

Development of an evidence-based complementary feeding practice module for mothers using the combined Delphi Method

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Abstract

Background Malnutrition in infants remains a challenge in Indonesia. Malnutrition often arises as a result of errors in complementary feeding practices. An education module for Indonesian mothers may help them correctly implement complementary feeding practices.

Objective To develop a module on correct complementary feeding practices for infants aged 6-9 months that can be read and understood by Indonesian mothers.

Methods We performed qualitative research using the two-round Delphi method combined with group discussions. The first round listed the most important sub-themes of the module, while the second round sought approval for the module from experts. The Delphi team members were included using purposive and snowball sampling methods. Expert opinions were summarized and rearranged using the *Steps for Coding and Theorization* (SCAT) method.

Results Ten experts were included in the Delphi team, with a mean duration of work experience of 28.5 (SD 12.37) years. The correct practices for giving complementary foods according to scientific evidence was named the *ABC-Makanan Pendamping ASI/MPASI-Press* ("Printed ABC of Complementary Feeding") module and was summarized into four main topics: timely, adequate, safe, and responsive feeding. This module was made using language, photos, and images that were easily understood by mothers and included the suitable nutritional compositions to meet the needs of infants aged 6-9 months.

Conclusion We developed the *ABC-MPASI-Press Module* based on scientific evidence and experts' reviews using the combined Delphi method. This educational guide is expected to inform mothers about correct complementary feeding practices for infants aged 6-9 months in order to prevent malnutrition. [Paediatr Indones. 2022;62:198-207 DOI: 10.14238/pi62.3.2022.198-207].

Keywords: complementary feeding; Delphi method; infant; malnutrition

Nutritional problems remain a challenge for both clinicians and the government in Indonesia. Three major problems plague the Indonesian population, leading to the term, "triple burden malnutrition," namely, underweight, overweight, and micronutrient deficiency.¹ Adequate food intake early in life is essential for brain structure and functional development. Malnutrition in infancy causes disturbances in brain development, ultimately affecting cognitive and behavioral abilities, including physical health, psychosocial health, and future productivity.^{2,3}

Errors in complementary feeding practices may result in malnutrition in infants.⁴⁻⁶ Up to 4.5% of mothers have reported giving early complementary feeding starting at <4 months of age, while 12.7% gave only one type of food, such as carbohydrate only, at the beginning of complementary feeding practice.

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Usually, carbohydrates are often given to infants at the age of six months, while animal protein is delayed. A study in Pontianak, Indonesia showed that 87.3% of mothers think oil should not be given in children younger than 9 months of age.⁷

Some Indonesian mothers engage in unhelpful activities while feeding their babies, such as watching television or digital devices (65.5%), scolding their babies while feeding (14.5%), or forcing their children to eat (11.8%).⁷ These results exposed several complementary feeding problems in Indonesia and revealed the need for comprehensive multidisciplinary management to deal with malnutrition in Indonesia. One such needed step was to develop an educational module for mothers' complementary feeding practices, especially for infants aged 6-9 months, as this is the earliest recommended period of complementary feeding in infants.

We aimed to create a module based on scientific evidence while also presenting accurate information about correct complementary feeding practices in a short, precise, simple, easy-to-understand manner for mothers to apply in their daily complementary feeding practices. Professionals (pediatricians or general practitioners) might also use this module as teaching material for mothers on complementary feeding.

Methods

This qualitative study was done to create a module (ABC-MPASI) on complementary feeding practices in the Indonesian language. We used a combination of the Delphi Method and focus group discussion (FGD) attended by pediatric nutrition experts to formulate the points included in the module.⁸⁻¹⁰ The Delphi Method was employed in two rounds, each lasting about 14 days. Team member inclusion was carried out by purposive sampling and the snowball method. Several experts in pediatric nutrition who were engaged in preparing the *Recommendations for Evidence-Based Feeding Practices* published by the *Indonesian Pediatric Society* (IPS) were included, as well as experts working in the fields of pediatrics, epidemiology, public health, and communication.

We informed the Delphi team members of the purpose of the study, then asked for their agreement to be involved in the module creation and commitment

to maintain the confidentiality of the module content. The identity of the experts was not revealed in detail to other team members, but the authors had access to the office addresses and phone numbers of the entire team.

