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Effect of Recovery Supplementary Feeding on Height Improvement in Stunted Toddlers: A Study at Mijen Health Center, Semarang, Central Java

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Background: The level of child malnutrition in Indonesia is considered to be high in the world. Some efforts were granted including the provision of supplementary food in some areas of Indonesia. The effort is chosen as a step to fulfill the need for nutrition in children. Objectives: This study aims to determine the relationship between providing supplementary food recovery and height gain in stunted toddlers at Mijen Health Center, Semarang City, Central Java. Method: This research employed a descriptive quantitative approach with a cross-sectional survey design. A checklist was used in the study. The sample consisted of 50 stunted toddlers selected through saturation sampling. Statistical analysis utilized the Chi-Square test with a confidence level of 95%. Results: As many as 52% of respondents have spent the recovery supplemental feeding (PMT) consumed for 60 days. The height of toddlers given recovery PMT increased, which previously had an average Z-score of -2.03, then increased to -1.86. Based on the results of the Chi-Square test, a P-Value of 0.009 (<0.05) can be interpreted that there is a significant relationship because the P-Value is <0.05; OR of 5,500 can be interpreted that recovery supplements that are not eaten out have a 5,500 times greater risk of no increase in height of stunted toddlers compared to toddlers who consume recovery PMT. Conclusion: This study concludes that there is a relationship between the provision of recovery supplementary food and height gain in stunted toddlers in the operational area of Mijen Health Center, Semarang City, Central Java.

Keywords : The Provision of Recovery Supplementary Food, Toddler's Height, Stunting

INTRODUCTION

Nutritional balance during the development and growth of children under five is very important. In the book "First 1,000 Days", the New South Wales government (2014) states that toddlers desperately need good nutrition because they need more of it to develop and develop. Growth is a term for a child's increasing body size, especially height. Development, however, refers to an increase in a person's ability to perform various functions, such as intelligence, independence, emotional-social, communication, speech, and motor and sensory abilities (Akbar et al., 2020). Three regions in 2022 experienced very high rates of stunting: West and Central Africa (32.5%), East and South Africa (32.3%), and South Asia (31.8%). On the other hand, two regions in Europe, Central Asia, and North America have low rates of total stunting (UNICEF, 2023).

The Indonesian Nutrition Status Survey (SSGI), organized by the Ministry of Health, showed a decrease of 2.8 percent for children under the age of five who are stunted in Indonesia to 21.6 percent in 2022 (Annur, 2023a). Despite progress in recent years, the rate of child malnutrition in Indonesia is still among the highest in the world. Of the ten toddlers, one experienced wasting, and three were stunted. According to UNICEF Indonesia (2022), the main focus in 2022 will be on the problem of maternal and child malnutrition, especially to prevent stunting. According to SSGI data from the Ministry of Health, East Nusa Tenggara province has the highest number of stunted toddlers in 2022 at 35.3%, and Bali province has the lowest number of stunted toddlers at 8% (Annur, 2023a).

Central Java is one of 18 provinces where the stunting rate of children under five is higher than the national average, according to the Indonesian Nutrition Status Survey (SSGI). Among provinces across the country, Central Java has the highest stunting percentage, 20.8%. The number of stunted children under five in Central Java decreased by 0.1 points from the previous year. According to the Central Java Ministry of Health, problems such as poverty, gender equality, stunting, malnutrition, clean water and sanitation, electrification rates of AKI/AKB SD/SLTP/SLTA, economic growth rates of infrastructure PTP figures, Gini index/sustainable urban and settlement gaps, livable houses, waste management, greenhouse gas emissions, disaster management, and marine ecosystems need to be prioritized by the SDGs (Hidayat Fahrul, 2023).

The total number of stunted toddlers in Central Java, Semarang City is 10.4% (Annur, 2023b). Semarang City has 80,734 children under five, with 1.15% stunting (926 children under five) (Semarang City Health Office, 2023a). According to data as of October 2023 in Mijen District, there are 48 stunted toddlers (Semarang City Health Office, 2023a).

The data mentioned above shows that stunting still occurs. The Ministry of Health has been working

to resolve it. The Ministry of Health of the Republic of Indonesia offers a variety of programs, including the Healthy Indonesia Program with a Family Approach (PIS-PK), Supplementary Feeding (PMT), and the First 1000 Days of Life (HPK). (Ministry of Health of the Republic of Indonesia, 2018). Safe and high-quality support activities and supplementary foods should be carried out to meet the needs of toddlers. Supplemental Feeding (PMT): Counseling and recovery PMT are the two types of PMT. These two strategies, although they have different goals, aim to meet the nutritional needs of children under the age of five (BKKBN, 2019). In recent years, supplemental feeding has begun. The benefit of providing supplementary food is a reduction in stunting rates. In addition, after the provision of additional food, monitoring, and evaluation continue to be carried out following the established service standards. This includes measurements of weight, height, LiLa, and other related cases (Sulistiani et al., 2023).

