

Preliminary Reports on the Experiences of Mothers in the Early Introduction of Complementary Feeding to Their Infants: a Phenomenological Study

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Abstract

Objective – The objective of the study was to explore the experiences of mothers with the early complementary feeding to infants in the IV Koto Sub-district, Agam District, West Sumatera Province of Indonesia. **Materials and Methods** – Qualitative methods, with a phenomenological approach were used in this study. This study was carried out from September to November 2022 in District IV Koto, Agam Regency. Ten mothers of infant aged 6-23 months who introduced complementary foods to their infants before six months of age were included in this study using a purposive sampling technique. Mothers who were not able to communicate well were excluded from this study. Semi-structured individual interviews were conducted to collect the data. Data analysis used conventional content analysis. **Results** – The experience of mothers in early complementary feeding of their infants were explored using five themes. These findings were that mothers perceived the benefits of early complementary feeding, infant cues, the need to work outside the home, insufficient breastmilk supply, receiving advice regarding early complementary feeding from grandmothers, and cultural beliefs. **Conclusion** – Mothers perceived the benefit of early complementary feeding for their infants and themselves. Therefore, health professionals should provide assistance and counseling to mothers breastfeeding their babies so they can continue with exclusive breastfeeding and introduce complementary foods at the right time.

Key Words: Infant Nutritional ■ Physiological Phenomena ■ Growth Disorder.

Introduction

The period from birth to twenty-four months is known as the golden period for the physical and intellectual growth and development, and behavior of infants and young children. Therefore, the efficiency of complementary feeding during infancy plays an essential role in preventing malnutrition and other harmful effects on children. Infants and young children need adequate nutrition for optimal growth and development (1). The food given to infants from birth to the first year of life will affect their entire life. In general, infants should receive

breast milk, which is essential for optimal growth and development. In the first six months, infants should only receive breast milk, but complementary foods are needed afterwards (2).

Infant feeding plays an essential role in the incidence of stunting in children. Infants who do not receive exclusive breastfeeding for six months and do not get adequate complementary foods after six months are at risk of stunting (3-9). Studies conducted in Mexico show that stunting occurs at an average age of 4 months, where there is a decrease in exclusive breastfeeding and the introduction of solid foods. The percentage of stunting is also high

in children who are not breastfed. Chronic malnutrition occurs due to lack of energy and nutrient consumption in the first year of life. Inadequate nutrition first affects body weight, and then affects linear growth (9).

Introducing complementary foods too early is the most common non-adherence behavior. A cross-sectional study in the United States published in 2018, aimed at identifying predictors of early complementary feeding, found that more than half of the infants (54.6%) were introduced to solid foods before six months of age. Breastfeeding status was a strong predictor for introducing complementary foods. Infants who were never breastfed or stopped breastfeeding at less than four months of age were more likely to be introduced to solid foods earlier than those who were breastfed for more than four months (10). Another study in Ireland in 2015 found that the timing of the introduction of formula milk was the strongest predictor of early introduction of complementary foods, with infants formula fed at four months of age having an 88.4% chance of having solid foods introduced before four months of age (11).

In Indonesia, although most practice introducing complementary feeding at the right time, there are still around 12.7% of mothers who introduce complementary foods early. Factors that contribute to early introduction of complementary feeding are low levels of education, lack of antenatal and post-natal visits, and living in rural areas (12). A cross-sectional study was conducted on 105 mothers recruited through an Internet-based parenting discussion forum in the UK. In this study, several mothers stated that it was challenging to wait up to six months to introduce solid foods to their infants. They believed breast milk alone is not sufficient to meet their nutritional needs. In addition, their babies also showed signs of hunger. Most mothers reported that health professionals recommend introducing solid foods that deviate from the official recommendations, especially if their infants have poor weight gain (13). Quantitative studies on the factors that influence the introduction of complementary feeding have been widely carried

out. However, qualitative studies related to this are still limited.

