

The Effectiveness of Leaflets in Improving Breastfeeding Mothers' Knowledge of Stunting Prevention in Masalili Village

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ABSTRACT

Stunting remains a public health challenge in Muna Regency, with a prevalence exceeding the national target (29.8%). Breastfeeding mothers' lack of knowledge regarding child-rearing practices and nutrition is one of the primary risk factors. Educational interventions using practical, self-directed media such as leaflets are needed to improve health literacy at the village level. This study aims to analyze the effectiveness of using leaflets to improve breastfeeding mothers' knowledge regarding stunting prevention in Masalili Village, Muna Regency. This is a quasi-experimental study with a non-equivalent control group design. The sample consisted of 30 breastfeeding mothers divided into two groups (15 in the intervention group and 15 in the control group) using purposive sampling. The intervention group received education using leaflets, while the control group received conventional education. The research instrument was a validated knowledge questionnaire. Data analysis was performed using univariate and bivariate methods with the Paired T-test using SPSS version 26.0 at a 95% confidence level. The results of the study showed a significant increase in the average knowledge score in the intervention group, from 66.5 (SD 7.2) to 86.4 (SD 5.1), with a p-value of 0.002. Meanwhile, in the control group, the increase in knowledge was not statistically significant, from 65.3 (SD 6.9) to 70.7 (SD 6.5) with a p-value of 0.180. There was a difference of 16.9 in the increase in knowledge scores in the group that received the leaflet. The leaflet was significantly effective in increasing breastfeeding mothers' knowledge regarding stunting prevention. The use of concise, self-contained visual media is highly recommended for health workers at community health centers as a routine health promotion tool in efforts to reduce stunting rates in rural areas

INTRODUCTION (Times New Roman, 12, bold, space 1)

Stunting is a manifestation of impaired linear growth in young children resulting from chronic malnutrition and recurrent infections, characterized by a height-for-age (HFA) z-score of less than -2 standard deviations (SD) (Ibrahim et al., 2021). According to data from the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), approximately 148.1 million children under five (22%) worldwide suffer from stunting (UNICEF, 2023; WHO, 2023). Globally, stunting remains a significant public

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health challenge due to its lasting impact on cognitive development and future productivity (Flynn et al., 2021).

In Indonesia, although the prevalence of stunting has shown a downward trend according to data from the Indonesian Health Survey (SKI)—from 37.6% in 2013 to 19.8% in 2024—the figure remains above the national target and the 20% threshold set by the WHO (Kemenkes, 2023). Although these achievements reflect the success of various nutrition-specific and nutrition-sensitive intervention programs, the public health burden remains significant. The latest prevalence figures indicate that nearly one in five children under five in Indonesia—equivalent to approximately 4.48 million children—still suffer from stunting (Vaivada et al., 2020)

According to the 2023 Indonesian Health Survey (SKI), the stunting rate in Southeast Sulawesi Province actually rose to 30.2%, up from 27.7% in the 2022 SSGI (Dinkes Provinsi Sulawesi Tenggara, 2024). Muna Regency is one of the regions with a relatively high prevalence of malnutrition, at 28.9%. This figure remains well above the WHO's tolerance threshold (20%), making it a priority area for nutrition intervention (Dinkes Kabupaten Muna, 2025)

The first 1,000 days of life (HPK) represent a critical window of opportunity for preventing stunting. Breastfeeding mothers play a central role during this period, particularly in exclusive breastfeeding and appropriate infant and child feeding practices (PMBA) (Erfina et al., 2025). Mothers' adequate knowledge of nutrition and child-rearing practices is a key determinant of children's nutritional status. However, mothers' low level of understanding often poses a barrier to the implementation of stunting prevention behaviors at the household level (Agyen et al., 2024).

In Masalili Village, Muna Regency, unequal access to health information and limited educational resources for breastfeeding mothers are believed to be contributing factors to the low level of understanding regarding stunting prevention. Based on initial observations, child-rearing practices that do not meet health standards are still prevalent, necessitating efforts to strengthen health literacy through targeted health promotion initiatives (Aziseh, 2023).

