Health Sciences International Journal (HSIJ)
Vol. 2, No. 2, August 2024, pp. 183 – 190
ISSN: 3026-5037
DOI: https://doi.org/10.71357/hsij.v2i2.44

Case report

Effective stunting prevention: Empowering maternal nutrition education in rural Indonesia through AKUR PENTING intervention

Putri Yuliantie[1*] , Novalia Widiya Ningrum[1], Istiqamah[1]

[1]*Department of Midwifery, Faculty of Health, Sari Mulia University, Banjarmasin, Indonesia*

[*]Corresponding author: putriyuliantie15@gmail.com

ARTICLE INFO

Article history:
Received: 03 July 2024
Accepted: 18 August 2024
Published: 31 August 2024

Keywords:
Stunting prevention
Maternal education
Complementary feeding
Rural healthcare
Nutritional intervention

ABSTRACT

Background: Stunting remains a significant public health issue in Indonesia, particularly in rural regions such as Bangun Harjo Village, Central Kalimantan. Stunting affects not only physical growth but also cognitive development, leading to long-term impacts on productivity, health, and quality of life. Despite various government interventions, stunting continues to prevail due to poor maternal nutrition knowledge, inadequate feeding practices, and socio-economic challenges.

Case presentation: In Bangun Harjo Village, high stunting rates among toddlers are largely attributed to improper complementary feeding (MPASI) and limited maternal understanding of nutrition. The Kupang Island Health Center initiated a community service intervention called "AKUR PENTING" (Stunting Prevention Kitchen Action) aimed at educating postpartum mothers and mothers of toddlers about proper feeding practices using locally available, nutrient-rich foods. The program included cooking demonstrations, distribution of educational materials, and active involvement of local healthcare workers.

Discussion: The intervention significantly improved maternal knowledge about nutrition, with participants showing enthusiasm and engagement in learning how to prepare balanced meals. However, sustained behavior change and addressing broader socio-economic issues such as poverty and food insecurity remain challenges. Community-based interventions, combined with government support and policies, are critical to ensuring long-term success in reducing stunting.

Conclusion: The AKUR PENTING intervention demonstrated the importance of maternal education and community engagement in stunting prevention. While the program successfully increased awareness and practical skills, comprehensive, multi-sectoral efforts are necessary to address the root causes of stunting, including socio-economic disparities and food insecurity.

Health Sciences International Journal (HSIJ)
Vol. 2, No. 2, August 2024, pp. 183 – 190
ISSN: 3026-5037
DOI: https://doi.org/10.71357/hsij.v2i2.44

1. Background

Stunting is a chronic condition marked by delayed growth in children, often resulting from long-term inadequate nutrition and recurrent infections, particularly during the first 1,000 days of life (United Nations Children's Fund (UNICEF) et al., 2023). This condition is prevalent in many low- and middle-income countries, including Indonesia, where it has emerged as a significant public health concern. Stunting not only impairs physical growth but also hinders cognitive development, resulting in long-term consequences, including decreased productivity and increased susceptibility to chronic diseases later in life (Black et al., 2013).

Indonesia, despite its economic progress, faces a substantial challenge in addressing stunting. According to UNICEF, nearly 30% of Indonesian children under five are stunted, highlighting the depth of the problem (Indonesian Ministry of Health-UNICEF, 2021). Stunting in Indonesia is particularly pervasive in rural areas, where poverty, lack of access to healthcare, and poor dietary practices prevail. These regions often rely on locally available food sources, which, while sometimes nutrient-rich, are often prepared and consumed in ways that do not meet the nutritional needs of young children (Indonesian Ministry of Health, 2020).

In addressing stunting, Indonesia has implemented various strategies at the national and regional levels. These include providing iron tablets to pregnant women, comprehensive immunization programs, vitamin A supplementation, and complementary feeding interventions through the Provision of Additional Food (PAF) program (Ministry of Health, 2020). However, despite these efforts, stunting remains a critical issue in many rural communities, including in Kalimantan, where challenges related to economic conditions, healthcare access, and nutrition knowledge persist (Laksono et al., 2022).

One such community is Bangun Harjo Village, located in Bataguh Subdistrict, Kapuas Regency, Central Kalimantan. This rural region faces significant barriers to healthcare and nutrition, which contribute to the high prevalence of stunting among its children. The Kupang Island Health Center, which serves the area, has identified a need for increased education and resources to improve maternal and child nutrition. This community service project aims to address these gaps by providing targeted education to postpartum mothers and mothers of toddlers, emphasizing the role of proper complementary feeding in preventing stunting (Utomo, 2018).

