

Education and nutrition intervention to mitigate stunting in Cisaranten Wetan, Cinambo District, Bandung

Dewi Astriany¹, Adang Firmansyah¹, Pupung Ismayadi², Iffa Risfayanti², Rizky Amaludin Mutaqin², Sani Nurlaela Fitriansyah³

¹Department of Pharmacology, ²Department of Basic Sciences and Humanities, ³Department of Pharmaceutical Biology Sciences, Sekolah Tinggi Farmasi Indonesia
Jl. Soekarno Hatta No. 354 Bandung, 40266, Indonesia

ARTICLE INFO:

Received: 2024-1-17
Revised: 2024-03-06
Accepted: 2024-05-01
Published: 2024-05-29

Keywords:

Education, Nutrition, Integrated Healthcare Center cadre, Stunting

ABSTRACT

Stunting is a complex problem related to environmental health and the provision of nutritious food. Chronic malnutrition in children results in permanently impaired physical and cognitive growth. Cisaranten Wetan Village, Cinambo District, Bandung has problems with the health conditions of children who are indicated to be stunted. The purpose of this service activity is to provide education to Integrated Healthcare Center (in Indonesia: Posyandu) cadres and the community regarding stunting, as well as assistance with specific nutritional interventions for children indicated as stunted. Education was conducted by the STFI Community Service Team with the theme of balanced nutrition and child development in the form of counseling, videos, and leaflets. Children who are indicated to be stunted are given additional food in the form of egg powder, curcumin honey, and goat milk regularly. The existence of routine education carried out with various media causes a change in the level of knowledge from the moderate category to good in mother respondents with children who are indicated to be stunted. Increased maternal knowledge affects behaviour in parenting and child growth and development.

©2024 Abdimas: Jurnal Pengabdian Masyarakat Universitas Merdeka Malang
This is an open access article distributed under the CC BY-SA 4.0 license
(<https://creativecommons.org/licenses/by-sa/4.0/>)

How to cite: Astriany, D., Firmansyah, A., Ismayadi, P., Risfayanti, I., Mutaqin, R. A., & Fitriansyah, S. N. (2024). Education and nutrition intervention to mitigate stunting in Cisaranten Wetan, Cinambo District, Bandung. *Abdimas: Jurnal Pengabdian Masyarakat Universitas Merdeka Malang*, 9(2), 251-261. <https://doi.org/10.26905/abdimas.v9i2.12813>

1. INTRODUCTION

Nutritional status is crucial in the growth and development of children. One of the major nutritional problems in child development is stunting, a condition that occurs in almost every developing country in the world (Fitriami & Galaresa, 2021). Stunting is a condition where a person's height is shorter compared to the height of others of the same age. Stunted (short stature) or low height-for-age is used as an indicator of chronic malnutrition, reflecting a long-term history of malnutrition in children (Naila et al., 2021). Stunting can lead to decreased immunity against diseases and reduced cognitive and motor development in children (Fitriami & Galaresa, 2021). It is very important to improve the nutritional status of children to prevent stunting cases.

Stunting is a problem related to health, environment, and the ability of families to provide nutritious food. Chronic malnutrition in children will result in permanent physical and cognitive growth

disorders (Naila et al., 2021). Low public understanding of this issue results in high stunting cases in Indonesia. Preventing stunting cases can begin by increasing public knowledge about the dangers of stunting and improving the nutritional status of children and pregnant women. According to WHO, the global prevalence of stunting reached 22 percent in 2020. Meanwhile, the prevalence of stunting in Indonesia among children under five was 21.6 percent in 2022 (Cahyawati et al., 2022). This data shows that the incidence of stunting in Indonesia is still high.

Stunting often occurs in children aged 12-36 months, with a prevalence of 38.3 - 41.5 percent. The period under five years old is a golden period in determining the quality of human resources in terms of intelligence and physical growth (Margawati & Astuti, 2018). Therefore, prevention and treatment of stunting cases in children under five are needed.

