



ORIGINAL ARTICLE

Mothers' Knowledge of Complementary Feeding (MP-ASI) for Infants Aged 6–12 Months at the Sayang Ibu Independent Midwifery Practice

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ABSTRACT

Introduction: Stunting remains a major public health problem in Indonesia. In Wajo Regency, the prevalence of stunting is 25.5%, and inadequate maternal knowledge regarding complementary feeding (MP-ASI) is considered one of the contributing factors to suboptimal child growth. Appropriate complementary feeding practices during the first 1,000 days of life are essential for preventing stunting and supporting optimal child development. **Objectives:** This study aimed to describe maternal knowledge regarding complementary feeding (MP-ASI) for infants aged 6–12 months. **Methods:** A descriptive quantitative study with a cross-sectional approach was conducted among 60 mothers with infants aged 6–12 months selected as study participants. Data were collected using a researcher-developed questionnaire assessing knowledge of complementary feeding based on the World Health Organization (WHO) (2021) Infant and Young Child Feeding (IYCF) Guidelines. Descriptive statistical analysis was performed using frequency distributions and percentages. **Results:** Of the 60 respondents, 36 (60.0%) had good knowledge regarding complementary feeding, while 16 (26.7%) had moderate knowledge and 8 (13.3%) had poor knowledge. Although most mothers demonstrated good knowledge, more than one-third of respondents still had moderate to poor knowledge, indicating the need for continued efforts to improve maternal understanding of appropriate complementary feeding practices. **Conclusions:** Maternal knowledge regarding complementary feeding was generally good; however, a considerable proportion of mothers still demonstrated inadequate knowledge. Strengthening nutrition education and counseling through maternal and child health services is essential to promote appropriate complementary feeding practices and support stunting prevention.

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1. Introduction

The first 1,000 days of life, from conception until a child reaches two years of age, represent a critical period for physical growth and neurodevelopment. During this period, adequate nutrition plays an essential role in ensuring optimal growth and preventing malnutrition. Breast milk is recognized as the optimal source of nutrition during the first six months of life. However, after six months, breast milk alone is insufficient to meet infants' increasing nutritional requirements for energy, protein, iron, zinc, and other essential micronutrients. Therefore, the World Health Organization (WHO) and the Indonesian Ministry of Health recommend introducing complementary feeding (Makanan Pendamping Air Susu Ibu/MP-ASI) at six months of age while continuing breastfeeding.



Despite these recommendations, inappropriate complementary feeding practices remain common in Indonesia. Delayed introduction, early initiation, inadequate feeding frequency, inappropriate food texture, insufficient dietary diversity, and poor nutritional quality continue to contribute to nutritional problems among infants and young children. According to the Indonesian Nutritional Status Survey (SSGI), the national prevalence of stunting was 21.6% in 2022. In South Sulawesi Province, the prevalence reached 27.2%, exceeding the national average, while Wajo Regency reported a prevalence of 25.5%, indicating that stunting remains a significant public health concern.

Previous studies have consistently demonstrated that maternal knowledge is one of the most important determinants of appropriate complementary feeding practices. Mothers with limited knowledge were more likely to introduce complementary foods inappropriately and provide diets lacking adequate diversity and feeding frequency[1]. Similarly, Other research found that inadequate maternal understanding regarding food quality, particularly animal-source protein, contributed to poor complementary feeding practices [2]. Furthermore, different article emphasized that maternal knowledge is strongly influenced by access to health information and support from healthcare providers[3]. Mothers with insufficient knowledge regarding age-appropriate food texture and feeding practices were more likely to experience feeding difficulties and nutritional problems among their children. Maternal knowledge regarding appropriate complementary feeding is also influenced by several maternal and household-related factors, which may contribute to differences in feeding practices[4]. A specific questionnaire for assessing mothers' knowledge regarding complementary feeding practices has also been developed and evaluated for validity and reliability in Indonesia [5].

