

The Effect of Booklet-Based Nutrition Education During the First 1,000 Days of Life on Parental Attitudes

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ABSTRACT/ ABSTRAK

ABSTRACT. The success of adequate nutritional fulfillment during the First 1,000 Days of Life is strongly influenced by parental attitudes in decision-making related to maternal dietary patterns during pregnancy, exclusive breastfeeding, and complementary feeding practices (complementary foods for breastfed infants); however, nutrition practices in accordance with recommended guidelines remain suboptimal, indicating the need for effective educational strategies. This study aimed to analyze the effect of booklet-based nutrition education during the First 1,000 Days of Life on parental attitudes at the Benteng Primary Health Care Center (UPT Puskesmas Benteng). A pre-experimental study design with a one-group pretest–posttest approach was conducted from August to September 2025 among 104 parents with children aged 0–24 months, selected using purposive sampling. Data were collected using an attitude questionnaire administered before and after the booklet-based nutrition education intervention and analyzed using the Wilcoxon Signed Rank Test. The results demonstrated a substantial increase in positive parental attitudes, from 7.7% at pretest to 88.5% at posttest, with a p -value of 0.000 ($p < 0.05$), indicating a significant effect of booklet-based nutrition education on parental attitudes. These findings confirm that booklet media are effective in enhancing positive parental attitudes toward nutritional fulfillment during the First 1,000 Days of Life and are recommended as an applicable nutrition education medium in primary health care settings.

ABSTRAK. Keberhasilan pemenuhan gizi pada periode 1000 Hari Pertama Kehidupan (HPK) sangat dipengaruhi oleh sikap orang tua dalam pengambilan keputusan terkait pola makan ibu hamil, pemberian ASI eksklusif, serta praktik pemberian Makanan Pendamping ASI (MP-ASI); namun praktik gizi sesuai rekomendasi masih belum optimal sehingga diperlukan strategi edukasi yang efektif. Penelitian ini bertujuan menganalisis pengaruh media booklet dalam edukasi gizi 1000 HPK terhadap sikap orang tua di UPT Puskesmas Benteng. Penelitian menggunakan desain pre-eksperimental dengan rancangan *one group pretest–posttest* yang dilaksanakan pada Agustus–September 2025 terhadap 104 orang tua yang memiliki anak usia 0–24 bulan, dipilih menggunakan teknik *purposive sampling*. Data dikumpulkan menggunakan kuesioner sikap sebelum dan sesudah intervensi edukasi gizi menggunakan media booklet dan dianalisis menggunakan uji Wilcoxon Signed Rank Test. Hasil penelitian menunjukkan adanya peningkatan sikap positif orang tua dari 7,7% pada pre-test menjadi 88,5% pada post-test, dengan nilai p -value = 0,000 ($p < 0,05$), yang menandakan adanya pengaruh signifikan edukasi gizi menggunakan media booklet terhadap sikap orang tua. Media booklet terbukti efektif meningkatkan sikap positif orang tua terhadap pemenuhan gizi 1000 HPK dan direkomendasikan sebagai media edukasi gizi yang aplikatif di fasilitas pelayanan kesehatan primer.

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INTRODUCTION

Maternal and child nutrition problems remain a major challenge in health development in Indonesia, as reflected by the persistently high prevalence of stunting. According to the 2023 Indonesian Nutritional Status Survey (SSGI), the prevalence of stunting among children under five in Indonesia reached 21.5%, which remains above the threshold set by the World Health Organization (WHO), namely less than 20% (Ministry of Health of the Republic of Indonesia, 2023). This condition indicates that nutrition improvement efforts, particularly during early life, still require strengthening through effective and sustainable interventions.

The First 1,000 Days of Life, which span from pregnancy until a child reaches two years of age, represent a critical period for establishing the foundation of long-term health. During this period, rapid growth and development occur; therefore, inadequate nutritional fulfillment may increase the risk of various degenerative diseases later in life, such as obesity, type 2 diabetes mellitus, hypertension, cardiovascular disease, and cancer. Consequently, appropriate nutritional fulfillment during the First 1,000 Days of Life is essential, with breast milk serving as the best initial source of nutrition for infants (Ministry of Health of the Republic of Indonesia, 2024).