According to the 2022 Indonesia Nutritional Status Survey (SSGI) by the Ministry of Health, the national stunting rate decreased from 24.4 percent in 2021 to 21.6 percent in 2022. Most of the 34 provinces showed a decrease compared to 2021, with only a few showing an increase. Currently, some areas have a prevalence below 20 percent, but this figure still does not meet the 2020-2024 National Medium-Term Development Plan (RPJMN) target. The Indonesian government must continue to strive to reduce the stunting rate to 14 percent by 2024. However, even if this target is achieved, it does not mean Indonesia is free from stunting. The next target is to reduce the stunting rate to a low category or below 2.5 percent.

According to data from the 2018 Basic Health Research (Riskesdas) published in the 2020 West Java Province Health Profile, the prevalence of stunting in West Java was 31.1 percent. The 2022 SSGI results show the stunting prevalence in West Java Province was 20.2 percent, while the prevalence in Bandung City was 19.4 percent. Several main factors can influence the occurrence of stunting, including maternal factors, maternal nutritional status during pregnancy, maternal education level, maternal knowledge, breastfeeding, complementary feeding, infection, and family economic and environmental factors (Rahayu et al., 2022). Children who are stunted have a higher risk of suffering from infections than normal children. Long-term infection in children affects their weight and linear growth (Flora, 2021).

To achieve optimal growth and development in children, especially under-fives, efforts are needed to handle and prevent stunting cases, starting from parents' knowledge and understanding, particularly mothers, about the risks of developmental delays due to stunting. Stunting prevention efforts must start from pregnancy, especially in the first 1,000 days of life, by increasing mothers' knowledge and attitudes about stunting prevention (Arnita et al., 2020; Manoppo & Huriah, 2022).



Figure 1. Location map of Cisaranten Wetan Village, Cinambo District, Bandung City

Education and nutrition intervention to mitigate stunting in Cisaranten Wetan, Cinambo District, Bandung

Dewi Astriany, Adang Firmansyah, Pupung Ismayadi, Iffa Risfayanti, Rizky Amaludin Mutaqin, Sani Nurlaela Fitriansyah

Cisaranten Wetan is a sub-district located in the Cinambo District, Bandung City, West Java (Figure 1). Cisaranten Wetan has potential in the health sector, including six Integrated Healthcare Center (or Posyandu) with active participation from their cadres. To enhance the role and cooperation between health workers and the community, so they have the human resources, capabilities, and willingness to independently prevent and address health problems, disasters, and health emergencies, RW Siaga has been established in RW 004 and RW 002.

The common issues faced by Cisaranten Wetan Sub-district, Cinambo District, Bandung City, include the health conditions of children, which still require special attention with several cases of stunting identified. Based on data from the Posyandu activities in September 2022, there were 19 children indicated to be malnourished out of a total of 49 children under five. This may correlate with the socioeconomic conditions of the Cisaranten Wetan community, where approximately 60 percent of the population is in the lower-middle class, and the public's knowledge about stunting is still low.

One method to address and prevent stunting cases is to increase public understanding of child growth and development across various aspects. This effort can be undertaken through regular community education using various media, aiming to improve public knowledge about child growth and development. Additionally, monitoring is necessary to ensure community compliance with good practices for child growth and development.

This community service program aims to provide education to Posyandu cadres and the community regarding stunting, support Posyandu cadres in education efforts, and implement specific nutritional interventions for children identified with stunting in Cisaranten Wetan Sub-district by applying research findings in the form of supplementary food products developed by STFI.

2. METHODS

The implementation of community service activities is carried out in a structured manner, starting from initial research, socialization and education, implementation of assistance, as well as monitoring and evaluation. The Participatory Action Research (PAR) method was chosen because in community service activities it involves people, processes, and results that can be sustainable (Nurhamidah et al., 2020).

Forum Group Discussion

The implementation begins with a focused group discussion (FGD) between the community service team (PKM), the Sub-district, the Public Health Center (Puskesmas), and Posyandu cadres. This activity aims to explain the program at each stage so that Posyandu cadres understand the implementation techniques. During this activity, the STFI PKM team, Posyandu cadres, the Head and staff of Cinambo Public Health Center, as well as the relevant Cisaranten Wetan Sub-district officials are introduced.