In the first round, we determined the main topics to be included in the ABC-MPASI module based on a needs analysis from the literature and preliminary research. The main issues and structure included in the module were made based on the *Recommendations for Evidence-Based Feeding Practices in Infants and Toddlers in Indonesia to Prevent Malnutrition* (2015).¹¹ We then compiled a questionnaire containing open-ended questions about the content and structure of the designed module, then e-mailed it to the team members with feedback requested within 15 days.

All entries submitted by the experts were collected and analyzed in a combined list and grouped according to the *Step for Coding and Theorization* (SCAT) analysis.¹² A point system was established in order to determine the most frequently mentioned sub-themes. In the second round, the authors compiled a follow-up questionnaire to rank materials to be included in the module. The team was also asked for input and corrections regarding the distribution of complementary feeding practice module materials. It was agreed upon that the most important target for the distribution of the modules would be mothers of babies aged six to nine months, and that the module will be distributed through pediatricians across Indonesia. Moreover, although the module was created using elementary-level Indonesian language, the module could be translated into local languages if necessary. The second round lasted for 21 days.

Results

The implementation of the Delphi method in the initial process of this study was begun by inviting experts in pediatric nutrition. Two experts in communication and community medicine were also invited. Ten of the twelve invited experts agreed to be included in the study, while two declined due to time constraints. Characteristics of the included experts are shown in **Table 1** and the Delphi questionnaire can be seen in **Appendix 1**.

All entries submitted by the experts were collected and analyzed in a combined list and grouped according

to the SCAT analysis method. The entries were listed according to the order of sub-themes and themes to which the entries belonged (Table 2).

Following the module creation process (Figure 1), the final module was produced (Appendix 2).

Discussion

The ABC-MPASI-Press Module was developed for mothers as an educational module on complementary feeding practices. The Delphi method was used in this study to deal with complex problems through structured

Table 1. Characteristics of experts included in the Delphi team

Characteristics	(N=10)
Expertise, n	
Pediatric nutrition	5
General pediatrics	3
Community medicine	1
Communication	1
Age, years	
Mean (SD)	51.3 (12.3)
Range	36-76
Work experience, years	
Mean (SD)	28.5 (12.4)
Range	11-53

Table 3. Module development entries

Main theme 1: Correct complementary feeding practices		
Sub-themes	Expert	n
The correct complementary feeding practice requirements are: 1) On time 2) Adequate 3) Safe 4) Responsive feeding	1,2,3,4,5,6,7,8,9	9
Sub-theme 1: On-time feeding		
Sub-theme	Expert	n
Prerequisites of complementary feeding practice: 1) The child's oromotor and psychological abilities are ready. 2) The baby can sit up, smacks lips when he/she sees food, and turn the head to the left and right. 3) Signs that the baby is ready to consume solid foods: sufficient head control, absence of tongue-thrust reflex, increased appetite, and food preference.	1,2,5,8	4
Complementary foods are given at the age of 6 months.	1,2,5	3
Sub-theme 2a: Adequate amount of complementary foods eaten		
Sub-theme	Expert	n
The amount of solid food eaten by the baby depends on their eating ability.	1,2,5,6,7	5
At least 200 kcal of energy is required from complementary feeding for babies aged 6-9 months.	1,3,4,5	4
Sub-theme 2b: Adequate frequency of eating in 1 day		
Sub-theme	Expert	n
The frequency of complementary feeding is based on the baby's age and response when given food.	1,2	2
The frequency of complementary feeding according to age is twice a day for babies aged 6-8 months and three times a day for babies aged 9-11 months.	3,4	2
Sub-theme 2c: Adequate consistency		
Sub-theme	Expert	n
The complementary food texture and viscosity should be of an appropriate consistency such that the infant can consume it.	1,5,6,7	4
Sub-theme 2d: Adequate composition		
Sub-theme	Expert	n
Complete and balanced nutrient content includes macronutrients and micronutrients, especially iron.	1,2,4,5	4
The composition of ideal complementary feeding for babies aged 6-9 months is 40-45% carbohydrates, 10-15% animal protein, and 35-40% lipid.	1,2,3	3

Table 3. Module development entries (continued)