The success of nutritional fulfillment during the First 1,000 Days of Life is strongly influenced by parental roles, particularly in decision-making related to maternal dietary patterns during pregnancy, exclusive breastfeeding, and complementary feeding practices (complementary foods for breastfed infants). One of the key factors influencing the formation of these behaviors is parental attitudes. Positive attitudes toward health information increase individuals' likelihood of adopting recommended nutrition-related behaviors, whereas less supportive attitudes may hinder the success of nutrition improvement programs (Notoatmodjo, 2022; Azwar, 2023).

Efforts to improve parental attitudes can be achieved through effective nutrition education by utilizing health promotion media that are appropriate for the characteristics of the target population. Booklet-based media are printed educational tools that present information in a concise, systematic manner and are supported by illustrations, making them easy to understand and suitable for repeated reading. These characteristics make booklets appropriate for populations with diverse educational backgrounds and varying levels of access to information. Several previous studies have demonstrated that the use of booklet-based media in nutrition education can significantly improve target groups' attitudes (Amalia et al., 2024; Yuniastuti & Budiono, 2023; Padila et al., 2023).

Nutrition problems during the First 1,000 Days of Life are also evident at the level of primary health care services. Local data from the Benteng Primary Health Care Center (UPT Puskesmas Benteng) indicate that in 2024 there were 1,583 children under five, of whom 149 were stunted and 279 were undernourished. During the period from January to June 2025, the total number of children under five was 1,290, with 257 cases of stunting and 148 cases of undernutrition. Of this total, 107 children aged 0–24 months constituted the subpopulation targeted in this study within the First 1,000 Days of Life period. These data suggest that nutrition problems in early life remain a significant public health concern in the service area of UPT Puskesmas Benteng.

In addition to knowledge-related factors, the effectiveness of nutrition education is also determined by the suitability of the media used for the target population. Booklet-based media are considered effective in delivering health messages in a written, structured, and visual format, thereby facilitating parents' understanding and internalization of the information provided. The ability of booklets to be read repeatedly may further strengthen positive attitudes, which are a prerequisite for the development of healthy and sustainable nutrition-related behaviors (Saringah et al., 2023; Sihite & Rotua, 2023; Amalia et al., 2024).

Within the context of primary health care services, such as those at UPT Puskesmas Benteng, the use of booklet-based media has strategic value because it can be easily integrated into routine maternal and child health services, including nutrition counseling and community-based health activities (posyandu). Nevertheless, although booklet-based media are frequently used in health promotion practice, empirical studies that specifically evaluate their effect on parental attitudes in nutrition education during the First 1,000 Days of Life at the primary health care level remain limited.

Based on this background, there is a research gap regarding empirical evidence on the effectiveness of booklet-based media in improving parental attitudes toward nutrition education during the First 1,000 Days of Life in local settings. Therefore, this study aimed to analyze the effect of booklet-based nutrition education during the First 1,000 Days of Life on parental attitudes at the Benteng Primary Health Care Center (UPT Puskesmas Benteng).

RESEARCH METHOD

This study employed a pre-experimental design using a one-group pretest–posttest approach to analyze changes in parental attitudes before and after the provision of health education using booklet-based media (Sugiyono, 2019). Pretest measurements were conducted prior to the intervention, while posttest measurements were administered after the completion of the entire nutrition education program. The study was conducted at the Benteng Primary Health Care Center (UPT Puskesmas Benteng) from August to September 2025, involving a population of all parents with children aged 0–24 months, totaling 107 individuals. All members of the population met the inclusion criteria and agreed to participate; therefore, a total sampling technique was applied, resulting in a sample size of 107 respondents.

The independent variable in this study was health education using booklet-based media, while the dependent variable was parental attitudes toward nutritional fulfillment during the First 1,000 Days of Life. The intervention was delivered through face-to-face nutrition education sessions using booklet-based media containing balanced nutrition materials for the First 1,000 Days of Life. The education was conducted in a single session with a duration of 30–60 minutes. The research instrument was a Likert-scale attitude questionnaire consisting of 20 statements, which had been tested for validity and reliability, with a Cronbach's alpha value of ≥ 0.70 , and employed an ordinal measurement scale. Data collection was carried out by assessing parental attitudes before the intervention (pretest) and after the intervention (posttest).

