

Correlation between Mother's Behavior in Providing Early Complementary feeding with the Incidence of Diarrhea

Intan Nabila^{1*}, Andi Hayyun Abiddin², Wiwin Martiningsih³, Joel Rey U. ACOB⁴

¹Department of Nursing, Poltekkes Kemenkes Malang, in175943@gmail.com

²Department of Nursing, Poltekkes Kemenkes Malang, andi_hayyun@poltekkes-malang.ac.id

³Department of Nursing, Poltekkes Kemenkes Malang, wiwin_matiningsih@poltekkes-malang.ac.id

⁴Department of Nursing, Visayas State University, Philippines, joel.acob@vsu.edu.ph

ABSTRACT

Babies are golden periods because in this period the babies will experience very significant. One of the influences on a baby's growth and development is providing nutrients to the baby appropriately according to his age, one of which is a complementary food. The purpose study was to determine the relationship between maternal behavior in early breastfeeding and the incidence of diarrhea in infants, in addition to identify mothers' breastfeeding behavior, the type of complementary food given, and the incidence of diarrhea in early breastfeeding. The method used a Traditional Study Review design and used the keywords "mother's behavior," "early complementary food," and "Baby diarrhea." This review study used a population of Infants 0-6 months. Exposure to Maternal Behavior in Early Breastfeeding, Outcome Incidence of Diarrhea, and Design Study Journal Articles used a cross-sectional design approach, analytical correlation, and analytical observational survey. Results showed a relationship between mothers' behavior in early breastfeeding and the incidence of diarrhea in infants. Mothers giving complementary food for less than six months were caused by factors such as low maternal knowledge and skills, which refer to the mother's low level of education. Medical personnel must be more active in counseling parents, especially mothers who have babies, about early complementary food to minimize the incidence of diarrhea in babies.

Keywords

maternal behavior; early complementary feeding; diarrhea

Background

Babies are humans who have just been born into the world, so they need the help of others to meet their needs. Besides breast milk, babies also need complementary food for breast milk or complementary feeding, these foods are given to babies over six months old (1). If the baby is less than six months old, the baby's digestive system is not normal and is not ready to accept the food, so babies aged less than six months can only be given exclusive breastfeeding. However, the community gives babies under six months old complementary food.

Parents, especially mothers of toddlers, must know the age of their toddler's nutritional status. Babies aged 0-6 months must be given breast milk because the baby's significant growth and development require something to support it, and the only thing that can support it is exclusive breastfeeding (2). A study in Sri Lanka stated that 23% of mothers with children under five said that under four months had been given complementary feeding, even mothers also gave complementary feeding in steamed rice, biscuits, and others without medical advice.

UNICEF (2006) noted that the awareness of mothers in Indonesia in giving breast milk to babies is 14%, and all these mothers only breastfeed their children until they are four months old (3). According to previous research, babies aged six months in Indonesia have been given complementary foods; therefore, many toddlers experience diarrhea. This statement is proven by the small number of babies who get diarrhea with exclusive breastfeeding compared to babies who get diarrhea with early complementary feeding (4). Acute Respiratory Infections (ARI) in Indonesia is the number 1 killer of babies, and after ARI, the disease that kills babies is diarrhea because it causes babies to become dehydrated.

UNICEF also states that babies who die from diarrhea only in 30 seconds. ARI in Indonesia is the number 1 killer of babies, and after ARI, the disease that kills babies is diarrhea because it causes babies to become dehydrated (5). Mothers who provide complementary feeding for less than six months are caused by the mother's insufficient knowledge and skills, so this will refer to the mother's educational level, which is still low. The mother's low level of education causes less exposure to the mother's information about early complementary feeding.

