Unnes Journal of Public Health 14 (2) (2025)



Unnes Journal of Public Health



http://journal.unnes.ac.id/journals/ujph

Exclusive Breastfeeding as the Foundation for Complementary Feeding: A 2022 Analysis of Nutrition Status Survey (NSS) Lampung Province, Lampung

Elmi Nuryati[™], Sisma Novebri

Faculty of Health, Universitas Muhammadiyah Pringsewu Lampung, Indonesia

Article Info

Article History: Submitted July 28, 2024 Revised January 16, 2025 Accepted July 25, 2025

Keywords: complementary feeding; exclusive breastfeeding; nutrition; breast milk

DOI

https://doi.org/10.15294/ ujph.v14i2.10660

Abstract

In Indonesia, supplemental foods are provided to almost 40% of newborns before they are six months old. This study aimed to identify the factors influencing complementary feeding practices in Lampung Province. A cross-sectional design was used, drawing on secondary data from the 2022 Nutrition Status Survey (NSS) of Lampung Province. Data were collected from all districts and cities in the province, consisting of 13 districts and 2 cities, and included children aged 6-23 months. The final sample comprised 2,310 respondents. Data collection involved interviews, anthropometric assessments and physical checks using household and individual questions carried out by qualified local enumerators. The physical examinations assessed nutritional status, including breastfeeding and complementary feeding practices. Anthropometric measurements included body weight, length/height, and mid-upper arm circumference. Multivariate logistic regression was used for data analysis. The results showed that the variable most strongly associated with complementary feeding practices was breastfeeding history (p = 0.001; OR = 2.244; 95% CI: 1.377–3.658). These findings highlight the importance of optimising exclusive breastfeeding up to six months of age, as it supports infants in developing preferences for a wider variety of foods.

INTRODUCTION

Over 40% of newborn in Indonesia are introduced to supplemental foods prior to six months age (WHO, 2020). Many of these complementary foods do not adequately meet infants' nutritional needs. Complementary foods that are low in calories, protein, and essential micronutrients can increase the risk of stunting (Luh Eka Purwani, 2024). After six months, infants require additional nutrients beyond what breast milk alone can provide, making complementary feeding a critical stage in their nutritional development. Proper supplemental feeding promotes general health, cognitive development, and physical growth. However, several factors such as parental

knowledge, the availability of food, and local traditions and customs can influence the challenges of providing appropriate complementary foods in Indonesia (Budi A. 2013).

Indonesia is a culturally diverse country, and this diversity extends to infant feeding practices. Each region has distinct food habits and preferences, which often influence the types of complementary foods given to babies. These variations can affect both the quality of nutrition received and the balance of nutrients needed for healthy growth. In addition, differences in parental education and socioeconomic status also shape how complementary foods are selected and prepared. To address these challenges, the



[☐] Correspondence Address: E-mail: elmighavind@umpri.ac.id

Government of Indonesia has introduced several policies to promote optimal infant feeding practices. Presidential Regulation No. 33 of 2013 supports breastfeeding and provides guidelines for complementary feeding. In addition, Minister of Health Regulation No. 15/2014 outlines the requirements for the production, labelling, and marketing of baby food.

The Ministry of Health has developed guidelines for complementary feeding that include several key recommendations. The initial step should be to offer complementary foods at six months of age. After six months of exclusive breastfeeding, complementary foods should be introduced gradually (Direktorat Promosi Kesehatan Kementerian Kesehatan RI, 2020). Second, the use of locally available foods such as rice, corn, and vegetables is encouraged to strengthen food security and reduce reliance on commercial baby food. Finally, the guidelines advise limiting the marketing and promotion of commercial baby food to avoid conflicts of interest and to ensure that recommendations remain evidence based (Kemenkes RI, 2023).

The high prevalence of stunting in Indonesia, reaching 31% among toddlers, indicates that complementary feeding practices still require improvement (UNICEF Indonesia, 2018). Many countries continue to struggle with double or even triple burdens of malnutrition. One of the primary causes of malnutrition in toddlers in developing countries, including Indonesia, is inappropriate breastfeeding practices. This challenge arises because infants and young children are entirely dependent on adults for their food intake. Families therefore play a crucial role in fulfilling their children's nutritional needs. However, this responsibility is often difficult to fulfil due to various internal and external challenges (Eka Mishbahatul Mar'ah Has, 2023). Research has shown that family empowerment interventions can significantly improve complementary feeding practices among families with children aged 6-11 months. Consistent with these findings, another study reported that 57.8% of children who received complementary foods had a history of exclusive breastfeeding (Annisa Nuradhiani, 2020).

Breastfeeding and complementary feeding are two interrelated stages that together ensure the nutritional needs of infants are met. Breast milk provides an essential foundation of nutrition and immunological protection in early life, while complementary foods fulfill the increasing nutritional requirements as the child grows. A smooth transition, supported by proper planning of complementary feeding, is crucial for promoting

healthy development and optimizing the infant's overall potential. Breastfeeding plays a significant role in shaping complementary feeding practices (WHO, 2023). By supplying digestive enzymes that facilitate digestion and fortify the intestinal lining, breast milk helps the baby's digestive system mature and gets them ready to handle complementary foods when they're ready. Breast milk provides all the nutrients needed for growth and development throughout the first six months of life, guaranteeing a solid nutritional basis prior to the introduction of supplemental foods. Exclusive breastfeeding for six months not only reduces the risk of food allergies but also promotes healthier eating habits when complementary feeding begins. Breast milk helps regulate appetite and exposes infants to a variety of flavors derived from the maternal diet, which can ease the transition to complementary foods. Consequently, breastfed infants are more likely to accept a wider range of foods once complementary feeding is introduced (American Academy of Pediatric, 2024). This is because breast milk has different flavors depending on the mother's diet, so babies are more accustomed to different flavors.

