



The Effectiveness of 1000 HPK E-Booklet Media on Improving Knowledge and Attitudes of Pregnant Women in Stunting Prevention

Mumpuni Intan Pertiwi¹, Hani Risnawati², Maya Olivia³, Sekar Keriswanies⁴

^{1,3,4}Study Program of Midwifery, Faculty of Health Science, Universitas Duta Bangsa Surakarta

² Study Program of Nursing, Faculty of Health Science, Universitas Duta Bangsa Surakarta

Email: mumpuni_intan@udb.ac.id

OPEN ACCESS

ISSN 2548-2246 (online)

ISSN 2442-9139 (print)

Edited by: Audrey Gracelia

Riwu

Reviewed by: Amirul Amalia

Nidatul Khojiyah

*Correspondence:

Mumpuni Intan Pertiwi

mumpuni_intan@udb.ac.id

Received: 05 Mar 2026

Accepted: 10 Mar 2026

Published: 1 April 2026

Citation: Mumpuni

Intan Pertiwi (2026)

The Effectiveness of 1000 HPK E-Booklet

Media on Improving Knowledge and

Attitudes of Pregnant Women in Stunting

Prevention

Midwiferia Jurnal

Kebidanan. 12:1.

doi:

10.21070 / mi dwi feria.v1i12.1790

Abstract

Stunting is a condition of failing to grow in children due to chronic malnutrition from the beginning of life, and remains a major global nutrition problem. Pregnant women and their families as a prevention effort from the prenatal period (1000 HPK starts from pregnancy). E-booklet media is used because it makes it easier for the target to understand the information conveyed than verbal delivery alone; with the e-booklet, the target can directly observe the images and the explanations that accompany them. This study used a quasi-experimental design with a pre-test and post-test in a single group. Pregnant women, sample selection technique: purposive sampling (selected based on inclusion criteria and readiness to participate in interventions). E-booklet themed 1000 First Days of Life that focuses on stunting prevention through pregnant women's nutrition, care behaviors, immunizations, and infant feeding practices. Based on the analysis, respondents were included in the 21-35 years age category. The Wilcoxon Signed Rank Test is used to compare the knowledge of pregnant women before (pre-test) and after (post-test) the intervention. Asymp value. The sig. (2-tailed) Knowledge is 0.009, and the 0.011 attitude is smaller than the $p <$ value of 0.05. There was a significant increase in pregnant women's knowledge and attitudes after counseling using an e-booklet, with average rankings of 0.009 and 0.011, respectively.

Keywords: E-booklet; 1000 HPK; Knowledge and Attitude; Pregnant Women; Stunting

INTRODUCTION

Stunting, a condition in which children fail to grow due to chronic malnutrition from the beginning of life, remains a major global nutrition problem (Padmantlyo *et al.*, 2024). In 2024, it is estimated that around 150 million children under 5 years old will be stunted, with a global prevalence of around 23.2% (Nurinasari *et al.*, 2025). The decline in stunting prevalence is slow, and many countries are not on track to achieve the SDG/WHO target (Imtiyas *et al.*, 2024). At the national level, Indonesia has shown a decrease in stunting prevalence from 24.4% (2021) to 21.6% according to the Indonesian Nutrition Status Survey (SSGI). However, this figure is still above the WHO target threshold ($\leq 20\%$) and still leaves major challenges, especially inter-provincial and inter-district/city inequality. (Noorwahyuni *et al.*, 2025)(Pertiwi, 2025). The handling of stunting in Indonesia focuses on interventions from pregnancy through the first 1000 days of life (1000 HPK) (Ema *et al.*, 2024). According to nutrition program statistics compiled for the Central Java Health Profile, 8.9% of toddlers in Central Java Province will be classified as short in 2021 (Uneputty *et al.*, 2024). Meanwhile, 20.8% of stunting incidents among children under five in Central Java Province were reported in the 2022 Indonesian Nutrition Status Survey (SSGI) (Nurinasari *et al.*, 2025).