Initial Survey and Data Collection

To obtain initial data on children indicated to be stunted in Cisaranten Wetan Sub-district, Cinambo District, Bandung City, a survey and respondent or participant selection were conducted in the form of baseline questionnaire distribution by the PKM team and Posyandu cadres.

Socialization and Education

Socialization and education activities were provided to Posyandu cadres and the community on themes related to stunting, balanced nutrition, and child growth and development. Before and after

the presentation of the material, pre-tests and post-tests were conducted, followed by a discussion session. Counseling for Posyandu cadres and the community by the STFI PKM team was also carried out using educational materials in the form of videos and leaflets containing the information needed by the community during the program.

Posyandu Cadre Assistance

Assistance for Posyandu cadres in specific nutritional interventions for children with indications of stunting is carried out in the following stages: (1) Activities to collect data on the nutritional status of children and toddlers in accordance with standard stunting parameters and monitoring parameters (source: Mother and Child Card/KIA) (Menteri Kesehatan Republik Indonesia, 2020); (2) Filling out a pre-test sheet to determine the knowledge and attitudes of mothers who have children under five regarding stunting, balanced nutrition, growth and development diseases in children, as well as environmental sanitation and cleanliness; (3) Providing specific nutritional interventions in the form of STFI processed food products in the form of egg powder, turmeric honey and goat's milk which are given periodically every 10 days to children who are indicated to be stunted.

Product administration and monitoring is carried out by parents together with Posyandu cadres, in accordance with Ministry of Health standards (Friska et al., 2022; Widiastuti et al., 2019). This stage will be carried out from March to June 2023.

Monitoring and Evaluation Stage

Endline questionnaire completion was conducted to evaluate the impact of the intervention on the status of children and toddlers with stunting and to assess the increase in respondents' knowledge and attitudes towards the material presented. Monitoring and evaluation of the PKM activities were carried out with relevant evaluation goals and criteria, namely participation rates and changes in participants' knowledge and attitudes. Evaluation to measure changes in public knowledge regarding the educational material themes was analyzed using the SPSS program with bivariate analysis. A long-term plan for the residents of Cisaranten Wetan Sub-district was also formulated to achieve a stunting-free status.

3. RESULTS AND DISCUSSION

Results

The FGD activities yielded information that the issue of stunting cases in Cisaranten Wetan Sub-district will be the focus of the PKM activities. The implementation was carried out from early March to June 2023, targeting Posyandu cadres and community members identified as having children with stunting. Through data collection by Posyandu cadres, data was obtained for 38 mothers identified as having children with stunting. The group of respondents/mothers identified as having children with stunting varied in age (Figure 2).

Age is one factor that can influence a person's ability to comprehend and think about an object. The older a respondent is, the more mature their physical and mental skills will be in absorbing information, thinking, and working. In addition to collecting respondent data by age, data on education and occupation distribution were also gathered. This information is very important as supporting data in evaluating the results of the PKM activities conducted.

Data collection on toddlers indicated to be stunted included gender, age, height, and weight. The gender distribution consisted of males (60.5 percent) and females (39.5 percent) out of 38 toddlers. The

Education and nutrition intervention to mitigate stunting in Cisaranten Wetan, Cinambo District, Bandung

Dewi Astriany, Adang Firmansyah, Pupung Ismayadi, Iffa Risfayanti, Rizky Amaludin Mutaqin, Sani Nurlaela Fitriansyah

age distribution among these toddlers was 13-24 months (36.8 percent), 25-36 months (42.1 percent), 37-48 months (10.5 percent), and 49-59 months (10.5 percent). Height categories were very short (34.2 percent), short (39.5 percent), and normal (26.3 percent). Weight categories were 5-10 kg (26.3 percent), 11-15 kg (71.2 percent), and 16-20 kg (2.6 percent). This data is very important as initial information on the condition of toddlers indicated to be stunted and will be used in ongoing PKM activities.

