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The Effect of Moringa (*Moringan Oleifera*) Leaf Powder on Maternal Knowledge with Stunting Prevention in Drien Rampak Village

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Abstract

Background of study: Stunting is a condition where toddlers don't grow properly because they don't get enough nutrition over a long time, get sick often, and don't get enough mental stimulation. One way to prevent stunting is by using Moringa leaves. However, many parents don't know much about the benefits of Moringa leaves, so it's important to educate them so they understand better.
Aims and scope of paper: This study aimed to find out how giving Moringa leaf powder to mothers affects their knowledge about preventing stunting in Drean Rampak Village.
Method: This research used a quantitative design with a quasi-experimental approach, specifically a one-group pretest-posttest design. The study took one month, from August 1 to September 1, 2024, and included 49 participants. It used the Wilcoxon test for analysis of the data.
Results: The study found that giving Moringa leaf powder had a big effect on mothers' knowledge about preventing stunting, with a p-value of 0.000, which is less than the significance level of 0.05, and a z-value of -6.285b.
Conclusion: The results show that giving Moringa leaf powder helps improve mothers' knowledge about preventing stunting in Drean Rampak Village, West Aceh. More promotion and education about stunting and the benefits of Moringa leaves are needed to help reduce the number of children who are stunted.

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INTRODUCTION

Stunting is a type of growth problem in young children caused by poor nutrition over a long time, repeated illnesses, and not getting enough mental or physical stimulation (Maharani et al., 2023). It happens when a baby doesn't get enough good food and care during the first 1000 days of life. This leads to slow brain development and slower growth. Stunted children are shorter than what is expected for their age. However, it's important to know that being short doesn't always mean a child is stunted, and stunting is a specific kind of short stature caused by long-term problems (BKKBN (Badan Kependudukan dan keluarga Berencana), 2022).

According to the World Health Organization (WHO) in 2023, stunting affected about 22% of children worldwide, which is roughly 149.2 million people. More than half of these cases were in Asia, with a total of 83.6 million children experiencing stunting. The highest number came from South Asia,

accounting for 58.7% of Asia's cases, followed by Southeast Asia with 14.9%, and Central Asia with 0.9% (WHO (World Health Organization), 2023).

In 2021, Stunting in Indonesia is still a significant issue, with occurrence rates of 24.4%, which surpasses the World Health Organization's target of. Because of this, Indonesia falls into the category of countries with a high stunting problem. In 2022, The Ministry of Home Affairs is responsible for monitoring the implementation of 8 Convergence Actions for Integrated Stunting Reduction Interventions, there were 977,185 children classified as stunted and 344,122 children classified as very stunted, out of a total of 15,798,153 children under the age of five (KEMENKES, 2022).

Aceh is one of the 12 priority provinces in the country where stunting is most common in 2022 (Zufriady et al., 2023). According to the 2021 Indonesian Nutrition Status Study (SSGI), 13 areas in Aceh are among the 76 districts or cities in these 12 priority provinces that have high stunting rates. Stunting rates above 40 percent are observed in certain areas, including Gayo Lues, Subulussalam City, and Bener Meriah. Gayo Lues, with a rate of 42.9 percent, is ranked seventh in the nation. Stunting is prevalent in Pidie, North Aceh and East. (BKKBN (Badan Kependudukan dan keluarga Berencana), 2022). In 2023, the West Aceh Health Office predicted that there will be 352 stunting cases in 12 sub-districts of Westaceh Regency. This is a significant decrease from 782 cases in 2022, but the number is still quite high (Dinas Kesehatan Aceh, 2023)

One way to prevent stunting is through the Supplementary Feeding Program (TMT) for toddlers. This program helps children who are malnourished to improve their nutritional condition and meet their dietary needs, so they can have healthy growth (KEMENKES, 2020). One type of food used in this program is products made from moringa leaves. Moringa plants are found all over Indonesia, and they are thought to have many health benefits. The WHO even calls moringa leaves a miracle tree, meaning it is a very special and beneficial plant (Wardita et al., 2021).