Sub-theme 2e: Adequate variety		
Sub-theme	Expert	n
Daily and weekly complementary feeding variations are required in all food groups.	1,2	2
A variety of foods needs to be displayed in the module.	3	1
Sub-theme 3: Safe		
Sub-theme	Expert	n
Are salt, spices, and sugar safe for babies?	1,6,7	3
Dangers in complementary feeding storage	1,2,4	3
Complementary foods must be prepared with adequate hygiene (wash hands, clean cooking utensils and cutlery). Clean water and high-quality fresh ingredients should be used.	1,5,7	3
Sub-theme 4a: Eating procedures and feeding response		
Sub-theme	Expert	n
Babies move their head and mouth on their own, approaching food when offered.	1,2,5,6,7,10	6
Mother feeds directly making eye contact with the baby.	1,2,5	3
Mother recognizes the signs of infant hunger and satiety.	9	1
The feeding process is stopped when the baby refuses.	5	1
Sub-theme 4b: Environment/eating atmosphere and responsive feeding		
Sub-theme	Expert	n
Neutral environment without rough coercion if the baby refuses to eat.	1,2,5,7	4
No distractions while eating (watching television or other electronic devices) for both the mothers and babies.	1,2,5,9	4
No target amount of food should be set for the baby.	1,2,5	3
Sub-theme 4c: Meal schedule		
Sub-theme	Expert	n
Meal time should be less than 30 minutes	1,2,5,6,7,10	6
Correct eating rules: Regular eating schedule	1,2,5	3
Only water is to be given to the baby between meals (without milk).	1,2,5	3
Main Theme 2: Module structure		
Sub-theme	Expert	n
Module structure	1,2,10	3
Number of modules to be created	6,7,10	3
1) Main topics and their divisions	6,7	2
2) Lots of pictures/illustrations		
1) Module should be simple	9	1
2) Module should be easy to understand		
Main Theme 3: Educational language		
Sub-theme	Expert	n
Simple Indonesian common language tailored for ease of understanding by mother	6,7,9,10	4
Terms in Indonesian:	6,7	2
1) On time		
2) Adequate/enough		
3) Safe		
4) Responsive feeding		
Abbreviation for the terms in Indonesian is required as acronym (TAAMa)	9	1

Note: TAAMa=*Tepat waktu, Adekuat, Aman, Makan responsif* (on time, adequate, safe, responsive feeding)

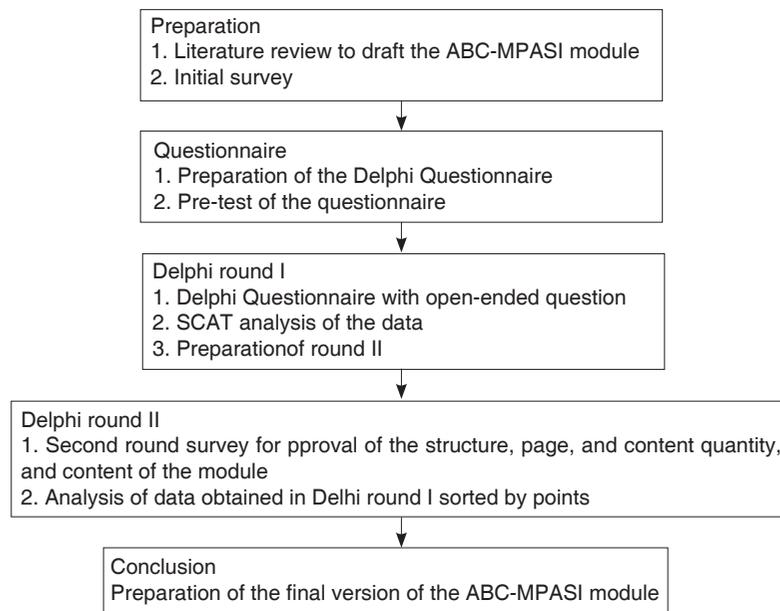


Figure 1. Flowchart of two rounds of the Delphi method to develop the module

and effective communication. In order to achieve "structured communication," several requirements had to be fulfilled, such as anonymous feedback from expert team members, as well as ample opportunities for the expert team to revise. In principle, the Delphi method aims to obtain conventional wisdom from a group of experts.^{10,13}

The study also ranked scores for the sub-themes proposed by each expert based on the central theme created and the number of experts recommending the sub-theme.¹² Furthermore, the selection of sub-themes for the module's content was made according to the experts' opinions. Afterwards, the *ABC-MPASI-Press Module* was created based on references, literature review results, results of a preliminary survey to a mothers' group with suitable characteristics, and the Delphi analysis data.