Research from Komalasari, et al. (2021) found that there was a relationship between the provision of recovery supplementary feeding (PMT-P) and weight gain for stunted toddlers at the Bulok Health Center, Tanggamus Regency, Lampung in 2020. The results of the study showed that supplemental feeding led to an increase in the weight of toddlers. This study states that three factors that can help prevent stunting in toddlers are dietary discipline, environmental cleanliness, and food variety (Komalasari et al., 2021). Research conducted by (Brahmani et al. 2023) showed that there was a correlation after giving the supplement, to the study's findings that the height of toddlers differed significantly before and after receiving the supplement. Based on research Erty Suksesty (2020) that after two toddlers from stunting became normal, a mixture of mung bean juice and boiled chicken eggs improved the nutritional status of BB/U and BB/TB toddlers, but had no impact on the TB/U category. And 1,123 out of 1,367 toddlers experienced improvements in their diet (Semarang City Health Office, 2023b). However, from the amount of diet, the provision of good supplementary food by stunted toddlers is not proportional to toddlers who pass stunting.

METHODOLOGY

This study uses a descriptive quantitative approach with a cross-sectional survey design. This research was conducted using a checklist. The population in this study is all stunted toddlers at the Mijen Health Center, Semarang City, Central Java. The sampling technique used was a saturated sample of 50 respondents The inclusion criteria in this study were toddlers aged 6-59 months with stunted conditions who lived in the working area of the Mijen District Health Center, Semarang City, Central Java. The exclusion criteria in this study are: Stunted toddlers who have HIV/AIDS, Stunted toddlers who come after the start of the study, Stunting toddlers who have congenital abnormalities. The sample used was 50 stunted toddlers taken from the saturated sample technique. The type of data collected is secondary data. Secondary

data was obtained through the medical records of stunted toddlers in the working area of the Mijen Health Center, Semarang City. Data collection is carried out from the results using a checklist that is filled in based on the results of existing secondary data and re-identified. The analysis used in the statistical test is Chi-Square with a 95% confidence degree (α = 5%).

RESULT AND DISCUSSION

Research on the provision of supplementary food to recover from the increase in height of stunted toddlers at the Mijen Health Center, Semarang City was carried out from January to February 2024. The sample in this study was carried out using the saturated sample technique. The entire population was used as a sample.

Table 1. Characteristics of Respondents

Characteristics of Respondents	Frequency	Percentage
Gender		
Man	19	38.0
Woman	31	62.0
Maternal Education		
Elementary School	8	16.0
Junior High School	17	34.0
Senior High School	22	44.0
Bachelor's degree	3	6.0
Father's Education		
comorbid conditionElementary School	2	4.0
Junior High School	17	34.0
Senior High School	23	46.0
Bachelor's degree	8	16.0
Mother's Work		
Not Working	40	80.0
Self-employed	2	4.0
Private Employees	2	4.0
Others	2	4.0
Merchant	4	8.0
Father's Work		
Laborer	22	44.0
Self-employed	5	10.0
Private Employees	14	28.0
Others	9	18.0
Comorbidities		
No Comorbidities	45	90.0
comorbid condition	5	10.0

History of exclusive breastfeeding		
Yes	29	58.0
Not	21	42.0
CTPS habits		
Always	43	86.0
Sometimes	7	14.0
Total	50	100.0

Based on the data in Table 1. It can be seen from the total number of samples as many as 31 respondents (62%), the majority of whom are women. While the rest were male sex as many as 19 respondents (38%). The education of mothers and fathers is the most educational, namely 22 (44%) and 23 (46%) respectively. The most mother's job is not working as many as 40 respondents (80%) and the father's job is mostly working as a laborer for 22 people (44%). Most of the respondents did not experience comorbidities (90%). Most of the respondents have also been given Exclusive Breastfeeding, namely 29 respondents 58%. Most of the respondents also always practice the habit of washing their hands (86%).