Although previous studies have identified the relationship between maternal knowledge and complementary feeding practices, most research has focused on analytical associations or intervention outcomes rather than describing the current level of maternal knowledge within specific primary healthcare settings. A recent scoping review also highlights the importance of maternal knowledge, attitudes, and practices in determining the quality of complementary feeding across different settings[6]. Limited evidence is available regarding maternal knowledge of complementary feeding among mothers attending independent midwifery practices in Wajo Regency, particularly at Bidan Sayang Ibu Independent Midwifery Practice, Sengkang. This lack of local evidence highlights the need to document the current level of maternal knowledge as baseline information for maternal and child health services in the local setting.

Assessing maternal knowledge is essential for identifying existing knowledge levels and gaps regarding complementary feeding recommendations. Such information provides an evidence base for understanding maternal educational needs and may serve as a reference for future analytical studies or educational interventions. Better maternal understanding regarding the appropriate timing, food texture, portion size, feeding frequency, and nutritional composition of complementary foods is associated with appropriate complementary feeding practices that support optimal infant growth and reduce the risk of growth faltering and stunting.

Preliminary data obtained from Bidan Sayang Ibu Independent Midwifery Practice indicated that the number of infants aged 6–12 months was 51 in 2023, 61 in 2024, and 53 in 2025. Initial observations also revealed that some mothers still had limited knowledge regarding appropriate complementary feeding, including the timing of introduction, food texture according to the infant's developmental stage, feeding frequency, portion size, and nutritional content. These findings indicate that maternal understanding of recommended complementary feeding practices remains inconsistent.

Therefore, this study aimed to describe maternal knowledge regarding complementary feeding (MP-ASI) for infants aged 6–12 months at Bidan Sayang Ibu Independent Midwifery Practice, Sengkang, Wajo Regency. The findings are expected to provide baseline evidence for healthcare providers in developing targeted nutrition education and counseling programs to improve complementary feeding practices and support stunting prevention.



2. Methods

This study employed a descriptive quantitative design using a cross-sectional approach. A cross-sectional study is an observational research design in which data on all variables are collected from the study population at a single point in time. The study aimed to describe maternal knowledge regarding complementary feeding (MP-ASI) for infants aged 6–12 months. The study was conducted at the Bidan Sayang Ibu Independent Midwifery Practice, Sengkang, Wajo Regency. The study population consisted of mothers with infants aged 6–12 months who were registered at the healthcare facility. A total of 60 mothers participated in the study. The inclusion criteria were mothers with infants aged 6–12 months who were registered at the Bidan Sayang Ibu Independent Midwifery Practice, attended the Posyandu during the study period, and agreed to participate by providing informed consent. The exclusion criteria included mothers who had communication or cognitive impairments that could interfere with questionnaire completion and mothers who did not complete the questionnaire.

Data were collected using a structured questionnaire consisting of 10 items assessing maternal knowledge regarding complementary feeding practices for infants aged 6–12 months. The questionnaire was administered directly to respondents during the data collection period. The collected data were analyzed using descriptive statistics. The results are presented as frequencies and percentages to describe the distribution of maternal knowledge levels regarding complementary feeding.

3. Results

Table 1 Characteristics of Respondents

Characteristics	n	%
Age		
<20 Years	5	8.3
20–35 years	45	75.0
>35 years	10	16.7
Education		
Primary school	4	6.7
Junior high school	8	13.3
Senior high school	32	53.3
College	16	26.7
Occupation		
Housewife	38	63.3
Civil servant	7	11.7
Others	15	25.0
Parity		
One child	25	41.7
>1 child	35	58.3

A total of 60 mothers with infants aged 6–12 months participated in this study. As presented in Table 1, most respondents were aged 20–35 years (45, 75.0%), followed by those aged over 35 years (10, 16.7%) and below 20 years (5, 8.3%). More than half of the respondents had completed senior high school (32, 53.3%), while the smallest proportion had completed primary school (4, 6.7%). Regarding occupation, most respondents were



housewives (38, 63.3%), followed by those in other occupations (15, 25.0%) and civil servants (7, 11.7%). In terms of parity, the majority of respondents had more than one child (35, 58.3%), whereas 25 respondents (41.7%) had one child. The detailed characteristics of the respondents are presented in Table 1.