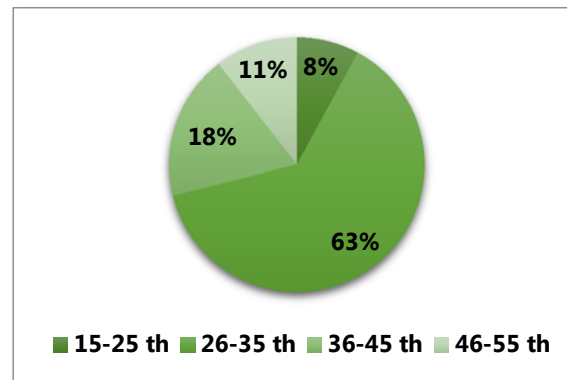


Figure 2. Age distribution of respondents consisting of Posyandu cadres and the community in the sub-district Cisaranten Wetan

The education phase in the form of counseling was conducted in the Hall of the Cisaranten Wetan Sub-district Office (Figure 3). Activities included distributing questionnaires before the education session (pre-test) and after the education session (post-test). The educational themes provided were about child growth and development knowledge, covering various aspects such as parenting patterns, dietary patterns, healthy nutrition, child growth issues, the importance of breastfeeding, and the importance of Posyandu visits. These themes were chosen because they pertain to every phase of a person's life. Stunting prevention is conducted at every phase of the life cycle (Hoddinott et al., 2013). Providing breastfeeding is an effective investment to reduce infant mortality rates and support child growth and development (Hansen, 2016).



Figure 3. The STFI PKM team provided counseling and distributed questionnaires

Before providing education through counseling, the results of the questionnaire showed that the level of knowledge among mothers in Cisaranten Wetan Sub-district mostly fell into the category of sufficient. Therefore, it is crucial to conduct education through counseling and other media regularly.

Counseling was conducted at the beginning of the activity before assisting Posyandu cadres in providing nutritional interventions and midway through the activity while assisting Posyandu cadres in nutritional interventions (Yarmaliza & Syahputri, 2020). Additionally, during the assistance provided to Posyandu cadres in delivering nutritional interventions, education was provided through videos and the distribution of leaflets (Figure 4) (Yazia et al., 2021).



Figure 4. Leaflet edukasi tentang tumbuh kembang anak (Source: Menteri Kesehatan Republik Indonesia, 2023)

The level of knowledge among the community in Cisaranten Wetan Sub-district, Cinambo District, Bandung City, shows variation. Out of a total of 38 mother respondents, the majority, 33 mother respondents (86.8 percent), were in the sufficient category, 4 mother respondents (10.5 percent) were in the good category, and 1 mother respondent (2.6 percent) was in the poor category (Figure 5). This can be considered as a factor that may contribute to the issue of stunting in children. After receiving counseling, there was a significant change in the level of maternal knowledge. Out of the total of 38 mother respondents, 34 mother respondents (89.5 percent) reached a good level of knowledge, 4 mother respondents (10.5 percent) reached a sufficient level of knowledge, and there were no mother respondents who remained in the poor category.

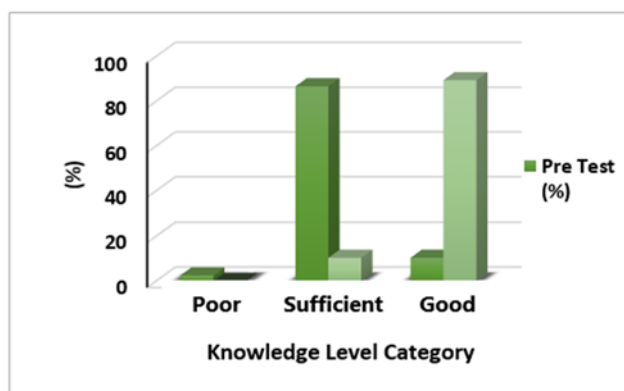


Figure 5. Graph of increasing mother's knowledge about child growth and development as a result of education.