Mothers with low levels of education tend to do things more often and easily hear information from other people without knowing clear information about complementary feeding (6). Mothers often give babies in Indonesia bottle-feeding compared to exclusive breastfeeding, and mothers have given complementary food for breastfeeding to babies younger than six months old. Mothers think their children will be full quickly (7). Family support, such as husbands, parents, siblings, and neighbors, also influences the provision of early complementary feeding to toddlers. If they support or are indifferent to the mother's behavior, infant constipation and diarrhea can occur. So that both husbands and families who live at home and are close to mothers also need to be given education about early complementary feeding, it is hoped that they can contribute to prevent diarrhea in toddlers (8).

Methods

The method used a literature review design by reviewing five journal articles that discuss the relationship between mothers' behavior in early complementary feeding and the incidence of diarrhea in infants. This study used the PEOS formulation with a population of 0-6 months' infants, exposure, the relationship between the mother's behavior in early complementary feeding, Outcome, the occurrence of diarrhea, and Study Design of journal articles using a cross-sectional, cross-sectional, study design. Correlation Analytic, analytic observational survey. The five journal articles were obtained from journal articles uploaded to the Google Scholar database for six years and were screened using the inclusion criteria, namely: Articles published in the last six years (2016-2021); Journal articles can be accessed and downloaded in full (full text); Journal articles have a DOI, ISSN, or ISBN; and title according to the topic.

Results

Table 1. Results of the review of the five journal articles

No	No. Author, title, year of publication, name of the journal	Results	Recommendation
1.	Author: Reni Halimah Title: Relationship of	Results : The mother has given babies aged	It is hoped that with this research, medical staff

<p>Complementary Foods for Mother's Milk (Complementary feeding) with Diarrhea in Infants Year: 2016 Journal Name: Health Journal</p>	<p>less than six months complimentary food because the mother thinks that if the baby cries, he needs other food besides breast milk. The percentage of toddlers under six months who have been given complementary feeding is less than the age of more than six months, with a difference of 9%. The article does not mention the type of complementary feeding given spoiled food, exposure to germs, toxic, and breastfeeding too early can cause diarrhea. Infants who had diarrhea were 59.4%, while infants who did not have diarrhea were 50.64%. There is a significant relationship between Early complementary feeding with the incidence of diarrhea in children under five in the Working Area of the Rajawali Alloy Health Center, Meraksa Aji District, Tulang Bawang Regency, in 2016, with p-value = 0.030.</p>	<p>will be more aggressive in conducting health promotion regarding complementary feeding to parents so that it will minimize the occurrence of diarrhea in infants.</p>
<p>2 Author: Oktaviana Maharani Title: Early Complementary feeding is Associated with the Incidence of Diarrhea in Infants aged 0-12 months in North Dampal District, Tolitoli, Central Sulawesi Year: 2016 Journal Name: Indonesian Journal of Nurses and Midwifery</p>	<p>The mother's level of knowledge could be higher about what age babies can be given complementary foods. Infants who were given complementary feeding <1 month 17%, <4 months 17%, 4-5 months 36%, and <6 months 30%. Giving complementary feeding <6 months is 70%, while >6 months is 30%. The types of complementary feeding provided in this article are: Sufor 50%, Other milk 5%, Water 69%, Sugar water 14%, Rice water 5%, Honey 14%, Mashed food 58% Toddler age is too early, food allergies, and the digestive system is not ready are the trigger factors for diarrhea in infants. A p-value of <0.05 was obtained, which was 0.014, which meant that there was a relationship between early complementary feeding and the incidence of diarrhea in infants aged 0-12 months in North Dampal</p>	<p>With this research, parents will know what age children can be given complementary feeding, and medical staff are expected to be able to provide information about complementary feeding in as much detail as possible.</p>