Results (Anggraeni et al., 2020) corroborate this, which suggests that the sexes differ significantly. In addition, the study stated that any child, regardless of gender, can be at risk of stunting, and gender is only used as the identity of the sample in the study. In addition, there are regulations on food consumption in some areas of society. Women and girls are more vulnerable to uneven distribution of food within the family because their needs are prioritized lower than those of men (Burhan et al., 2023).

Based on the data in Table 1. It can be seen that 8 respondents (16%) have completed their last education at the primary school level based on Table 4.3 above. There were 17 respondents (34%) at the junior high school/MTs level. The highest number of respondents was 22 respondents (44%) at the SMA/SMK/MA level. As for those who have held a bachelor's degree, there are 3 respondents (6%). The majority of mothers in this study have a high school education, which is consistent with research conducted by (Amalia et al., 2022).

The main factor is the level of education of the mother. The lack of education impacts mothers' understanding of prenatal care, postpartum care, and nutrition for themselves and their children. (Nurbaety, 2022). Poor education given to mothers during pregnancy will also have an impact on their knowledge of good nutrition. Pregnant women who are malnourished during pregnancy are at higher risk of complications. The fetus will also be malnourished, and nutritional deficiencies during pregnancy will cause the child to be malnourished as well. In addition, mothers who are not educated enough may have difficulty choosing cheap foods that are rich in nutrients (Sukmawati & Sirajuddin, 2023).

Based on the data in Table 1. It can be seen that 2 respondents (4%) have a recent degree from an elementary or MI educational institution, as shown in Table 4.4. Then, 17 respondents (34% of the total) were from the junior high school/MTs level. The number of respondents was the highest with 23 respondents (46%) of the total number at the high school, vocational, or MA level. The 8 respondents (16%) have held a bachelor's degree. The majority of fathers in the study had completed high school, which is in line with the findings of Putri et al. (2021).

The level of education of parents affects the health of their children. Having a lot of information is another characteristic of a highly educated individual (Esyuananik et al., 2021). The economic position of the family increases along with the father's education level because a higher level of education will increase the father's earning potential and the family's purchasing power (Burhan et al., 2023).

Based on the data in Table 1. It is known that 40 respondents (80%) do not work. After that, 4 respondents (8% of the total) worked in the trading sector. In addition, 2 respondents (4%) are self-employed; two respondents are employees in the private sector; and two respondents came from different professions. Non-working mothers dominated among respondents, according to their occupations. The majority of mothers do not work, according to a study conducted by (Roma Uli Pangathousands et al. 2022).

Parenting is an indirect cause of stunting. If a mother has a good parenting style and takes stunting prevention measures from an early age, the possibility of her child being stunted will be reduced. Ineffective parenting in many ways, including encouraging unhealthy eating habits, can hinder a child's growth. It is difficult for parents to feed their children while nurturing them because there is not enough time to do so. Many parents don't pay attention to the type of food their children consume because they work outside the home and often take care of their children by others (Raden et al., 2022). Mothers who do not work will tend to be able to focus on the type of food and be on time in feeding their children so that their children are expected to be able to fulfill their nutrition.

Based on the data in Table 1. It is known that the most types of work of respondents are labor, which is as many as 22 respondents (44% of the total). Furthermore, 5 respondents (10%) are self-employed. Thirteen respondents (28%) in the data were private employees. In the data, 9 respondents (18%) work in other professions. (Utami et al. 2022) found that fathers' jobs were mostly laborers, and this is consistent with this study.

According to a study cited by Hatril in (Rahayu et al. 2018) in (Neherta et al. 2023) said that families with fathers who work as permanent workers have a better average diet than households with fathers who only work as day laborers. Research that has been conducted by Alibbirwin in 2018 and cited in (Neherta et al. 2023) showed that children whose fathers worked as workers or self-employed tended to have less nutrition than children whose fathers did not work.

Based on the data in Table 1. It is known that out of 50 respondents, 45 respondents (90%) do not have comorbidities. Pulmonary TB was found in only five respondents (10%). The findings of this study are consistent with the study of (Rosliana et al. 2020) which also found that the majority of toddlers did not have comorbidities.

According to WHO (2012) in (A. A. Amalia et al. 2024), stunting can also be caused by infections; However, the severity, duration, and recurrence of infections in infants and toddlers, as well as whether there are any nutrient deficiencies associated with growth, affect this. Five respondents were found to have comorbidities, the disease suffered from pulmonary tuberculosis. TB symptoms are not the same as adults. Common diseases among children are underweight and refusal to eat (Simbolon, 2019).