2. Case presentation

Bangun Harjo Village, located in the Bataguh Subdistrict of Kapuas Regency, Central Kalimantan, is one of many rural regions in Indonesia where stunting remains a significant concern.

Health Sciences International Journal (HSIJ)
Vol. 2, No. 2, August 2024, pp. 183 – 190
ISSN: 3026-5037
DOI: https://doi.org/10.71357/hsij.v2i2.44

The village is served by the Kupang Island Health Center, which has documented high rates of stunting among children under five years old. The lack of awareness about proper feeding practices for young children, coupled with economic hardships, contributes to the persistence of this issue in the region (Utomo, 2018).

The village predominantly relies on locally available foods, such as snakehead fish (haruan), spinach, and rice, which, while nutritionally beneficial, are often not utilized to their full potential due to a lack of knowledge regarding proper preparation methods for young children (Beal et al., 2018; Laksono et al., 2022). Despite the availability of nutritious food, improper cooking techniques and unbalanced meals contribute to inadequate nutrient intake, particularly for infants and toddlers who are most vulnerable to the effects of malnutrition (Sari et al., 2010).

In response to the high prevalence of stunting, a community service intervention was designed and implemented by the Kupang Island Health Center in collaboration with local health workers, including midwives and community health cadres. The intervention aimed to educate postpartum mothers and mothers of toddlers about the importance of complementary feeding and demonstrate practical cooking techniques using locally available ingredients. The intervention, titled "AKUR PENTING (Aksi Kunci Dapur untuk Pencegahan Stunting [Indonesian])" or "Stunting Prevention Kitchen Action," was designed to provide hands-on demonstrations and educational materials to improve maternal knowledge and ultimately reduce stunting rates.

The program included several key activities:

1) Health counseling and education

   Postpartum mothers and mothers of toddlers were invited to participate in health counseling sessions, where they received information about stunting, the importance of complementary feeding, and the role of nutrition in preventing stunting. The sessions were facilitated by healthcare professionals, including midwives and nutritionists, who provided guidance on feeding practices and answered questions from participants (Kang et al., 2018).

2) Cooking demonstrations

   A central component of the intervention was the cooking demonstration, where participants were shown how to prepare nutrient-dense meals using locally available ingredients such as snakehead fish, spinach, rice, and garlic. These foods were chosen for their high protein, iron, and micronutrient content, which are critical for preventing stunting (Pasaribu et al., 2020). The cooking demonstrations emphasized the preparation of simple, affordable meals that could be easily replicated at home.

Health Sciences International Journal (HSIJ)
Vol. 2, No. 2, August 2024, pp. 183 – 190
ISSN: 3026-5037
DOI: https://doi.org/10.71357/hsij.v2i2.44

3) Distribution of educational materials

To ensure that the knowledge gained during the sessions could be applied at home, participants were provided with leaflets, flipcharts, and menu books that contained recipes for nutritious meals. These materials were designed to be simple and practical, providing step-by-step instructions on how to prepare balanced meals for toddlers (Chowdhury et al., 2022).

4) Community engagement and sustainability

The intervention also focused on community engagement by involving local health cadres and midwives in the planning and implementation of the activities. By building local capacity and fostering collaboration between healthcare providers and the community, the program aimed to ensure the sustainability of its outcomes (Beal et al., 2018; Byrd et al., 2022; Goudet et al., 2019).

A total of 25 postpartum mothers and mothers of toddlers participated in the intervention, which was held in the village hall of Bangun Harjo on February 21, 2023. The program was well-received by participants, who expressed enthusiasm for the cooking demonstrations and actively engaged in discussions about nutrition and feeding practices.

3. Discussion

The intervention conducted in Bangun Harjo Village highlights several critical factors in the fight against stunting in rural Indonesia. One of the most significant factors contributing to the success of the intervention was the focus on maternal education. Research has shown that improving maternal knowledge about nutrition and feeding practices is one of the most effective strategies for reducing stunting rates (Bhutta et al., 2013). Mothers who are educated about the importance of proper nutrition are more likely to adopt healthier feeding practices, which can lead to improved child growth outcomes (Dewey & Begum, 2011).

By using hands-on cooking demonstrations and providing practical, easy-to-follow recipes, the program empowered mothers to take control of their children's nutrition. This approach is particularly effective in rural settings, where mothers may have limited access to formal education or healthcare services (Chowdhury et al., 2022). The use of locally available ingredients, such as snakehead fish and spinach, ensured that the meals demonstrated during the sessions could be easily replicated at home, making the intervention both practical and sustainable (Alviodinasyari et al., 2019; Prachom et al., 2023).

