



## Training on Tummy Massage for Nasyiatul 'Aisyiyah Cadres in East Purwokerto as an Effort to Improve the Quality of Life of Stunted Toddlers

Inggar Ratna Kusuma<sup>1)</sup>, Sawitri Dewi<sup>2)</sup>, Ragil Setiyabudi<sup>3)</sup> Irma Finurina Mustikawati <sup>4)</sup>

<sup>1,2,3</sup> Faculty of Health Sciences, Universitas Muhammadiyah Purwokerto

<sup>4</sup> Faculty of Medicine, Universitas Muhammadiyah Purwokerto

[✉inggarratnakusuma@gmail.com](mailto:inggarratnakusuma@gmail.com)

(Corresponding author's email)

### ARTICLE INFO

#### Article history

Received : 12-11-2025

Revised : 18-11-2025

Accepted : 18-11-2025

#### Keywords

Toddlers; early detection of stunting; Tummy Massage

### ABSTRACT

According to the 2022 Indonesian Nutritional Status Survey, the prevalence of stunting among children under five decreased to 21.6%, yet this figure remains above the national target of 14% and the \*\*WHO threshold of 20%. Children in rural areas are more vulnerable to stunting due to limited access to healthcare, inadequate parental knowledge of nutrition, poor access to nutritious food, and insufficient clean water and sanitation facilities. In East Purwokerto Subdistrict, there are 1,955 toddlers, most of whom are at risk of stunting. The Tummy Massage Training was implemented to enhance the capacity of Aisyiyah cadres in stimulating toddlers' growth and development, providing early management for gastrointestinal issues (such as bloating, constipation, and colic), and assisting in early stunting detection. The program involved 25 Nasyiatul 'Aisyiyah cadres through counseling sessions and hands-on training. Pre-tests and post-tests were conducted to measure knowledge improvement, showing a notable increase of around 90%. After practical demonstrations, cadres were able to perform tummy massage effectively on toddlers. This community-based intervention proved effective in improving cadres knowledge and skills in managing gastrointestinal disturbances and supporting early stunting prevention efforts. The activity highlights the importance of empowering local health volunteers through practical training as a sustainable strategy to improve child health and reduce stunting rates in vulnerable communities.

Hasil Survei Status Gizi Indonesia 2022 persentase balita stunting turun menjadi 21,6 persen, penurunan tersebut masih jauh dari target nasional sebesar 14 persen dan batas minimal WHO yakni 20 persen. Anak-anak yang tinggal di daerah pedesaan memiliki risiko stunting lebih tinggi karena kurangnya akses ke pelayanan kesehatan, praktek pengasuhan yang dipengaruhi oleh kurangnya pengetahuan orang tua tentang kesehatan gizi, akses ke makanan bergizi yang masih kurang serta kurangnya akses ke air bersih dan sanitasi. Jumlah balita di Kecamatan Purwokerto Timur yaitu 1955 anak dan sebagian besar merupakan balita dengan risiko stunting. Pelatihan Tummy Massage membantu kader 'Aisyiyah untuk



dapat melakukan stimulasi tumbuh kembang balita dan upaya awal penanganan pertama balita dengan gangguan gastrointestinal (kembung, sembelit, melancarkan pencernaan, dan mengurangi kolik) dan awal diagnosa resiko stunting. Kegiatan ini untuk membantu meningkatkan ketrampilan kader Nasiyatul 'Aisyiyah dalam penanganan gangguan gastrointestinal pada balita dan sebagai upaya meminimalkan risiko stunting. Kegiatan dilakukan melalui penyuluhan dan pelatihan Tummy Massage kepada sekitar 25 orang kader. Pada awal dan akhir sesi, diberikan pre test dan post test untuk mengukur tingkat pengetahuan, terdapat peningkatan pengetahuan kader yang cukup baik sekitar 90%, selain itu kader dapat mempraktekkan tummy massage pada balita masing- masing setelah diberikan demonstrasi. Penyuluhan ini memiliki pengaruh positif dalam meningkatkan pengetahuan kader dalam upaya deteksi awal stunting.