Data analysis comprised univariate analysis to describe data distribution and bivariate analysis using the Wilcoxon Signed Rank Test, as the data were ordinal and paired, with a significance level set at $p < 0.05$. This study obtained permission from the Benteng Primary

Health Care Center and was conducted in accordance with research ethics principles, including informed consent, anonymity, and confidentiality, without involving invasive procedures or posing risks to the respondents.

RESULTS

Univariate Analysis

Table 1. Distribution of Parental Attitudes Before Booklet-Based Nutrition Education at UPT Puskesmas Benteng

Attitude	Frequency (f)	Percentage (%)
Positive	8	7.7
Neutral	69	66.3
Negative	27	26.0
Total	104	100%

Source: Primary data, 2025

Table 1 presents the distribution of parental attitudes prior to the provision of booklet-based nutrition education. The majority of respondents were categorized as having neutral attitudes, while the proportion of positive attitudes remained low, and a considerable number of respondents still exhibited negative attitudes. This condition indicates that before the intervention, parental attitudes toward nutritional fulfillment during the First 1,000 Days of Life had not yet been optimally established.

Table 2. Distribution of Parental Attitudes After Booklet-Based Nutrition Education at UPT Puskesmas Benteng

Attitude	Frequency (f)	Percentage (%)
Positive	92	88.5
Neutral	12	11.5
Total	104	100%

Source: Primary data, 2025

Table 2 shows the distribution of parental attitudes after the implementation of booklet-based nutrition education. The results demonstrate a substantial shift toward positive attitudes, with the majority of respondents classified as having positive attitudes and no respondents remaining in the negative attitude category. These findings indicate that nutrition education delivered through booklet-based media was effective in improving parental attitudes toward nutritional fulfillment during the First 1,000 Days of Life.

Bivariate Analysis

Table 3. Effect of Booklet-Based Nutrition Education During the First 1,000 Days of Life on Parental Attitudes at UPT Puskesmas Benteng (Wilcoxon Signed Rank Test)

Pre- and Posttest of Health Education Using Booklet-Based Media	N	Mean Rank	Sum of Ranks	Asymp. Sig. (2-tailed)
Negative Ranks	1 ^a	4.50	4.50	.001
Positive Ranks	100 ^b	51.47	5146.50	
Ties	3 ^c			
Total	104			

Source: Primary data, 2025

The results of the Wilcoxon Signed Rank Test presented in Table 3 indicate a statistically significant difference in parental attitudes before and after the intervention ($p = 0.001$; $p < 0.05$). A total of 100 respondents experienced an improvement in attitudes (positive ranks), three respondents showed no change (ties), and one respondent exhibited a decrease in attitude (negative rank) following the intervention. Statistically, these findings confirm that booklet-based nutrition education had a significant effect on parental attitudes toward nutritional fulfillment during the First 1,000 Days of Life at UPT Puskesmas Benteng, despite one respondent demonstrating a decline in attitude after the intervention.

DISCUSSION

These findings demonstrate that booklet-based media have a significant influence on parental attitudes, as reflected by the observed changes in attitudes following the First 1,000 Days of Life nutrition education intervention. This change indicates that the delivery of nutrition information through booklets can enhance parents' acceptance, understanding, and tendency to adopt more positive attitudes toward nutritional fulfillment practices during the critical early life period of children.

Conceptually, changes in attitudes are closely linked to improvements in knowledge, which serve as a foundational component in attitude formation. Several previous studies have shown that booklet-based media are effective in increasing nutrition-related knowledge during the First 1,000 Days of Life. A study by Amalia et al. (2024) reported a significant increase in knowledge among pregnant women regarding stunting prevention after receiving education using booklets and videos ($p = 0.009$). Similar findings were reported by Subu et al. (2022), who observed an improvement in nutrition knowledge among prospective brides following nutrition education, with a p -value of 0.000. Such increases in knowledge provide an important basis for the development of positive parental attitudes toward early childhood nutritional fulfillment.

