 6-59 Months in Gorontalo, Indonesia. *Jurnal Kesehatan Masyarakat, 20*(3), 523-533. https://doi.org/10.15294/kemas.v20i3.13539

Oyenubi, A., & Rossouw, L. (2024). Is the impact of the South African child support grant on childhood stunting robust? An instrumental variable evaluation. *Children and Youth Services Review, 164(*January). https://doi.org/10.1016/j.childyouth.2024.107829

Ramadhan, K., Entoh, C., & Nurfatimah, N. (2022). Peran Kader dalam Penurunan Stunting di Desa [The Role of Cadres in Reducing Stunting in Villages]. *Jurnal Bidan Cerdas, 4*(1), 53–61. https://doi.org/10.33860/jbc.v4i1.409

Sey-Sawo, J., Sarr, F., Bah, H. T., & Senghore, T. (2023). Women's empowerment and nutritional status of children in the Gambia: further analysis of the 2020 Gambia demographic and health survey. *BMC Public Health, 23*(1), 1–13. https://doi.org/10.1186/s12889-023-15494-1

Supadmi, S., Laksono, A. D., Kusumawardani, H. D., Ashar, H., Nursafingi, A., Kusrini, I., & Musoddaq, M. A. (2024). Factor related to stunting of children under two years with working mothers in Indonesia. *Clinical Epidemiology and Global Health, 26*(January). https://doi.org/10.1016/j.cegh.2024.101538

Widiasih, R., Sunjaya, D. K., Rahayuwati, L., Rusyidi, B., Ermiati, Sari, C. W. M., Mardani, Rusdi, & Tung, S. E. H. (2025). Evaluating the knowledge, roles, and skills of health cadres in stunting prevention: A mixed-method study in Indonesia. *Belitung Nursing Journal, 11*(3), 330–339. https://doi.org/10.33546/bnj.3722

World Health Organization (WHO) (2016). *Childhood Stunting: Context, Causes and Consequences*. Retrieved from: https://www.who.int/publications/m/item/childhood-stunting-context-causes-and-consequences-framework?utm_source=chatgpt.com. Accessed on 18th August 2023.