Therefore, this study aimed to explore the experiences of mothers in introducing early complementary feeding to infants in the IV Koto Sub-district, Agam District, West Sumatera Province of Indonesia.

Methods

Design

The study used a qualitative method with a phenomenological approach. This study was conducted from September to November 2022 in District IV Koto, Agam Regency.

Participants

Mothers who had babies aged 6–23 months participated in this study. Inclusion criteria were mothers who introduced complementary foods early, before their infant was six months old, and who were willing to participate. Mothers who could not read or communicate well were excluded from the study. The number of participants recruited was determined by data saturation. Saturation is one of the recommended approaches for determining sample size in qualitative research, and was taken as a criterion for determining sample size in this study. Therefore, the authors terminated the research because the data obtained were satisfactory, the data began to be repetitive, and no new information emerged (14). The saturation point of this research was reached after interviewing ten mothers.

Data Collection

In-depth interviews were used to explore the experience of mothers in introducing complementary foods to their infants. Interviews were conducted for 15–30 minutes. The list of questions in the interview guidance included: How did you decide on the first food to give your baby? What type of food was given to the baby first? Are you having trouble introducing solid foods to your baby? What

factors influenced you in the early complementary feeding of your infants? What are your beliefs about complementary feeding of infants in your country, and what are your views on the existing guidelines for complementary feeding? The interview process was recorded using a video recorder.

Ethical Statement

The authors adhered to ethical principles during this study, such as respect for human dignity, autonomy, beneficence, nonmaleficence, anonymity, and justice. Before conducting the interviews, the researcher informed the participants of the purpose and procedures of the study. After the participants had understood, the author asked them to sign their consent to participate in this study. This study was approved by Health Research Ethical Committee of RSUP Dr. M. Djamil Padang, No.: LB.02.02/5.7/500/2022.

Data Analyses

The results of the interviews were transcribed for analysis. The author used conventional content analysis to analyze the data. This form of analysis is generally carried out in studies whose purpose is to describe a phenomenon, such as the experience of introducing early complementary foods to infants. The data analysis starts by reading all the verbatim transcripts then the data are read word by word to obtain the code by first highlighting the appropriate words that emerge from the text to capture critical thoughts and concepts. Next, the authors note impressions, initial ideas, and analysis. Then they label each code that appears that reflects more than one critical thought. The codes are then sorted into categories based on the relationship between the codes. These emerging categories are used to organize and group codes into meaningful groups (15).

Results

This study involved ten mothers aged between 28 and 44 years. Five mothers had secondary

Table 1. Socio-Demographic Characteristic of Participants

Characteristics	Frequency N (%)	
Age	25–30 years	4 (40)
	30–40 years	4 (40)
	>41 years	2 (20)
Education level	Secondary school	5 (50)
	Undergraduate	5 (50)
Working status	Unemployed	4 (40)
	Employed	6 (60)
Time for introducing solid food	<3 months	2 (20)
	3–4 months	3 (30)
	5–6 months	5 (50)
The child age	6–11 months	2 (20)
	12–18 months	2 (20)
	>18 months	5 (50)

education, and other five mothers had higher education (Bachelor's degrees). As many as seven mothers had to leave the house to work, and three others were housewives. The infants' ages were between 12 months and 24 months (Table 1).

The themes that emerged from the analysis included the perceived benefits of early introduction of complementary feeding, perceived infant cues, the need to work outside the home, perceived insufficiency of breast milk supply, receiving advice regarding early complementary feeding from a grandmother, and cultural beliefs. The theme and subtheme are presented in Table 2.