Central Java Province is in the middle of the national prevalence map, which shows the need for interventions tailored to the local context to accelerate stunting reduction (Nurinasari *et al.*, 2025). Sukoharjo Regency has a dataset on stunting among toddlers, compiled by the BPS and local agencies. The number and distribution of cases indicate the need for promotive and educational activities that reach pregnant women and families as a prevention effort from the prenatal period (1000 HPK starts from pregnancy) (Padmantlyo *et al.*, 2024). Knowledge and attitudes of pregnant women regarding the causes, prevention, and importance of nutritional interventions in 1000 HPK are important determinants in stunting prevention efforts (Yuliantini *et al.*, 2023)(Pertiwi *et al.*, 2025)e.

Research at the Undaan Health Center, Kudus Regency, and their findings showed that the difference between pre and post tests for nutrition education using booklet media was statistically significant ($p = 0.000$ 0.05)(Anita Dyah Listyarini, Yayuk Fatmawati, 2020). H_0 was rejected, pointing out that nutritional counseling for pregnant women in the work environment of the Undaan Health Center in Kudus Regency did have an impact on stunting prevention behavior (Anita Dyah Listyarini, Yayuk Fatmawati, 2020). In addition, the study showed that in the intervention group, there was a significant difference in knowledge ($p=0.000$) before and after education with booklet media. In the control group, there was a significant difference in knowledge ($p=0.000$) between pre- and post-education sessions. It can be concluded that

education through booklet media and lectures significantly improves respondents' knowledge (Marni & Ratnasari, 2021; Susanti, 2021).

Studies report that giving digital booklets/e-booklets can improve knowledge and even attitudes related to nutrition, breastfeeding, or prevention of nutrition problems in pregnant women and other target groups (Rochana, Aksari, and Alfiani, 2022) (Fadhila, Syam, and M, 2021). The results showed that the average knowledge level of pregnant women about the postpartum period increased from 49.56 to 76.74 after treatment, with an average change of 27.17. So, it can be concluded that there is a significant difference between before and after treatment, with a p-value of 0.000 (<0.05) (Rahmah *et al.*, 2023).

E-booklet media is used because it will make it easier for the target to understand the information conveyed than the delivery of information only verbally, with the target being able to directly observe the images and writings, which are explanations of the images in the e-booklet media (Caya, Peristiowati, and Wardani, 2025) (Asnel *et al.*, 2025) (Asi *et al.*, 2022). This study aims to assess the effectiveness of the 1000 HPK E-Booklet Media in increasing pregnant women's knowledge and attitudes regarding stunting prevention at the Maryam Midwifery Healthy House.

METHODS

This study uses a quasi-experimental design with a pretest and posttest approach in one group (one-group pretest–posttest design). Population: Pregnant women who visited or were registered at the Maryam Midwife Health Home during the study period. Sample: 10 pregnant women who met the inclusion criteria ($n = 10$). Sample selection technique: purposive sampling (selected based on inclusion criteria and readiness to participate in interventions). Due to the small number, this study is treated as a pilot/experimental study.

Inclusion Criteria: Pregnant women with at least 12 weeks of gestation; willing to participate in the entire series of research (pretest, receive e-booklet, posttest); can read or be assisted by family (if needed). Exclusion Criteria: Pregnant women with severe cognitive impairment that inhibits the filling of the questionnaire; Pregnant women who were clinically unstable at the time of the intervention.

Media: E-booklet themed "1000 First Days of Life" (1000 HPK) that focuses on stunting prevention through pregnant women's nutrition, care behaviors, immunization, and infant feeding practices. Form of award: E-booklet is sent to participants in digital format (PDF) via WhatsApp at the location, questionnaire data collection instrument. The effect of e-booklets on knowledge and attitudes was analyzed using the Wilcoxon Signed-Rank Test.