Based on the data in Table 1. It is known that 29 respondents (58%), the majority have given exclusive breastfeeding, as shown in Table 4.8. However, 21 respondents (42%) did not receive exclusive breastfeeding. The majority have been exclusively breastfed in line with the findings of (Lindawati et al. 2023). There are several benefits for mothers and newborns when they give exclusive breastfeeding. Because of its optimal nutritional content, easy-to-digest, cheap, and practical, breast milk is an excellent natural baby food for babies. In addition, due to the better absorption of calcium compared to breast milk replacer, breast milk promotes the growth of the baby, especially in terms of height (Lindawati et al., 2023).

Exclusively breastfeeding for the first six months of a baby's life is enough, said the Indonesian Ministry of Health (2012) quoted in (Nurbaety, 2022). The importance of exclusive breastfeeding becomes apparent at this age. The digestive system can only process breast milk at this stage, therefore no solid food can be digested. In addition, because the kidneys are not perfect, the excretion of the remaining food burning cannot be done properly. Exclusive breastfeeding has many advantages, including strengthening the immune system, providing necessary nutrients, being simple, inexpensive, clean, and healthy, and strengthening the bond between mother and child.

Based on the data in Table 1. It is known that 43 respondents (86%) consistently wash their hands with soap. At the same time, 7 respondents (14%) found that they sometimes wash their hands. This is in line with the findings of (Syam & Sunuh, 2020), which found that the majority of people now regularly wash their hands with soap (CTPS). Drinking water sources, the physical quality of water, latrine ownership, and hygienic habits (e.g., how often and how often a person washes their hands) are all part of water, sanitation, and hygiene (WASH) (S. I. Putri & Hedo, 2023). According to Apriluana and Fikawati (2018), when sanitation is inadequate, the prevalence of infectious diseases such as respiratory infections and diarrhea can increase stunting rates (S. I. Putri & Hedo, 2023).

Table 2. Distribution of frequency of supplementary feeding recovery at Mijen health center

PMT	Frequency	Percentage
Not Exhausted	24	48.0
Finish	26	52.0
Total	50	100.0

Based on table 2. It should be noted that supplementary feeding was carried out for 60 days, with the result that 26 respondents (52% of the total) ate all supplementary recovery foods. Meanwhile, 24 respondents (52% of the total) did not. The World Health Organization (WHO) reports that nutritional problems are the cause of almost half of infant and child deaths under the age of five. The risk of death for a child is 13 times greater when undernourished compared to a healthy child. According to the World Health Organization (WHO), 54% of infant and toddler deaths are caused by malnutrition (Evitasari, 2021). One of the important parts of a toddler's growth is nutrient intake. Foods rich in carbohydrates, fats, proteins, zinc, and calcium are ideal for a toddler's diet (Jamaluddin et al., 2022).

One way to deal with nutritional problems is to give babies additional food, especially for vulnerable groups. The main goal is to provide the nutrients that newborns need to grow and develop optimally (Erty Successty, 2020). The number of respondents who had taken the recovery supplement was greater than those who did not, as shown in the results of Table 2.

Table 3. Distribution of the frequency of stunted toddlers' height at the Mijen Health Center

The height of stunted	Frequency	Percent
increased height	16	32.0
No height increased	34	68.0
Total	50	100.0

Based on table 3. It is known that 14 respondents (64%) are classified as increasing, while 16 respondents (32%) are classified as not increasing. Value Z-Score After being given supplementary feeding, recovery for 60 days with Z-Score the highest was 0.27 and the lowest was -3.55 with an average of -1.86. Meanwhile, before being given additional food to restore the value of Z-Score the highest was 0.52 and the lowest was -3.73 with an average of -2.03. During toddlerhood, a child's physical, cognitive, social, and psychomotor development occurs very quickly. The physical development of toddlers depends on the regular consumption of sufficient and high-quality nutrients (Dewi et al., 2023).

The child anthropometric standard, issued by the Minister of Health in 2020, is a benchmark to measure the nutritional status of children, paying attention to nutrition and growth and development from

toddlers to later ages (Ernawati, 2020). In Table 3., there was an increase in height in the respondents. Even so, there are still toddlers who have not increased. A long history of malnutrition or improper management of a child's nutrition can lead to linear developmental retardation. There are two main causes of malnutrition in children: lack of nutrients in their diet and health problems that lower their hunger and immunity, making them more susceptible to disease. As a result, children may experience malnutrition (Hayyin, 2023).