Perceived Benefits of Early Introduction of Complementary Feeding

All the mothers stated that the early introduction of complementary foods benefits both the infant and the mother. The common benefit of early introduction of complementary feeding is infant weight gain. The mothers said that their infants gained weight after being introduced to complementary foods early on. Some of the participant statements are as follows: *“Because complementary foods are added to breast milk, he is gaining weight” (P2).* Her

Table 2. Category and Theme That Emerge from Data Analysis

Significant statement	Category	Sub-theme	Theme
She calms down, doesn't cry too much (P3)	Become calmer and stop crying	The benefit for the infant	The benefit of early complementary feeding
After he ate the watery promina, he immediately calmed down (stopped crying) (P4)			
I think my child is hungry. It feels like breastmilk is not enough. He keeps crying. After I fed him, he stopped crying and started to calm down, so I continued to provide him with food (P6)			
I used to think because he kept crying, maybe he was hungry, so I tried to give him food. It turned out he stopped crying and started to calm down after eating (P10)	Weigh gain		
Because complementary foods are added to breast milk, he gains weight (P2).			
Her weight increased significantly after being fed, so she gains weight (P3).			
Every month he continues to gain weight. Sometimes people ask me how many months old he is, but his body is big enough (P6)			
He gains weight every month after I feed him (P7)	Normal development		
He's gaining weight fast (P10)			
She also crawls faster (P3)			
Sometimes he moves, because his feeling is happy, he can turn around (P4)	Sleep longer		
She calms down after feeding, slept well. He wakes up when he is thirsty and urinates (P3)			
He's already full when he's fed, so he just sleeps (P4)	Normal digestion		
Alhamdulillah, there is no effect on him such as vomiting, diarrhea, or constipation (P2)			
She does not vomit even when I give her food, so I think there is no effect on her (P4)			
Defecation is also normal (P4)	Good eating habit		
There is no effect on my child, he is healthy, and his digestion is normal. Defecation is also smooth (P7)			
When she was six months old, she was given nasi tim (solid infant porridge), it started to solidify, and she want to eat (P3)			
Now, he can eat 3-4 times a day, finish the portion of food I provide, and he eats voraciously (P6)	Calm	The benefit for the mother	
His appetite is very good now, and he even eats voraciously (P10)			
Because she wants to eat, I am happy to see her (P1)	Comfortable		
If he's calm, I can also eat, I can also calm down, when he's awake, I can breastfeed him (P4)			
He wants to breastfed with me (P4)	Crying	Infant hunger	Perceived infants' hunger and cues
At first, she was crying all the time (P1)			
Maybe he is crying, so my mom gives him food (P2)			
Usually she is fussy, after breastfeeding she is still crying (P3)			
If he did not receive the food, he would always be crying all the time (P4)			
Because he cries all the time, maybe the milk is not enough (P5)			
It feels like breastmilk is not enough. He keeps crying (P6)			
My husband told me to feed my baby because he was always crying. Finally, I started giving him food (P7)			
The baby was crying all the time, so he started to be fed (P8)			
If I'm not at home, seeing my baby crying, my mother immediately gives my child a banana (P9)			
I used to think because he kept crying, maybe he was hungry, so I tried to give him food. It turned out he stopped crying and started to calm down after eating (P10)	Tummy bloat		
Maybe her tummy is bloated (P1)			
Maybe the stomach is bloated. We can feel it by pressing the stomach			