Recent studies have examined the factors influencing complementary feeding practices and their impact on child nutrition. Maternal age, education, and family support have been shown to significantly affect maternal self-efficacy in providing complementary foods (Fadilah et al., 2023). Maternal ages beyond 30 have been linked to lower dietary diversity and lower attainment of the minimum tolerable diet in urban slums, whereas higher levels of maternal education are linked to increased meal frequency (Angeline et al 2023). In Ethiopia, commercial complementary feeding (CCF) is widely practiced, with child age, non-exclusive breastfeeding, and maternal employment identified as key determinants (Tirunesh Debessa, Zewudu Befkadu, Tefera Darge, 2023). Moreover, maternal knowledge of complementary feeding is positively correlated with children's nutritional status (Hardianti at al, 2023). Socioeconomic factors, such as living above the poverty line, also influence complementary feeding practices (Angeline at al, 2023). These results highlight the intricate interactions that shape complementary feeding behaviors and, eventually, the nutritional outcomes of children between maternal, socioeconomic, and environmental factors.

By understanding how breastfeeding influences complementary feeding, parents can be better prepared to introduce solid foods to their infants in a healthy and effective manner. Rese-

arch on the relationship between maternal employment and child nutrition has produced mixed findings. While one study reported no significant correlation between maternal occupation and children's nutritional status(Nur Annisa Nugraheningtyasari, 2018), others have shown that longer maternal working hours are positively associated with higher BMI and childhood obesity, particularly in higher socioeconomic groups. Historically, complementary feeding was introduced as a way to support mothers in balancing childcare and work responsibilities. However, modern bottle-feeding practices can pose greater risks when they replace, rather than supplement, breast milk. Evidence also suggests that working mothers may consume more calories and dietary fats while spending less time on childcare and household activities compared to non-working mothers (Hetal Damania, 2014). The intricate connection between maternal employment and family nutritional outcomes is highlighted by the fact that these factors can affect the nutrition of both mothers and children. Finding the variables influencing supplemental feeding habits in Lampung Province is the goal of this study. Lampung was chosen as the study site because it is among the top ten priority areas for stunting reduction in Indonesia. In 2021, the prevalence of stunting in Lampung reached 18.2%, which remains higher than the national target of 14% set for 2024 (PPID Provinsi Lampung, 2024). This issue is closely linked to suboptimal infant and young child feeding practices, including exclusive breastfeeding and complementary feeding.

METHOD

The research design employed was crosssectional, using secondary data from the 2022 Nutrition Status Survey (NSS) of Lampung Province, a nationwide survey carried out by the Republic of Indonesia's Ministry of Health. Data were collected from all districts and cities in Lampung Province, consisting of 13 districts and 2 cities. Rural and remote districts, with limited health services and nutrition education, may influence community understanding and practices related to complementary feeding. The 2022 NSS provides large-scale provincial level data, containing data on kids between the ages of 6 and 23 months as well as variables thought to influence supplemental feeding methods. Data collection was conducted by trained local enumerators through interviews, anthropometric measurements, and physical examinations. Household

and individual questionnaires were used as interview instruments. The physical examinations captured nutritional status data, including breastfeeding and complementary feeding practices. Anthropometric measurements included body weight, length/height, and mid-upper arm circumference. Appropriate software and standardized measurement tools were employed to ensure data accuracy and consistency. This approach enabled the NSS to provide a comprehensive overview of nutritional status, including factors related to complementary feeding. The total sample for this study was 2,310 respondents. Sampling was conducted using the Probability Proportional to Size (PPS) method with Linear Systematic Sampling and a two-stage approach. In the first stage, villages in Lampung Province were selected as the primary sampling units. In the second stage, households within the selected villages were chosen as the secondary sampling units. Data analysis began with an assessment of respondent characteristics. Ratio-scale data included maternal age, while ordinal-scale data covered maternal education, maternal occupation, history of exclusive breastfeeding, early initiation of breastfeeding, history of formula consumption, and fruit and vegetable consumption. In preparing the dataset, researchers ensured validity and relevance by using national-level data from the 2022 NSS. Data quality was evaluated in terms of reliability, time coverage, collection methods, and potential bias. Variables were selected in accordance with standard definitions used in national analyses. Univariate analysis was applied to describe respondent characteristics, whereas the chi square test was used in bivariate analysis to look at correlations between variables. Finally, to determine the variables affecting supplemental feeding habits in Lampung Province, multivariate logistic regression was employed.

RESULT AND DISCUSION

The study's findings show that below 47.3% of respondents in this study are in the age of 35-43 years, only 2% of mothers are 17-25 years old. The percentage of mothers with primary education was 50.1%, mothers with secondary education was 43.8%. Around 74% in this study are housewives, then 62.7% have initiated early breastfeeding and 97% get exclusive breastfeeding. In this study, it was also found that 34.9% of babies get formula milk, only 20.9% of babies are given vegetables and 58.2% are given fruit and 57.8% get complementary foods (Table 1)