The height of a toddler is unlikely to decrease. In the worst case, the height of the toddler remains the same as the previous month. According to the World Health Organization, stagnation, defined as a flat curve, is a common indicator of a problem. When height does not change or remains the same over time, it indicates that growth is not occurring. The child must continue to gain height even though his weight sometimes drops below the normal limit. On a graph of tall growth by age, this will look like a horizontal or flat line. The development and growth of toddlers will be hampered by this condition (Widiastuti & Winarso, 2021)

Table 4. Distribution of supplementary feeding based on the height of stunted toddlers at the Mijen Health Center

Variable	Category	Height Increase		Height Doesn't Rise		Total		OR	P-Value
		n	%	n	%	n	%		
Supplementary Feeding (PMT)	Completely consumed	22	44	4	8	26	52	5,500	0,009
	Not completely consumed	12	24	12	24	24	48		

Based on table 4. It is known that 22 out of 50 respondents (44%) who received recovery supplements reported an increase in height in stunted toddlers after consuming these foods. This shows that this intervention has a positive effect on children's growth. Meanwhile, recovery supplements that were not eaten up with increased height were obtained by 12 respondents (24%). As a result of the recovery supplements provided, conditions such as food type, nutrition, amount, and nutritional value have been met, and diverse meal schedules to meet the nutritional needs of respondents. As a result, respondents eat up and increase in height (Jamaluddin et al., 2022).

However, respondents who did not eat up but were tall could increase due to several factors, such as socioeconomic status, infectious infections, breastfeeding, and other forms of supplemental feeding (S. I. Putri & Hedo, 2023). This in the characteristics of the respondents was found that the majority of respondents did not have infectious diseases and were exclusively breastfed. In the book "Recognize

Stunting Early Childhood" from Nestlé Nutrition Institute Switzerland (2018), it was explained that babies are more susceptible to dangerous diseases, bacterial infections, diarrhea, intestinal damage, and other growth problems. Babies usually have no symptoms at three to five months of age and symptoms begin to appear at six to eighteen months of age. Neglected or delayed medical treatment can negatively impact a child's development. Malnutrition, stunting, and wasting are possible impacts (Maigoda et al., 2023). Exclusively breastfeeding toddlers has several advantages. It is recommended to wait to give it to children until they are twelve to twenty-two years old to get the maximum benefits. In a study conducted by (Ip et al. 2007), it was found that breastfeeding decreased the likelihood of diarrhea and infection in children, obesity, type I and II diabetes, infantile leukemia, SIDS, and necrotizing enterocolitis (Anggraini et al., 2023).

Some of the things that cause respondents not to spend Supplementary Feeding (PMT) are due to several things, namely monotonous Supplementary Feeding Menu (PMT) such as biscuits that make toddlers bored, which can reduce toddlers' appetite (Esinelya et al., 2021). In some situations, other family members also consume Supplementary Feeding from toddlers, causing toddlers to not get enough portions. In addition, there are some toddlers who do not consume Supplementary Feeding because the taste of food is not good or does not suit their taste. Parents' ignorance about the importance of Supplementary Feeding can affect toddlers' compliance in consuming it (Aryani, 2019; Sinaga et al., 2023).

In addition, from the analysis, the value of OR = 5,500 was obtained, which means that recovery supplements that were not eaten up had a 5,500 times greater risk of no increase in height of stunted toddlers compared to toddlers who ate up recovery supplements. We can conclude that H0 is rejected because the P-value generated based on the results of the statistical test is 0.009 (<0.05). Researchers found that there was a significant relationship between providing recovery food to stunted toddlers could increased height at the Mijen Health Center. This indicates that giving recovery supplements to toddlers affects their height.

Similarly, (Calista Ajiputri et al. 2023) and (Widiastuti & Winarso, 2021) found that the height of toddlers increased and the majority of macro and micronutrients in formula milk were digested. Supplemental feeding for 26 days has an impact on toddlers' height gain, according to research (Amaluddin et al. (2022) Research conducted by (Anton et al. 2022) with the title "Effect of Rebon Shrimp-Based Supplementary Feeding on Height of Stunted Children" shows that rebon shrimp supplements can help stunted children increase their height. However, contrary to what was hypothesized in the study by (Umasangaji et al. 2021), no correlation between dietary supplement intake and changes in height or body length was found. It was explained that the findings were not in line with the findings of the research.