Continuation of Table 2. Category and Theme That Emerge from Data Analysis			
Significant statement	Category	Sub-theme	Theme
I think breastmilk only is not enough for her, she is not full enough (P3)	Not full enough	Infant hunger	Perceived infants' hunger and cues
But, he is not feeling well, because he is hungry. My breastmilk is lacking, so what do I need to do, I feel sorry for him (P4)			
Before five months, I fed him because his stomach was hungry (P7)			
The breastmilk may not be enough (P8)	Chewing	Interest in food	
When she sees me eating, she chews too (P1)			
She is also trying to reach the food that I eat (P1)	Reaching food		
I remembered she was two and a half months old when introducing solid food. I could only take two months off from work (P1)	Go outside home	Go outside home for work	Need to work outside home
Syamil, maybe he's crying, maybe formula milk isn't enough... I also want to work again, so I can't breastfeed exclusively, so he's fed by my mother (P2)			
I continued to breastfeed until he was three months old. When I started going to work, he wasn't getting any more breastmilk and beginning to get complementary foods (P6)			
He's the smallest one, maybe because of the influence of age, my milk supply is lacking	Lack of breastmilk	Breastmilk insufficient	Insufficient breastmilk supply
I mean, she only suckles on the right side (P5)			
My breastmilk is not enough anymore; it doesn't come out and is insufficient. Since my son is a boy, he needs more nutrition (P6)			
Try feeding your infants, my mother said. Try giving the child a dredged banana (P1)	Advice from grandmothers	Advice to provide complementary food early	Receive advice regarding early complementary feeding from parents and cultural beliefs
If I get information from parents, if the infant is crying, maybe she is hungry, then she must be fed (P3)			
My sister advised me to start feeding my child when she saw him crying (P7)			
Yes, because I live in a village with my parents, they recommended that I give complementary food to my child earlier (P9)			
The elderly around my house advised me to give my baby biscuits when I see him cry (P10)			
My mother said it's okay for infants to be given complementary foods earlier, in the past infants were also fed earlier, even when they are one week old (P2)	Habits from ancestor	Practices passed down from ancestors	
From ancient times, when a child cried, the parents thought their child was hungry. I also did not understand whether the child was hungry, so the ancients often fed their babies earlier (P7)			

weight has increased significantly after being fed, so she is gaining weight” (P3).

In addition to weight gain, two mothers revealed that their infant's development was faster than other infants'. This is as shown by the following participants: *“She also crawls faster” (P3). “Sometimes he moves, because he is feeling is happy, he can turn around “ (P4).*

Five participants said their infants' digestion was as expected even though the infants were introduced to complementary foods early. The mothers mentioned normal digestion, such as the infants not having diarrhea, they did not vomit, and had regular bowel movements. The participants' expressions regarding this are: *“Alhamdulillah (Praise God),*

there is no effect on him such as vomiting, diarrhea, or constipation” (P2). “Defecation is also normal” (P3).

Most of the mothers said their infants became calmer and stopped crying after receiving complementary foods. Some of the participant statements include: *“She calms down, doesn't cry so much” (P3). “After he ate the watery promina (the baby porridge brand), he immediately calmed down (stopped crying)” (P4). “I think my child is hungry. It feels like breastmilk is not enough. He keeps crying. After I fed him, he stopped crying and started to calm down, so I continued to provide him with food” (P6).*

Most mothers perceived that their infants slept longer after consuming complementary foods early. This was expressed by participants 1, 2, 3, and 4.

Some of the statements by the participants were: “She calms down after feeding, and sleeps well.” “She wakes up when she is thirsty and urinates” (P3). “He’s already full when he’s fed, so he just sleeps” (P4)

Interestingly, one participant claimed that her infant had good eating habits because she was given solid food after six months. The participant’s statements are: “When she was six months old, she was given nasi tim (solid infant porridge), it started to solidify, and she want to eat» (P3). The benefits that the mothers perceived for themselves are that the mothers became calmer and were more comfortable. Some of the participant statements are: “Because she wants to eat, I am happy to see her” (P1). “If he’s calm, I can also eat, I can also calm down, when he’s awake, I can breastfeed him” (P4).

Perceived Infant Hunger and Cues

Most mothers said that their infant showed signs of hunger, such as crying, even though the baby had been breastfed. In addition, the mothers felt that the baby was not full, but the infant’s stomach looked bloated. The babies were also interested in food, such as reaching for food and chewing when they see their mother eating. The following are some of the participants’ statements regarding the baby’s hunger cues: “Usually, she is fussy after drinking milk. She keeps crying” (P3). “Because she’s just crying, so maybe there’s not enough milk for her” (P5). “Maybe her stomach is bloated. We can feel it by pressing her stomach” (P3). “When he sees me eating, he chews too” (P1). “She is also trying to reach the food that I eat” (P1).

Need to Work outside the Home

Work is of one the reasons for mothers giving complementary foods early. Working mothers leave their infants with their grandmothers or parents, giving their infants complementary foods while the mothers work outside the home. The participants’ statements include: “I remembered she was two and a half months old when I introduced her to solid food. I only took two months off from work” (P1). “Syamil, maybe he’s crying, maybe formula milk isn’t enough...