A scientific, evidence-based guide for complementary feeding practices is urgently needed, especially with the increase in the incidence of stunting in Indonesia. We expect this module to be used by pediatricians and general practitioners in Indonesia to provide mothers with primary education on correct complementary feeding practices. Furthermore, amidst information overload on social media, this module can be used to address the urgent need for mothers to learn correct complementary feeding practices.

The book *Evidence-Based Feeding Practices in Infants and Toddlers in Indonesia to Prevent Malnutrition* (2015), recommended by the *Indonesian Pediatric Society*, is a reference for pediatricians in Indonesia to educate mothers about complementary feeding practices.¹¹ However, this publication presents challenges to physicians, as they tend to provide excessive theoretical content, while mothers expect concise, simple, and practical tips for daily implementation. Discrepancies in maternal knowledge lead to inappropriate complementary feeding practices in Indonesia, not only in mothers with low socioeconomic status, but also in mothers with higher socioeconomic status.⁷

The main theme of complementary feeding practices was broken down into four sub-themes: "on time" (*Tepat waktu*), "adequate" (*Adekuat*), "safe" (*Aman*), and "responsive feeding" (*Makan responsif*), further abbreviated as TAAMA for mothers to remember. The module was developed in accordance with the *WHO Global Strategy for Feeding Infant and Young Children* (2003) requirements for proper complementary feeding.^{11,14,15} Our experts recommended that the module be written in Indonesian to reach a wider audience, and in everyday language that mothers could easily understand.^{16,17}

The "on-time" sub-theme included the timing at which complementary foods should be introduced;

40% of the experts provided readiness assessment requirements that infants must meet to receive complementary foods. About 30% of experts also suggested the age of six months as an appropriate time for starting solid food. There was agreement among the experts regarding this sub-theme.

The "adequate" sub-theme was further divided into adequacy of the amount of complementary foods eaten, the frequency of complementary feeding in a day, the texture and viscosity of complementary foods, the composition of complementary foods, and the variety of complementary foods given. In this section, expert opinions varied. Various examples of the ideal composition of carbohydrates, protein, and fat for 6-9 months infants were also shown, so that mothers could reproduce adequate complementary feeding by looking at the pictures.¹⁸

In the "safe" sub-theme, the discussion focused on cleanliness during preparation and feeding of the solid food to babies as well as on proper food storage. The literature regarding complementary food storage processes varied from rules for complementary food containers and storage location. Our communication experts noted that detailed and dense information would make it harder for a mother to remember the message, thus we simplified the information.^{19,20} For example, one expert suggested providing information about the safe temperature for storing complementary foods. However, it was deemed as too detailed and was discarded.

In addition, the "safe" sub-theme also discussed the addition of salt or sugar in complementary foods. Recommendations for salt intake in infants vary considerably between countries.²¹ Based on the *National Health Service* recommendations, the maximum salt intake is <1 gram per day (equivalent to 0.4 grams of sodium).¹¹ The amount of salt in the *ABC-MPASI-Press Module* was set at 0.1 grams in 1 serving of solid food for babies aged 6-9 months, taking into account that the sodium intake is already fulfilled from breast milk or formula milk. The amount of 0.1 grams of salt was given to the mother in a photo to make it easier for mothers to replicate. Additional salt was not needed in manufactured complementary food, as it already contained sodium. The reason for determining the 0.1-gram number was to provide a broader safety margin for mothers to cook complementary foods. It was also found that giving

0.1 grams of additional salt was enough to enhance the taste of complementary foods.

The experts encountered difficulties in the "responsive feeding" topic, including appropriate eating procedures, environment, atmosphere, and schedules. Since much information was given on this sub-theme, communication experts suggested creating an abbreviation for mothers to remember.²² Therefore, "6T" was created to summarize this sub-theme material: regular feeding, no more than 30 minutes, no target, no forcing, eye contact, and noticing signs of hunger and satiety (in Indonesian: teratur, tidak lebih dari 30 menit, tidak ada target, tidak memaksa bayi, tatap mata ibu dan bayi, dan tanda lapar dan kenyang bayi).