CONCLUSION

The results of 26 out of 50 respondents (52%) at the Mijen Health Center showed that toddlers with stunting conditions did not experience a change in height, while 24 out of 50 respondents (48%) showed that the recovery supplement was not eaten up. 2. The results of 16 respondents (32%) showed that toddlers did not experience a change in height, while 34 respondents (64%) showed an increase. After being given recovery supplementary feeding for 60 days, the highest Z-Score value was 0.27 and the lowest was -3.55 with an average of -1.86. On the other hand, the Z-Score value before the recovery supplementary feeding was 0.52 and the lowest was -3.73 with an average of -2.03. Based on a statistical test conducted using the Chi-Square test with a P-Value of 0.009, the results were obtained that there was a significant relationship between the provision of recovery supplementary food and the increase in height of stunted toddlers in the working area of the Mijen Health Center, Semarang City, Central Java. Specifically, the risk of not increasing the height of stunted toddlers was 5,500 times higher in toddlers who did not consume all the recovery supplements compared to toddlers who consumed all the recovery supplements. The health facility is encouraged to improve the recovery supplementary feeding program by guaranteeing consistent distribution, enhancing food quality, and monitoring food consumption. It is recommended to hold ongoing nutrition education classes for parents and caregivers to emphasize the importance of regular supplementary and balanced nutrition for stunted children. A more varied and child-friendly supplementary menu can improve children's appetite and compliance with their food, leading to better growth outcomes.

REFERENCES

Akbar, F., Hamsah, I. A., Darmiati, D., & Mirnawati, M. (2020). Deteksi Dini Tumbuh Kembang Balita di Posyandu. Jurnal Ilmiah Kesehatan Sandi Husada, 12(2), 1003–1008. https://doi.org/10.35816/jiskh.v12i2.441

Amalia, A. A., Tiwery, I. B., Widiansari, F. E., & Purnamasari, J. (2024). Permasalahan dan Kebutuhan Kesehatan Terkait Pencegahan Stunting. Penerbit NEM.

Amalia, M., Anggraini, Y., & Satria, D. (2022). Faktor Yang Berhubungan Dengan Stunting Pada Balita Usia 12-59 Bulan Di Kenagarian Balingka Kabupaten Agam Tahun 2021. Jurnal Ners, 6(4), 2807–8721.

Anggraeni, Z. E. Y., Kurniawan, H., Yasin, M., & Aisyah, A. D. (2020). Relationship between Birth Weight, Birth Length and Gender with Stunting Incidence. The Indonesian Journal of Health Science, 12(1), 51–56.

Anggraini, N. N., Khasanah, U., Lutfitasari, A., & Prakasiwi, S. I. (2023). Edukasi ASI Eksklusif pada Ibu untuk Membantu Penurunan Kasus Stunting di Kelurahan Kedungmundu. 5(2), 25–28.

Annur, C. M. (2023a). Daftar Prevalensi Balita Stunting di Indonesia pada 2022. In Katadata Media Network (Issue 2022, pp. 1–11).

Annur, C. M. (2023b). Kabupaten Brebes , Wilayah dengan Prevalensi Balita Stunting Tertinggi di Jawa Tengah pada 2022 (pp. 2022–2023).

Anton, S. S., Bukhari, A., Baso, A. J. A., & Erika, K. A. (2022). Effect of Rebon Shrimp-Based Supplementary Feeding on Height of Stunted Children. Journal of International Conference Proceedings, 5(1), 236–241. https://doi.org/10.32535/jicp.v5i1.1473

Aryani, N. A. (2019). Evaluasi Pelaksanaan Program Pemberian Makanan Tambahan Pemulihan (PMT-P) untuk Penderita Balita Gizi Buruk (Studi Kasus di Puskesmas Welahan I Kabupaten Jepara). Universitas Negeri Semarang.

BKKBN. (2019). Pemberian Makanan Tambahan (PMT) di Posyandu.

Brahmani, I. A., Laksmi, I. G. P., & Jayanti, D. M. (2023). Health Science Journal. Health Science Journal, 6(2), 773–783. https://doi.org/10.34305/jikbh.v14i02.850

Burhan, R., Kusdalinah, Nugraheni, D. E., Andriani, L., & Efriani, R. (2023). Feeding Practice Pencegahan Stunting. Penerbit NEM.

Calista Ajiputri, A., Elmira Amanda, W., Sevina Putri, L., Tirta Damayanti, L., & Bataha, K. (2023). Pendampingan Program Pemberian Makanan Tambahan (PMT) Lokal Sebagai Perubahan Status Gizi Balita Desa Jangur Kabupaten Probolinggo. Jurnal Pengabdian Kepada Masyarakat Nusantara (JPkMN), 4(3), 1885–1893.