RESULT

In the analysis and processing of data, the results of the description of pregnant women at the Maryam Midwife Healthy House can be shown in the following table:

Table 1. Overview of Pregnant Women at the Midwife's Healthy House

Karakteristik	Category	Frequency	(%)	Mean	Median	Cohen's w
Mother's Age	<20 years old	0	0	28.0	28.0	1.00
	21-35 years old	10	0			
	>35 years old	0	0			
Mother's Education	Elementary	1	10	11.4	12.0	0.31
	Secondary	5	50			
	Higher	4	40			

Based on the data analysis in Table 1, all respondents are included in the safe reproductive age for pregnancy category, 21-35 years. The education category for pregnant women is 50% at the intermediate level.

Table 2. The Relationship of Knowledge in Pregnant Women with the 1000 HPK e-Booklet

Variabel	Ranks	n	Mean Rank	Asymp. Sig. (2-tailed)
Post-Pre Knowledge	Negative Ranks	1a	2.00	.009
	Positive Ranks	9b	5.89	
	Ties	0c		
	Total	10		

Based on the results of the data analysis in Table 2, there is a change in pregnant women's knowledge after receiving an intervention in the form of an e-booklet on the First 1000 Days of Life (HPK). The analysis used the Wilcoxon Signed Rank Test to compare pregnant women's knowledge before (pretest) and after (posttest) receiving an intervention. Asymp value. Sig. (2-tailed) of 0.009, which is smaller than the value of $\alpha = 0.05$, shows that there is a statistically significant difference between the knowledge of pregnant women before and after being given the 1000 HPK e-booklet media.

Table 3. The Relationship of Attitudes in Pregnant Women with the 1000 HPK e-Booklet

Variabel	Ranks	n	Mean Rank	Asymp. Sig. (2-tailed)
Post-Pre Attitudes	Negative Ranks	1a	2.50	.011
	Positive Ranks	9b	5.83	
	Ties	0c		
	Total	10		

The results of the statistical test showed the value of Asymp. Sig. (2-tailed) is 0.011, which is smaller than the value of α (0.05). This means that providing E-Booklet 1000 HPK media has a statistically significant effect on improving pregnant women's attitudes toward preventing stunting.

DISCUSSION

Based on the results of the data analysis in Table 1, all respondents are within the safe reproductive age for pregnancy category, 21-35 years old (Retnowati, 2024). The education category for pregnant women is 50% at the intermediate level. At ages 20-35, pregnant women tend to have more regular pregnancy checkups because they still consider them very important. In contrast, <20-year-olds tend not to understand the importance of regular antenatal visits, while >35-year-olds tend to be indifferent to antenatal visits because they feel they have experience (Eka Mitra Yuli Firliana, Ikit Netra Wirakhmi, 2024). A healthy, safe reproductive life span is 20-35 years. Pregnancy at the age of less than 20 years and over 35 years can cause anemia because being less than 20 years old is not biologically optimal, the emotions tend to be unstable, and the mentality is immature. Hence, it is easy to experience shocks that lead to a lack of attention to meeting nutrient needs during pregnancy (Yunisari Puteri Nesa, Aprianti, 2024). Meanwhile, at the age of 35 years, related to the decline and decline of immunity as well as various diseases that afflict at this age and the older the mother, there will be a progressive deterioration of the endometrium so that to meet the nutritional needs of the fetus it is necessary to grow a wider placenta (Rawita, Andriani and Febria, 2024).

Based on the results of the data analysis in Table 2, there is a change in pregnant women's knowledge after receiving an intervention in the form of an e-booklet on the First 1000 Days of Life (HPK)—asymptotic value. Sig. (2-tailed) of 0.009, which is smaller than the value of $\alpha = 0.05$, shows that there is a statistically significant difference between the knowledge of pregnant women before and after being given the 1000 HPK e-booklet media. Knowledge is the result of a person's sensing (Collins *et al.*, 2021). Knowledge also has levels, one of which is the process of knowing about things that have been learned or received, in this case, about the fulfillment of clown nutrition during the first 1000 days of life or before the child is 2 years old (Christina Anugrahini, Maria Fatimah W.A Fouk, Sefrina Maria SeukAsa, 2024). Mother's knowledge regarding the first 1000 days of life is very important for preventing nutritional problems during a child's growth and development (Ema *et al.*, 2024).

