

PROVIDING EDUCATION ON NUTRITIONALLY AWARE FAMILY BEHAVIOR AS AN EFFORT TO PREVENT STUNTING

Winda Nur Musfiroh Agustin^{1*}, Yuninda Loviana Ersianti²

^{1,2}Midwifery Department, Faculty of Health Sciences and Psychology, Universitas Sunan Gresik, Indonesia

Abstrak

Stunting masih menjadi permasalahan gizi kronis yang berdampak jangka panjang terhadap kualitas sumber daya manusia, terutama pada periode emas pertumbuhan anak. Rendahnya pengetahuan keluarga mengenai perilaku gizi seimbang, khususnya penerapan Keluarga Sadar Gizi (*KADARZI*), menjadi salah satu faktor yang berkontribusi terhadap kondisi tersebut. Kegiatan pengabdian masyarakat ini bertujuan untuk meningkatkan pengetahuan ibu balita mengenai *KADARZI* sebagai upaya pencegahan stunting berbasis keluarga di Desa Jati, Kabupaten Sidoarjo. Metode yang digunakan adalah edukasi kesehatan dengan pendekatan pemberdayaan masyarakat menggunakan desain *pre* dan *post* edukasi. Sasaran kegiatan adalah ibu yang memiliki balita, yang mengikuti penyuluhan gizi, diskusi interaktif, serta pendampingan dalam memahami prinsip *KADARZI*. Pengukuran pengetahuan dilakukan menggunakan kuesioner sebelum dan sesudah edukasi. Hasil kegiatan menunjukkan adanya peningkatan tingkat pengetahuan ibu balita setelah diberikan edukasi *KADARZI* dibandingkan dengan kondisi sebelum edukasi. Partisipasi aktif masyarakat selama kegiatan juga menunjukkan penerimaan yang baik terhadap program pengabdian yang dilaksanakan. Edukasi *KADARZI* terbukti mampu meningkatkan pemahaman keluarga mengenai praktik gizi yang tepat dan berpotensi mendukung pencegahan stunting secara berkelanjutan. Kegiatan ini diharapkan dapat menjadi model pengabdian masyarakat yang aplikatif dan mudah direplikasi di wilayah lain dengan karakteristik serupa.

Kata Kunci: *KADARZI*, Stunting, Edukasi Gizi

Abstract

Stunting remains a chronic nutritional problem with long-term impacts on human resource quality, particularly during the critical period of child growth. Limited family knowledge regarding balanced nutrition behaviors, especially the implementation of Nutrition-Conscious Family (KADARZI) practices, contributes significantly to this condition. This community engagement activity aimed to improve mothers' knowledge of KADARZI as a family-based stunting prevention effort in Jati Village, Sidoarjo Regency. The method applied was health education using a community empowerment approach with a pre and post education design. The participants were mothers of children under five who received nutrition counseling, interactive discussions, and guided assistance on KADARZI principles. Knowledge levels were assessed using questionnaires administered before and after the educational intervention. The results showed an increase in mothers' knowledge levels following the KADARZI education compared to the baseline condition. Active community participation during the program indicated positive acceptance of the empowerment activities. KADARZI-based education effectively enhanced family understanding of appropriate nutrition practices and has the potential to support sustainable stunting prevention. This activity can serve as a practical and replicable community engagement model for similar settings.

Keywords: KADARZI, Stunting, Nutrition Education

*Correspondence:

Name of Corresponding Author

E-mail: wnm.agustin@lecturer.usg.ac.id

INTRODUCTION

Stunting, also known as impaired growth in children, is a condition caused by long-term malnutrition that results in a child's height being shorter than the healthy growth standard for their age (United Nations Children's Fund., 2021). According to the Indonesian Ministry of Health Regulation No. 2 of 2020 concerning Anthropometric Standards for Assessing Child Nutritional Status, stunting or short stature is a nutritional status based on the Height for Age (HFA) index, with a z-score of less than -2SD (Standard Deviation). Stunting poses a significant threat to the quality of human resources in Indonesia because it is not only a physical growth issue but also causes children to become ill and impairs brain development and intelligence (Candra, 2020).

In 2022, 148.1 million children under 5 years of age were stunted (WHO, 2018; WHO dan Unicef, 2023). Indonesia remains far from the target of a 14% reduction by 2024. According to the 2023 Indonesian Health Survey (SKI), the national stunting prevalence was 21.6%, a decrease of approximately 0.8% compared to the previous year (Kementrian Kesehatan RI, 2024). Stunting in East Java showed a significant downward trend, from 19.2% (2022) to 14.7% (2024). Although this figure is lower than the national prevalence, stunting remains a major health problem that requires serious attention, especially given its impact on child morbidity and the risk of infections such as diarrhea and pneumonia.