I also want to work again, so I can’t breastfeed exclusively, so he’s fed by my mother” (P2), “I continued to breastfeed until he was three months old. When I started going to work, he wasn’t getting any more breastmilk and began to get complementary foods” (P6).

Perceived Insufficient Breast Milk Supply

Some mothers reported that the lack of breast milk was the reason why they gave early complementary foods to their babies, as expressed by the following participants: “He is the smallest one, maybe because of the influence of age, my milk supply is lacking” (P3). “I mean, she only suckles on the right side” (P5). “My breastmilk is not enough anymore; it doesn’t come out and is insufficient. Since my son is a boy, he needs more nutrition” (P6).

Advice regarding Early Introduction of Complementary Feeding from Parents, and Cultural Beliefs

Most mothers said that grandmothers greatly influenced them to provide early complementary foods. The mothers revealed that the grandmothers often taught them to give complementary foods early because this was the custom passed down from generation to generation, from their ancestors. This was expressed by the following participant: “Try feeding your infants, my mother said. Try giving the child a banana” (P1). “My mother said it’s okay for infants to be given complementary foods earlier, in the past also infants were fed early, even when they were one week old” (P2). “What I hear from my parents is if the infant is crying, maybe she is hungry, then she must be fed” (P3). “From ancient times, when a child cried, the parents thought their child was hungry. I also did not understand whether the child was hungry, so the ancients often fed their babies earlier” (P7).

Discussion

The current study identifies the experiences of mothers with the early introduction of complementary feeding. The experiences include the perceived benefits of early introduction of complementary feeding,

perceived infant cues, the need to work outside the home, perceived breast milk supply insufficiency, receiving advice regarding early complementary feeding from grandmothers, and cultural beliefs.

According to the WHO and UNICEF, the recommended time to introduce solid foods is when infants are six months old (1, 16). The European Society for Paediatric Gastroenterology, Hepatology, and Nutrition (ESPGHAN) Committee on Nutrition recommends exclusive breastfeeding for at least four months and exclusive or dominant breastfeeding up to six months. Complementary feeding (solids and liquids other than breast milk or infant formula) should not be given before four months, and should be completed in at most six months (17).

Although most studies claim that this timing of solid food introduction in infants is good, some studies still reveal early solid food introduction. Two qualitative studies report the use of traditional foods given to infants before six months (18, 19). A longitudinal qualitative design was used to explore teenage mothers' infant feeding choices in KwaZulu-Natal, South Africa. Ten teenage mothers participated in this study. The majority of these mothers had the intention to practice exclusive breastfeeding. Still, in the follow-up period, some mothers introduced liquids or solids to infants while waiting for breast milk to come in and following advice from their elders. Grandmothers suggested mothers give infants traditional medicine and water to purge the babies' intestines (20).

Buser et al. (2020) reported the same in a study in Rural Zambia that investigated mothers' cultural beliefs and health-seeking behavior in newborn care. In this study, some mothers reported that they gave traditional herbs mixed with porridge at the infant age of one month, to keep the baby from disease. Health professionals can promote infant feeding practices in mothers by constantly maintaining cultural beliefs that benefit and minimize harm to the babies. But mothers should be encouraged to avoid the use of traditional herbs in babies' porridge at one month of age (21).

In this study, some mothers stated the benefits of early introduction of complementary feeding.

The perceived benefits include healthier infants and better growth, stopping the babies crying and helping them sleep longer. Kuswara et al. (2016), who explored the mother's experience in feeding babies, explained that the early introduction of complementary foods was influenced by elders who encouraged mothers to give solid food and formula milk to make the baby grow and be healthy (22). A previous study in Ghana revealed that early introduction of complementary feeding could affect the frequency and duration of breastfeeding, as well as infant growth and development (23).