The main advantage of our module is its practicality. During the creation of the module, we made sure that it was concise enough to be read in one sitting, thus reducing the risk of not completing the module. Furthermore, we included several examples in the form of real-life pictures to assist the mothers in food preparation.

The main limitation of this study was that it was the early stage of module development. Before it can be widely used in daily practice, further research is necessary in order to adjust its structure according to local situations.

In conclusion, errors in complementary feeding practices lead to malnutrition problems in Indonesia. The *ABC-MPASI-Press module* is an evidence-based, scientifically developed complementary feeding module that provide mothers with practical educational material on correct complementary feeding practices for babies aged 6-9 months.

Conflict of interest

None declared.

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References

1. Black RE, Victora CG, Walker SP, Bhutta ZA, Christian P, de Onis M, et al. Maternal and child undernutrition and overweight in low-income and middle-income countries. *Lancet*. 2013;382:427-51. DOI: 10.1016/s0140-6736(13)60937-x.
2. Aboud FE, Akhter S. A cluster-randomized evaluation of a responsive stimulation and feeding intervention in Bangladesh. *Pediatrics*. 2011;127:1191-7. DOI: 10.1542/peds.2010-2160.
3. Waber DP, Bryce CP, Fitzmaurice GM, Zichlin ML, McGaughy J, Girard JM, et al. Neuropsychological outcomes at midlife following moderate to severe malnutrition in infancy. *Neuropsychology*. 2014;28:530-40. DOI: 10.1037/neu0000058.
4. Blaney S, Februhartanty J, Sukotjo S. Feeding practices among Indonesian children above six months of age: a literature review on their magnitude and quality (part 1). *Asia Pac J Clin Nutr*. 2015;24:16-27. DOI: 10.6133/apjcn.2015.24.1.13.
5. Blaney S, Februhartanty J, Sukotjo S. Feeding practices among Indonesian children above six months of age: a literature review on their potential determinants (part 2). *Asia Pac J Clin Nutr*. 2015;24:28-37. DOI: 10.6133/apjcn.2015.24.1.14.
6. Santika O, Februhartanty J, Ariawan I. Feeding practices of young children aged 12–23 months in different socio-economic settings: a study from an urban area of Indonesia. *Br J Nutr*. 2016;116 Suppl 1:S1-S7. DOI: 10.1017/s0007114515003438.
7. Andriani R, Supriyatno B, Sjarif D. Gambaran Karakteristik Ibu, Pengetahuan, dan Praktik Pemberian Makanan Pendamping Air Susu Ibu pada Bayi di Kota Pontianak. *Sari Pediatri*. 2021;22:277-84. DOI: 10.14238/sp22.5.2021.277-84.
8. Boulkedid R, Abdoul H, Loustau M, Sibony O, Albeti C. Using and reporting the Delphi method for selecting healthcare quality indicators: a systematic review. *PLoS One*. 2011;6:e20476. DOI: 10.1371/journal.pone.0020476.
9. Jünger S, Payne SA, Brine J, Radbruch L, Brearley SG. Guidance on Conducting and REporting DELphi Studies (CREDES) in palliative care: Recommendations based on a methodological systematic review. *Palliat Med*. 2017;31:684-706. DOI: 10.1177/0269216317690685.
10. McMillan SS, King M, Tully MP. How to use the nominal group and Delphi techniques. *Int J Clin Pharm*. 2016;38:655-62. DOI: 10.1007/s11096-016-0257-x.
11. Ikatan Dokter Anak Indonesia. Rekomendasi praktik pemberian makan berbasis bukti pada bayi dan batita di Indonesia untuk mencegah malnutrisi: IDAI; 2015. [cited 2022 January 1]. Available from: <https://www.idai.or.id/professional-resources/pedoman-konsensus/rekomendasi-praktik-pemberian-makan-berbasis-bukti-pada-bayi-dan-batita-di-indonesia-untuk-mencegah-malnutrisi>.
12. Seki M, Fujinuma Y, Matsushima M, Joki T, Okonogi H, Miura Y, et al. How a problem-based learning approach could help Japanese primary care physicians: a qualitative study. *Int J Med Educ*. 2019;10:232-40. DOI: 10.5116/ijme.5de7.99c7.
13. Okoli C, Pawlowski S. The Delphi method as a research tool: An example, design considerations and applications. *Information & Management*. 2004;42:15-29. DOI: 10.1016/j.im.2003.11.002
14. World Health Organization. *Global Strategy for Infant and Young Child Feeding*. Singapore: WHO; 2003. p. 30.
15. Pan American Health Organization, World Health Organization. *Guiding principles for complementary feeding of the breastfed child*. Washington DC: Pan American Health Organization, World Health Organization; 2003. p. 37.
16. Warde F, Papadacos J, Papadacos T, Rodin D, Sahlia M, Giuliani M. Plain language communication as a priority competency for medical professionals in a globalized world. *Can Med Educ J*. 2018;9:e52-e9.
17. Quesenberry AC. Plain Language for Patient Education. *Journal of Consumer Health on the Internet*. 2017;21:209-15. DOI: 10.1080/15398285.2017.1311611.
18. Scheltema E, Reay S, Piper G. Visual representation of medical information: the importance of considering the end-user in the design of medical illustrations. *J Vis Commun Med*. 2018;41:9-17. DOI: 10.1080/17453054.2018.1405724.
19. Bester N, Di Vito-Smith M, McGarry T, Riffkin M, Kaehler S, Pilot R, et al. The Effectiveness of an Educational Brochure as a Risk Minimization Activity to Communicate Important Rare Adverse Events to Health-Care Professionals. *Adv Ther*. 2016;33:167-77. DOI: 10.1007/s12325-016-0284-y.
20. Giguère A, Légaré F, Grimshaw J, Turcotte S, Fiander M, Grudniewicz A, et al. Printed educational materials: effects on professional practice and healthcare outcomes. *Cochrane Database Syst Rev*. 2012;10(10):CD004398. DOI: 10.1002/14651858.CD004398.pub3.
21. Michaelsen KF, Weaver L, Branca F, Robertson A. Feeding and nutrition of infants and young children: guidelines for the WHO European Region, with emphasis on the former Soviet countries: World Health Organization: 2000. p. 288.
22. Radović T, Manzey D. The Impact of a Mnemonic Acronym on Learning and Performing a Procedural Task and Its Resilience Toward Interruptions. *Front Psychol*. 2019;10:2522. DOI: 10.3389/fpsyg.2019.02522.