Stunting is a multifactorial condition not caused by a single factor but by interconnected factors (Annisa Ridlayanti, 2024). The WHO conceptual framework groups the causes of stunting into three groups: household and family factors (food security, income, nutritional knowledge, and maternal and parental education), individual factors (nutritional intake, exclusive breastfeeding, and history of infectious diseases), and environmental factors (access to health services and sanitation) (WHO, 2018).

The Indonesian government is conducting area-based stunting mapping as a prevalence reduction strategy, allowing interventions to be tailored to local characteristics and risk factors. Nutrition Aware Families (KADARZI) play a crucial role in stunting prevention through optimal nutritional fulfillment, while low nutritional awareness contributes to stunting in toddlers (Wijayanti & Nindya, 2017).

Research shows a significant relationship between KADARZI behavior and stunting incidence in toddlers aged 6–59 months (Kustin & Hidayati, n.d.). Another study also found that maternal knowledge and behavior regarding KADARZI were significantly associated with toddler nutritional status ($p = 0.013$) (Yusuf et al., 2024).

Preliminary interviews with 10 mothers of toddlers showed that 70% of respondents had not implemented KADARZI indicators, such as regular weighing, iodized salt consumption, exclusive breastfeeding, nutritional supplementation, and a balanced diet. The main reasons included a lack of

information, the perception that KADARZI was difficult to implement, and minimal support from health workers. Of the mothers who did not implement KADARZI, two had children with a history of stunting, indicating a potential link between low KADARZI implementation and stunting incidence. These findings underscore the importance of improving family education and support in early stunting prevention efforts.

While this activity successfully improved cognitive understanding, the long-term success of stunting prevention depends on the sustainability of these practices. Future community engagement should focus on practical demonstrations and 'KADARZI-friendly' home environments to ensure that the 85.7% of mothers who now possess fair-to-good knowledge can implement these indicators consistently to reduce stunting prevalence effectively.

In conclusion, KADARZI-based education serves as a vital foundation for family-based stunting prevention. To achieve the national target of a 14% reduction by 2024, it is recommended that this participatory education model be replicated in other regions with similar characteristics, focusing on empowering mothers as the primary health decision-makers in the household.

METHOD

This community service activity aims to increase the knowledge of mothers of toddlers about the Nutrition Aware Family (KADARZI) program as a stunting prevention effort. A one-group pretest-posttest approach was used, comparing the knowledge measurement results before and after KADARZI education.

The activity was conducted in Jati Village, Sidoarjo Regency, in October 2025. Baseline conditions indicated that most mothers of toddlers did not yet fully understand the principles of KADARZI, as reflected in low scores on the knowledge questionnaire before the intervention. This condition served as the basis for implementing the educational activity as a form of community service intervention.

Respondents for this activity were mothers of toddlers aged 24–59 months living in Jati Village, totaling 126 respondents, selected from a population of 183. Respondents were selected using purposive sampling based on predetermined inclusion and exclusion criteria.

The community service intervention was carried out through KADARZI education, including health education, interactive discussions, and brief mentoring related to the five main indicators of KADARZI. Knowledge was measured twice: before the education (pretest) and after the education (posttest).

Data collection used the KADARZI knowledge questionnaire developed by Ni Putu Ari Anggarani (2019). The questionnaire consisted of 25 items with a Likert scale. The instrument underwent face validity and reliability testing, with a Cronbach's alpha value of 0.942, thus being

deemed reliable. The knowledge levels were categorized into three groups based on the total score achieved from the 25-item questionnaire. Following the standard classification, the categories are defined as follows. Good, achieved if the respondent's score is >75% of the total possible score. Fair, achieved if the respondent's score is between 56% and 75%. And poor, achieved if the respondent's score is <56%. This categorization was applied consistently to both pre-test and post-test data to evaluate the impact of the KADARZI education program.

Data analysis was conducted descriptively, comparing KADARZI knowledge scores from the pretest and posttest. Results are presented as average scores, percentages, and category distributions (good, sufficient, and poor) without inferential statistical testing.

The expected outcome is increased knowledge of mothers of toddlers about KADARZI after the education, which will serve as a basis for strengthening the family-based stunting prevention program in Jati Village, Sidoarjo Regency.