Health education requires supporting materials to enhance the effectiveness of message delivery. Leaflets were chosen because they offer the advantage of combining text and engaging visuals, are easy to carry, and can be reviewed by mothers at home (Lestari & Sefrina, 2024). The use of visual aids in health promotion has been shown to improve information retention compared to conventional lectures without visual aids (Listiyawati et al., 2025).

The choice of leaflets as a medium in this study was based on considerations of accessibility and the effectiveness of health communication in rural areas such as Masalili Village. Compared to audiovisual media such as videos, leaflets do not depend on the availability of electronic devices or the stability of internet signals, which often pose technical barriers in remote areas (Agustina et al., 2025). In addition, unlike flipcharts which are one-way and can only be viewed during the educational session leaflets offer the advantage of flexibility, as they can be taken home by breastfeeding mothers (Ambarwati et al., 2026). Its concise yet informative nature, combined with simple text and engaging visual illustrations, facilitates self-paced learning in the home environment. This is particularly crucial for breastfeeding mothers with limited free time, as information on stunting prevention can be reviewed and discussed with other family members, ultimately reinforcing memory retention and a sustained understanding of the material (Dinanda et al., 2024).

This study aims to analyze the impact of educational outreach using leaflets on improving breastfeeding mothers' knowledge of stunting. The findings of this study are expected to serve as a basis for local community health centers in designing more practical and targeted educational strategies

METHODOLOGY

Research Types and Designs

This study is a quantitative study with a quasi-experimental design using a non-equivalent control group design. This design aims to examine the effect of the intervention by comparing respondents' knowledge levels before (pre-test) and after (post-test) receiving education via leaflets.

Research Location and Time

The study was conducted in Masalili Village, Muna Regency. This location was selected through purposive sampling, taking into account the characteristics of the area and the need for education on stunting among breastfeeding mothers in the region. The study was conducted in September 2025.

Population and Sample

The population for this study consisted of all breastfeeding mothers in the region, with a sample of 30 respondents selected using purposive sampling and divided equally (n=15 per group). **The inclusion criteria for this study were breastfeeding mothers with infants aged 0–24 months**

Instrumen Penelitian

The instrument used for data collection was a questionnaire on knowledge of stunting that had been validated for both validity and reliability. The questionnaire consisted of 15 multiple-choice questions covering the definition of stunting, its causes, impacts, and prevention methods. In addition, an intervention tool in the form of a leaflet was used, containing concise information and engaging illustrations regarding the prevention of stunting during the breastfeeding period.

Data Collection Procedures

Data collection was conducted in three phases:

1. 1. Pre-test Phase: Respondents were asked to complete a questionnaire before receiving the educational session to assess their baseline knowledge.
2. 2. Intervention Phase: Researchers provided education on stunting using leaflets for approximately 20–30 minutes. The leaflets were distributed to respondents to read and keep.
3. 3. Post-test Phase: After the intervention, respondents completed the same questionnaire again to measure changes in knowledge.

Data Analysis

The data were analyzed using statistical software. Univariate analysis was used to describe the respondents' characteristics and the mean knowledge scores. Bivariate analysis was used to test the effect of the intervention using an independent samples t-test.

RESULTS AND DISCUSSION

The characteristics of the respondents in both groups were relatively balanced

Table 1
Respondent Characteristics

Charakteristik Responden	Intervention	Control
Age		
21-25 year old	4 (26,7%)	3 (20,0%)
26-30 year old	6 (40,0%)	7 (46,7%)
31-35 year old	5 (33,3%)	5 (33,3)
Education		
Elementary school	1 (6,7%)	0 (0,0%)
Junior High school	3 (20,0%)	4 (26,7%)
Senior high school	9 (60,0)	8 (53,3)
Bachelor	2 (13,3%)	3 (20,05)
Occupation		
Housewife	11 (73,3%)	12 (80,0)
Self employed	4 (26,7%)	3 (20,0%)
Total	15 (100,0%)	15 (100,0%)

The characteristics of the respondents in this study showed a nearly homogeneous distribution between the treatment group and the control group. Based on age, the majority of respondents in both groups were in the 26–30 age range, namely 6 people (40.0%) in the treatment group and 7 people (46.7%) in the control group. In terms of educational level, most respondents were high school graduates, with respective percentages of 60.0% in the treatment group and 53.3% in the control group. Meanwhile, based on employment status, the majority of respondents in both groups were homemakers, with 11 people (73.3%) in the treatment group and 12 people (80.0%) in the control group. Overall, this demographic profile indicates that the respondents had comparable backgrounds prior to receiving the intervention.

