FACTORS INFLUENCING THE IMPLEMENTATION OF "ISI PIRINGKU" COMPLEMENTARY FEEDING FOR INFANTS AGED 6–23 MONTHS IN THE PREVENTION OF STUNTING

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ABSTRAK : FAKTOR-FAKTOR YANG MEMPENGARUHI PEMBERIAN MPASI ISI PIRINGKU PADA BAYI 6-23 BULAN UNTUK PENCEGAHAN STUNTING

Latar Belakang: Stunting merupakan gangguan pertumbuhan dan perkembangan anak akibat kekurangan gizi kronis dan infeksi berulang, yang ditandai dengan panjang atau tinggi badan anak berada di bawah standar. Stunting disebabkan oleh asupan gizi yang kurang dalam waktu cukup lama akibat pemberian makanan yang tidak sesuai dengan kebutuhan gizi. Stunting berpotensi memperlambat perkembangan otak, dengan dampak jangka panjang berupa keterbelakangan mental, rendahnya kemampuan belajar, dan risiko serangan penyakit kronis. Pemberian MPASI isi piringku pada bayi 6-23 bulan dapat menjadi jalan keluar untuk mengatasi stunting jika diaplikasikan sesuai dengan pedoman yang benar.

Tujuan penelitian: Tujuan dari penelitian ini untuk mengetahui faktor-faktor apa saja yang dapat mempengaruhi dalam pemberian MPASI isi piringku pada bayi 6-23 bulan.

Metode penelitian: Metode penelitian yang digunakan adalah metode analitik korelasi dengan pendekatan *cross-sectional* dan pengambilan sampel dengan *accidental sampling*. Populasi pada penelitian ini adalah seluruh ibu yang memiliki bayi 6-23 bulan di Wilayah Kecamatan Harjamukti Kota Cirebon sebanyak 346 orang, dengan jumlah sampel 114 orang.

Hasil analisis data dengan uji *chi square* didapatkan hasil terdapat hubungan yang signifikan antara pengetahuan, jumlah anak, pendapatan keluarga dan media informasi dengan pemberian MPASI isi piringku. *p-value* pengetahuan (0,000), jumlah anak (0,008), pendapatan keluarga (0,000) dan media informasi (0,000).

Kesimpulan: Hasil penelitian menunjukkan bahwa pemberian MPASI sesuai pedoman isi piringku pada ibu dengan bayi usia 6–23 bulan dipengaruhi oleh beberapa faktor, antara lain jumlah anak (paritas), pendapatan keluarga, paparan media informasi, serta pengetahuan ibu.

Saran: Diharapkan agar tenaga kesehatan dan kader posyandu meningkatkan edukasi gizi kepada ibu melalui penyuluhan maupun media informasi yang mudah dipahami.

Kata Kunci : Faktor-Faktor; MPASI; Isi Piringku; Bayi; Stunting.

ABSTRACT

Background: Stunting is a growth and developmental disorder in children caused by chronic malnutrition and recurrent infections, characterized by a child's length or height being below the standard. Stunting occurs due to prolonged inadequate nutritional intake resulting from the provision of food that does not meet nutritional requirements. It has the potential to hinder brain development, with long-term consequences such as cognitive delays, low learning capacity, and an increased risk of chronic diseases. The implementation of complementary feeding based on the *"Isi Piringku"* guidelines for infants aged 6–23 months can serve as an effective strategy to prevent stunting when applied appropriately.

The objective of this study is to identify the factors that influence the implementation of complementary feeding based on the *"Isi Piringku"* guidelines among mothers with infants aged 6–23 months.

The research employed a correlational analytic method with a cross-sectional approach, and the sampling technique used was accidental sampling. The study population consisted of all mothers with infants aged 6–23 months in the Harjamukti District, Cirebon City, totaling 346 individuals, with a sample size of 114 respondents.

The results of data analysis using the Chi-square test showed a significant relationship between knowledge, number of children, family income, and information media with the practice of complementary feeding based on the *"Isi Piringku"* guidelines. The p-values were as follows: knowledge (0.000), number of children (0.008), family income (0.000), and information media (0.000).

Conclusion**:** The results of the study indicate that the implementation of complementary feeding in accordance with the *"Isi Piringku"* (My Plate) guidelines among mothers with infants aged 6–23 months is

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influenced by several factors, including the number of children (parity), family income, exposure to information media, and maternal knowledge.

Suggestion**:** It is recommended that healthcare workers and *posyandu* (community health post) cadres enhance nutrition education for mothers through counseling sessions and easily understandable information media.

Keyword : Factors; MPASI; Isi Piringku; Baby; Stunting.