## **A. INTRODUCTION**

Stunting is a disorder of child growth and development resulting from chronic malnutrition and recurrent infections, characterized by height or length measurements below the standards established by the Ministry of Health (Ramadhani et al., 2024). According to the Indonesian Nutritional Status Survey (SSGI) 2022, the prevalence of stunting among children under five was 21.6%, a decrease of 2.8% compared to 24.4% in the previous year (Kemenkes, 2023). However, this decline remains far from the national target of 14% and the WHO (Mars Wijayanti et al., 2021) minimum threshold of 20%. Stunted refers to toddlers who are at risk of becoming stunted (Laksono et al., 2022). The government has implemented various efforts to address stunting, including both specific and sensitive interventions. Greater emphasis is placed on preventive measures rather than on the management of stunting cases. One of the key prevention strategies involves improving the nutritional status of toddlers. Tummy massage can help enhance appetite, strengthen the immune system, and prevent illness in young children. Therefore, tummy massage can serve as an effective preventive approach to reduce the risk of stunting.

Various factors contribute to stunting, including child condition, household environment, socioeconomic status, and environmental factors (Mulyaningsih et al., 2021). Predisposing factors may originate from either the child or the mother. Children born with low birth weight (LBW), suffering from acute diarrhea, or frequently consuming unhealthy foods are more prone to stunting (Sartika et al., 2021). Maternal factors include malnutrition during pregnancy, which increases the risk of low birth weight infants (Putri et al., 2023). Access to Water, Sanitation, and Hygiene (WASH) facilities also significantly influences child health; children living in households with good sanitation before the age of two are five times less likely to experience stunting (BKKBN 2023, n.d.)

Children residing in rural areas face higher stunting risks due to limited healthcare access. According to the National Team for the Acceleration of Poverty Reduction (TNP2K), stunting is influenced by inadequate parenting practices due to limited parental knowledge of nutrition and health (Shahid et al., 2021), low-quality antenatal and postnatal care services (Amita et al., 2024), insufficient access to nutritious food (Andi Tenri Mantikaisih Laras & Dety Mulyanti, 2023) and poor access to clean water and sanitation (Perpres, 2021)



In East Purwokerto Subdistrict, there are 1,955 toddlers, with 289 children identified as nutritionally at risk or stunted (19 severely malnourished, 102 undernourished, and 168 underweight). Posyandu (community health post) activities in villages mainly consist of weighing children and providing supplementary food. Most 'Aisyiyah cadres in Purwokerto are Posyandu volunteers. However, Posyandu activities in East Purwokerto, a predominantly rural residential area, remain limited, with low parental participation in optimizing child growth and attending Posyandu services for children aged 0–5 years.

Stunting in East Purwokerto is caused by multiple interrelated factors. Mothers with children at risk of stunting—identified by weight and height measurements that do not correspond to age—often feel embarrassed and reluctant to return for subsequent monthly weighing sessions. This reluctance hinders early detection and timely intervention for stunting risk. The Nasyyatul 'Aisyiyah (NA) cadres in East Purwokerto, many of whom also serve as Posyandu and Family Assistance Team (TPK) members, play a crucial role in stunting prevention efforts in the region (Stewart et al., 2013). However, these cadres have not yet mastered effective communication strategies to educate mothers about the importance of regularly monitoring their children's growth and development. Additionally, families with children under two years old at risk of stunting require specific educational approaches to promote proper developmental stimulation.

Tummy Massage training helps 'Aisyiyah cadres stimulate toddlers' growth and development. It also serves as an initial intervention for children with gastrointestinal disorders such as bloating (Aprianti, 2023), constipation, digestive discomfort, and colic (Laksono et al., 2022). If left unaddressed, stunted toddlers may develop into chronically stunted children (Januarti et al., 2020). The earlier the risk of stunting is identified, the more effective and manageable the intervention will be (Priyono, 2020).

The Tummy Massage training covers techniques for massaging toddlers to enhance growth and development and manage gastrointestinal issues (Sartika et al., 2021). The main advantage of this program is its potential to stimulate growth and development among toddlers at risk of stunting (Fatima et al., 2020)

## **B. METHODS**

The Nasyyatul 'Aisyiyah cadre group of East Purwokerto is part of the local community health cadre network, consisting of 13 administrators and 45 members. Approximately 80% of the administrators are young mothers with children aged 1–5 years. The group's activities include regular meetings, educational sessions, and collaborations with village Posyandu (Integrated Health Post) programs. These initiatives are designed to enhance cadres' knowledge and skills in early detection of stunting through educational outreach and training on Tummy Massage as well as early identification of developmental delays in toddlers. The program was implemented in three stages: preparation, implementation, and evaluation. Participants' knowledge of tummy massage was assessed through pre-test and post-test evaluations, while their practical skills were measured through direct practice using a phantom model.