Appendices

Appendix 1. The Delphi Questionnaire used in the study

Initial:	Age, years:
Expertise:	Work experience, years

Section 1: Contents

Based on your expertise, what are the essential contents that should be covered in a complementary feeding practice module based on the Indonesian Pediatric Society recommendations?

Section 2: Messages

Based on your expertise, what messages need to be delivered in each sub-theme of the module?

On-time feeding	
Adequacy	
Safety	
Responsive feeding	

Section 3: Structure

Based on your expertise, what is your opinion regarding

The module being divided into 4 sub-themes (on-time feeding, adequacy, safety, responsive feeding)

The module being categorized according to age groups (6 to 9 months, 9 to 12 months, >12 months)

Appendix 2. Final ABC-MPASI-Press Module

MPASI UNTUK BAYI USIA 6-9 BULAN

Damayanti R. Sjarif & Rini Andriani

APAKAH MPASI ITU?
MPASI (Makanan Pendamping ASI) adalah makanan padat atau cair yang mulai diberikan kepada bayi ketika ASI saja tidak lagi mencukupi kebutuhan gizi bayi yang semakin meningkat.

APA MANFAAT MPASI?
MPASI memberikan tambahan zat gizi yang dibutuhkan bayi, melatih kemampuan makan bayi dan meningkatkan ikatan antara ibu dan bayi. Penting diingat ibu, praktek pemberian MPASI harus dilakukan dengan benar.

APA AKIBATNYA
BILA TERJADI KESALAHAN-KESALAHAN DALAM PRAKTIK PEMBERIAN MPASI?
Bayi akan menjadi kurus, pendek, gizi terganggu sehingga kecerdasannya terganggu dikemudian hari dan mudah terkena penyakit karena daya tahan tubuh yang kurang.