INTRODUCTION

Stunting is one of the chronic malnutrition problems caused by inadequate nutritional intake over an extended period due to the provision of food that does not meet nutritional needs (Kemenkes, 2022). Stunting has the potential to slow brain development, with long-term impacts such as mental retardation, low learning ability, and an increased risk of chronic diseases (Kemenkes, 2018). The causes of stunting include prolonged chronic malnutrition, insufficient protein intake in proportion to total caloric intake, intrauterine growth retardation, and frequent infections during early childhood (Kemenkes, 2023).

The introduction of complementary feeding (MPASI) begins gradually when an infant reaches six months of age, according to their nutritional needs. During this period, the infant starts to learn and recognize different forms and tastes of food other than breast milk. Providing appropriate complementary feeding based on the *Isi Piringku* guidelines helps ensure that the infant's nutritional intake is adequate. Complementary feeding is a crucial period for an infant's growth and development, particularly in preventing stunting (BKKBN, 2022). The provision of complementary feeding to prevent and address stunting must be appropriate in quantity adequately meeting caloric and nutritional requirements and appropriate in type, through recipe modifications using a variety of food ingredients.

The prevalence of stunting in West Java Province increased from 20.2% in 2022 to 21.7% in 2023 (BPS, 2023). According to the 2021 Indonesian Nutritional Status Survey (SSGI), the prevalence of stunting in Cirebon City was 30.6% (Mohammad, 2023). Based on data from the Central Statistics Agency of Cirebon City, the highest number of stunted children under five in 2023 was recorded in Harjamukti District, with 1,900 children, or 42.7% of the total 4,451 stunted children in Cirebon City (BPS, 2023).

Several measures to prevent stunting include providing exclusive breastfeeding to infants up to six months of age, continuing breastfeeding until two years of age, offering complementary foods based on the *Isi Piringku* guidelines, and regularly monitoring the infant's growth and development (Khasanah, 2022). *Isi Piringku* is a healthy eating movement that promotes a balanced nutritional concept, serving as a replacement for the former slogan "Four Healthy, Five Perfect." The *Isi Piringku* program is considered a more effective slogan for health promotion efforts (BKKBN, 2022).

As an effort to reduce and address the prevalence of stunting, the government has issued regulations expected to contribute to the reduction of stunting rates. One of these is Minister of Health Regulation (PMK) No. 41 of 2014, which states that the objective of the Balanced Nutrition Guidelines is to provide daily guidance on healthy eating and behavior based on four pillars of balanced nutrition: consuming a variety of foods, practicing clean and healthy living behaviors, engaging in physical activity, and regularly monitoring body weight. The messages of balanced nutrition are visualized through the concept of *"Isi Piringku"*, which serves as a guide for appropriate portions of food and beverages at every meal (JDIH, 2014).

An important factor in addressing stunting is ensuring adequate nutritional intake for both pregnant women and children under five, particularly sufficient intake of animal protein, as it not only supports physical growth but also optimizes brain development in children (Aliah, 2024). Therefore, efforts to promote understanding of balanced nutrition should not be directed solely toward pregnant women but should also target mothers of infants, especially during the complementary feeding phase for children aged 6–23 months.

RESEARCH METHODS

The research method used in this study was an analytical correlational method with a cross-sectional approach, and sampling was conducted using accidental sampling. The study population consisted of all mothers with infants aged 6–23 months in the Harjamukti District of Cirebon City, totaling 346 individuals. The study was conducted in August 2025 with a sample size of 114 respondents. Respondents were given a questionnaire containing

questions on their characteristics, including identity and other supporting data relevant to the dependent and independent variables being studied. Data were analyzed using univariate and bivariate analyses with the Chi-square test.

The inclusion criteria in this study are as follows:

a. Infants who have completed exclusive breastfeeding or those who are given formula milk
b. Mothers with infants aged 6–23 months
c. Willingness to participate as respondents

The exclusion criteria in this study are as follows:

a. Mothers who were not present during the data collection
b. Mothers with an educational background in health sciences

RESEARCH RESULTS

Univariate Analysis

Table 1
Frequency Distribution of Respondents Based on Number of Children

Variable	n	%
Number of Children		
Primipara (1)	35	30,7
Multipara (>1)	79	69,3

Based on table 1, the majority of respondents are in the multiparous category, namely 79 people (69.3%).

Table 2
Frequency Distribution of Respondents Based on Family Income

Variable	n	%
Family Income		
High	69	60,5
Low	45	39,5

Based on table 2, the majority of respondents' family income is in the high category, namely 69 people (60.5%).