The preparation stage involved conducting a field survey of the target group, coordinating and obtaining permissions from relevant institutions, and engaging with key stakeholders—particularly Nasyyatul 'Aisyiyah administrators and cadres—to ensure active participation and achievement of program objectives. This stage was carried out over several weeks in February 2025. Subsequently, coordination with the implementation team was



conducted to prepare educational materials and the necessary equipment for delivering effective training to the cadre group.

### C. RESULTS AND DISCUSSION

The Nasyiatul 'Aisyiyah cadre group activity in East Purwokerto was conducted on May 24, 2025, at the TPQ Al Hikmah Hall. The event involved active participation from the local community and was supported by university students. Prior to the educational session, a pre-test was administered to the participants to assess their initial level of knowledge regarding the topics to be delivered. The session then proceeded with the presentation of material on toddler growth and development, including various growth and developmental disorders that may affect young children. This was followed by a session on the benefits of Tummy Massage and a demonstration of the proper steps and techniques for performing it.

Table 1. Stages and Implementation of Community Engagement Activities

Stage	Description	Activities Implemented
<b>Preparation</b>	Identification of partner needs and readiness for tummy massage training.	<ul style="list-style-type: none"> <li>- Coordination with Nasyiatul 'Aisyiyah</li> <li>- Development of training materials and selection of speakers.</li> <li>- Preparation of logistics and training schedule.</li> </ul>
<b>Implementation</b>	Conducting material presentations and tummy massage practices.	<ul style="list-style-type: none"> <li>- Presentation of materials:                             <ol style="list-style-type: none"> <li>(1) <i>Tummy Massagel</i> – Inggar Ratna Kusuma</li> <li>(2) <i>Development in Todller</i>– Sawitri Dewi</li> <li>(3) <i>Readiness for toddler school</i> – Ragil Setiabudi</li> </ol> </li> </ul>
<b>Evaluation</b>	Reflection and follow-up of the activity outcomes.	<ul style="list-style-type: none"> <li>- Observation of participants' progress.</li> <li>- Discussion on implementation challenges and next steps.</li> <li>- Comparison of pre- and post-training tummy massage.</li> </ul>

At the end of the session, participants completed a post-test to evaluate their understanding of the material presented. The results were used to measure the effectiveness of the training activity. The comparison between pre-test and post-test scores indicated a significant improvement—approximately 90%—in cadres' knowledge regarding stimulation of toddler growth and development as well as the practice of Tummy Massage



Picture 1. Cummunity activity



Picture 2. Audience

## **D. CONCLUSION**

The community service activity conducted with the Nasyiatul 'Aisyiyah cadre community in East Purwokerto has made a significant contribution to enhancing cadres' knowledge and skills in performing Tummy Massage, which is expected to serve as a community empowerment initiative for the early detection of stunting among toddlers.

The sustainability of this program is highly encouraged so that local government bodies and the community, particularly Posyandu cadres who are also active members of Nasyiatul 'Aisyiyah, can continue to apply the Tummy Massage method in their routine duties. Furthermore, the program aims to strengthen collaboration between cadres, community health centers (Puskesmas), and village midwives in the monitoring and promotion of healthy growth and development among toddlers.

## **E. ACKNOWLEDGEMENTS**

Acknowledgments are extended to all administrators and members of Nasyiatul 'Aisyiyah East Purwokerto for their cooperation and participation. We also express our sincere gratitude to the Institute for Research and Community Service (LPPM) of Universitas Muhammadiyah Purwokerto for facilitating this community service program, enabling its successful and smooth implementation.

## **F. AUTHOR CONTRIBUTIONS**

Activity implementation: IRK, RS. Article preparation: IRK, SD. Impact analysis: IRK, SD. Results presentation: IRK, RS, SD.