Prinsip Pemberian MPASI yang BENAR

T 1. Tepat waktu
A 2. Adekuat
A 3. Aman
Ma 4. Makan responsif

TEPAT WAKTU
MPASI UNTUK TEPAT WAKTU BAYI 6-9 BULAN
MPASI diberikan SAAT bayi mencapai usia 6 bulan dengan syarat kemampuan pencernaan, oromotor, dan psikologis bayi sudah siap, yang ditandai dengan:

- Bayi sudah mampu duduk dengan kepala tegak
- Bayi mulai mengecap-ngecap saat melihat makanan
- Bayi mampu mengontrol gerakan mulut dan lidah

MPASI UNTUK BAYI USIA 6-9 BULAN

TEPAT WAKTU
Bayi berusia 6-9 bulan sudah dapat diperkenalkan dengan berbagai variasi makanan, seperti karbohidrat, lemak, protein hewani, protein nabati, serta sayur dan buah.

PENTING!!!
Berikan protein hewani yang kaya zat besi agar bayi dapat bertumbuh dengan baik.

Hindari pemberian menu tunggal (misalnya hanya pisang, labu, atau bubur nasi)



ADEKUAT
Kebutuhan energi harian dari ASI dan MPASI untuk bayi usia 6-9 bulan sebesar **700 kalori yang terdiri dari:**

1. Menyusui selama 10-30 menit sebanyak 5-6x sehari sebesar 500 kalori. Bila diberikan ASI perah, paling sedikit 120 ml sebanyak 5-6x sehari.
2. Pemberian MPASI yang mengandung kalori sebesar 200 kalori.

Kapan nutrisi dikatakan cukup untuk bayi?
Bila bayi mengalami kenaikan berat badan sebanyak 350 gram/ bulan di usia 6-9 bulan.

Kebutuhan Energi Harian (kcal)



MPASI dengan Total kalori sekitar 200 kalori dengan komposisi :

- Karbohidrat 45-50%
- Protein 10-15%
- Lemak 35-40%



MPASI UNTUK BAYI USIA 6-9 BULAN

ADEKUAT
Contoh menu bubur ikan yang dapat diberikan pada usia 6-9 bulan dengan energi sekitar 200 kalori



Cara Pembuatan menu bubur nasi dengan ikan nila

- Masukkan 3 sendok makan nasi dan 1 gelas mineral air/ air kaldu ke dalam panci.
- Masukkan garam dalam jumlah yang sedikit dan diaduk.
- Kemudian dimasak di atas kompor hingga mendidih dan kental.
- Masukkan 40 gram daging ikan nila yang telah dipotong kecil, kemudian diaduk hingga matang.
- Tambahkan minyak 1/2 sendok makan dan daun bawang secukupnya.

Ikan nila dapat juga digantikan dengan jenis ikan lainnya atau bahan makanan lain seperti hati ayam, daging ayam, daging sapi, dan telur ayam.



MPASI UNTUK BAYI USIA 6-9 BULAN

ADEKUAT
Contoh menu MPASI dengan menggunakan MPASI pabrikan dengan kalori sebesar ±200 kal / porsi



- Masukkan labu siam ke dalam panci berisi air dan rebus hingga mendidih.
- Masukkan 1 buah hati ayam ke dalam panci dan masak hingga matang.
- Tuangkan isi panci ke dalam mangkuk MPASI pabrikan.
- Aduk hingga rata, tambahkan minyak 7,5 ml dan sajikan bersama hati ayam.

Catatan:

1. Pemberian garam pada usia 6-9 bulan, dalam jumlah sesedikit mungkin hingga memberikan tambahan rasa pada MPASI.
2. Garam boleh ditambahkan pada MPASI yang dibuat terpisah, dengan jumlah paling banyak: 0,1 gram/ hari.
3. Garam tidak perlu ditambahkan bila menggunakan MPASI pabrikan.



Appendix 2. Final ABC-MPASI-Press Module (continued)

ADEKUAT → **MPASI UNTUK BAYI USIA 6-9 BULAN**

Makanan keluarga adalah makanan yang dimasak untuk seluruh keluarga
Contoh menu MPASI dengan menggunakan makanan keluarga dengan kalori sebesar +200 kal / porsi



Contoh porsi makanan + 200 kalori yang diambil dari makanan keluarga

- Masukkan 3 sdm nasi ke dalam blender makanan.
- Masukkan juga 1/2 mangkuk kecil sup sayuran.
- Kemudian diblender hingga halus, dan sajikan dalam mangkuk.
- Tambahkan minyak 1/2 sdm (7,5 ml).
- Sajikan dengan daging sapi dan hati ayam yang telah cincang kecil.