RESULT AND DISCUSSION

This community service activity involved 126 mothers with toddlers aged 24–59 months in Jati Village, Sidoarjo Regency. The results of the initial measurement (pretest) showed that the level of respondents' knowledge regarding Nutrition Aware Families (KADARZI) was still relatively low.

Table 1 presents the distribution of respondents' knowledge levels before and after the implementation of KADARZI education. The table shows an increase in the proportion of respondents with good and fair knowledge categories after the community empowerment activities.

Table 1. Distribution of respondents' knowledge levels before and after KADARZI education

No	Knowledge category	Pre-Test		Post-Test	
		Frequency (n)	Percen (%)	Frequency (n)	Percen (%)
1	Good	13	10.3	59	46.8
2	Fair	33	26.3	49	38.9
3	Poor	80	63.5	18	14.3
	Jumlah	126	100	126	100

The results of the respondents' knowledge levels before and after the KADARZI education program are presented in Table 1. In the initial measurement (pre-test), the majority of respondents were in the poor knowledge category (80 people (63.5%)), followed by 33 in the fair knowledge category (26.2%), and 13 in the good knowledge category (10.3%). These findings indicate that before the community service activities were implemented, respondents' knowledge levels regarding KADARZI were relatively low.

After the KADARZI education program (post-test), there was a change in the distribution of respondents' knowledge levels. The number of respondents in the good knowledge category increased to 59 (46.8%), while those in the fair knowledge category increased to 49 (38.9%).

Conversely, the number of respondents in the poor knowledge category decreased to 18 (14.3%). This change in distribution indicates an increase in respondents' knowledge after the educational activities, as illustrated in Figure 1 and summarized numerically in Table 1.

The shift in the proportion of respondents from the poor knowledge category to the fair and good knowledge categories reflects the positive impact of the community service activities in improving families' understanding of KADARZI principles.

The results of the community service activities indicate that the Family Awareness of Nutrition (KADARZI) education program contributed to improving the knowledge of mothers of toddlers in Jati Village, Sidoarjo Regency. The increase in knowledge following the education program demonstrates that the structured and contextual delivery of nutrition information was well-received by the community and effective in improving families' understanding of the principles of balanced nutrition.

Knowledge is an early cognitive factor that plays a crucial role in shaping health attitudes and behaviors. Individuals with higher levels of knowledge are more likely to accept and implement recommended health behaviors (Notoatmodjo S., 2019). Therefore, the increased knowledge gained through the KADARZI education program in this activity provides an important foundation for family-based stunting prevention efforts.

Active community participation throughout the program contributed to the success of this community service program. Respondents' involvement in discussions and Q&A sessions reflected an empowerment process, where the community was not merely a recipient of information but also played an active role in the learning process. This participatory approach aligns with the principles of community empowerment in the health sector (Asniar et al., 2020).

Increasing knowledge about KADARZI has strategic implications for stunting prevention, as KADARZI indicators are directly related to monitoring child growth, ensuring balanced nutrition, and utilizing basic health services. Low family nutrition awareness is known to contribute to stunting, making strengthening family knowledge through education a relevant and necessary step (Devianto et al., 2022; Siska Ningtyas Prabasari & Triani, 2024; Zurhayati & Hidayah, 2022).

In addition to increasing knowledge, this community service activity demonstrated the potential for adopting KADARZI as a health behavior innovation at the family level. A better understanding of KADARZI principles encourages families to recognize their role in independently maintaining the nutritional status of toddlers. Sustainable adoption of KADARZI practices is expected to support long-term improvements in toddler nutritional status (Aghadiati et al., 2023; Munawaroh et al., 2022; Yuwanti et al., 2021).



Figure 1. Documentation of community empowerment activities through KADARZI education in Desa Jati, Sidoarjo.

The figure illustrates a series of community engagement activities, including (a) baseline data collection using a pre-education knowledge questionnaire among mothers of under-five children, (b) delivery of KADARZI education through group discussion and interactive counseling sessions, and (c) post-education evaluation using a knowledge questionnaire. These activities demonstrate active community participation and direct engagement in improving family nutrition awareness.

CONCLUSION

The Family Nutrition Awareness Education (KADARZI) program, a form of community service, has been proven to improve the knowledge of mothers of toddlers in Jati Village, Sidoarjo Regency. This increase in knowledge demonstrates that structured and participatory nutrition education is effective in strengthening families' understanding of the principles of balanced nutrition.

This community service activity has the potential to encourage the adoption of KADARZI practices as a family health behavior in stunting prevention. Therefore, KADARZI education needs to be implemented sustainably and integrated with integrated health post (Posyandu) activities to maintain and expand its impact.