Table 2. Distribution of Maternal Knowledge Regarding Complementary Feeding

Variable	Good (%)	Fair (%)	Poor (%)
Timing of complementary feeding	42 (70.0)	12 (20.0)	6 (10.0)
Feeding frequency and portion size	38 (63.3)	14 (23.3)	8 (13.3)
Food types and nutritional composition	35 (58.3)	15 (25.0)	10 (16.7)
Food texture and consistency	30 (50.0)	20 (33.3)	10 (16.7)
Overall maternal knowledge	36 (60.0)	16 (26.7)	8 (13.3)

Table 2 presents the distribution of maternal knowledge regarding complementary feeding. Knowledge regarding the appropriate timing of complementary feeding was generally good, with 42 respondents (70.0%) categorized as having good knowledge, while only six respondents (10.0%) had poor knowledge. Similarly, good knowledge was observed for feeding frequency and portion size among 38 respondents (63.3%), food types and nutritional composition among 35 respondents (58.3%), and food texture and consistency among 30 respondents (50.0%). Overall, most mothers demonstrated good knowledge regarding complementary feeding (36 respondents; 60.0%), whereas 16 respondents (26.7%) had fair knowledge and eight respondents (13.3%) had poor knowledge.

4. Discussion

The present study demonstrated that maternal knowledge regarding complementary feeding among mothers of infants aged 6–12 months was predominantly classified as good. Overall, 60.0% of respondents had good knowledge, indicating that most mothers understood the basic principles of appropriate complementary feeding, including the recommended timing, feeding frequency, portion size, food types, and food texture. Maternal knowledge is an important determinant of infant feeding practices because mothers are primarily responsible for selecting, preparing, and providing complementary foods that meet the nutritional requirements of growing infants. Adequate maternal knowledge is associated with appropriate complementary feeding practices, which contribute to optimal growth and development during the first two years of life.

Although good knowledge was the predominant category, approximately 40% of respondents were still classified as having fair or poor knowledge. This finding indicates that knowledge gaps remain among a substantial proportion of mothers and suggests that not all caregivers have an adequate understanding of recommended complementary feeding practices. Similar knowledge, attitude, and practice gaps regarding complementary feeding have also been reported among mothers living in stunting-locus areas[7]. Inadequate knowledge may increase the likelihood of inappropriate feeding behaviors, such as the early or delayed introduction of complementary foods, unsuitable



food consistency, insufficient meal frequency, or nutritionally inadequate food choices. These practices may negatively affect children's nutritional status and increase the risk of growth faltering and stunting.

The predominance of good maternal knowledge observed in this study is consistent with previous research by [8], which reported that mothers of reproductive age generally possess better knowledge regarding the initiation of complementary feeding because they have greater access to maternal and child health services and health information. In the present study, most respondents were between 20 and 35 years of age, an age group commonly associated with greater cognitive maturity, higher health literacy, and increased utilization of healthcare services. Furthermore, more than half of the respondents had completed senior high school, which may have enhanced their ability to understand health information and apply appropriate infant feeding recommendations. These characteristics may explain the relatively high proportion of mothers with good knowledge observed in this study. Despite these encouraging findings, the presence of mothers with only fair or poor knowledge highlights the continued need for nutrition education interventions. Health education provided through antenatal care, postnatal care, immunization services, and community-based integrated health posts (Posyandu) should emphasize practical aspects of complementary feeding, particularly regarding appropriate food consistency, dietary diversity, meal frequency, and age-specific feeding recommendations. Strengthening maternal knowledge through continuous education may improve complementary feeding practices and ultimately contribute to reducing the risk of malnutrition and stunting among young children. The use of audiovisual educational media has also been shown to be a potential approach for improving mothers' knowledge and attitudes regarding complementary feeding[9]. Previous intervention research has demonstrated that structured complementary feeding education can improve maternal knowledge and feeding-related behavior[10].