District, Tolitoli, Central Sulawesi.	
3	<p>Authors: Veryudha Eka P, Lutfi Wahyuni, and Indria Kusuma Dewi</p> <p>Title: Relationship between Providing complementary feeding to Infants Aged 0-6 Months with Diarrhea in Pacet Village, Pacet District, Mojokerto Regency</p> <p>Year: 2017</p> <p>Journal Name: Journal of Health Sciences</p> <p>1. Customs is also a trigger factor for mothers giving babies complementary foods. 64.3% of babies were given complementary feeding before six months, while those who breastfed milk were 35.7%.</p> <p>2. The types of complementary feeding given in this article are: ASI (2) respondents Porridge and Bananas (4) respondents</p> <p>3. Contaminated food that contains bacteria can cause diarrhea in infants. Infants who experience diarrhea as much as 57.1%.</p> <p>There is a relationship between giving complementary feeding to infants aged 0-6 months and diarrhea in Pacet Village, Pacet District, Mojokerto Regency. Giving complementary feeding before the age of 6 months can cause diarrhea.</p>
4	<p>Authors: Evi Rosita and Dewi Imrohwati</p> <p>Title: The Relationship between Mother's Education Level and Early Complementary feeding for Infants Aged 0-6 Months (Study at UPT Puskesmas Kemlagi, Kemlagi District, Mojokerto Regency, East Java Province)</p> <p>Year: 2016</p> <p>Journal Name: Midwifery Journal of STIKes Insan Medika Jombang Scholar</p> <p>1. Some mothers give early complementary feeding due to low information based on education level. Mothers who give complementary feeding <6 months, namely: Elementary-Junior High School Education: 90% High School Education: 57.1 % Academy/Bachelor Degree: 36.4%</p> <p>2. Of the ten respondents who ate scraped bananas and drank starch water instead of milk and honey water, eight babies (80%) and the rest were only given exclusive breastfeeding.</p> <p>3. This article does not discuss the occurrence of diarrhea.</p> <p>Providing early complementary feeding to infants aged 0-6 months; most respondents provided early complementary feeding.</p>
5	<p>Authors: Maidartati, Sri</p> <p>Results : th this research,</p>

Hayati, and Pratiwi Indah Sari	1. The low level of knowledge causes toddlers to be given complementary feeding for less than six months. As many as 61% of infants who are not old enough have eaten complementary foods.	Posyandu cadres, nurses, and other health workers will be more active in educating the public about complementary feeding so it can decrease the incidence of diarrhea in infants.
Title: The Relationship of Early Complementary feeding Giving with Diarrhea in Infants 0-6 Months at Ciumbuleuit Health Center	2. complementary feeding in this article only mentions food and drinks other than breast milk.	
Year: 2021	3. Causes of diarrhea by infection, malabsorption (impaired absorption of nutrients), and food. As many as 48% of infants experience diarrhea.	
Journal Name: BSI Journal of Nursing		

The p-value is 0.013, indicating a relationship between early complementary feeding and the incidence of diarrhea in infants 0-6 months at the Ciumbeleit Health Center in Bandung.

Discussion

The review results of the five journal articles above stated why mothers give early complementary feeding prematurely, including mothers thinking their children will be full quickly and are not fussy after being given complementary feeding and a lack of information about early complementary feeding. It has become an inherited hereditary culture. So that mothers give early complementary feeding to babies less than six months due to the mother's lack of knowledge about early complementary feeding caused by the mother low education level.

A low level of education caused mothers' lack of knowledge, so they tended to only receive information from neighbors who have yet to prove the truth. Besides that, mothers who lack knowledge will more often race against the culture circulating in the local area. Early complementary feeding, namely exclusive breastfeeding complementary food for babies who are given when they are more than six months old and contain iron, babies born have reserves of vitamins and minerals from the mother's womb. Still, when they are more than six months old, they will decrease and need a food source (9). According to researchers, medical staff must be more aggressive in counseling parents, especially those with babies less than six months, so that diarrhea and constipation did not occur. Some of the other foods that mothers give to their babies include formula milk, rice water, honey, pureed food, and plain water (5).