Table 1. Characteristics of Respondent

Variable Frequency Percentage (%) Mother's age (average 31.33 years) 17-25 47 2.0 26-34 717 31.0 35.43 1093 47.3 43-51 453 19.6 Education Higher Education 141 6.1 6.1 Secondary Education 1012 43.8 9.1 7.0 7.0 7.0 7.0 1.0 7.0 <t< th=""><th colspan="5">Table 1. Characteristics of Respondent</th></t<>	Table 1. Characteristics of Respondent				
17-25	Variable	Frequency	Percentage (%)		
26-34 717 31.0 35-43 1093 47.3 43-51 453 19.6 Education 141 6.1 Secondary Education 1012 43.8 Primary Education 1157 50.1 Occupation Formal/non-formal 601 26.0 Housewives 1709 74.0 Early Breastfeeding Initiation History Yes 1449 62.7 No 861 37.3 History of Exclusive Breastfeeding Yes 2240 97.0 No 70 3.0 Formula Feeding Yes 807 34.9 No 1503 65.1 Fruit Consumption Yes 482 20.9 No 1828 70.1 Vegetable Consumption Yes 1344 58.2 No 966 41.8 Complementary Foods	Mother's age (average 31.33 years)				
35-43	17-25	47	2.0		
## Addition ## Education ## Higher Education ## Higher Education ## Higher Education ## Addition ## Ad	26-34	717	31.0		
Education 141 6.1 Secondary Education 1012 43.8 Primary Education 1157 50.1 Occupation Formal/non-formal 601 26.0 Housewives 1709 74.0 Early Breastfeeding Initiation History Yes 1449 62.7 No 861 37.3 History of Exclusive Breastfeeding Yes 2240 97.0 No 70 3.0 Formula Feeding Yes 807 34.9 No 1503 65.1 Fruit Consumption Yes 482 20.9 No 1828 70.1 Vegetable Consumption Yes 1344 58.2 No 966 41.8 Complementary Foods		1093	47.3		
Higher Education 141 6.1 Secondary Education 1012 43.8 Primary Education 1157 50.1 Occupation 601 26.0 Formal/non-formal 601 26.0 Housewives 1709 74.0 Early Breastfeeding Initiation History Yes 1449 62.7 No 861 37.3 History of Exclusive Breastfeeding Yes 2240 97.0 No 70 3.0 Formula Feeding Yes 807 34.9 No 1503 65.1 Fruit Consumption Yes 482 20.9 No 1828 70.1 Vegetable Consumption Yes 1344 58.2 No 966 41.8 Complementary Foods	43-51	453	19.6		
Secondary Education 1012 43.8 Primary Education 1157 50.1 Occupation 50.1 50.1 Formal/non-formal 601 26.0 Housewives 1709 74.0 Early Breastfeeding Initiation History Yes 1449 62.7 No 861 37.3 History of Exclusive Breastfeeding Yes 2240 97.0 No 70 3.0 Formula Feeding Yes 807 34.9 No 1503 65.1 Fruit Consumption Yes 482 20.9 No 1828 70.1 Vegetable Consumption Yes 1344 58.2 No 966 41.8 Complementary Foods	Education				
Primary Education 1157 50.1 Occupation 700 26.0 Formal/non-formal 601 26.0 Housewives 1709 74.0 Early Breastfeeding Initiation History 70 20.0 Yes 1449 62.7 No 861 37.3 History of Exclusive Breastfeeding 97.0 Yes 2240 97.0 No 70 3.0 Formula Feeding 807 34.9 No 1503 65.1 Fruit Consumption Yes 482 20.9 No 1828 70.1 Vegetable Consumption Yes 1344 58.2 No 966 41.8 Complementary Foods	Higher Education	141	6.1		
Occupation Formal/non-formal 601 26.0 Housewives 1709 74.0 Early Breastfeeding Initiation History Yes 1449 62.7 No 861 37.3 History of Exclusive Breastfeeding Yes 2240 97.0 No 70 3.0 Formula Feeding Yes 807 34.9 No 1503 65.1 Fruit Consumption Yes 482 20.9 No 1828 70.1 Vegetable Consumption Yes 1344 58.2 No 966 41.8 Complementary Foods	Secondary Education	1012	43.8		
Formal/non-formal	Primary Education	1157	50.1		
Housewives 1709 74.0 Early Breastfeeding Initiation History Yes 1449 62.7 No 861 37.3 History of Exclusive Breastfeeding 2240 97.0 No 70 3.0 Formula Feeding 807 34.9 Yes 807 34.9 No 1503 65.1 Fruit Consumption Yes 482 20.9 No 1828 70.1 Vegetable Consumption Yes 1344 58.2 No 966 41.8 Complementary Foods					
Early Breastfeeding Initiation History Yes 1449 62.7 No 861 37.3 History of Exclusive Breastfeeding 2240 97.0 No 70 3.0 Formula Feeding 34.9 34.9 No 1503 65.1 Fruit Consumption Yes 482 20.9 No 1828 70.1 Vegetable Consumption Yes 1344 58.2 No 966 41.8 Complementary Foods	Formal/non-formal	601	26.0		
Yes 1449 62.7 No 861 37.3 History of Exclusive Breastfeeding 2240 97.0 No 70 3.0 Formula Feeding 807 34.9 No 1503 65.1 Fruit Consumption Yes 482 20.9 No 1828 70.1 Vegetable Consumption Yes 1344 58.2 No 966 41.8 Complementary Foods	Housewives	1709	74.0		
No 861 37.3 History of Exclusive Breastfeeding 2240 97.0 Yes 2240 97.0 No 70 3.0 Formula Feeding 807 34.9 Yes 807 34.9 No 1503 65.1 Fruit Consumption Yes 482 20.9 No 1828 70.1 Vegetable Consumption Yes 1344 58.2 No 966 41.8 Complementary Foods	Early Breastfeeding Initiation History				
History of Exclusive Breastfeeding Yes 2240 97.0 No 70 3.0 Formula Feeding Yes 807 34.9 No 1503 65.1 Fruit Consumption Yes 482 20.9 No 1828 70.1 Vegetable Consumption Yes 1344 58.2 No 966 41.8 Complementary Foods	Yes	1449	62.7		
Yes 2240 97.0 No 70 3.0 Formula Feeding 34.9 Yes 807 34.9 No 1503 65.1 Fruit Consumption 482 20.9 No 1828 70.1 Vegetable Consumption Yes 1344 58.2 No 966 41.8 Complementary Foods	No	861	37.3		
No 70 3.0 Formula Feeding 34.9 Yes 807 34.9 No 1503 65.1 Fruit Consumption 482 20.9 No 1828 70.1 Vegetable Consumption Yes 1344 58.2 No 966 41.8 Complementary Foods	History of Exclusive Breastfeeding				
Formula Feeding	Yes	2240	97.0		
Yes 807 34.9 No 1503 65.1 Fruit Consumption Yes 482 20.9 No 1828 70.1 Vegetable Consumption Yes 1344 58.2 No 966 41.8 Complementary Foods	No	70	3.0		
No 1503 65.1 Fruit Consumption 482 20.9 Yes 482 70.1 Vegetable Consumption 70.1 Yes 1344 58.2 No 966 41.8 Complementary Foods	Formula Feeding				
Fruit Consumption Yes 482 20.9 No 1828 70.1 Vegetable Consumption Yes 1344 58.2 No 966 41.8 Complementary Foods	Yes	807	34.9		
Yes 482 20.9 No 1828 70.1 Vegetable Consumption Yes 1344 58.2 No 966 41.8 Complementary Foods	No	1503	65.1		
No 1828 70.1 Vegetable Consumption 70.1 Yes 1344 58.2 No 966 41.8 Complementary Foods	Fruit Consumption				
Vegetable Consumption Yes 1344 58.2 No 966 41.8 Complementary Foods	*	482	20.9		
Yes 1344 58.2 No 966 41.8 Complementary Foods	No	1828	70.1		
Yes 1344 58.2 No 966 41.8 Complementary Foods	Vegetable Consumption				
Complementary Foods	-	1344	58.2		
<u> </u>	No	966	41.8		
<u> </u>	Complementary Foods				
	<u> </u>	1335	57.8		
No 975 42.2	No	975	42.2		