The program also emphasized the importance of community engagement in stunting prevention. By involving local health workers, including midwives and community health cadres, the

Health Sciences International Journal (HSIJ)
Vol. 2, No. 2, August 2024, pp. 183 – 190
ISSN: 3026-5037
DOI: https://doi.org/10.71357/hsij.v2i2.44

intervention fostered a sense of ownership and responsibility within the community (Goudet et al., 2019). This is crucial for ensuring the long-term sustainability of the program, as local health workers can continue to provide support and guidance to mothers long after the initial intervention has ended.

However, the intervention also revealed several challenges. While the mothers were enthusiastic about the cooking demonstrations and the educational materials provided, sustaining long-term behavior change remains a significant hurdle. Research suggests that continuous support and follow-up are essential for ensuring that the knowledge gained during interventions is applied consistently over time (Kang et al., 2018). Without regular reinforcement, mothers may revert to old feeding practices, which could undermine the progress made during the intervention.

In addition to the need for sustained support, broader structural issues such as poverty and food insecurity continue to pose significant barriers to stunting prevention in rural areas like Bangun Harjo Village. Many families in the region face economic hardships that limit their ability to access a diverse range of nutritious foods (Bhutta et al., 2013). While the intervention focused on using locally available ingredients, addressing the root causes of food insecurity will require larger systemic changes, including government policies that promote economic development and improve access to healthcare and nutrition (Indonesian Ministry of Health, 2020).

Conditional cash transfer programs, which provide financial incentives for families to invest in health and nutrition, have been successful in other countries in reducing stunting rate (Chowdhury et al., 2022). Expanding such programs in Indonesia, particularly in rural areas, could complement community-based interventions like the one conducted in Bangun Harjo Village and help to address the underlying economic factors that contribute to stunting.

Furthermore, the intervention highlighted the importance of addressing both the direct and indirect factors that contribute to stunting. While poor dietary intake and recurrent infections are the primary direct causes of stunting, indirect factors such as poor maternal education, inadequate healthcare access, and socio-economic challenges also play a significant role (Black et al., 2013). Comprehensive stunting prevention efforts must therefore address these broader social determinants of health to be truly effective.

4. Conclusion

The community service intervention conducted in Bangun Harjo Village provides valuable insights into the importance of maternal education and community engagement in stunting prevention. By educating postpartum mothers and mothers of toddlers about proper

Health Sciences International Journal (HSIJ)
Vol. 2, No. 2, August 2024, pp. 183 – 190
ISSN: 3026-5037
DOI: https://doi.org/10.71357/hsij.v2i2.44

complementary feeding practices and demonstrating how to prepare nutritious meals using locally available ingredients, the intervention addressed one of the key drivers of stunting—poor dietary intake.

However, the intervention also underscored the need for sustained support and follow-up to ensure long-term behavior change, as well as the importance of addressing broader structural issues such as poverty and food insecurity. While community-based interventions are crucial for improving maternal knowledge and promoting healthy feeding practices, they must be part of a broader, multi-sectoral strategy that addresses the underlying socio-economic factors contributing to stunting. Collaboration between local healthcare providers, government agencies, and the community is essential to create a sustainable and comprehensive approach to stunting prevention in rural areas like Bangun Harjo Village.

5. Conflict of interest

All authors declare no conflict of interest.

6. References

Alviodinasyari, R., Pribadi, E. S., & Soejoedono, R. D. (2019). Kadar Protein Terlarut dalam Albumin Ikan Gabus (Channa striata dan Channa micropeltes) Asal Bogor SOLUBLE ROTEIN CONCENTRATION IN SNAKEHEAD FISH ALBUMIN BOGOR ORIGIN (CHANNA STRIATA AND CHANNA MICROPELTES). *Jurnal Veteriner*, *20*(3), 436. https://doi.org/10.19087/jveteriner.2019.20.3.436

Beal, T., Tumilowicz, A., Sutrisna, A., Izwardy, D., & Neufeld, L. M. (2018). A review of child stunting determinants in Indonesia. *Maternal & Child Nutrition*, *14*(4), e12617. https://doi.org/10.1111/mcn.12617

Bhutta, Z. A., Das, J. K., Rizvi, A., Gaffey, M., Walker, N., Horton, S., Webb, P., Lartey, A., & Black, R. E. (2013). Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost? *Maternal and Child Nutrition*, *382*(9890), 452–477.