Mothers who gave their babies other food are due to economic factors, lack of knowledge, and cultural factors. One example of cultural factors is giving honey to children. Giving honey, according to belief, will clean up the dirt that has been there since he was born (10). Honey is a sweet liquid produced by bees and contains amino acids, carbohydrates, and vitamins. Giving honey to toddlers can cause a rare disease, namely infant botulism. The disease is carried by anaerobic bacteria from the soil and can be carried by air. Clinical manifestations caused by this disease include lethargy, weakness, shortness of breath, lazy breastfeeding, difficulty swallowing, constipation, diarrhea, difficulty opening eyes, and dry mouth (11). Besides honey, mothers with a low economy will give their babies rice or plain water. Giving plain water is not recommended and is not even allowed to be given to babies

who are not yet six months old because it forces their digestive system to accept food that their digestive system should not be able to use to digest food or drinks other than breast milk. Kevin Andrian said that by giving water can cause flatulence, diarrhea, and water poisoning (12).

Formula milk is also often given to babies less than six months old. The mother gives it because her milk production is low, her nipples hurt from breastfeeding, and she is busy at work. Breast milk should be used as the main energy source for babies and should be given to babies compared to formula milk (bottled milk). Apart from being the main energy source, the other benefits of breastfeeding are the support for the growth and development of the baby. This statement is supported by previous researchers who stated that formula milk's dangers because it contains a lot of lactose; if the baby's lactose production is imbalanced with formula milk, it will cause diarrhea in the baby (13).

The last complementary food is scraped or mashed bananas. The mother who provides this complementary food thinks that bananas are a source of fiber and carbohydrates for babies, so if their child cries, it is a sign of hunger; they will be silent and calm after being given a banana; it is a sign that the baby is full. Bananas contain fiber, antioxidants, potassium, Vit B6, vitamin C, magnesium, copper, carbohydrates, protein, and little fat. The component is good for children but not babies less than six months. This statement is supported by Elison's statement saying that in babies who are given complementary food before six months, their intestines are not ready to accept this food (12).

Bananas have high fiber, so if the baby is given complementary banana food, it makes the intestinal cavity to become full and it will stimulate the intestine to expel it to trigger diarrhea (14). Contraindications to early complementary feeding in infants less than six months, namely food allergies that cause diarrhea. Diarrhea can occur because when a baby aged less than six months old is given early complementary feeding, it will force his digestive system to be ready and willing to receive nutrition other than breast milk which will eventually fill the intestinal cavity and will trigger diarrhea.

Diarrhea can occur due to errors in providing complementary foods, time, amount, age, and portion. Giving food that accompanies breast milk to infants under six months of age can cause absorption disorders in the baby's digestive system; besides, complementary foods contain various food substances. An increase in osmotic pressure in the intestinal cavity will cause a shift of water and electrolytes into the intestinal cavity, causing diarrhea in infants (15).

Conclusion and Recommendations

There is a relationship between the mother's behavior regarding early complementary feeding and the incidence of diarrhea. The incidence of diarrhea in infants can occur due to the mother's behavior in giving complementary feeding before six months. The mother's lack of knowledge was the factor that most influenced the mother's behavior in giving early complementary feeding to children aged less than six months. The types of complementary feeding given by the mother included scraped bananas or mashed food 58%, formula milk 50%, water 69%, and honey 15%. It is better if early complementary feeding is given to toddlers aged 6-24 months because the digestive organs of toddlers are more than six months old and ready to accept food other than breast milk, but giving early complementary feeding to toddlers must also pay attention to the portion, frequency, type of food according to age and ability toddler.

References

1. Usmiyati U, Maulida I. Analisis Perilaku Ibu Dalam Pemberian Mp-Asi Secara Dini Menurut Faktor Penyebabnya Pada Bayi Di Puskesmas Margadana Kota Tegal Tahun 2015. Siklus: Journal Research Midwifery Politeknik Tegal. 2017;6(1).