Table 2
Average Stunting Knowledge Scores (Pre-test and Post-test) in the intervention group and the control group

Group	N	Mean Pre-test (SD)	Mean Post-test (SD)	P-value*
Intervention	15	66,5 (7,2)	86,4(5,1)	0,002
Control	15	65,3 (6,9)	70,7(6,5)	0,180

*Uji Paired T-Test

Interpretation of the Results in Table 2:

1. Intervention Group: There was a significant increase in the average knowledge score, from 66.5 (SD 7.2) at the pre-test to 86.4 (SD 5.1) at the post-test. Statistical test results showed a p-value of 0.002 ($p < 0.05$), indicating a significant effect of the leaflet on improving breastfeeding mothers' knowledge regarding stunting prevention
2. Control Group: The mean knowledge score at the beginning of the study was 65.3 (SD 6.9) and increased to 70.7 (SD 6.5) at the end of the study. However, this increase was not statistically significant, with a p-value of 0.180 ($p > 0.05$).

**Table 3:
Results of the Intergroup Intervention Effectiveness Test**

Variable	Rata-rata Peningkatan Skor	Selisih	P-Value**
Knowledge Enhancement	16,9		<0.000

** Uji Independent T-Test

The results—specifically, an average increase in scores of 16.9 points—indicate a substantial difference in knowledge acquisition between the two group.

The results of the analysis indicate that the use of leaflets had a significant impact on increasing breastfeeding mothers’ knowledge regarding stunting prevention in Masalili Village, Muna Regency. This is evidenced by an average increase in knowledge scores of 16.9, with a p-value of <0.000. This significance level, which is well below 0.05, indicates that the leaflet intervention is empirically effective in changing respondents’ cognitive knowledge.

This is supported by a study by Djafar et al. (2024), which states that the use of leaflets is effective in changing knowledge levels because they stimulate the sense of sight, making health messages easier to absorb and remember over a longer period of time (Djaafar et al., 2024).

This significant increase in knowledge aligns with cognitive theory, which states that the process of information retention is more effective when it involves visual stimuli. Leaflets have an advantage over verbal education alone because they present information concisely, include relevant images, and feature an appealing layout (Rosa et al., 2025).

Psychologically, print media such as leaflets allow recipients to reread the material at their own pace. In rural areas like Masalili Village, the availability of physical materials that can be taken home serves as a reminder for breastfeeding mothers to practice appropriate parenting and ensure proper nutrition to prevent stunting (Siburian & Ritonga, 2024)

Psychologically, print media such as leaflets allow respondents to reread the material at their own pace. In rural areas like Masalili Village, the availability of physical materials that can be taken home serves as a reminder for breastfeeding mothers. This finding aligns with the research by Setyawan et al. (2025) in other rural areas, which showed that stunting education via leaflets consistently and significantly improved mothers’ cognitive scores compared to conventional counseling alone. This medium bridges the gap in access to digital health information, which may not yet be evenly distributed at the village level (Setyawan et al., 2025).

Information focused on stunting prevention—including exclusive breastfeeding, nutritious complementary foods, and sanitation—is crucial for breastfeeding mothers. A 16.9-point increase in the score indicates a shift from unawareness to knowledge. This improvement was most likely driven by the leaflet’s design, which simplified the complex medical concepts of stunting into more accessible and practical language. This success is supported by prior research indicating that self-directed informational materials (such as leaflets) can enhance mothers’ autonomy in seeking health solutions for their children (Alfitriyeni et al., 2024)

The results of this study suggest that limited access to information in rural areas can be addressed through the use of targeted health promotion materials. In Masalili Village, where social interactions among breastfeeding mothers remain quite close-knit, leaflets serve not only as individual learning tools but also as topics for discussion within their social circles. This reinforces the retention of information in the respondents' long-term memory (Dinanda et al., 2024).