The analysis's findings indicated no statistically significant correlation between the mother's educational attainment, maternal occupation, and maternal age with the practice of supplementary feeding. However, given the importance of these variables in the relevant literature and their potential influence on supplemental feeding practices, these variables are still included in the multivariate regression model to see their overall contribution (Table 2)

The variables included in the multivariate model candidates were maternal age, occupation, education and exclusive breastfeeding history (Table 3)

The multivariate analysis began with calculations in the first stage of changes in the B coefficient for each variable. It was found that none changed by more than 10%, so the education variable was excluded from the model. In the second stage of the model, there was still a vari-

able with a P value > 0.05, namely maternal age, so the maternal age variable (P value 0.778) was removed. From the results of the changes in the B coefficient for each variable, none changed by more than 10%, so the age variable was removed from the model.

Next, in the third stage, it was seen that there were still variables in the model with a P value > 0.05, namely occupation, so the occupation variable (P value 0.429) was removed. From the results of the changes in the B coefficient for each variable, it was found that none changed by more than 10%, so the occupation variable was removed from the model. The results of the analysis show that the factor that most influences complementary feeding practices is a history of exclusive breastfeeding. No other variables have a P value > 0.05. Thus, the final model can be determined as follows (Table 4)

The results showed that a history of ex-

Table 2. Bivariate Analysis of Factors Influencing Complementary Feeding Practices

Variable	P Value	OR	95% CI	
			Lower	Upper
Mother's age	0.724	0.971	0.822	1.145
Education	0.658	1.081	0.764	1.530
Occupation	0.462	1.073	0.889	1.296
History of Exclusive Breastfeeding	0.001	2.235	1.371	3.643

Table 3. Candidat Models of Factors Influencing Complementary Feeding Practices

Variable	P Value	OR	95% CI	
			Lower	Upper
Mother's Age	0.772	0.975	0.825	1.154
Occupation	0.507	1.069	0.878	1.302
Education	0.810	1.017	0.884	1.171
History of Exclusive Breastfeeding	0.001	2.243	1.376	3.657
Constant	0.001	0.282		

Table 4. Factors that Most Influence Complementary Feeding Practices

Variable	P Value	OR	95% CI	
			Lower	Upper
History of exclusive breastfeeding	0.001	2.235	1.371	3.643
Constant	0.000	0.319		

clusive breastfeeding was the most influential factor in complementary feeding practices, with a p-value < 0.05. These findings suggest that a mother's prior breastfeeding experience, particularly with her first child, strongly influences the practice of exclusive breastfeeding for subsequent children. Mothers who have successfully breastfed exclusively tend to possess greater knowledge and understanding of the appropriate introduction of complementary foods, including aspects such as timing, type of food, feeding frequency, and consistency. This reinforces the notion that successful exclusive breastfeeding for six months reflects positive maternal knowledge, attitudes, and behaviors toward meeting their children's nutritional needs. In Lampung Province, complementary foods are often prepared in line with local culture and the availability of regional food sources. Common examples include boiled sweet potatoes and mashed freshwater fish, which is abundant locally and rich in protein and omega-3 fatty acids that support brain development. To ensure optimal nutrition, it is essential for mothers to follow complementary feeding guidelines recommended by health professionals while also making use of nutrient-rich local foods available in their communities (Selvi Rahmawati, Anggraeni Janar Wulan, 2020). A positive breastfeeding experience can increase maternal confidence in managing a child's nutritional needs. Mothers who successfully practice exclusive breastfeeding for six months are often more assured in introducing complementary foods in line with health guidelines (Farida Noor Rahmah, M. Zen Rahfiludin, 2020a). Such experience is valuable, as it helps mothers more easily recognize signs of readiness for complementary feeding, for example when the infant shows interest in eating (Dessie Wanda, 2022). Beyond maternal experience, cultural factors also significantly influence decisions about infant feeding. Each community has its own traditions, beliefs, and customs regarding infant and young child feeding, often passed down through generations. For instance, some cultures encourage the early introduction of foods such as bananas or porridge before six months of age, while others may delay the introduction of solid foods (Mahfirotun, 2023). Taken together, both maternal experience and cultural context play a critical role in shaping the quality and success of complementary feeding practices.