In addition to enhancing knowledge, booklet-based media have also been shown to be effective in positively influencing attitudes. Simanjuntak and Wahyudi (2021) found that the use of pocket books among preconception women significantly improved attitudes toward nutritional fulfillment and stunting prevention ($p < 0.05$). Padila et al. (2023) similarly reported significant changes in parental attitudes following health education delivered through booklets ($p = 0.00$). These findings support the results of the present study, indicating that booklets as educational media are capable of encouraging parents to develop more positive attitudes toward nutrition practices during the First 1,000 Days of Life.

The effectiveness of booklets can also be understood from the inherent characteristics of the medium. Booklets present information in a systematic and concise manner and can be read repeatedly according to readers' needs, thereby facilitating comprehension and internalization of key messages. This makes booklets superior to simpler printed materials, such as leaflets. Simanjuntak and Wahyudi (2021) demonstrated that pocket books were more effective than leaflets in improving knowledge and attitudes related to anemia, breastfeeding, and stunting, which is relevant to the context of the present study.

Nevertheless, several studies indicate that the effectiveness of booklets may be further enhanced when combined with other educational media. A study conducted in Sambas

Regency reported that the combination of video and booklet media significantly improved pregnant women's knowledge and attitudes regarding nutrition, with a p-value of 0.000 (Kurniatin, n.d.). These findings suggest that although the present study used booklets as the primary educational medium, the results remain consistent with the existing literature and highlight opportunities for the development of multimodal interventions in future research.

The context of the First 1,000 Days of Life is highly relevant to this discussion, as this period represents a critical phase for child growth and development. Schwarzenberg and Georgieff (2018) emphasized that adequate nutrition during the First 1,000 Days of Life plays a crucial role in brain development and long-term health and can reduce the risk of non-communicable diseases, such as obesity, hypertension, and diabetes, later in life. Essential nutrients, including protein, iron, zinc, and vitamins, are fundamental to neurological development, underscoring the importance of parental attitudes toward nutritional fulfillment during this period.

The findings of this study are also consistent with behavioral theories, particularly the Theory of Planned Behavior, which posits that changes in health-related behaviors are preceded by changes in attitudes, influenced by individuals' knowledge and beliefs (Naim et al., 2017). Booklet-based education serves as a stimulus that influences parental attitudes and has the potential to promote healthier nutrition-related behaviors in daily practice. Furthermore, family-based educational approaches and health literacy interventions have been shown to be effective in supporting parents in making more informed nutrition-related decisions (Hindin et al., 2004).

In summary, this discussion confirms that the study findings are consistent with theoretical frameworks, previous empirical evidence, and the critical importance of nutritional fulfillment during the First 1,000 Days of Life. Booklet-based media have been demonstrated to be an effective educational tool in fostering positive parental attitudes, as reflected in the results of this study, and are relevant for implementation in stunting prevention and health promotion programs at the primary health care level.

CONCLUSION

This study concludes that booklet-based nutrition education during the First 1,000 Days of Life has a significant effect on improving parental attitudes at the Benteng Primary Health Care Center (UPT Puskesmas Benteng). The results of the Wilcoxon test revealed a statistically significant difference in parental attitudes before and after the intervention, with the majority of respondents demonstrating a positive shift in attitudes following the nutrition education. These findings indicate that booklet-based media are an effective educational tool for delivering nutrition information in a systematic and easily understandable manner and for strengthening positive parental attitudes toward nutritional fulfillment during the First 1,000 Days of Life.

Based on the study findings, booklet-based media are recommended for sustained use as nutrition education tools within maternal and child health services at UPT Puskesmas Benteng, particularly in nutrition counseling, maternal classes, and community-based health activities (posyandu). Health care providers are encouraged to integrate booklets as standard nutrition education materials for the First 1,000 Days of Life to ensure that health messages are more effectively understood and retained by parents. Furthermore, future studies are

recommended to employ experimental designs with control groups and to combine booklet-based media with interactive educational methods in order to obtain a more comprehensive understanding of the intervention's effectiveness in influencing changes in parental attitudes and nutrition-related behaviors.

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