REFERENCES

- Aghadiati, F., Ardianto, O., & Wati, S. R. (2023). Hubungan Pengetahuan Ibu Terhadap Kejadian Stunting Di Wilayah Kerja Puskesmas Suhaid. *Journal Of Healthcare Technology And Medicine*, 9(1), 130. <https://doi.org/10.33143/jhtm.v9i1.2793>
- Annisa Ridlayanti. (2024). *Patofisiologi Stunting (Growth Failure)*. Universitas Airlangga.
- Asniar, A., Kamil, H., & Mayasari, P. (2020). *Pendidikan Dan Promosi Kesehatan*. Syiah Kuala University Press. <https://doi.org/10.52574/syiahkualauniversitypress.224>
- Candra, A. (2020). *Epidemiologi Stunting*. Universitas Diponegoro.
- Devianto, A., Dewi, E. U., & Yustiningsih, D. (2022). Hubungan Tingkat Pengetahuan Ibu Tentang Stunting Dengan Angka Kejadian Stunting Di Desa Sanggrahan Prambanan Klaten. *Journal Nursing Research Publication Media (Nursepedia)*, 1(2), 81–88. <https://doi.org/10.55887/nrpm.v1i2.13>
- Kementrian Kesehatan Ri. (2024). *Profil Kesehatan 2023*.
- Kustin, O. E. T. W., & Hidayati, A. (N.D.). The Relationship Between Nutrition Conscious Family Behavior And Stunting Incidents In Toddlers In The Jelbuk Health Center Working Area, Jember Regency. *Ournal Of Nursing Periodic*, 2(1). Retrieved From <https://jnp.uuds.ac.id/jnp/article/view/31>.
- Munawaroh, H., Nada, N. K., Hasjiandito, A., Faisal, V. I. A., Heldanita, H., Anjarsari, I., & Fauziddin, M. (2022). Peranan Orang Tua Dalam Pemenuhan Gizi Seimbang Sebagai Upaya Pencegahan Stunting Pada Anak Usia 4-5 Tahun. *Sentra Cendekia*, 3(2), 47. <https://doi.org/10.31331/sencenivet.v3i2.2149>
- Notoatmodjo S. (2019). *Promosi Kesehatan Dan Perilaku Kesehatan* (Cetakan Ke 4). Rineka Cipta.
- Siska Ningtyas Prabasari, & Triani, Y. (2024). Mipasi Sebagai Upaya Pencegahan Stunting. *Gemassika: Jurnal Pengabdian Kepada Masyarakat*, 8(1), 56–64. <https://doi.org/10.30787/gemassika.v8i1.1417>
- United Nations Children’s Fund. (2021). The State Of The World’s Children 2021: On My Mind—Promoting, Protecting And Caring For Children’s Mental Health. . *United Nations Children’s Fund*.
- Who. (2018). Childhood Stunting: Context , Causes Andconsequences Who Conceptual Framework. *Who*.
- Who Dan Unicef. (2023). *Publikasi Unggulanbahasa Indonesia:23 Mei 2023 Tingkat Dan Tren Kekurangan Gizi Anak: Who Dan Unicef*.
- Wijayanti, S., & Nindya, T. S. (2017). Hubungan Penerapan Perilaku Kadarzi (Keluarga Sadar Gizi) Dengan Status Gizi Balita Di Kabupaten Tulungagung. *Amerta Nutrition*, 1(4), 379. <https://doi.org/10.20473/amnt.v1i4.7135>
- Yusuf, N. A. R., Haji Jafar, C. P. S., & Pandeirof, F. (2024). Hubungan Kadarzi (Keluarga Sadar Gizi) Dengan Kejadian Stunting Pada Balita Usia 24-59 Bulan. *An Idea Health Journal*, 5(02), 104–112. <https://doi.org/10.53690/ihj.v5i02.424>

Yuwanti, Y., Mulyaningrum, F. M., & Susanti, M. M. (2021). Faktor – Faktor Yang Mempengaruhi Stunting Pada Balita Di Kabupaten Grobogan. *Jurnal Keperawatan Dan Kesehatan Masyarakat Cendekia Utama*, 10(1), 74. <https://doi.org/10.31596/jcu.v10i1.704>

Zurhayati, Z., & Hidayah, N. (2022). Faktor Yang Berhubungan Dengan Kejadian Stunting Pada Balita. *Jomis (Journal Of Midwifery Science)*, 6(1), 1–10. <https://doi.org/10.36341/jomis.v6i1.1730>