The early introduction of dietary supplements is common in many societies, despite recommendations for exclusive breastfeeding until 4–6 months of age. Supplementation can influence lactation patterns and ovarian activity, poten-

tially leading to premature ovulation in mothers. However, research indicates that complementary food supplementation does not necessarily reduce breastfeeding frequency or replace homeprepared foods (Black et al., 2020). In some cases, supplementation may even increase dietary diversity (Angeline et al, 2023). Several factors are associated with early supplementation, including rural residence, maternal employment, and household size. Although early supplementation does not always shorten the overall duration of breastfeeding, the use of infant formula as the first supplement has been linked to slightly earlier weaning. To address potential micronutrient deficiencies in complementary foods, strategies such as incorporating animal-source foods, using fortified products, or providing supplements have been recommended.

The WHO and the Indonesian Paediatric Association recommend exclusive breastfeeding for the first six months before the introduction of complementary foods (Apriantini, Sagita, Anggriani, 2024). According to the WHO, among the "critical and sensitive periods in human life" is complemented feeding. It begins when breast milk or formula alone is no longer sufficient to meet an infant's nutritional needs, requiring the addition of other foods and fluids alongside breast milk or breast milk substitutes (Maria et al, 2024). According to current United Kingdom guidelines, supplemental feeding should begin at approximately six months of age, but no earlier than four months. Usually, a variety of sites provide parents with information and help on supplemental feeding, and many of them show a strong desire to seek out more advice (Kelly Spurlock, Toity Deave, Patricia J Lucas, 2023).

Consistent with previous research, mothers who practice exclusive breastfeeding generally understand the benefits of breast milk and the importance of proper nutrition for their infants. This knowledge can shape how they introduce complementary foods, with greater attention to the quality, quantity, and appropriate timing needed to meet their baby's nutritional requirements (Eriza Wahyuhandani, 2024). Exclusive breastfeeding is also associated with a stronger emotional bond between mother and child. As a result, mothers may be more attentive when selecting and introducing complementary foods, carefully observing their infant's responses to new foods, and fostering a positive and enjoyable feeding experience (Apriantini, Sagita, Anggriani, 2024).

The results of this investigation show that the practice of exclusive breastfeeding was not substantially impacted by maternal age. The average maternal age in this study was 31.33 years. Mothers across different age groups now have equal opportunities to acquire knowledge about appropriate complementary feeding practices due to technological advancements and broad access to information (Reisy Tane, 2021). Various resources, such as health education programs, prenatal classes, and online platforms, enable mothers of all ages to learn how to introduce complementary foods properly (Yuna Trisuci Aprillia, Susiana Nugraha, 2019) Mental and emotional readiness to face the challenges of complementary feeding is not solely determined by age. Younger mothers may approach the process with more enthusiasm, while older mothers may be more composed and better able to manage their infant's needs (Riska Maulidanita, 2020). In addition, family support whether from partners, parents, or in laws plays an essential role in shaping complementary feeding practices. Such support is less dependent on maternal age and more influenced by family dynamics and relationships. Ultimately, factors such as knowledge, personal values, and the desire to provide the best care for the child appear to have a stronger impact on complementary feeding practices than age alone. Awareness of the importance of proper nutrition and the intention to ensure optimal growth and development remain central drivers of maternal behavior (Saifuddin Zuhri, 2023).

This study also found that maternal employment did not significantly influence complementary feeding practices. This finding differs from previous research, which suggested that due to time constraints and limited maternity leave policies, mothers working in the formal sector tend to introduce complementary foods earlier, potentially affecting both the frequency and quality of feeding (Eriza Wahyuhandani, 2024). Many working mothers receive support from family members such as husbands, parents, or caregivers who assist with complementary feeding. Such support can minimize the impact of maternal work schedules on feeding practices (Nurul Septyasrini, Faizah Betty Rahayuningtyas, 2015). In addition, community-based programs and health facilities that provide education and guidance on appropriate complementary feeding further help working mothers meet their children's nutritional needs. In this study, 75% of respondents were housewives. Housewives generally have more time to prepare fresh and nutritious meals, select groceries carefully, maintain food hygiene, and establish regular feeding schedules (Eriza Wahyuhandani, 2024). With fewer time constraints, they are better able to follow their babies' feeding routines (Desi Ria Simanjuntak, 2017). and often have the flexibility to experiment with different types of foods and recipes to introduce variations in taste and texture (silvi zaimy, ratna indah sari dewi, 20121). Overall, while maternal employment may affect the timing and frequency of complementary feeding, these challenges can be mitigated through family support, workplace policies, and increased awareness of child nutrition. In Indonesia, several legal frameworks reinforce support for breastfeeding mothers. Health Law No. 36 of 2009, Article 128, emphasizes that families, local governments, and communities must provide time and facilities to support breastfeeding mothers (Undang Undang Republik Indonesia Nomor 36 Tahun 2009 Tentang Kesehatan, 2009). Similarly, Government Regulation No. 33 of 2012, Article 9, requires government bodies and communities to provide supportive facilities and policies for breastfeeding (Peraturan Pemerintah (PP) Nomor 33 Tahun 2012 Tentang Pemberian Air Susu Ibu Eksklusif, 2012). These policies demonstrate Indonesia's strong commitment to exclusive breastfeeding by safeguarding maternal and infant rights, ensuring workplace and healthcare provider responsibilities, and regulating formula use. Consistent implementation of these standards is necessary to ensure that all infants receive exclusive breastfeeding for the first six months of their lives.