Moringa (moringa oleifera) is referred to as “a miracle tree” because every part of this plant has benefits and potential that can be used for different purposes (Ahmad et al., 2023). Moringa oleifera is known as one of the most economically valuable plants, especially for the food industry in some developing countries (Andini et al., 2024). Moringa (moringa oleifera) contains abundant nutrients that play an important role in meeting human nutritional needs. The leaf part of the moringa plant (moringa oleifera) is usually used in food ingredients because of its high nutritional value. Compared to other plants that are commonly consumed as vegetables or fruits, the nutritional content of moringa leaves is much higher (Flora et al., 2021). Moringa leaves are currently widely used in products that can be consumed by toddlers, of course through the fortification process. Fortification is a method of adding certain vitamins and minerals to food which is a chance to give healthy food to everyone in society, especially those who need it most because of their nutrition needs (Fatmawati et al., 2022).

The Moringa tree, also called Moringa Oleifera, is an amazing natural food packed with incredible health benefits and loaded with protein. Its leaves are especially nutritious. When dried, Moringa leaves are rich in over 40 natural antioxidants, about 26 grams of protein, plenty of calcium (2,095 mg), iron (27.1 mg), and a very high amount of β-carotene (16,800 mg), making them a powerful addition to a healthy diet (Moedjiherwati et al., 2023). Research by (Nurdin et al., 2022) found that moringa leaves positively influence the nutritional status of toddlers, as measured by age-specific body mass index (BMI-for-age).

Additionally, improving knowledge is essential in efforts to reduce stunting by encouraging better feeding practices in children. Mothers' understanding of proper nutrition and healthy eating habits plays a crucial role in preventing stunting (Aghadiati et al., 2023). The lack of knowledge among mothers is due to the fact that they do not receive sufficient education or counseling from health workers on how to prevent stunting. The respondents' lack of knowledge will cause them to fail to meet the nutritional needs of their toddlers, which will result in stunted growth and development (Sepeh et al., 2023). One effort to increase knowledge to change feeding behavior in children is through nutrition education using moringa leaves, which have high nutritional content, including

22.7% protein, fat 4.65%, carbohydrates 7.92%, and calcium 350-50 mg. Moringa leaves are rich in essential nutrients, including vitamins, minerals, protein, and antioxidants, which support children's growth and development. As a result, increasing mothers' awareness of the benefits of moringa leaves in preventing stunting can make a meaningful difference (Andini et al., 2024).

Researcher interviews with 10 mothers wh toddlers found that 6 people do not know how to prevent stunting by using moringa leaf powder and there has never been counseling from health workers regarding how to process moringa leaf powder. While 4 toddlers know how to prevent stunting from social media but do not know the processing of moringa leaf powder as an additional food. This study aimed to find out how giving Moringa leaf powder to mothers affects their knowledge about preventing stunting in Drean Rampak Village.

METHOD

This research was conducted from August 01 to September 01, 2024 at Drien Rampak Village, Arongan Lambalek District. The type of research used is quasi esperiment with one group pretest-posttest design. This design was chosen due to limited human resources, which made it difficult to form a comparison group. However, this design allowed respondents to be their own controls, making differences in results more clearly visible. This study reveals the effect of moringa (moringan oleifera) leaf powder on maternal knowledge by involving one group of subjects. The group will be given a pretest to measure knowledge before treatment followed by treatment and given a posttest to measure knowledge after treatment using a questionnaire that measured mothers' knowledge about stunting and the use of moringa leaves, which was based on a study conducted by (Fatmawati et al., 2022; Palupi et al., 2023) which has undergone validity and reliability testing. In this study, the sample consisted of 49 mothers from Drien Rampak Village, and the sampling method used was total sampling (Sulung & Yasril, 2023). This study used the Wilcoxon test to analyze the data because the normality test showed the data didn't follow a normal distribution. This test helped determine the change in mothers' knowledge levels before and after the intervention.

RESULTS AND DISCUSSION

Results

1. **Univariate Analysis**

a. Demographic data

a) Age of respondent

Table 1 The distribution of age among the respondents in Drien Rampak Village

No	Age	Frequency	%
1	25-44 years (Young Age)	47	95.9
2	44-60 Years (Middle Age)	2	4.1
Total		**49**	**100**

Source: Primary Data (Processed, 2024)

Table 1 indicates that most of the people surveyed are between the ages of 30 and 34.

b) Education

Table 2 Frequency Distribution of Respondents' Education in Drien Rampak Village

No	Education	Frequency	%
1	Elementary School	3	6.1
2	Junior High School	8	16.3
3	Senior High School	36	73.5
4	Diploma 3	1	2.0
5	Bachelor's Degree	1	2.0
Total		**49**	**100.0**