Mother's knowledge of 1000 HPK plays a very important role in the successful implementation of this program (Isnaini, Mariza, and Putri, 2022). Mothers who are well informed about the importance of the first 1000 days will be more likely to take actions that support the child's optimal growth and development (Marni & Ratnasari, 2021). Therefore, efforts to improve maternal knowledge through education and counseling are

essential to encourage better implementation of maternal and child care during this critical period (Nurinasari *et al.*, 2025). Electronic booklets, or "E-Booklets", can convey information concisely and include visually appealing images. Clear, concise, easy-to-understand, and attractive graphics in the form of letters, photos, and images (Rochana, Aksari, and Alfiani, 2022).

An e-booklet is a digital medium used to convey health messages in an easily accessible manner (Caya, Peristiowati, and Wardani, 2025). The implementation of the first 1000 days of life was the most in the good category, with 52 people (65.8%); the most knowledge among Baduta mothers in the good category was 51 people (64.6%). The results of the study showed that there was a relationship between the knowledge of clown mothers and the implementation of the first 1000 days of life as a stunting prevention strategy ($p=0.000$) (Asnel *et al.*, 2025). Based on the data analysis in Table 3, the statistical test shows the Asymp. value. Sig. (2-tailed) is 0.011, which is smaller than the value of α (0.05). This means that the provision of E-Booklet 1000 HPK media has a statistically significant effect on improving pregnant women's attitudes toward preventing stunting.

The study used the Wilcoxon Signed Rank Test to analyze the cat's attitudes toward family planning before and after receiving family planning counseling with an e-booklet, and a significant p-value (< 0.001) was obtained. This shows that family planning counseling with e-booklet media influences Catin's attitude toward family planning (Sarah Mardliyah Aprilia, Suprapti, 2023). There is an effect of nutrition education delivered via e-booklet on adolescent nutritional attitudes ($p=0.008$). The results of the study "The Effect of Health Counseling Using Booklets on Knowledge, Attitudes, and Motivation of Pregnant Women in Stunting Prevention at PMB Ratini in 2023" concluded: There was a significant increase in the knowledge, attitude, and motivation of pregnant women in stunting prevention at PMB Ratini in 2023 after counseling using booklets, with an increase in the average ranking of 10.00 and 12.00, respectively, as well as a p-value that Significant (Neng Fauziah, Fanni Hanifa, 2024).

CONCLUSIONS

The results of the study "E-Booklet Media 1000 HPK Towards Improving Knowledge and Attitudes of Pregnant Women to Prevent Stunting " concluded that there was a significant increase in the knowledge and attitude of pregnant women after counseling using e-booklet media, with a significant increase in the average and respectively.

ACKNOWLEDGEMENTS

The researcher would like to thank Duta Bangsa University Surakarta for funding this research. Thank you to Maryam Midwife Health House for supporting the research, and to all parties who have helped prepare this article.