Mothers working in the informal sector generally have greater flexibility in managing their time, which enables them to provide complementary foods more consistently in line with health recommendations. However, they may face financial challenges and have limited access to information. In this context, both the family and work environment play a crucial role in supporting appropriate complementary feeding practices. Policies that promote breastfeeding and programs that emphasize the importance of complementary foods can further assist working mothers. Research indicates that younger mothers often have less knowledge and experience in providing appropriate complementary foods, which may lead to practices inconsistent with health guidelines, such as introducing foods too early or providing nutritionally inadequate options (Farida Noor Rahmah, M. Zen Rahfiludin, 2020b). In contrast, older mothers typically possess greater knowledge and experience in child care, including complementary feeding. They are more likely to follow suggested practices, such making sure they are getting enough nutrients and introducing complementary meals at the right age. Targeted programs for younger mothers and other vulnerable groups are essential to enhance knowledge and promote proper complementary feeding practices, regardless of maternal age. Previous studies have demonstrated that maternal age plays an important role in complementary feeding decisions, underscoring the need for continuous education and support for all mothers. This study also has limitations, particularly the inability of researchers to directly control the variables under investigation. Nevertheless, the findings are significant in showing that a history of exclusive breastfeeding strongly influences complementary feeding practices. Mothers who exclusively breastfeed are more likely to introduce complementary foods in accordance with nutritional guidelines. This underscores the importance of promoting and supporting exclusive breastfeeding as a strategy to improve the quality of complementary feeding, enhance infant growth and development, and ultimately contribute to reducing child malnutrition.

CONCLUSION

In Lampung Province, the practice of introducing complementary foods before infants reach six months of age remains common. However, the results of this study indicate that mothers with a history of exclusively breastfeeding their first child are more likely to continue exclusive breastfeeding with subsequent children. Exclusive breastfeeding until six months of age provides critical benefits in preparing infants to accept and enjoy a variety of foods. It establishes an optimal foundation for the development of taste and food preferences, thereby supporting healthy growth and balanced eating patterns during infancy. Mothers who practice exclusive breastfeeding tend to have a stronger understanding of the benefits of breast milk and the importance of introducing complementary foods at the appropriate time. Resources such as prenatal classes, Healthcare providers' advice and breastfeeding counseling are essential in assisting with this procedure. During the exclusive breastfeeding period, professional guidance helps mothers recognize the signs of readiness for complementary foods and provides strategies for introducing them appropriately. Infants who are exclusively breastfed for six months often adapt more easily to complementary foods because they are accustomed to regular feeding schedules and to the varied flavors of breast milk, which reflect the mother's diet. This familiarity facilitates the transition to solid foods and enhances acceptance of a wider variety of foods. The findings of this study also highlight the importance of providing

mothers with positive breastfeeding experiences, as these can strengthen their confidence and belief in achieving exclusive breastfeeding goals. Regular access to information about breastfeeding benefits and strategies for overcoming challenges, through courses, counseling, and other support resources, can further motivate and empower mothers.

ACKNOWLEDGEMENT

The author is grateful to the "Badan Penelitian dan Pengembangan Kemenkes Republik Indonesia" for giving the author the opportunity to use Indonesia's nutrition status survey data as research material, so that the author can complete the research well.

REFERENCES

- American Academy of Pediatric. (2024). Breastfeeding & Solid Foods: Working Together. *Healthy Children.Org.* https://www.healthychildren.org/English/ages-stages/baby/breastfeeding/Pages/Working-Together-Breastfeeding-and-Solid-Foods.aspx?utm_source=chatgpt.com
- Angeline Jeyakumar, Prasad Babar, Pramila Menon, Raji Nair, Suresh Jungari, Aishwarya Medhekar, Bhrunal Prakshale, Jasmine Shaikh, Merlin Chacko, Mohini Nikam, Purva More, Shakila Nayel, S. S. & S. A. (2023). Determinants of complementary feeding practices among children aged 6–24 months in urban slums of Pune, Maharashtra, in India. *Journal of Health, Population and Nutrition*. https://jhpn.biomedcentral.com/articles/10.1186/s41043-022-00342-6
- Annisa Nuradhiani. (2020). Pemberian Asi Ekslusive dan Makanan Pendamping ASI pada Kejadian Stunting di Negara Berkembang. *Jurnal Gizi Kerja Dan Produktivitas*. https://www.bing.com/ck/a?!&&p=2c819444cdc4573bJmltd-HM9MTcyMjEyNDgwMCZpZ3VpZD0zOGQ3MDlmYS02NjlhLTZmN2EtMzRhNS0xYTY1NjI5YTY5NGYmaW5zaWQ9NTIyNw&ptn=3&ver=2&hsh=3&fclid=38d709fa-669a-6f7a-34a5-1a65629a694f&psq=hubungan+asi+dengan+makanan+pendamping+asi&u=a1a
- Black, R., McLaughlin, M., & Giles, M. (2020). Women's experience of social media breastfeeding support and its impact on extended breastfeeding success: A social cognitive perspective. *British Journal of Health Psychology*, *25*(3), 754–771. https://doi.org/10.1111/bjhp.12451
- Peraturan Pemerintah (PP) Nomor 33 Tahun 2012 tentang Pemberian Air Susu Ibu Eksklusif, (2012). https://peraturan.bpk.go.id/Details/5245/ppno-33-tahun-2012
- Budi A. (2013). Analisis Faktor Yang Mempengaruhi MP ASI dini. E Journal STIKes William Both.
- Desi Ria Simanjuntak, C. G. (2017). Mengetahui hubungan pengetahuan dan pekerjaan ibu