Source: Primary Data (Processed, 2024)

Table 2 above shows that the majority of respondents are high school graduates with a percentage of 73.5%.

c) Respondent's occupation

Table 3 Frequency Distribution of Respondents' Occupations in Drien Rampak Village

No	Job	Frequency	%
1	Housewife	47	95.9
2	Employee	2	4.1
Total		**49**	**100.0**

Source: Primary Data (Processed, 2024)

Table 3 shows that the majority of respondents have jobs as housewives with a percentage of 95.9%.

d) Respondents' knowledge category before intervention

Table 4 Respondents' knowledge category before intervention

No	*Pretest*	Frequency	%
1	Good	34	69.4
2	Intermediate	15	30.6
Total		**49**	**100.0**

Source: Primary Data (Processed, 2024)

Table 4 above shows that the majority of 34 respondents (69%) have good knowledge about moringa leaf powder.

e) Respondents' knowledge category after the intervention

Table 5 Frequency Distribution of Posttest Respondents in Drien Rampak Village

No	Posttest	Frequency	%
1	Good	49	100.0
2	Intermediate	0	0
Total		**49**	**100.0**

Source: Primary Data (Processed, 2024)

Table 5 above shows that respondents' knowledge about the benefits of giving moringa leaf powder improved after the education was provided. Before the education, only 49

respondents were in the good knowledge category. After the education, the number of respondents in the good category increased to 49.

2. Bivariate Analysis

Table 6 The Effect of Moringa Leaf Powder (Moringan Oleifera) on Maternal Knowledge with Stunting Prevention in Drien Rampak Village, Arongan Lambalek District, West Aceh Regency

Knowledge	N	Mean	Std. Deviation	Min	Max	Z score	Asymp. Sig.(2-tailed
Pre	49	78.16	8.581	60	90	-6.285	0.000
Post	49	91.43	6.455	80	100		

Source: Primary Data (Processed, 2024)

Table 6 above shows that in the intervention group, the pre-test and post-test comparison yielded a p-value of 0.000, which is less than 0.05. This indicates a significant effect from giving moringa leaf powder, supported by a Z score of -6.285.

Discussion

The pretest results revealed that respondents were unaware of stunting and the benefits of moringa leaves in preventing it. Further observations showed that respondents typically fed their children without focusing on proper nutrition and relied mainly on monthly posyandu education. Before the intervention, they did not know that moringa leaves could help prevent stunting, so this information was new to them. After receiving education about stunting and the benefits of moringa leaves, respondents' knowledge significantly improved, with a p-value of 0.000 ($p < 0.05$) and a Wilcoxon test Z score of -6.285, indicating a clear positive effect from the moringa leaf powder intervention.

Moringa leaves are currently widely used in products that can be consumed by toddlers, of course through the fortification process. Fortification involves adding specific vitamins and minerals to foods, offering a great way to provide nutritious options for everyone, especially those who are more vulnerable to nutritional deficiencies (Perwitasari & Nurita, 2023).

Moringa plants are employed to alleviate malnutrition, particularly in infants and breastfeeding mothers. Despite being edible, the leaves can be consumed raw, cooked, or ground up and stored unrefrigerated for several months without loss of their nutrients. When you turn moringa leaves into powder, the caloric value, protein, calcium, iron, and vitamin A content all go up. This happens because when the leaves are made into powder, the water is removed, which makes the nutrients more concentrated (Nuroddin et al., 2022).

Researchers assumed that mothers in Drien Rampak Village, Arongan Lambalek District had certain knowledge about moringa leaves before the study began. To check this, they gave out questionnaires to these mothers to assess their understanding of how moringa leaf powder can help prevent stunting. The results showed that many mothers still had limited knowledge about the benefits of moringa in preventing stunting. After the initial survey, the researchers provided education on stunting and moringa. Following this education, they distributed another set of questionnaires to measure the mothers' improved knowledge. The results showed that the mothers' knowledge and attitudes about stunting had improved, falling into the good category. The improvement in knowledge was due to the education being delivered in a simple, clear, and easy-to-understand way. This made it easier for the mothers to grasp the information. The combination of education and questionnaires also increased the mothers' interest in learning more about stunting and moringa.