Contoh menu dan kandungan nutrisi MPASI dari makanan rumahan

3 sdm nasi yang sudah dilumatkan bersama sup sayuran dan 1 sdm daging cincang dan 1 hati ayam	3 sdm nasi yang sudah dilumatkan bersama sup sayuran dan 40 gram ikan goreng kecap
- Total Kalori 250 kkal	- Total Kalori 240 kkal
- Zat Besi 3,5 mg	- Zat Besi 1,8 mg

ADEKUAT → **MPASI UNTUK BAYI USIA 6-9 BULAN**

Kekentalan yang dapat diberikan pada bayi usia 6-7 bulan



Jumlah MPASI yang dapat diberikan sebanyak 2-3 sendok makan (1/2 porsi bubur ikan= 100 kkal) dengan frekuensi 2-3 kali makan

Kekentalan yang dapat diberikan pada bayi usia 7-8 bulan



Jumlah MPASI dapat diberikan sesuai kemampuan makan bayi dan ditingkatkan hingga mencapai 1/2 mangkuk ukuran 250 mL (1 porsi bubur ikan= 200 kkal) dengan frekuensi 2-3 kali makan / hari

Jumlah MPASI yang diberikan disesuaikan dengan kemampuan makan bayi serta ditingkatkan secara bertahap

Berikan 1 hati ayam setiap hari untuk mencukupi kebutuhan zat besi bayi



Diblender dan disaring untuk tekstur bayi usia 6-8 bulan

Tekstur untuk usia 8-9 bulan

A M A N → **MPASI UNTUK BAYI USIA 6-9 BULAN**

- Cuci tangan sebelum menyiapkan bahan makanan.
- Cuci tangan ibu dan bayi sebelum makan.



Pisahkan talenan untuk memotong bahan mentah dan matang, serta gunakan bahan makanan yang baik.



Gunakan air bersih untuk minum dan memasak serta pastikan alat-alat yang digunakan bersih.



- Masak makanan hingga matang.
- Siapkan MPASI dalam porsi kecil.
- Berikan MPASI segera setelah disiapkan.



Bila terdapat MPASI yang akan diberikan pada jadwal makan selanjutnya, simpan ditempat yang bersih dan tertutup.

- Di suhu ruangan, MPASI harus segera diberikan.
- Dapat disimpan di kulkas paling lama 24 jam.



MAKAN RESPONSIF → **MPASI UNTUK BAYI USIA 6-9 BULAN 6T**

JADWAL

- Jadwal makan dibuat teratur setiap 2-3 jam sesuai dengan tanda lapar bayi.
- Waktu makan tidak lebih dari 30 menit.
- Diantara waktu makan hanya diberikan air putih.

LINGKUNGAN

- Suasana hati ibu harus rileks, tidak ada target untuk jumlah makanan yang harus dihabiskan anak.
- Tidak memaksa anak dalam proses pemberian makan, baik secara halus maupun dengan cara kasar.
- Tidak makan sambil menonton televisi, mainan dan alat elektronik lainnya.

PROSEDUR




- Tatap mata ibu & bayi
- Ibu menyuapi secara langsung.
- Bayi menggerakkan sendiri kepala dan mulutnya, mendekati makanan.
- Ibu mengenal tanda lapar dan kenyang bayi.
- Akhiri proses pemberian makan bila bayi sudah menolak.

Praktek pemberian MPASI Usia 6-9 Bulan dengan prinsip TAAMa

- Frekuensi:**
Makan utama 2-3 kali sehari.
Tambahkan selingan 1-2 kali bila sudah memenuhi 3 kali makan utama.
- Jumlah:**
Tingkatkan secara bertahap sesuai kemampuan bayi.
- Kepekatan/Konsistensi:**
Tekstur bubur atau makanan yang dilumatkan.
- Variasi:**
Diberikan berbagai jenis makanan.
- Pemberian makan secara aktif dan responsif.**