Although there has been a significant increase, researchers recognize that knowledge is only the first step toward behavioral change. However, given the substantial increase in scores (16.9), there is a strong likelihood that this increase in knowledge will serve as the foundation for changes in the attitudes and practices of breastfeeding mothers, thereby contributing to a sustainable reduction in stunting rates in Muna Regency.

The researchers acknowledge that this study has several limitations that should be noted. First, the observation period between the intervention (pre-test) and the final evaluation (post-test) was relatively short, so this study was only able to measure short-term changes in knowledge without examining long-term information retention. Furthermore, this study was unable to control for external variables such as exposure to information from the mass media or discussions among respondents outside of the intervention sessions, which may have influenced the final results. Nevertheless, the results of this study still provide an objective picture of the effectiveness of leaflets as an initial tool in efforts to promote health and prevent stunting at the village level.

CONCLUSION

Based on the results of a study conducted in Masalili Village, Muna Regency, it can be concluded that the use of leaflets is effective in improving breastfeeding mothers' knowledge regarding stunting prevention. This is evidenced by a significant increase in the average knowledge score in the intervention group (from 66.5 to 86.4) with a p-value of 0.002. In contrast, no statistically significant increase in knowledge was found in the control group ($p = 0.180$). The difference in score increase of 16.9 indicates that visual interventions and structured education through leaflets were able to transform respondents' understanding of stunting prevention efforts in an optimal manner

It is hoped that health workers, particularly those in the relevant Community Health Center (Puskesmas) service areas, can optimize the use of leaflets as a routine tool in Posyandu activities and individual counseling. For future research, it would be beneficial to expand the study variables to include changes in attitudes and practices, as well as conduct longitudinal studies to assess the consistency of knowledge retention among breastfeeding mothers following media-based interventions.

LITERATURE

- Agustina, B. H., Hermawan, N. S. A., & Rukmana, N. M. (2025). Pengaruh Promosi Kesehatan Media Leaflet Terhadap Tingkat Pengetahuan Kader Posyandu Dalam Gerakan Pencegahan Stunting. *Jurnal Ilmu Kedokteran Dan Kesehatan*, 12(10), 2549–4864. <http://ejournalmalahayati.ac.id/index.php/kesehatan>
- Agyen, V. A., Annim, S. K., & Asmah, E. E. (2024). Neighbourhood mothers' education and its differential impact on stunting: Evidence from 30 Sub-Saharan African countries. *Social Science & Medicine*, 340, 116462. <https://doi.org/10.1016/J.SOCSCIMED.2023.116462>