- dengan pemberian makanan pendaming asi (MP ASI) dengan Kejadian stunting di Puskesmas Beru Kelurahan Waioti Kabupaten Sikka Tahun 2019. *Journal of Universitas Airlangga*. https://www.bing.com/ck/a?!&&p=831-392a182861d3fJmltdHM9MTcyMjEyNDgwMCZpZ3VpZD0zOGQ3MDlmYS02NjlhLTZmN2EtMzRhNS0xYTY1NjI5YTY5NGYmaW5zaWQ9NTIwNQ&ptn=3&ver=2&hsh=3&fclid=38d709fa-669a-6f7a-34a5-1a65629a694f&psq=hubungan+pekerjaan+ibu+rumah+tangga+dengan+pembe
- Dessie Wanda, N. N. (2022). Pengalaman Ibu dalam Pemberian ASI Eksklusif pada Anak dengan Kondisi Stunting. *Jurnal Penelitian Kesehatan Suara Forikes*. https://scholar.ui.ac.id/en/publications/pengalaman-ibu-dalam-pemberian-asi-eksklusif-pada-anak-dengan-kon
- Direktorat Promosi Kesehatan Kementerian Kesehatan RI. (2020). Pemberian Makanan Bayi dan Anak(PMBA). *Kemenkes RI*. https://www.bing.com/ck/a?!&&p=31fe13ec7d2aab12JmltdHM9MTcyMjEyNDgwMCZpZ3VpZD0zOGQ3MDlmYS02NjlhLTZmN2EtMzRhNS0xYTY1NjI5YTY5NGYmaW5zaWQ9NTE4Nw&ptn=3&ver=2&hsh=3&fclid=38d709fa-669a-6f7a-34a5-1a65629a694f&psq=Kementerian+Kesehatan+telah+mengembangkan+pedoma
- Eka Mishbahatul Mar'ah Has. (2023). Peningkatan Praktik Pemberian Makanan Pendamping ASI (MPASI) dan Pertumbuhan Optimal Balita dengan Intervensi Pemberdayaan Keluarga. *UNAIR NEWS*. https://pubmed.ncbi.nlm.nih.gov/37096692/
- Eriza Wahyuhandani, T. M. (2024). Hubungan Pengetahuan Gizi dan Pekerjaan Ibu Terhadap Pemberian MP-ASI Dini di Puskesmas Telaga Biru Kota Pontianak Tahun 2014. *Amerta Nutrition*. https://e-journal.unair.ac.id/AMNT/article/view/7142
- Eva Apriantini, Yona Desni Sagita, Yunita Anggriani, R. A. (2024). Faktor-Faktor Yang Berhubungan Dengan Pemberian Makanan Pendamping Asi (Mp-Asi) Dini Pada Bayi 0-6 Bulan Di Tanggamus. *Jurnal Kedokteran Dan Kesehatan*. https://ejurnalmalahayati.ac.id/index.php/kesehatan/article/view/13245
- Fadilah, A. L., Lailatul Muniroh, & Atmaka, D. R. (2023). Family supports and maternal factors of complementary feeding self-efficacy for children aged 6-24 months. *Jurnal Action: Aceh Nutrition Journal*. https://ejournal.poltekkesaceh.ac.id/index.php/an/article/view/656
- Farida Noor Rahmah, M. Zen Rahfiludin, M. I. K. (2020a). Peran Praktik Pemberian Makanan Pendamping ASI terhadap Status Gizi Anak Usia 6-24 Bulan di Indonesia: Telaah Pustaka. *Media Kesehatan Masyarakat Indonesia*. https://ejournal.undip.ac.id/index.php/mkmi/article/view/32531
- Farida Noor Rahmah, M. Zen Rahfiludin, M. I. K.

- (2020b). Peran Praktik Pemberian Makanan Pendamping ASI terhadap Status Gizi Anak Usia 6-24 Bulan di Indonesia: Telaah Pustaka. *Media Kesehatan Masyarakat Indonesia*. https://ejournal.undip.ac.id/index.php/mkmi/article/view/32531
- Hardianti Naim, Devin Mahendika, Nur Afifah Harahap, Sulistyani Prabu Aji, Ardiana Batubara, Lina Yunita, R. P. (2023). The Relationship between Maternal Knowledge of Complementary Foods with the Nutritional Status of Toddlers. *International of Health Science*. https://jurnal.agdosi.com/index.php/IJHS/article/view/47
- Hetal Damania, P. M. (2014). Nutritional Assessment of Working and Non-Working Mothers: A Pilot Study. *International Journal Of Innovative Research & Development'*. https://www.internationaljournalcorner.com/index.php/ijird_ojs/article/view/134842
- Kelly Spurlock, Toity Deave, Patricia J Lucas, S. D. (2023). Parental engagement with complementary feeding information in the United Kingdom: A qualitative evidence synthesis. *Maternal & Child Nutrition*. https://pubmed.ncbi.nlm.nih.gov/37551916/
- Undang Undang Republik Indonesia Nomor 36 Tahun 2009 Tentang Kesehatan, (2009). https://www.bing.com/ck/a?!&&p=3f1f8e84ce249a4dJ-mltdHM9MTcyMjEyNDgwMCZpZ3VpZD0zOGQ3MDlmYS02NjlhLTZmN2EtMzRhNS0xYTY1NjI5YTY5NGYmaW5zaWQ9NTQ0OA&ptn=3&ver=2&hsh=3&fclid=38d709fa-669a-6f7a-34a5-1a65629a694f&psq=Undang-Undang+Kesehatan+No.+36+Tahun+2009+pasal+
- Kemenkes RI. (2023). Buku Resep MPASI (Makanan Pendamping ASI). Kemenkes RI. https://www.bing.com/ck/a?!&&p=8ee39cdfec6a2f95J-mltdHM9MTcyMjEyNDgwMCZpZ3VpZD0zOGQ3MDlmYS02NjlhLTZmN2EtMzRhNS0xYTY1NjI5YTY5NGYmaW5zaWQ9NTI1NQ&ptn=3&ver=2&hsh=3&fclid=38d709fa-669a-6f7a-34a5-1a65629a694f&psq=Kementerian+Kesehatan+telah+mengembangkan+pedoma
- Luh Eka Purwani. (2024). Pemberian Makanan Pendamping ASI yang Tepat untuk Pencegahan Stunting. *Kemenkes RI*. https://yankes.kemkes.go.id/view_artikel/3121/pemberianmakanan-pendamping-asi-yang-tepat-untuk-pencegahan-stunting
- Maria Elena Capra, Nicola Mattia Decarolis, Delia Monopoli, Serena Rosa Laudisio, Antonella Giudice, Brigida Stanyevic, Susanna Esposito, G. B. (2024). Complementary Feeding: Tradition, Innovation and Pitfalls. *Nutrients*. https://pubmed.ncbi.nlm.nih.gov/38474864/
- Nur Annisa Nugraheningtyasari, N. A. S. (2018). Correlation Between Nutritional Status Of Children Aged 12 – 36 Months And Mother's Working Status In Taman, Sidoarjo. *Biomelecul*