Dewi, M. U. K., Puspitaningrum, D., Purwanti, I. A., & Vitriasari, M. R. (2023). Pola Pemberian Makan Berhubungan Dengan Stunting Pada Balita Usia 2 Tahun Di Wilayah Kerja Puskesmas Cepiring Kendal the Correlation of Feeding Pattern and Stunting Incidence in Toddlers Aged 2 Years in the Working Area of Cepiring Kendal Health Center. Seminar Nasional Kebidanan UNIMUS Semarang, 23, 357–369.

Dinkes Kota Semarang. (2023a). DASHBOARD KESEHATAN DINAS KESEHATAN KOTA SEMARANG STUNTING.

Dinkes Kota Semarang. (2023b). UPAYA PERCEPATAN PENURUNAN STUNTING DI KOTA SEMARANG.

Ernawati, A. (2020). Gambaran Penyebab Balita Stunting di Desa Lokus Stunting Kabupaten Pati. Jurnal Litbang: Media Informasi Penelitian, Pengembangan Dan IPTEK, 16(2), 77–94. https://doi.org/10.33658/jl.v16i2.194

Erty Suksesty, C. (2020). Efektifitas Program Pemberian Makanan Tambahan Menggunakan Kombinasi Jus Kacang Hijau Dan Telur Ayam Rebus Terhadap Perubahan Status Gizi Stunting Di Kabupaten Pandeglang. Jurnal IMJ: Indonesia Midwifery Journal, 3(2), 35–41.

Esinelya, E., Masrul, M., & Firdawati, F. (2021). Studi Kebijakan Program Makanan Tambahan Biskuit Pada Balita Kurang Gizi Di Kota Solok Tahun 2020. Human Care Journal, 6(2), 284. https://doi.org/10.32883/hcj.v6i2.1215

Esyuananik, Khasanah, U., & Laili, A. N. (2021). Penguatan Pola Asuh Keluarga dalam Mencegah Stunting Sejak Dini. Penerbit NEM.

Evitasari, D. (2021). Pengaruh Efektivitas Pemberian Makanan Tambahan terhadap Balita di Bawah Garis Merah. Jurnal Kampus STIKES YPIB Majalengka, 8(1), 9–17. https://doi.org/10.51997/jk.v8i1.105

Hayyin, A. (2023). SENTRI : Jurnal Riset Ilmiah. SENTRI: Jurnal Riset Ilmiah, 2(4), 1275--1289.

Hidayat Fahrul, D. (2023). RAD TPB/SDGs Jawa Tengah Tahun 2019-2023.

Jamaluddin, Madina, J. I., Saida, N., Andari, E. A., Mujahida, N., Fahmi, N., Nur, R., & Pitriani. (2022). Pemberian Makanan Tambahan Pada Balita Berisiko Stunting Di Desa Rerang Kecamatan Dampelas. Jurnal Pengabdian Dan Pengembangan Masyarakat Indonesia, 1(2), 76–80. https://doi.org/10.56303/jppmi.v1i2.51

Kemenkes RI. (2018). Pemerintah atasi Stunting : melalui PIS-PK, Pemberian Makanan Tambahan (PMT), dan 1000 Hari Pertama Kehidupan (HPK).

Komalasari, K., Fara, Y. D., Utami, I. T., Mayasari, A. T., Komalasari, V., & Al Tadom, N. (2021). Efektivitas Pemberian Makanan Tambahan Pemulihan (PMT-P) Terhadap Kenaikan Berat Badan Balita Stunting. Journal of Current Health Sciences, 1(1), 17–20. https://doi.org/10.47679/jchs.v1i1.4

Lindawati, L., Harahap, A., & Anto, A. (2023). Hubungan Pekerjaan Orang Tua dan Asi Eksklusif dengan Kejadian Stunting Di Menawi Kabupaten Kepulauan Yapen. Journal of Pharmaceutical and Health Research, 4(1), 147–151. https://doi.org/10.47065/jharma.v4i1.3254

Maigoda, T. C., Rahmad, A. H. Al, & Simbolon, D. (2023). Kenali Stunting Sejak Dini. Penerbit NEM.

Neherta, M., Marlani, R., & Deswita. (2023). Faktor-Faktor Penyebab Stunting pada Anak. Penerbit Adab.

Nurbaety. (2022). Mencegah Stunting pada Balita Usia 24-59 Bulan. Penerbit NEM.