Similarly, the research by (Wahyuningsih & Darni, 2021) found that mothers' knowledge improved after receiving education about stunting and snacks made from moringa leaves, which can help boost toddler nutrition and prevent stunting. The study found that using moringa leaf powder had a

positive impact on improving mothers' knowledge about preventing stunting. This suggests that using local, nutritious foods like moringa can be an effective part of public health and stunting prevention efforts. It also suggests that village governments can use this knowledge to include moringa-based nutrition education in existing community programs like Posyandu and PKK. This study adds to the scientific knowledge about using local foods in nutrition programs, provides a practical model for education, and supports community empowerment through the use of moringa. However, the study has some limitations. It was conducted in a limited area, lasted only a short time, focused mainly on knowledge, and did not account for external factors like economic conditions, food availability, and childcare practices. For future research, it is recommended to conduct studies in a wider area, with better design, and to look at changes in children's behavior and health. It is also advised that village leaders and health workers train communities in growing and processing moringa so that it can be used consistently in daily life.

CONCLUSION

The study found that after completing questionnaires about stunting, all 49 mothers showed good knowledge and positive attitudes (100%). The Wilcoxon test results showed a p-value of 0.000, which is less than 0.05, and a Z score of -6.285. This means giving Moringa leaf powder (Moringa Oleifera) had a significant positive impact on mothers' knowledge about preventing stunting in Drien Rampak Village, Arongan Lambalek District.

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AUTHOR CONTRIBUTION STATEMENT

The first author (FA) contributed to the conceptualization of the study, development of the research methodology, data collection, and preparation of the initial manuscript draft. The second author (OS) was responsible for designing the research instruments, coordinating the field intervention activities, and overseeing the data collection process. The third author (SD) handled data curation, performed statistical analysis, and prepared the results section. The fourth author (H) contributed to the literature review, provided conceptual input, and assisted in refining the discussion section. The fifth author (YA) supported the intervention implementation, prepared visual materials, and documented the research activities. The sixth author (DVS) reviewed the manuscript critically for intellectual content, edited the language, and ensured compliance with publication formatting requirements. All authors have read, reviewed, and approved the final version of the manuscript for publication.

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), 130–137. https://doi.org/10.33143/jhtm.v9i1.2793

Ahmad, Z., Dulahu, W., & Aulia, U. (2023). Sosialisasi dan Konseling Pencegahan Stunting Serta Pemberian Makanan Tambahan berbahan Daun Kelor. *Jurnal Pengabdian Masyarakat Farmasi : Pharmacare Society*, *2*(1), 14–21. https://doi.org/10.37905/phar.soc.v2i1.18442

Andini, A., Kartika, I. D., Hasbi, B. E., & Jafar, M. A. (2024). Hubungan Tingkat Pengetahuan Ibu Tentang Pemanfaatan Daun Kelor Terhadap Upaya Pencegahan Stunting Pada Anak Usia 6 Bulan – 2 Tahun di Puskesmas Mandai Tahun 2022 – 2023. *INNOVATIVE: Journal Of Social Science Research*, *4*(1), 5005–5016. Google Scholar

BKKBN (Badan Kependudukan dan keluarga Berencana). (2022). *SSGI 2022 dan Program Percepatan Penurunan Stunting*. Retrieved from https://warta.bkkbndiy.id/ssgi-2022-dan-program-percepatan-penurunan-stunting/

Dinas Kesehatan Nagan Raya. (2025). *Laporan Dinas Kesehatan Nagan Raya*. Retrieved from https://dinkes.naganrayakab.go.id/

Fatmawati, N., Zulfiana, Y., & Julianti, I. (2022). Pengaruh Daun Kelor (Moringa oleifera) Terhadap Pencegahan Stunting. *Jurnal FUNDUS*, *3*(1), 1–6. https://doi.org/10.57267/fundus.v3i1.251

Flora, R., Febri, F., Yuliana, I., Sari, D. M., Anna, Y., Tanjung, R., & Nolia, H. (2021). Upaya Pemberdayaan Masyarakat Dalam Pemanfaatan Daun Kelor Sebagai Minuman Siap Saji Untuk Pencegahan Stunting di Kecamatan Tuah Negeri as a Ready-to-eat Drink for Stunting Prevention in Tuah Negeri District. *Prosiding Seminar Nasional UNIMUS*, *4*(1), 2505–2510. Google Scholar