REFERENCES

- Anita Dyah Listyarini, Yayuk Fatmawati, I. S. (2020) 'Edukasi Gizi Ibu Hamil Dengan Media Booklet Sebagai Upaya Tindakan Pencegahan Stunting', *Jurnal Pengabdian Kesehatan*, 3(1), pp. 73–83.
- Asi, P. *et al.* (2022). 'Effect Of Education With E-Booklets On Exclusive Breast Milk', *Journal Riset Gizi*, 10(1).
- Asnel, R. *et al.* (2025) 'Efektifitas Pendidikan Kesehatan Menggunakan Media E-Booklet dalam Meningkatkan Pengetahuan Kontrasepsi pada Pasangan Usia Subur', *Jurnal Kesehatan*, 14(1), pp. 67–73.
- Caya, N., Peristiwati, Y. and Wardani, R. (2025) 'Pengaruh Edukasi E-Booklet Anemia terhadap Pengetahuan dan Kepatuhan Komsumsi Tablet Zat Besi Ibu Hamil di Wilayah Kerja UPTD Puskesmas Sangurara Kota Palu', *Jurnal Pendidikan dan Teknologi Kesehatan*, 8(2), pp. 253–261.
- Christina Anugrahini, Maria Fatimah W.A Fouk, Sefrina Maria SeukAsa, J. A. N. (2024) '1000 Hari Pertama Kehidupan (Hpk) Pada Ibu Hamil Dan Keluarga Beresiko Stunting Di Desa Kabuna Haliwen Atambua Nusa Tenggara Timur', *Jurnal BUDIMAS*, 06(01), pp. 1–8.
- Collins, S. P. *et al.* (2021) 'Peningkatan Pengetahuan Dan Sikap Ibu Hamil Tentang 1000 Hpk Di Desa Lumban Inaina Dan Sabungan Ni Huta I', *Jurnal Kreativitas Pengabdian Kepada Masyarakat (PKM)*, 8, pp. 3303–3318.
- Eka Mitra Yuli Firliana, Ikit Netra Wirakhmi, S. H. (2024) 'Gambaran Pengetahuan Dan Sikap Ibu Hamil Tentang Pencegahan Stunting Di Desa Sikasur Kecamatan Belik Kabupaten Pematang', *Jurnal Keperawatan Suaka Insan (JKSI)*, 9(2), pp. 2018–2023.
- Ema, B. *et al.* (2024) 'Gerakan 1000 Hari Pertama Kehidupan Melalui Edukasi Intervensi Gizi Spesifik Sebagai Upaya Pencegahan Stunting', *JMM (Jurnal Masyarakat Mandiri)*, 8(1), p. 397. doi: 10.31764/jmm.v8i1.20039.
- Fadhila, A. D., Syam, A. and M, M. A. (2021) 'Pengaruh Pemberian Media Buku Saku pada 1000 Hari Pertama Kehidupan (HPK) pada Siswa Remaja Putri di SMAN 1 Lasusua Kabupaten Kolaka Utara', *Jurnal Nursing Inside Community*, 3(3), pp. 74–83.
- Imtiyas, H. *et al.* (2024) 'EDUKASI “ Cegah Stunting Dengan Slogan Grogol ” Untuk Meningkatkan

Pengetahuan Pencegahan Stunting Pada Keluarga Berisiko Stunting Di Desa Grogol , Sukoharjo
Pendahuluan Stunting adalah gangguan tumbuh kembang pada balita yang disebabkan oleh kekurangan g',
Jurnal Pengabdian Masyarakat FIK UMS, 1(3), pp. 125–132.

Isnaini, N., Mariza, A. and Putri, M. A. (2022) 'Pentingnya Gizi Pada Ibu Hamil Sebagai Upaya Pencegahan Stunting Di Periode 1000 Hpk', *Jurnal Perak Malahayati*, 4(1), pp. 87–93. doi: 10.33024/jpm.v4i1.6823.

Marni, M. and Ratnasari, N. Y. (2021) 'Penyuluhan Pencegahan Risiko Stunting 1000 Hari Pertama Kehidupan pada Generasi Muda', *Indonesian Journal of Community Services*, 3(2), p. 116. doi: 10.30659/ijocs.3.2.116-125.

Neng Fauziah, Fanni Hanifa, A. S. (2024) 'Pengaruh Penyuluhan Kesehatan Menggunakan Booklet Terhadap', *Jurnal Ilmiah Kebidanan Indonesia*, pp. 46–53.

Noorwahyuni, H. *et al.* (2025) 'Hubungan Pengetahuan Ibu Baduta Dengan Implementasi 1000 Hari Pertama Kehidupan (Hpk) Sebagai Pencegahan Stunting Pada Balita Di Wilayah Kerja Puskesmas Pudi Kabupaten Kotabaru Tahun 2024', *Jurnal Penelitian Multidisiplin Bangsa*, 1(8), pp. 1238–1244. doi: 10.59837/jpnmb.v1i8.225.

Nurinasari, H. *et al.* (2025) 'Edukasi Gizi Ibu: Upaya Preventif Menekan Angka Stunting Di Kabupaten Sukoharjo Jawa Tengah', *Empowerment Journal*, 5(1), pp. 42–49. doi: 10.30787/empowerment.v5i1.1904.