Pangaribuan, S. R. U., Napitupulu, D. M. T., & Kalsum, U. (2022). Hubungan Sanitasi Lingkungan, Faktor Ibu dan Faktor Anak Dengan Kejadian Stunting Pada Anak Usia 24 – 59 Bulan di Puskesmas Tempino Kabupaten Muaro Jambi. Jurnal Pembangunan Berkelanjutan, 5(2), 79–97. https://doi.org/10.22437/jpb.v5i2.21199

Putri, N., Nurlinawati, & Mawarti, I. (2021). Gambaran Tingkat Pendidikan dan Tinggi Badan Orangtua Balita Stunting Usia 24-59 Bulan Pendahuluan Masa ketika anak berada di bawah umur lima tahun (balita) merupakan masa kritis dari perkembangan dan pertumbuhan didalam siklus hidup manusia . Masa bali. Jurnal Ilmiah Ners Indonesia, 2(1), 24–32.

Putri, S. I., & Hedo, D. J. P. K. (2023). Stunting : Kenali Faktor Penyebabnya. Rena Cipta Mandiri.

Raden, N. D. P., Laput, D. O., Manggul, M. S., Padeng, E. P., Bebok, C. F. M., Janggu, J. P., Halu, S. A. N., Trisnawati, R. E., Nanur, F. N., Banul, M. S., Senudin, P. K., Dafiq, N., & Golo, T. (2022). Dinamika Pelayanan Kebidanan di Era 4.0. Penerbit Widina.

Rosliana, L., Widowati, R., & Kurniati, D. (2020). Hubungan Pola Asuh, Penyakit Penyerta, dan Pengetahuan Ibu

dengan Status Gizi pada Anak Usia 12-24 Bulan di Posyandu Teratai Wilayah Kerja Puskesmas Ciasem Kabupaten Subang Tahun 2020. Syntax Idea, 2(8), 415–428.

Simbolon, D. (2019). PENCEGAHAN STUNTING MELALUI INTERVENSI GIZI SPESIFIK PADA IBU MENYUSUI ANAK USIA 0-24 BULAN. MEDIA SAHABAT CENDEKIA.

Sinaga, E. S., Rasyid, I. A., Mubarok, M. R., Sudharma, N. I., & Nolia, H. (2023). Pemantauan Konsumsi Pemberian Makanan Tambahan (PMT) Dalam Meningkatkan Berat Badan Balita Dengan Masalah Gizi. ABDI MOESTOPO: Jurnal Pengabdian Pada Masyarakat, 6(1), 1–8. https://doi.org/10.32509/abdimoestopo.v5i2.2236

Sukmawati, & Sirajuddin. (2023). Pendampingan Pemberian Makan Anak (PMA). Penerbit NEM.

Sulistiani, R. P., Puspitasari, D. A., Wirandoko, I. H., Wicaksono, D., Aghadiati, F., Farianingsih, Y., Mustafida, R. Y., Davidson, S. M., Suryana, A. L., Abigayl, I., Oksidriyani, S., Wardani, D. W. K. K., & · N. L. A. C. M. (2023). Stunting dan Gizi Buruk. Pradina Pustaka.

Syam, D. M., & Sunuh, H. S. (2020). Hubungan Kebiasaan Cuci Tangan, Mengelola Air Minum dan Makanan dengan Stunting di Sulawesi Tengah. Gorontalo Journal of Public Health, 3(1), 15. https://doi.org/10.32662/gjph.v3i1.919

Umasangaji, M. S., Amir, A., Sitti, D. A. N., & Rowa, S. (2021). EFEKTIVITAS PEMBERIAN MAKANAN TAMBAHAN PADA BALITA KURUS DAN SANGAT KURUS DI WILAYAH KERJA PUSKESMAS KAPASA KOTA MAKASSAR. 4(1), 16–23.

UNICEF. (2023). Stunting has declined steadily since 2000 – but faster progress is needed to reach the 2030 target. Wasting persists at alarming rates and overweight will require a reversal in trajectory if the 2030 target is to be achieved.

Utami, D. S., Rusmita, E., & Adji, D. R. (2022). Karakteristik Keluarga dan Karakteristik Pola Asuh Orang Tua dengan Balita Stunting Usia 23-59 Bulan Di Kelurahan Ciumbuleuit Kota Bandung. Jurnal Ilmiah JKA (Jurnal Kesehatan Aeromedika), 8(1), 52–62. https://doi.org/10.58550/jka.v8i1.144

Widiastuti, A., & Winarso, S. P. (2021). Program Pmt Dan Grafik Pertumbuhan Balita Pada Masa Pandemi Covid. Jurnal Sains Kebidanan, 3(1), 30–35. https://doi.org/10.31983/jsk.v3i1.6890