Table 3
Frequency Distribution of Respondents Based on Information Media

Variable	n	%
Information Media		
Once	87	76,3
Never	27	23,7

Based on table 3, the majority of respondents were in the category of having received information about MPASI on my plate, namely 87 people (76.3%).

Table 4
Frequency Distribution of Respondents Based on Knowledge of Nutrition

Variable	n	%
Knowledge of Nutrition		
Good (≥70%)	83	72,8
Not Good (<70%)	31	27,2

Based on table 4, the majority of respondents' knowledge is in the good category, namely 83 people (72.8%).

Table 5
Frequency Distribution of Respondents Based on Provision of MPASI on My Plate

Variable	n	%
Provision of MPASI on My Plate		
In Accordance (≥75%)	84	73,7
Not Suitable (<75%)	30	26,3

Based on table 5, the majority of respondents are in the appropriate category in providing MPASI on my plate, namely 84 people (73.7%).

Bivariate Analysis

Table 6
Distribution of the Relationship between the Number of Children and the Provision of MPASI on My Plate

Number of Children	Provision of MPASI on My Plate						*p-value*
	In Accordance		Not Suitable		Total		
	n	%	n	%	n	%	
Primipara (1)	20	23,8	15	50	35	30,7	0,008
Multipara (>1)	64	76,2	15	50	79	69,3	

Based on table 6, there is a relationship between the number of children and the provision of

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MPASI on my plate with a p-value of 0.008.

Based on table 7, there is a relationship between family income and the provision of MPASI on my plate with a p-value of 0.000.

Table 7
Distribution of the Relationship between Family Income and the Provision of MPASI on My Plate

Family Income	Provision of MPASI on My Plate						*p-value*
	In Accordance		Not Suitable		Total		
	n	%	n	%	n	%	
High	64	76,2	5	16,7	69	60,5	0,000
Low	20	23,8	25	83,3	45	39,5	

Table 8
Distribution of the Relationship between Information Media and the Provision of MPASI on My Plate

Information Media	Provision of MPASI on My Plate						*p-value*
	In Accordance		Not Suitable		Total		
	n	%	n	%	n	%	
Once	83	98,8	4	13,3	87	76,3	0,000
Never	1	1,2	26	86,7	27	23,7	

Based on table 8, there is a relationship between information media and the provision of MPASI isi piringku with a p-value of 0.000.

Based on table 9, there is a relationship between knowledge and the provision of MPASI on my plate with a p-value of 0.000.

Table 9
Distribution of the Relationship between Knowledge and the Provision of MPASI on My Plate

Knowledge	Provision of MPASI on My Plate						*p-value*
	In Accordance		Not Suitable		Total		
	n	%	n	%	n	%	
Good	79	94	4	13,3	83	72,8	0,000
Not Good	5	6	26	86,7	31	27,2	

DISCUSSION

Based on the results presented in Table 6, it can be seen that out of 79 respondents with multiparous status, the majority 64 respondents (76.2%) provided complementary feeding (MPASI) in accordance with the *Isi Piringku* guidelines. This finding aligns with the theory stating that experience plays a significant role in enhancing a person's knowledge and behavior (Aprilia, 2020).

Based on the results of the Chi-square statistical test, a significance level with a p-value of 0.008 was obtained, indicating a significant relationship between the number of children and the provision of complementary feeding "*Isi Piringku*". Tsega (2024) stated that parity was identified as a statistically significant predictor in determining the timing of complementary feeding initiation. The incidence of both early and delayed initiation of complementary feeding was higher among primiparous mothers compared to multiparous mothers. Furthermore, the average time to begin complementary feeding was shorter among primiparous mothers than among multiparous mothers (Tsega, 2024). Based on these findings, parity-based complementary feeding education and practice should be recommended to address this gap and further reduce the prevalence of malnutrition among infants and children, which can lead to stunting.

Based on the results presented in Table 7, among the 84 respondents who provided complementary feeding (MPASI) in accordance with the *Isi Piringku* guidelines, 64 respondents (76.2%) had a high income. This finding is consistent with the theory stating that a higher family economic status influences positive changes in the quality and variety of nutritious foods consumed. As family income increases, the opportunity to prepare high quality complementary foods for infants also rises (Utama, 2021). Conversely, families with low

economic status are often unable to afford a diverse range of food ingredients. Parents with low income are therefore less able to meet their children's nutritional needs as recommended (Manoppo, 2023).