- Alfitriyeni, S., Kusvitasari, H., & Hasanah, S. N. (2024). Efektifitas Edukasi Stunting Menggunakan Media Leaflet Terhadap Tingkat Pengetahuan Wanita Usia Subur Di Wilayah Kerja Puskesmas Sungai Tabuk 1. *Health Care : Jurnal Kesehatan*, 13(2), 190–197.
- Ambarwati, A., Sabir, & Elfiyunai, N. N. (2026). Pengaruh Edukasi Nutrisi Ibu Hamil dengan Media Booklet terhadap Pengetahuan dan Sikap Ibu Hamil dalam Pencegahan Stunting di Wilayah Puskesmas Biromaru. *Jurnal Pengabdian Masyarakat Dan Riset Pendidikan*, 4(4), 22152–22163. <https://doi.org/10.31004/jerkin.v4i4.5664>
- Aziseh, N. (2023). Penyuluhan strategi pencegahan stunting di kelurahan dr. Soetomo kota surabaya. *Communnity Development Journal*, 4(6), 13251–13257.
- Dinanda, C., Manikam, R. M., & Angesti, A. N. (2024). Pengaruh Edukasi Gizi menggunakan Media Leaflet terhadap Pengetahuan Gizi Seimbang pada Ibu Balita di Kelompok Bermain Al-Muttaqin Desa Ladan Kabupaten Kepulauan Anambas. *Jurnal Ilmiah Kesehatan*, 16(2), 432–442. <https://doi.org/10.37012/jik.v16i2.2351>
- Dinkes Kabupaten Muna. (2025). *Laporan Tahunan*. Dinas Kesehatan Kabupaten Muna.
- Dinkes Provinsi Sulawesi Tenggara. (2024). *Profil kesehatan Provinsi Sulawesi Tenggara*. Dinas kesehatan Provinsi Sulawesi Tenggara.
- Djaafar, T., Amsal, & Novarianti. (2024). Increasing Knowledge and Attitudes of Mothers of Toddlers with Leaflet Media About Stunting. *JURNAL PROMOTIF PREVENTIF*, 7(2), 205–210. <http://journal.unpacti.ac.id/index.php/JPP>
- Erfina, E., Hariati, S., Tawali, S., Nurmaulid, N., Safari, K., & McKenna, L. (2025). Development and evaluation of blended interventions to prevent stunting in children of adolescent mothers: A mixed methods study. *Journal of Pediatric Nursing*, 85, 697–705. <https://doi.org/10.1016/J.PEDN.2025.10.003>
- Flynn, J., Alkaff, F. F., Sukmajaya, W. P., & Salamah, S. (2021). Comparison of WHO growth standard and national Indonesian growth reference in determining prevalence and determinants of stunting and underweight in children under five: a cross-sectional study from Musi sub-district [version 4; peer review: 2 approved]. *F1000Research*, 9(May 2020), 1–20. <https://doi.org/10.12688/F1000RESEARCH.23156.4>
- Ibrahim, H. A. A., Nasr, R. A., Salama, A. A., & Amin, A. A. (2021). Childhood malnutrition and hypo mineralized molar defects: A cross sectional study. *F1000 Research*, 10(3), 1–22. <https://doi.org/10.12688/f1000research.74557.1>
- Kemendes, R. (2023). *Survei Kesehatan Indonesia (SKI) 2023*. Badan Kebijakan Pembangunan Kesehatan.
- Lestari, R. A., & Sefrina, L. R. (2024). Efektivitas Penggunaan Media Leaflet Dengan Tingkat Pengetahuan Dan Sikap Ibu Mengenai Stunting. *PREPOTIF : Jurnal Kesehatan Masyarakat*, 8(3), 7420–7828.
- Listiyawati, M. D., Putri, D. W., & Simanungkalit, S. F. (2025). The Effect of Stunting Prevention Education on Mothers' Knowledge at Pasir Putih Health Center. *Jurnal Mandala Pengabdian Masyarakat*, 6(2), 614–822. <https://doi.org/10.35311/jmpm.v6i2.656>
- Rosa, S. E. B., Pratiwi, D., & Siahaan, M. F. (2025). The Effectiveness Of Leaflet Media On Maternal Knowledge And Attitudes About Stunting Prevention At Titi Papan Village Medan Deli District In 2025. *Jurnal Maternitas Kebidanan*, 10(1), 208–217.
- Setyawan, M. R., Hidayah, T. Y., Wibowo, N. A. R., Setyaningrum, D., Trisanti, N. E., Kurniawati, S. Y., Putri, D., Rais, M. R. F., Damayanti, K. S., Rifa'i, M. R., &

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- Hartono, B. (2025). Efektivitas Leaflet Menu PMT dalam Meningkatkan Pengetahuan Ibu terhadap Pencegahan Stunting di Kelurahan Jurang, Temanggung. *Pelayanan Unggulan : Jurnal Pengabdian Masyarakat Terapan*, 2(3), 01–10. <https://doi.org/10.62951/unggulan.v2i3.1951>
- Siburian, U. D., & Ritonga, P. T. (2024). The Effectiveness of Health Promotion Using Leaflet Media and Poster Media on The Knowledge of Mother Todders About Stunting. *Contagion : Scientific Periodical of Public Health and Coastal Health*, 6(1), 752–763.
- UNICEF. (2023). *The State of the World's Children 2020: In Children's Nutrition*. UNICEF.
- Vaivada, T., Akseer, N., Akseer, S., Somaskandan, A., Stefopoulos, M., & Bhutta, Z. A. (2020). Stunting in childhood: An overview of global burden, trends, determinants, and drivers of decline. *American Journal of Clinical Nutrition*, 112, 777S-791S. <https://doi.org/10.1093/ajcn/nqaa159>
- WHO. (2023). *Global Database on Child Growth and Malnutrition*. World Health Organization, (WHO). <http://www.who.int/nutgrowthdb/about/introduction/en/index6.html>