KEMENKES. (2022). *Keputusan Menteri Kesehatan Republik Indonesia Tentang Pedoman Nasional Pelayanan Kedokteran Tata Laksana Stunting*. 1–52. Jakarta: Kementrian Kesehatan

Maharani, C., Shabariah, R., Sari, T. prawita, & Utami, M. D. (2023). Hubungan Pola Pemberian Makan dengan Kejadian Stunting pada Anak Usia 12-36 Bulan di Wilayah Kerja Puskesmas Tegal. *Prosiding Seminar Nasional Penelitian LPPM UMJ*. Google Scholar

Moedjiherwati, T., Octavianti, M., Handriati, A., & Handayani, B. (2023). Pemanfaatan Daun Kelor bagi Pencegahan Stunting di Desa Padenglang. *Seandanan: Jurnal Pengabdian Pada Masyarakat*, *3*(1), 8–14. https://doi.org/10.23960/seandanan.v3i1.54

Nurdin, N., Sunandar, & Ariyana. (2022). Olahan Daun Kelor Untuk Perbaikan Status Gizi Balita dalam Upaya Pencegahan Stunting. *Jurnal Ilmiah Kesehatan Masyarakat*, *1*(4), 453–459. https://doi.org/10.55123/sehatmas.v1i4.714

Nuroddin, H., Rosanto, K. H., & Wicaksono, D. W. (2022). Jurnal Bina Desa Inovasi Pembuatan Makanan Tambahan dari Daun Kelor Guna Mencegah Stunting Pendahuluan. *Jurnal Bina Desa*, *4*(3), 369–374. Google Scholar

Palupi, H., Renowening, Y., Mahmudah, H., & Hartono, I. S. (2023). Pengetahuan Ibu Tentang Gizi Berhubungan Dengan Kejadian Stunting Pada Balita Umur 24-36 Bulan. *Jurnal Kesehatan Mahardika*, *10*(1), 2–7. https://doi.org/10.54867/jkm.v10i1.145

Perwitasari, T., & Nurita, S. R. (2023). Edukasi pada Ibu Balita tentang Pemanfaatan Daun Kelor untuk Pencegahan Stunting di Desa Talang Bukit Muaro Jambi. *Jurnal Abdimas Kesehatan (JAK)*, *5*(2), 230–234. https://doi.org/10.36565/jak.v5i2.458

Sepeh, Y. R., Simanihuruk, R., & Kofi, M. M. (2023). STUNTING DI DESA OENENU SELATAN KABUPATEN Nusa Tenggara Timur merupakan provinsi. *Jurnal Kesehatan Komunitas Santa Elisabeth*, *1*(1), 90–102. https://doi.org/10.12538/jkkse-akbidsteli.v1i02.41

Sulung, N., & Yasril, A. I. (2023). *Metode Besar Sampel dan Teknik Pengambilan Sampling Untuk*

Penelitian Kesehatan. Deepublish. Google Scholar

Wahyuningsih, R., & Darni, J. (2021). Edukasi Pada Ibu Balita Tentang Pemanfaatan Daun Kelor (*Moringa Oleifera*) sebagai Kudapan untuk Pencegahan Stunting. *Jurnal Pengabdian Masyarakat Sasambo*, *2*(1), 161–165. https://doi.org/10.32807/jpms.v2i2.687

Wardita, Y., Suprayitno, E., & Kurniyati, E. M. (2021). Determinan Kejadian Stunting pada Balita. *Journal of Helath Science*, *VI*(I), 7–12. https://doi.org/10.24929/jik.v6i1.1347

WHO (World Health Organization). (2025). *Global Nutrition Targets 2025 Stunting Policy Brief*. *9*. Retrieved from https://www.who.int/publications/i/item/WHO-NMH-NHD-14.3

Zufriady, Marconi, A. P., Adam, B. I. F., Zikri, K., Darmaneva, N. R., Azizah, N. R., Limbong, P., Febrianti, R., Fadila, S., Sahbani, V., & Juwita, Z. (2023). Pengabdian Masyarakat Melalui Sosialisasi Pencegahan Stunting Di Desa Lubuk Agung. *Jurnal Pengabdian Multidisiplin*, *3*(2022), 1–5. https://doi.org/10.51214/japamul.v3i1.365