- er and Health Science Journal. https://e-journal.unair.ac.id/BHSJ/article/view/9266
- Nurul Septyasrini, Faizah Betty Rahayuningtyas. (2015). Hubungan Tingkat Pengetahuan Dan Status Pekerjaan Dengan Pemberian Asi Eksklusif. *Jurnal Berita Ilmu Keperawatan*. https://journals.ums.ac.id/index.php/BIK/article/view/10588
- PPID Provinsi Lampung. (2024). Gubernur Arinal Djunaidi Canangkan Kegiatan Intervensi Serentak Pencegahan Stunting Tingkat Provinsi Lampung Tahun 2024. https://ppid.lampungprov.go.id/detail-post/Gubernur-Arinal-Djunaidi-Canangkan-Kegiatan-Intervensi-Serentak-Pencegahan-Stunting-Tingkat-Provinsi-Lampung-Tahun-2024?utm source=chatgpt.com
- Reisy Tane, F. B. S. (2021). Edukasi Online Pemberian MPASI Terhadap Praktik Pemberian Makan Dan Status Gizi Anak Usia 6-24 Bulan. *BEST, Journal of Biology Education, Science and Technology*. https://jurnal.uisu.ac.id/index.php/best/article/view/4554
- Riska Maulidanita. (2020). Faktor Yang Berhubungan Dengan Pemberian Makanan Pendamping Air Susu Ibu Pada Bayi 0-6 Bulan Di BPM Romauli Silalahi. *Window of Health, Jurnal Kesehatan*. https://jurnal.fkmumi.ac.id/index.php/woh/ article/view/603
- Saifuddin Zuhri. (2023). Pilihan Rasional Ibu Dalam Memilih Makanan Pendamping Air Susu Ibu (Mpasi) Untuk Mencegah Stunting Pada Anak. *Jurnal Endurance*. http://publikasi.lldikti10.id/index.php/endurance/article/view/2208
- Selvi Rahmawati, Anggraeni Janar Wulan, N. U. (2020). Edukasi Pemberian Makanan Pendamping Asi (MPASI) Sehat Bergizi Berbahan Pangan Lokal Sebagai Upaya Pencegahan Stunting di Desa Kalisari Kecamatan Natar Lampung Selatan. *Jurnal Pengabdian Masyarakat Ruwai Jurai*. https://www.bing.com/ck/a?!&&p=396ea9beae8a1d2dJmltdHM9MTc-yMjEyNDgwMCZpZ3VpZD0zOGQ3MDlm YS02NjlhLTZmN2EtMzRhNS0xYTY1Nj15Y TY5NGYmaW5zaWQ9NTE3Ng&ptn=3&ver=2&hsh=3&fclid=38d709fa-669a-6f7a-34a5-1a65629a694f&psq=makanan+pendamping+asi+pada+masyarakat+lampung&u
- Silvi Zaimy, Ratna Indah Sari Dewi, Siska Sakti Anggraini. (20121). Hubungan Paritas Dan Pekerjaan Ibu Dengan Pemberian Makanan Pendamping Air Susu Ibu (Mp-Asi) Dini Pada Bayi Usia 0-6 Bulan. *Jurnal Kesehatan Medika Saintika*. https://jurnal.syedzasaintika.ac.id/index.php/medika/article/view/1097/0
- Siti Mahfirotun Nimah Dyah Mahendrasari Sukendra. (2023). Hubungan antara Pengetahuan, Sikap, dan Praktik Ibu dalam Pemberian Makanan Pendamping Asi (MPASI) pada Anak USIA 6-24 Bulan dengan Kejadian Stunting di Wilayah Kerja Puskesmas Singgahan Kabupaten Tuban. *Jurnal Kesehatan Masyarakat*. https://ejournal3.undip.ac.id/index.php/jkm/article/

Elmi Nuryati et al. / Unnes Journal of Public Health 14 (2) (2025)

- view/37707
- Tirunesh Debessa, Zewudu Befkadu, Tefera Darge, A. M. & E. N. (2023). Commercial complementary food feeding and associated factors among mothers of children aged 6–23 months old in Mettu Town, Southwest Ethiopia, 2022. *BMC Nutrition*. https://bmcnutr.biomedcentral.com/articles/10.1186/s40795-023-00775-0
- UNICEF Indonesia. (2018). Kerangka Aksi untuk Gizi Ibu dan Makanan Pendamping ASI. *UNI-CEF*. https://www.unicef.org/indonesia/id/ dokumen/kerangka-aksi-untuk-gizi-ibu-danmakanan-pendamping-asi
- WHO. (2020). Pekan Menyusui Dunia: UNICEF dan WHO menyerukan Pemerintah dan Pemangku Kepentingan agar mendukung semua

- ibu menyusui di Indonesia selama COVID-19. *WHO*. https://www.who.int/indonesia/news/detail/03-08-2020-pekan-menyusui-dunia-unicef-dan-who-menyerukan-pemerintah-dan-pemangku-kepentingan-agar-mendukung-semua-ibu-menyusui-di-indonesia-selama-covid-19
- WHO. (2023). Infant and young child feeding. *WHO*. https://www.who.int/news-room/fact-sheets/detail/infant-and-young-child-feeding?utm_source=chatgpt.com
- Yuna Trisuci Aprillia, Susiana Nugraha, E. S. M. (2019). Efektifitas Kelas Edukasi Makanan Pendamping Asi (Mp-Asi)Dalam Peningkatan Pengetahuan Ibu Bayi. *Jurnal Bidang Ilmu Kesehatan*. https://ejournal.urindo.ac.id/index.php/kesehatan/article/view/500