Black, R. E., Victora, C. G., Walker, S. P., Bhutta, Z. A., Christian, P., de Onis, M., Ezzati, M., Grantham-McGregor, S., Katz, J., Martorell, R., & Uauy, R. (2013). Maternal and child undernutrition and overweight in low-income and middle-income countries. *The Lancet*, *382*(9890), 427–451. https://doi.org/10.1016/S0140-6736(13)60937-X

Byrd, K. A., Shieh, J., Mork, S., Pincus, L., O'Meara, L., Atkins, M., & Thilsted, S. H. (2022). Fish and Fish-Based Products for Nutrition and Health in the First 1000 Days: A Systematic Review of the

Health Sciences International Journal (HSIJ)
Vol. 2, No. 2, August 2024, pp. 183 – 190
ISSN: 3026-5037 DOI: https://doi.org/10.71357/hsij.v2i2.44

Evidence from Low and Middle-Income Countries. *Advances in Nutrition (Bethesda, Md.)*, *13*(6), 2458–2487. https://doi.org/10.1093/advances/nmac102

Chowdhury, T. R., Chakrabarty, S., Rakib, M., Winn, S., & Bennie, J. (2022). Risk factors for child stunting in Bangladesh: an analysis using MICS 2019 data. *Archives of Public Health = Archives Belges de Sante Publique*, *80*(1), 126. https://doi.org/10.1186/s13690-022-00870-x

Dewey, K. G., & Begum, K. (2011). Long-term consequences of stunting in early life. *Maternal & Child Nutrition*, *7 Suppl 3*(Suppl 3), 5–18. https://doi.org/10.1111/j.1740-8709.2011.00349.x

Goudet, S. M., Bogin, B. A., Madise, N. J., & Griffiths, P. L. (2019). Nutritional interventions for preventing stunting in children (birth to 59 months) living in urban slums in low- and middle-income countries (LMIC). *The Cochrane Database of Systematic Reviews*, *6*(6), CD011695. https://doi.org/10.1002/14651858.CD011695.pub2

Indonesian Ministry of Health. (2020). *Basic health research 2020: National report*.

Indonesian Ministry of Health-UNICEF. (2021). *Toward a future in Indonesia without child undernutrition*. Indonesian Ministry of Health-UNICEF.

Kang, Y., Aguayo, V. M., Campbell, R. K., & West, K. P. (2018). Association between stunting and early childhood development among children aged 36-59 months in South Asia. *Maternal & Child Nutrition*, *14 Suppl 4*(Suppl 4), e12684. https://doi.org/10.1111/mcn.12684

Laksono, A. D., Wulandari, R. D., Amaliah, N., & Wisnuwardani, R. W. (2022). Stunting among children under two years in Indonesia: Does maternal education matter? *PloS One*, *17*(7), e0271509. https://doi.org/10.1371/journal.pone.0271509

Pasaribu, Y. P., Buyang, Y., Suryaningsih, N. L. S., Dirpan, A., & Djalal, M. (2020). Effect of steaming and pressurized boiling process to the nutrient profile of Papuan cork fish Channa striata as potential protein-rich food to prevent stunting. *Medicina Clínica Práctica*, *3*, 100120. https://doi.org/10.1016/j.mcpsp.2020.100120

Prachom, N., Yuangsoi, B., Pumnuan, J., Ashour, M., Davies, S. J., & El-Haroun, E. (2023). Effects of Substituting the Two-Spotted Cricket (Gryllus bimaculatus) Meal for Fish Meal on Growth Performances and Digestibility of Striped Snakehead (Channa striata) Juveniles. *Life (Basel, Switzerland)*, *13*(2). https://doi.org/10.3390/life13020594

Sari, M., de Pee, S., Bloem, M. W., Sun, K., Thorne-Lyman, A. L., Moench-Pfanner, R., Akhter, N., Kraemer, K., & Semba, R. D. (2010). Higher household expenditure on animal-source and nongrain foods lowers the risk of stunting among children 0-59 months old in Indonesia:

Health Sciences International Journal (HSIJ)
Vol. 2, No. 2, August 2024, pp. 183 – 190
ISSN: 3026-5037 DOI: https://doi.org/10.71357/hsij.v2i2.44

implications of rising food prices. *The Journal of Nutrition*, *140*(1), 195S-200S. https://doi.org/10.3945/jn.109.110858

United Nations Children's Fund (UNICEF), World Health Organization (WHO), & International Bank for Reconstruction and Development/The World Bank. (2023). *Levels and trends in child malnutrition: UNICEF / WHO / World Bank Group Joint Child Malnutrition Estimates: Key findings of the 2023 edition*. UNICEF & WHO.

Utomo, B. S. (2018). Bersama cegah stunting. *WartaKesmas-Ministry of Health*, 6–7.