Education and nutrition intervention to mitigate stunting in Cisaranten Wetan, Cinambo District, Bandung

Dewi Astriany, Adang Firmansyah, Pupung Ismayadi, Iffa Risfayanti, Rizky Amaludin Mutaqin, Sani Nurlaela Fitriansyah

From these results it can be seen that there has been a change in the average level of knowledge of maternal respondents from the adequate category to the good category (Table 1). This change shows that there is a significant impact of the education carried out, both in the form of direct counseling and using other media, in increasing knowledge among mothers whose children are indicated to be stunted. However, these changes did not significantly affect mothers' attitudes and behavior.

Table 1. The influence of the level of knowledge on mother's behavior regarding child growth and development

Mother's knowledge	Mother's Behavior			
	Sufficient		Good	
	n	%	n	%
Poor	1	2.6	0	0
Sufficient	8	21.1	25	65.8
Good	2	5.3	2	5.3
Total	11	28.9	27	71.1

Another stage carried out in the PKM activities is the assistance provided to Posyandu cadres in measuring the weight and height of children indicated to be stunted and providing nutritional interventions in the form of STFI products (Figure 6). The provision of nutritional interventions to children indicated to be stunted is expected to have an impact on reducing the stunting rate and is a sustainable PKM program with Cisaranten Wetan Sub-district, Cinambo Sub-district, Bandung City. These nutritional interventions consist of powdered eggs (STFI product), turmeric honey (STFI product), and goat milk. These products have high nutritional value and can improve appetite. As undertaken by the Government, one of the strategies to address stunting is through specific nutritional interventions (to address direct causes of stunting) and sensitive nutritional interventions (to address indirect causes of stunting) (Candriasih et al., 2021; Dewi et al., 2022).



Figure 6. Mentoring Posyandu Cadres and Providing Nutritional Interventions with STFI Products

Discussion

The causes of stunting are highly complex, but some contributing factors and risks include genetic factors, gender, maternal nutrition during pregnancy, birth weight, child nutrition intake, economic status, maternal knowledge, exclusive breastfeeding, and disease infections. The long-term impacts of stunting can lead to poor health, increased risk of infectious diseases, lower cognitive levels, and lower academic achievement in children. Children experiencing stunting may have an IQ 5-10 points lower than normal children, reducing productivity by 20-30 percent. Other long-term risks include the onset of

diseases and disabilities in old age, such as diabetes, obesity, and heart disease, affecting work quality and leading to reduced economic productivity (Flora, 2021).

Efforts to prevent stunting should ideally begin with maternal understanding of the risks of developmental delays in children, parenting patterns, child development guidance, and strengthening interventions to improve maternal knowledge and attitudes towards health and nutrition. Empowering Posyandu cadres is crucial in addressing stunting cases, as they have been trained by healthcare workers to implement and assist in health promotion programs conducted by health centers (Kusumawardani et al., 2020). At Posyandu, cadres conduct nutritional screening for children and pregnant women monthly. Posyandu also provides health promotion through counseling, especially on nutrition to parents using flipcharts or maternal and child health books. Education and monitoring of children at Posyandu by health cadres are key success factors in reducing stunting, but cadre capacity requires support to provide better nutritional education, through training and educational resources (Cahyawati et al., 2022).

Posyandu cadres require special attention and encouragement in addressing stunting cases in Cisaranten Wetan Sub-district. In this program, the STFI community service team provides education to Posyandu cadres and the community on topics related to stunting, as well as mentoring to empower Posyandu cadres as educators for the community, especially on child nutrition topics.

The preliminary survey results in Cisaranten Wetan Sub-district, based on data from the Cinambo Health Center, indicate the presence of children indicated to be stunted. One effort to address the occurrence of stunted children in Cisaranten Wetan Sub-district, Cinambo Sub-district, Bandung City, is through monitoring by Posyandu cadres of children indicated to be stunted monthly and conducting counseling and distributing leaflets containing information on child growth, development, and nutrition.