## **G. REFERENCES**

- Amita, D. F., Siti Yuyun Rahayu Fitri, & Wiwi Mardiah. (2024). Intervensi Digital Untuk Meningkatkan Perilaku Makan Buah Dan Sayur Pada Remaja : Systematic Review. *Lentera Perawat*, 5(1), 156-165. <https://doi.org/10.52235/lp.v5i1.294>
- Andi Tenri Mantikaisih Laras, & Dety Mulyanti. (2023). Manajemen Angka Kemiskinan Ekstrem Terhadap Penurunan Angka Stunting Di Kabupaten Dompu Nusa Tenggara Barat. *Jurnal Sains Dan Kesehatan*, 7(1), 27-38. <https://doi.org/10.57214/jusika.v7i1.275>
- Aprianti, R. (2023). The Relationship Between Parenting and Feeding Patterns On The Incidence Of Stunting. *Jurnal EduHealth*, 14(3), 1225-1229.



<https://doi.org/10.54209/jurnaleduhealth.v14i3.2494>

BKKBN 2023. (n.d.). *Kebijakan Percepatan Penurunan stunting*.

Fatima, S., Manzoor, I., Joya, A. M., Arif, S., & Qayyum, S. (2020). Stunting and associated factors in children of less than five years: A hospital-based study. *Pakistan Journal of Medical Sciences*, 36(3). <https://doi.org/10.12669/pjms.36.3.1370>

Januarti, L. F., Abdillah, A., & Priyanto, A. (2020). Family Empowerment Model in Stunting Prevention Based on Family Centered Nursing. *STRADA Jurnal Ilmiah Kesehatan*, 9(2), 1797–1806. <https://doi.org/10.30994/sjik.v9i2.536>

Kemenkes. (2023). Survei Kesehatan Indonesia. In BPS.

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 July), 1–11. <https://doi.org/10.1371/journal.pone.0271509>

Mars Wijayanti, S. P., Kusumawati, E., Ayu Maqfiroch, A. F., & Sistiarani, C. (2021). Media Information Exposure and Stunting Prevalence in Rural Area, Banyumas Regency, Indonesia. *Annals of Tropical Medicine & Public Health*, 24(03). <https://doi.org/10.36295/asro.2021.24309>

Mulyaningsih, T., Mohanty, I., Widyaningsih, V., Gebremedhin, T. A., Miranti, R., & Wiyono, V. H. (2021). Beyond personal factors: Multilevel determinants of childhood stunting in Indonesia. *PLoS ONE*, 16(11 November), 1–19. <https://doi.org/10.1371/journal.pone.0260265>

Perpres. (2021). *Peraturan Presiden No 28* (Issue 1).

Priyono, P. (2020). Strategi Percepatan Penurunan Stunting Perdesaan (Studi Kasus Pendampingan Aksi Cegah Stunting di Desa Banyumundu, Kabupaten Pandeanglang). *Jurnal Good Governance*, 16(2), 149–174. <https://doi.org/10.32834/gg.v16i2.198>

Putri, R. A., Sulastri, S., & Apsari, N. C. (2023). Pemanfaatan Potensi Lokal Dalam Upaya Pencegahan Stunting. *Ijd-Demos*, 5(1). <https://doi.org/10.37950/ijd.v5i1.394>

Ramadhani, F., Hatta, H., & Susanti, I. (2024). *Behavior Change Based on Local Wisdom*. 17(4), 1299–1304.

Sartika, A. N., Khoirunnisa, M., Meiyetrian, E., Ermayani, E., Pramesthi, I. L., & Nur Ananda, A. J. (2021). Prenatal and postnatal determinants of stunting at age 0–11 months: A cross-sectional study in Indonesia. *PLOS ONE*, 16(7), e0254662. <https://doi.org/10.1371/journal.pone.0254662>

Shahid, N., Salman, F., & Makhdam, M. (2021). Major factors responsible for child malnutrition: A review. *Journal of the Pakistan Medical Association*, 71(2 B), 729–733. <https://doi.org/10.47391/JPMA.1243>

Stewart, C. P., Iannotti, L., Dewey, K. G., Michaelsen, K. F., & Onyango, A. W. (2013). Contextualising complementary feeding in a broader framework for stunting prevention. *Maternal & Child Nutrition*, 9(S2), 27–45. <https://doi.org/10.1111/mcn.12088>