Based on the results of the Chi-square statistical test, a significance level with a p-value of 0.000 was obtained, indicating a significant relationship between family income and the provision of complementary feeding (*Isi Piringku*). In the provision of complementary feeding, family income plays an important role, as higher income allows easier access to and purchasing power for supplementary foods, whereas lower economic conditions make it more difficult to afford such foods (Bangun, 2023). The level of income is a determining factor for both the quality and quantity of food consumed. The fulfillment of complementary feeding is influenced by the parents' economic capacity to meet these needs. A family's ability to purchase food ingredients depends on the amount of income they earn. Families with limited income are more likely to experience difficulties in meeting food needs, particularly in providing adequate nutrients for each stage of a child's development. In contrast, families with higher income have better opportunities to offer a wider variety of foods for their family members.

Based on the results presented in Table 8, it can be seen that among the 87 respondents who had received information about *Isi Piringku* complementary feeding, 83 respondents (98.8%) provided complementary feeding in accordance with the *Isi Piringku* guidelines. This finding is consistent with the study by Alliyah (2024), which stated that mothers of toddlers who received education and information through learning activities experienced changes and improvements in their knowledge regarding the appropriate selection of food ingredients for complementary feeding (Alliyah, 2024). The advancement of science and technology has enabled mothers to utilize information media to easily access and explore various types of information, including that related to the *Isi Piringku* concept in the application of complementary feeding.

Based on the results of the Chi-square statistical test, a significance level with a p-value of 0.000 was obtained, indicating a significant relationship between information media and the provision of complementary feeding (*Isi Piringku*). Exposure to information media (such as mass media, social media, and educational applications) has a positive correlation with improved complementary feeding practices, including food diversity, feeding frequency, dietary adequacy, and age-appropriate food introduction. Mothers who have received information about complementary feeding based on the *Isi Piringku* guidelines through various information media play an important role. They are able to apply this knowledge to prepare complementary foods (MPASI) in accordance with proper balanced nutrition principles. These efforts contribute to reducing the prevalence of stunting and malnutrition among children. Information media such as social media, booklets, maternal and child health handbooks, posters, brochures, and audiovisual media have proven effective in increasing mother's knowledge and improving complementary feeding practices aligned with the *Isi Piringku* guidelines and adapted to the child's age.

Based on the results presented in Table 9, it can be seen that among the 83 respondents who had good knowledge, 79 respondents (94%) provided complementary feeding in accordance with the *Isi Piringku* guidelines. This finding is consistent with the theory of Notoatmodjo (2018), which states that knowledge is the result of the process of knowing, occurring when a person perceives a particular object through the five senses namely sight, hearing, smell, taste, and touch.

Based on the results presented in Table 9 and the Chi-square statistical test, a significance level with a p-value of 0.000 was obtained, indicating a significant relationship between maternal knowledge and the provision of complementary feeding (*Isi Piringku*). A mother's knowledge in preparing a baby's first complementary food at six months of age serves as one of the key efforts in preventing stunting, by ensuring adequate nutritional intake according to the infant's developmental stage. This finding is supported by a previous study conducted by Geovani, which showed a significant relationship between knowledge of the *Isi Piringku* concept and the nutritional status of elementary school children at Patria Al-Ittihadiyah Private Elementary School, Percut Sei Tuan Subdistrict, where the Chi-square test yielded a p-value of 0.003 (Geovani, 2021). Mother's knowledge and attitudes regarding balanced nutrition fulfillment can serve as a foundation for developing healthy behaviors. Information obtained from accurate and reliable sources can enhance mothers' knowledge, thereby increasing their awareness of the importance of balanced nutrition for the family particularly for the growth and development of infants and young children.

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CONCLUSION

The results of the study indicate that the provision of complementary feeding (MPASI) in accordance with the *Isi Piringku* guidelines among mothers with infants aged 6–23 months is influenced by several factors, including the number of children (parity), family income, exposure to information media, and maternal knowledge. Good nutritional knowledge, adequate family economic support, and broad access to nutritional information tend to enable mothers to provide complementary feeding that aligns with recommended guidelines. Therefore, efforts to improve nutritional knowledge, provide information through various media platforms, and strengthen family support are essential to promote appropriate complementary feeding practices in accordance with the *Isi Piringku* guidelines.

SUGGESTIONS

Based on the research findings, it is recommended that healthcare workers and *posyandu* (community health post) cadres enhance nutrition education for mothers through counseling sessions and accessible information media. The government and relevant institutions should also expand access to nutritional information and support programs that improve family economic conditions, enabling mothers to provide complementary feeding in accordance with the *"Isi Piringku"* guidelines.

Providing complementary foods that are complete and include a variety of food sources is the most effective approach to improving infants' nutritional status. Therefore, food sources for complementary feeding should be accessible to all segments of society.

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