Knowledge related to feeding frequency and portion size was also generally adequate. There is study support this finding [11], who reported that educational attainment contributes positively to mothers' ability to understand health recommendations. Since most respondents had completed senior high school, they were better able to comprehend recommendations regarding appropriate meal frequency and portion size according to infants' nutritional needs. However, the presence of mothers with only fair or poor knowledge suggests that educational interventions should continue to emphasize appropriate portion sizes because inadequate feeding volumes may fail to meet infants' daily energy requirements. Similar findings were reported [12], who emphasized that improving maternal understanding of meal composition and portion size is essential for preventing nutritional deficiencies during infancy. Regarding food types and nutritional composition, more than half of the respondents demonstrated good knowledge. This finding may be associated with the occupational characteristics of the respondents, as most were housewives who generally have more opportunities to prepare meals and seek information regarding infant nutrition. [13] In the other hand, similarly reported that mothers who spend more time caring for their children are more likely to apply appropriate complementary feeding practices. Nevertheless, several mothers still lacked adequate understanding of dietary diversity and the importance of including animal-source protein and healthy fats in complementary foods. Maternal nutritional knowledge and previous experience with complementary feeding are



important considerations in understanding the quality of complementary feeding practices among children under two years of age^[14]. This finding indicates that nutrition education should continue to promote balanced complementary feeding using locally available nutritious foods to support optimal growth and reduce the risk of stunting. In addition to nutritional composition, the preparation of complementary foods should also consider safe and hygienic food-handling practices^[15].

Knowledge regarding food texture and consistency was comparatively lower than other knowledge domains. Appropriate progression of food texture is essential for developing infants' oral motor skills and preventing feeding difficulties later in childhood. This finding is consistent with this result ^[16], who reported that maternal experience gained through previous child-rearing positively influences confidence in introducing food textures gradually according to developmental stages. This article ^[12] also emphasized that age-appropriate food texture contributes to chewing skill development, whereas delayed texture progression may increase the likelihood of feeding difficulties during later childhood. Therefore, education regarding complementary feeding should emphasize not only food quality but also appropriate food texture according to infants' developmental readiness. Overall, the findings indicate that mothers attending Bidan Sayang Ibu Independent Midwifery Practice generally possessed adequate knowledge regarding complementary feeding. However, the remaining knowledge gaps observed in several domains suggest that maternal education should be strengthened through continuous nutrition counseling, practical demonstrations, and educational media focusing on feeding timing, meal frequency, food texture, and dietary diversity. The present study provides local evidence that may assist healthcare providers in developing educational programs tailored to the needs of mothers in Wajo Regency.

Several limitations should be acknowledged. Data were collected using self-administered questionnaires, and some respondents completed the questionnaires while caring for restless infants during Posyandu services. This situation may have influenced the accuracy of several responses despite the researchers providing additional explanations whenever necessary. Furthermore, because this study employed a descriptive cross-sectional design, it only described maternal knowledge without examining causal relationships between maternal knowledge and complementary feeding practices or child nutritional outcomes. Future studies should employ analytical designs to investigate factors associated with maternal knowledge and evaluate the effectiveness of nutrition education interventions in improving complementary feeding practices.

5. Conclusion

This study found that most mothers at the Bidan Sayang Ibu Independent Midwifery Practice, Sengkang, Wajo Regency, had a good level of knowledge regarding complementary feeding (MP-ASI) for infants aged 6–12 months. Most respondents understood the appropriate timing of complementary feeding, feeding frequency, portion size, food texture, and nutritional composition. However, a proportion of mothers still demonstrated fair and poor knowledge, particularly regarding dietary diversity, food texture progression, and the nutritional composition of complementary foods. These findings indicate the need for continuous nutrition education and counseling to improve maternal understanding and promote appropriate complementary feeding practices, thereby supporting optimal infant growth and contributing to stunting prevention. Future



studies should employ analytical research designs to identify factors associated with maternal knowledge and complementary feeding practices, as well as evaluate the effectiveness of educational interventions in improving maternal knowledge and infant nutritional outcomes.

Author's Contribution Statement:

Rosmiati: Conceptualization, Methodology, Investigation, Data Curation, Writing – Original Draft, Supervision. Eka Wulansari: Formal Analysis, Validation, Investigation, Writing – Review & Editing. Marhumi: Data Collection, Resources, Visualization, Septiani Reski: Writing – Review & Editing.

Conflicts of Interest:

The authors declare that there are no conflicts of interest related to this study.

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