2. Abdullah GI, Ayubi D. Determinan Perilaku Pemberian Air Susu Ibu Eksklusif pada Ibu Pekerja. *Kesmas: Jurnal Kesehatan Masyarakat Nasional (National Public Health Journal)*. 2013;7(7):298-303.
3. Wargiana R, Susumaningrum LA, Rahmawati I. Hubungan Pemberian MP-ASI Dini dengan Status Gizi Bayi Umur 0-6 Bulan di Wilayah Kerja Puskesmas Rowotengah Kabupaten Jember. *Pustaka Kesehatan*. 2013;1(1):47-53.
4. Yerni A. Hubungan MP Asi Dini dengan Diare pada Bayi 0-6 Bulan di Puskesmas Stabat. *Jurnal Keperawatan Priority*. 2020;3(1):30-8.
5. Maharani O. Pemberian Makanan Pendamping ASI Dini Berhubungan dengan Kejadian Diare pada Bayi umur 0–12 bulan di Kecamatan Dampal Utara, Tolitoli, Sulawesi Tengah. *JNKI (Jurnal Ners dan Kebidanan Indonesia)(Indonesian Journal of Nursing and Midwifery)*. 2016;4(2):84-9.
6. Ibrahim M. Hubungan antara karakteristik ibu dan perilaku ibu dengan riwayat pemberian makanan pendamping ASI (MP-ASI) dini di wilayah Puskemas Atinggola Kecamatan Atinggola Kabupaten Gorontalo Utara tahun 2014. *JIKMU*. 2015;5(3).
7. Afriyani R, Halisa S, Rolina H. Faktor-faktor yang berhubungan dengan pemberian MP-ASI pada bayi usia 0-6 bulan di BPM Nurtilla Palembang. *Jurnal Kesehatan*. 2016;7(2):260-5.
8. S. A. R. Rahman HB. Analisis data yang dilakukan adalah univariat dan bivariat dengan uji chi square dan uji phi. 2014. 1-10 p.
9. Aldriana N. Faktor-faktor yang berhubungan dengan pemberian MP-ASI dini di Desa 2 Dayo Wilayah Kerja Puskesmas Tandun II Kabupaten Rokan Hulu tahun 2013. *Jurnal Martenit and Neonatal*. 2015;3(2):1-9.
10. Arsyati AM, Rahayu YT. Budaya pemberian makanan pendamping ASI (MP-ASI) pada bayi usia kurang dari 6 bulan di desa Leuwibatu Rumpin. *HEARTY: Jurnal Kesehatan Masyarakat*. 2019;7(1).
11. Angela D. Tepatkah madu diberikan pada bayi? 2016 [Available from: <https://www.idai.or.id/artikel/klinik/pengasuhan-anak/tepatkah-madu-diberikan-pada-bayi>].
12. Elison NK, Dhilon DA, Hastuty M, Wahyuni WS. Penyebab Rendahnya Cakupan ASI Eksklusif di Kabupaten Kampar Provinsi Riau: Penelitian Kualitatif. *Jurnal Doppler*. 2020;4(1):43-8.
13. Herawati R, Yunita Y. Faktor–Faktor Yang Berhubungan Dengan Gizi Lebih Pada Balita Di Wilayah Kerja Puskesmas Kepenuhan Hulu. *Jurnal Martenit and Neonatal*. 2014;2(2):230-9.
14. Bhaskoro R, Mulyawan B. Hubungan Pemberian Makanan Padat Dini dengan Kejadian Diare pada Bayi di RSUD Ambarawa. *Saintika Medika*. 2013;9(2):104-9.
15. Wahyuni L, Putri IK. Hubungan Pemberian Mp-Asi Pada Bayi Usia 0-6 Bulan Dengan Terjadinya Diare Di Desa Pacet Kecamatan Pacet Kabupaten Mojokerto. *Jurnal Ilmu Kesehatan*. 2017;4(1):1-4.