Infants' kidney and gastrointestinal functions are usually mature enough to digest nutrients from complementary foods (nonmilk) at four months. The maturity of the baby's kidney and gastrointestinal function, as well as neurodevelopment, is essential for the safety and effectiveness of the metabolic process of mixed diets using breast milk and complementary feeding. Digested food increases the maturity of digestive function (17). Therefore, health professionals need to support mothers in introducing complementary foods at the right time, and correct mothers' misunderstandings about the benefits of early complementary feeding.

Some mothers cited infant hunger cues as the reason why they introduced complementary foods earlier. This finding is consistent with a qualitative study conducted in Brazil that found most mothers introduced complementary food early to their infants because the mothers perceived infant hunger (2). A previous study in the San Francisco Bay Area also supported this finding. The study reported that most mothers identify infant hunger as a behavioral response, such as mouth movement, interest in food, reaching and pointing to food. Satiety cues identified by parents were that the infant would spit food out, refuse to open their mouth, or push away spoons and plates (24). Teaching mothers about infant hunger cues, and how mothers should respond to them, is necessary to develop infant feeding practices that comply with the recommendations.

The lack of breast milk supply was another experience expressed by the study participants. Data were collected from May to August 2009 from

households with children 6 to 23.9 months of age in one rural area (South Harina Village of Lohagara Subdistrict) in Chittagong, and three slum areas (Badda, Saat Tola, and Mirpur) in Dhaka. The mothers introduced solid food when they felt their breast milk was insufficient to meet their infant's need (25). Health professionals must reassure mothers that their breast milk supply will be adequate if mothers continue to breastfeed their babies.

The need to go outside the home for work is also a reason why some mothers introduce solid food to their infants earlier. A prospective study in China involved 695 postpartum mothers to identify the determinants of the early introduction of complementary feeding. The results showed that mothers who returned to work before the infant was six months were more likely to introduce complementary foods early. Return to work was recognized as a barrier to exclusive breastfeeding in different cultures. Health professionals must inform the mother about how to continue breastfeeding after returning to work, and convince the mother of the importance of exclusive breastfeeding for infant growth and development (26).

Some mothers revealed that they had received advice from their mothers to introduce complementary food early. The advice that mothers receive from their mothers constantly contradicts the recommendations of professionals, thus creating pressure on mothers to decide to begin complementary feeding for their children (2, 22). A study conducted in India found that most mothers have several sources of information regarding feeding practices, such as family members, friends, neighbors, mothers of similar-aged children, and health care professionals. Mothers found that advice from health care professionals and family members is often contradictory. Some mothers prefer to comply with family advice since this is their cultural tradition; others feel uncertain about whose advice they should follow and are anxious about their capabilities in caregiving (27). Health professionals must be aware of mothers' fears and anxieties regarding complementary feeding. Moreover, health care professionals should recognize the culturally sensitive issues

regarding complementary feeding, and overcome the practices that conflict with health recommendations. Socioeconomic, family, and cultural issues should be considered when providing health education interventions in relation to Infant and Young Child Feeding (IYCF).

Limitation

The limitations of this study include the varying educational level of the participants, which is one of the challenges in conducting in-depth interviews. Another limitation relates to the time that had elapsed since the mother's experience of early complementary feeding, as this can lead to retrospective recall bias. In this case, the data depended on the mother's ability to recall memories about giving early complementary food to their child. However, overall, the research results provide insight into the experience of early complementary feeding. They can be essential for designing interventions that promote optimal feeding in infants and young children.

Conclusion

There are several factors that influence mothers in introducing early complementary feeding. These factors need to be considered by health care providers. Mothers' knowledge, attitudes, beliefs, and self-efficacy related to introducing complementary feeding contribute to the growth and development of children. Formal education of mothers about nutrition is essential for the well-being of their infants. Encouraging mothers to participate in monthly growth monitoring, providing information intensively through the media, and strengthening counseling to mothers during post-natal visits need to be considered to improve the introduction of complementary feeding based on the recommendations.

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