Cisaranten Wetan Sub-district has potential in the field of health, including the presence of six Posyandu where the participation of the cadres is quite active. In order to increase participation and cooperation between officials and the community to have the human resources and capabilities as well as the willingness to prevent and address health problems, disasters, and health emergencies independently, a RW Alert has been formed in RW 004 and RW 002.

This community service activity is relevant to the needs of the community in Cisaranten Wetan Sub-district in addressing existing stunting cases, with the aim of achieving appropriate targets and increasing the level of knowledge of the community, especially mothers, in understanding the importance of balanced nutrition, maintaining health, and environmental cleanliness. Increasing knowledge has the potential to reduce the risk of stunting problems in toddlers. The results of this activity are in line with Astuti's statement that stunting prevention can be achieved by increasing knowledge in the community through educational campaigns and training (Astuti et al., 2018). The information on increased knowledge among mothers indicated to have stunted children is very important, as increased knowledge will have a positive impact on the attitudes and behaviors of mothers regarding child development (Hamzah & Hamzah, 2020). Behaviors indicating increased maternal knowledge may include attention to providing nutrition to children and adherence to attending Posyandu for child development monitoring.

Another goal that can be achieved is the availability of project-based learning media for students. The contribution of students is expected to be one form of implementation of the independent campus program and interprofessional education promoted by the Ministry of Education, Culture, Research, and Technology. Interprofessional education in this program collaborates with local government at the sub-district level and Posyandu cadres, so that knowledge transfer occurs during the activity. This can enrich students' knowledge in addition to the knowledge gained during their education in the pharmacy undergraduate program. The contribution of health field lecturers as educators is expected to be one

form of education for the community so that the community gains more insights and understands the importance of participating in this program.

Based on discussions with the sub-district and Posyandu cadres, the identified problem and priority to be addressed in the near future in Cisaranten Wetan Sub-district is the presence of stunting cases in children. According to data from Posyandu activities in September 2022, there were 19 children indicated to have malnutrition out of a total of 49 toddlers. This may correlate with the socio-economic conditions of the community in Cisaranten Wetan Sub-district, where approximately 60 percent of the total population is in the lower-middle socioeconomic status, and the community's knowledge regarding stunting is still low.

In the implementation of community service activities, there are several supporting factors for the successful execution of the activities: (1) Assistance from the leaders and staff of Cisaranten Wetan Sub-District in providing supporting facilities and venues for the activities; (2) Posyandu cadres as active partners playing a crucial role as the implementing team, conducting measurements of stunting parameters, delivering products while providing guidance and monitoring nutritional interventions, as well as assisting in disseminating educational materials to the community within the Cisaranten Wetan Sub-District; (3) Parents of participants who are highly active, enthusiastic, and always eager to accompany their children in consuming supplementary food products, as well as in discussion sessions and Q&A sessions during various educational activities; (4) The leadership and staff of the Cinambo District Health Center who are always supportive and communicative.

Some factors that hinder the implementation of community service activities include the attendance of the community at educational events in the sub-district hall and the schedule of Posyandu activities conducted on weekdays, resulting in many people being unable to attend, as well as limited time and funds, which means that the data on the results of nutritional interventions obtained only represent short-term outcomes.

4. CONCLUSION AND RECOMMENDATIONS

The community service activities conducted in the form of periodic education through direct counseling, using video media, or leaflets can enhance knowledge about balanced nutrition and child development in the community of Cisaranten Wetan Sub-District, Cinambo District, Bandung City, especially among mothers with children who are indicated as stunted. The increase in knowledge about child development can improve mothers' behaviors in nurturing their children's growth and development. Additionally, there is an increase in the number of healthy children with good nutrition and a decrease in the number of children indicated as stunted, as measured by the analysis of data from regular health parameter measurements. The sustainability of this program is expected to contribute to addressing the issue of stunting in Indonesia, thereby creating a quality next generation for the progress of the nation and the country.