Padmanty, S. *et al.* (2024) 'Preventing Stunting Towards a Healthy Society In Prampelan Resident , Waru Village , Sukoharjo Regency Cegah Stunting Menuju Masyarakat Sehat pada Warga Prampelan , Desa Waru , Kabupaten Sukoharjo Abstrak', *Prosiding Webinar Pengabdian Masyarakat*, pp. 1–10. Available at: <https://doi.org/10.23917/abdimas.5202>.

Pertiwi, M. I. (2025). 'Chronic energy deficiency status in pregnant women as a risk of low birth weight', *Riset Informasi Kesehatan*, 14(1), pp. 112–116. doi: 10.30644/rik.v14i1.972.

Pertiwi, M. I. *et al.* (2025) 'Efektivitas Konsumsi Daun Katuk (*Sauropus Androgynus*) Terhadap Peningkatan Kadar Hemoglobin Pada Ibu Hamil: Studi Meta Analisis', *Prosiding Seminar Informasi Kesehatan Nasional (SIKESNas) 2025*, pp. 144–151.

Rahmah, G. Z. *et al.* (2023). 'Literature Review: The Influence Of Nutrition Education Media Forms On Increasing Mothers' Knowledge To Prevent Stunting In Children', *Journal Gizi Kesehatan*, 15(1), pp. 131–139.

Rawita, E., Andriani, L. and Febria, C. (2024) 'Gambaran Tingkat Pengetahuan Ibu Hamil Tentang Kehamilan Berisiko Di Nagari Balingka Kecamatan IV Koto Kabupaten Agam Tahun 2023', *Journal Of Social Science Research Volume*, 4, pp. 568–575.

- Retnowati, F. D. (2024) 'Analisis Faktor Yang Mempengaruhi Sikap Ibu Hamil Dalam Melakukan Kunjungan Antenatal Care', *Jurnal Pengembangan Ilmu Dan Praktik Kesehatan*, 3, pp. 16–28.
- Rochana, S., Aksari, S. T. and Alfiani, T. (2022) 'Pengaruh Edukasi Kesehatan Dengan E - Booklet Terhadap Breastfeeding Self Efficacy Dan Maternal Depressive Symptom Di Masa Pandemi Covid 19', *Jurnal kesehatan Al-Irsyad*, 15(1), pp. 104–115.
- Sarah Mardiyah Aprilia, Suprpti, A. K. (2023) 'Pengaruh Penyuluhan KB Dengan Media E-Booklet Terhadap Pengetahuan Dan Sikap Catin Tentang KB', *Jurnal Ilmu Kesehatan dan Gizi (JIG)*, 1(3), pp. 30–41.
- Susanti, L. (2021) 'Pengaruh Pendidikan Kesehatan Dengan Booklet Terhadap Pengetahuan Ibu Hamil Tentang 1000 Hari Pertama Kehidupan', *Jurnal Delima Harapan*, 8(2), pp. 46–52. doi: 10.31935/delima.v8i2.136.
- Uneputty, B. S. B. *et al.* (2024) 'Pemberian Makanan Tambahan (Pmt) Untuk Mencegah Stunting Pada Balita Dan Pemberian Gizi Tambahan Pada Ibu Hamil Di Kelurahan Bulakan Kabupaten Sukoharjo', *Jurnal Pengabdian Masyarakat*, 1(10), pp. 770–776. doi: 10.62335/3t86t007.
- Yuliantini, E. *et al.* (2023) 'Pemberdayaan Masyarakat Melalui Edukasi Gizi: Strategi Pencegahan Stunting di Kabupaten Seluma', *Jurnal Pengabdian Masyarakat*, 1(3), pp. 519–525. doi: 10.30762/welfare.v1i3.652.
- Yunisari Puteri Nesa, Aprianti, N. W. H. (2024) 'Hubungan Pengetahuan Ibu, Riwayat BBLR dan Ibu Hamil Usia Dini dengan Kejadian Stunting pada Balita', *Jurnal Riset Pangan dan Gizi (JR-Panzi)*, 6(1), pp. 1–12.