In this community service activity, several challenges were encountered, including the level of community participation in attending counseling programs, parental awareness to regularly monitor their children's growth and development at the integrated health center (Posyandu), and the limited availability of food products to conduct nutritional interventions for children indicated as stunted. Sustainability of the program in the future is essential by providing counseling to enhance community knowledge, especially among mothers, regarding child-rearing practices, balanced nutrition, and food diversification. Activities could be implemented at more suitable times to ensure greater attendance,

thus achieving the objectives of the program. A holistic approach is crucial, involving governmental agencies, communities, and relevant partners, particularly in poverty alleviation efforts to enable families to meet their nutritional needs. Nutritional intervention programs for children indicated as stunted need to be continued to help reduce stunting rates through active collaboration among the government, communities, educational institutions, and relevant stakeholders, thereby providing broader benefits.

ACKNOWLEDGEMENTS

This journal article was written based on the results of community service activities funded by the Indonesian College of Pharmacy (Sekolah Tinggi Farmasi Indonesia) and the Ministry of Education, Culture, Research, and Technology of the Republic of Indonesia through the 2023 Research and Community Service Grant Program.

REFERENCES

- Arnita, S., Rahmadhani, D. Y., & Sari, M. T. (2020). Hubungan pengetahuan dan sikap ibu dengan upaya pencegahan stunting pada balita di Wilayah Kerja Puskesmas Simpang Kawat Kota Jambi. *Jurnal Akademi Baiturrahim Jambi*, 9(1), 7-14. <http://dx.doi.org/10.36565/jab.v9i1.149>
- Astuti, S. (2018). Gerakan pencegahan stunting melalui pemberdayaan masyarakat di Kecamatan Jatinangor Kabupaten Sumedang. *Dharmakarya: Jurnal Aplikasi Ipteks Untuk Masyarakat*, 7(3), 185-188. <https://doi.org/10.24198/dharmakarya.v7i3.20034>
- Cahyawati, P. N., & Permatananda, P. A. N. K. (2022). Pendampingan kader posyandu desa kerta dalam penerapan gizi seimbang dan pemantauan tumbuh kembang anak. *Warmadewa Minesterium Medical Journal*, 1(3), 56-61.
- Candriasih, P., Ndama, M., & Pont, A. V. (2021). Specific and sensitive nutrition interventions with nutritional status of toddlers as prevention of stunting in the coronavirus disease 2019 pandemic in Sigi district, Indonesia. *Open Access Macedonian Journal of Medical Sciences*, 9(E), 415-418. <https://doi.org/10.3889/oamjms.2021.6148>
- Dewi, Y. M., Parulian, T. S., & Indriarini, M. Y. (2022). Implementation-specific nutritional interventions in stunting prevention: Literature review. *NurseLine Journal*, 7(1), 8-20. <https://doi.org/10.19184/nlj.v7i1.27702>
- Flora, R. (2021). *Stunting dalam kajian molekuler* (1st ed., Vol. 1). Universitas Sriwijaya Press.
- Fitriami, E., & Galaresa, A. V. (2022). Edukasi pencegahan stunting berbasis aplikasi Android dalam meningkatkan pengetahuan dan sikap ibu. *Citra Delima: Scientific Journal of Citra Internasional Institute*, 5(2), 78-85. <https://doi.org/10.33862/citradelima.v5i2.258>
- Friska, D., Kekalih, A., Runtu, F., Rahmawati, A., Ibrahim, N. A. A., Anugrapaksi, E., Utami, N. P. B. S., Wijaya, A. D., & Ayuningtyas, R. (2022). Health cadres empowerment program through smartphone application-based educational videos to promote child growth and development. *Frontiers in Public Health*, 10, 887288. <https://doi.org/10.3389/fpubh.2022.887288>
- Hamzah, S. R., & Hamzah, B. (2020). Gerakan pencegahan stunting melalui edukasi pada masyarakat di Desa Muntoi Kabupaten Bolaang Mongondow. *JPKMI (Jurnal Pengabdian Kepada Masyarakat Indonesia)*, 1(4), 229-235. <https://doi.org/10.36596/jpkmi.v1i4.95>

Education and nutrition intervention to mitigate stunting in Cisaranten Wetan, Cinambo District, Bandung

Dewi Astriany, Adang Firmansyah, Pupung Ismayadi, Iffa Risfayanti, Rizky Amaludin Mutaqin, Sani Nurlaela Fitriansyah

- Hansen, K. (2016). Breastfeeding: A smart investment in people and in economies. *The Lancet*, 387(10017), 416. [https://doi.org/10.1016/S0140-6736\(16\)00012-X](https://doi.org/10.1016/S0140-6736(16)00012-X)
- Hoddinott, J., Alderman, H., Behrman, J. R., Haddad, L., & Horton, S. (2013). The economic rationale for investing in stunting reduction. *Maternal and Child Nutrition*, 9(S2), 69–82. <https://doi.org/10.1111/mcn.12080>
- Kusumawardani, L. H., Rachmawati, U., Jauhar, M., & Rohana, I. G. A. P. D. (2020). Community-based stunting intervention strategies: Literature review. *Dunia Keperawatan: Jurnal Keperawatan dan Kesehatan*, 8(2), 259–268. <https://doi.org/10.20527/dk.v8i2.8555>
- Manoppo, M. W., & Huriyah, 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>
- Margawati, A., & Astuti, A. M. (2018). Pengetahuan ibu, pola makan dan status gizi pada anak stunting usia 1-5 tahun di Kelurahan Bangetayu, Kecamatan Genuk, Semarang. *Jurnal Gizi Indonesia (The Indonesian Journal of Nutrition)*, 6(2), 82–89. <https://doi.org/10.14710/jgi.6.2.82-89>
- Menteri Kesehatan Republik Indonesia. (2020). *Peraturan Menteri Kesehatan Republik Indonesia Nomor 2 Tahun 2020*.
- Menteri Kesehatan Republik Indonesia. (2023). Leaflet. Retrieved from: <https://promkes.kemkes.go.id/category/leaflet>
- Naila, N. N., Mahfuz, M., Hossain, M., Arndt, M., Walson, J. L., Nahar, B., & Ahmed, T. (2021). Improvement in appetite among stunted children receiving nutritional intervention in Bangladesh: Results from a community-based study. *European journal of clinical nutrition*, 75(9), 1359–1367. <https://doi.org/10.1038/s41430-020-00843-9>
- Nurhamidah, N., Elvia, R., Handayani, D., Amida, N., & Palenti, C. D. (2020). Pemberdayaan kelompok tani melalui pembuatan bioenergi pertanian dari limbah batang pisang. *JPPM (Jurnal Pendidikan dan Pemberdayaan Masyarakat)*, 7(2), 190–196. <https://doi.org/10.21831/jppm.v7i2.35136>
- Rahayu, T. H. S., Suryani, R. L., & Utami, T. (2022). Gambaran tingkat pengetahuan ibu tentang stunting pada balita di Desa Kedawung Kecamatan Susukan Kabupaten Banjarnegara. *Borneo Nursing Journal (BNJ)*, 4(1), 10–17. <https://doi.org/10.61878/bnj.v4i1.44>
- Widiastuti, R. N., Meiningsih, S., Nugraha, D. A., & Finaka, A. (2019). *Bersama perangi stunting*. Jakarta: Direktorat Jenderal Informasi dan Komunikasi Publik.
- Yarmaliza, Y., & Syahputri, V. N. (2020). Kaldu tempe sebagai intervensi spesifik dalam pencegahan stunting. *Jurnal Kesehatan*, 11(1), 001–007. <https://doi.org/10.35730/jk.v11i1.684>
- Yazia, V., Hasni, H., Nurleny, Andika, M., & Arista, C. (2021). Pemberian intervensi gizi spesifik untuk pencegahan stunting pada anak. *Jurnal Abdimas Saintika*, 3(1), 26–29. <http://dx.doi.org/10.30633/jas.v3i1.1076>
-