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Description of Complementary Feeding Practice to *Underweight* Children Under Two Years Old in The Working Area of Puskesmas Kanor, Bojonegoro District

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ABSTRACT

Children under two years of age, are in a very important developmental period often referred to as the Golden Age. Child classified as Underweight based on anthropometry, measurements if their body weight for Age (BB/U) is between -3 SD <-2 SD. According to data from the Bojonegoro District Health Service. This study aims to describe complementary feeding practice to underweight children aged 6-24 months with in the working area of the kanor community health center. Research used an interview method with a questionnare for data collectin, A total of 41 children were selected through random sampling. The result showed that the age at first complementary feeding was correct in 68.4% of cases however, frequency 75.6%, amount 63.4%, texture 75.6%, variation 53, 6%, responsiveness 58.5% and hygiene 58.5%. While most children had a story of exclusive breastfeeding, aspect such as children had a history of exclusive breasfeeding aspect such as frequency, quantity, texture, variety, and responsivenness of complementary feeding were incorrect even though cleanliness was satisfactory**.** Educational interventions are needed to improve knowledge and practices related to proper complementary feeding for children.

INTRODUCTION

Babies under the age of two years a critical period in their development. This period marks a journey of growth and development inside the mother's womb. When the necessary nutrients are adequately provided, the baby's growth and development naturally progress well. However, if there are deficiencies or inadequate nutrition during this process, it can lead to problems that may hinder development and have future implications[1]. Children are considered "Underweight" based on anthropometric categories when their Weight-for-Age (WAZ) is between -3 SD and <-2 SD[2]. According to the World Health Organization (WHO), Underweight is when Weight-for-Age (WAZ) is less than minus two[3]. UNICEF, a global organization focused on children, states that one-third of a million children worldwide die due to issues such as underweight.

Inadequate nutrition intake and various infectious diseases directly cause or contribute to children becoming underweight. However, there are also indirect causes such as the accessibility and proximity of health facilities, sanitation, and food availability[4]. Dietary intake, such as insufficient consumption of exclusive breastfeeding and complementary feeding is a significant factor

contributing to underweight in infants. The contribution of breast milk decreases as the child grows older: from 100% at 0-6 months, it reduces to 75% at 6-9 months, further decreasing to 50% at 9-12 months, and drastically drops to 25% from 12-24 months. The lack of breast milk contribution after 6 months necessitates the introduction of nutritious complementary feeding to meet the child's nutritional needs[5].

According to the World Health Organization's report in 2017, globally, the prevalence of children under the age of 5 who are underweight is 14%, which equates to approximately 84.5 million children[6]. According to Report on Result of National Basic Health Research, the prevalence of underweight children in Indonesia was 19.6% in 2013 and decreased to 17.7% in 2018. Meanwhile, according to the Indonesian Nutritional Status Survey, the prevalence of underweight was 19.6% in 2019, decreased to 17% in 2021, and slightly increased to 17.1% in 2022. According to Report on Result of National Basic Health Research 2018, the prevalence of underweight in East Java was 16.8%, while according to Indonesian Nutritional Status Survey in 2022, it was 15.8%. According to data from the Bojonegoro District Health Office, Kanor subdistrict is the second highest area in Bojonegoro in terms of underweight prevalence, at 11.42%[7]. Based on data obtained from a preliminary study conducted at Puskesmas Kanor, there is a prevalence of 7.01% of children under the age of two who are recorded as underweight. Recognizing the importance of providing complementary feeding to children under two years old, especially those with underweight status, researchers are interested in conducting this study in Puskesmas Kanor.

MATERIALS AND METHODS

This study is descriptive research using a cross-sectional design. The research will be conducted from September 2023 to March 2024. The study will take place in the working area of Puskesmas Kanor, Bojonegoro District. The sample size consists of 41 underweight infants. Data collection techniques include primary data such as mother and infant identity information, exclusive breastfeeding history, and complementary feeding practices. Secondary data will include the total number of underweight infants in Puskesmas Kanor. Data analysis will involve univariate descriptive analysis to understand the characteristics of each variable studied.

RESULTS

Characteristics of Respondents

The research results show the characteristics of the study sample as follows: the characteristics of children under two years, with the majority falling within the age range of 12-24 months (87.8%), most of whom are male (61%); and the characteristics of mothers, with the majority having completed high school education (73.2%), most being unemployed/housewives (61%), and

with a family income below the regional minimum wage (UMK) (58.5%). Below is a table summarizing the respondent characteristics:

Tabel 1 Characteristics of Respondents

No.	Variabel	n	%
1	Age Children		
	6-9 month	1	2.4
	9-12 month	4	9.8
	12-24 month	36	87.8
2	Gender of Child		
	Male	25	61
	Female	16	39
3	Mother`s Education		
	Completed SMA/SMK	30	73.2
	University	11	26.8
4	Mother`s Job		
	Unemployed	25	61
	Employed	16	39
5	Family Income		
	<UMK	24	58.5
	≥UMK	17	41.5

Source: Primary Data, 2023

History *Exclusive* Breastfeeding

The research results show the history of exclusive breastfeeding in underweight infants, with two variables: Non-exclusive breast feeding (31.7%) and Exclusive breastfeeding (68.3%). Here is the table of exclusive breastfeeding history.

Tabel 2 History of *Exclusive* Breastfeeding

No.	Variabel	n	%
1	Non-Exclusive Breastfeeding	13	31.7
2	Exclusive Breastfeeding	28	68.3

Source: Primary Data, 2023

Complementary Feeding

The results of the study showed that the provision of complementary feeding to underweight toddlers, most of the category of giving complementary feeding was not appropriate in the category of frequency of giving complementary feeding, there were 31 toddlers (75.6), the number of complementary feeding given was 26 toddlers (63.4%), the texture of giving complementary feeding was 31 toddlers (75.6%), there were variations in giving complementary feeding there were 22 toddlers (53.6%), and the responsiveness of giving complementary feeding there were 24 toddlers (58.5%), while in the category To be precise, most of them were in the first age category for giving complementary feeding, there were 28 toddlers (68.4%) and the cleanliness of giving complementary feeding was 24 toddlers (58.5%).

Tabel 3 Complementary Feeding

Category Complementary Feeding	Incorrect		Correct	
	n	%	n	%
First Age Complementary Feeding - Correct: 6 months - Incorrect: <6 month or >6 month	13	31.7	28	68.4
Frequency Complementary Feeding - Correct: a. 6-9 month: Given 2-3 main meals and 1-2 snacks. b. 9-24 month: Given 3-4 meals, 1-2 kali snacks. - Incorrect: a. 6-9 month: Given fewer or more than 2-3 main meals and 1-2 snacks b. 9-24 month: Provided less or more than 3-4 main meals and 1-2 snacks.	31	75.6	10	24.4
Amount Complementary Feeding - Correct: a. 6-9 month: Start with 2-3 tablespoons and gradually increase to ½ cup (250 ml) b. 9-12 month: ½ to ¾ cup (250 ml). c. 12-24 month: ¾ to 1 cup 250 ml. - Incorrect: a. 6-9 month: No Start with 2-3 tablespoons and gradually increase to ½ cup (250 ml) b. 9-12 month: No ½ to ¾ cup (250 ml). c. 12-24 month: No ¾ to 1 cup 250 ml.	26	63.4	15	36.6
Texture Complementary Feeding - Correct: a. 6-9 month: Thick/thin porridge b. 9-12 month: Minced texture/diced texture c. 12-24 month: Regular texture (family food) - Incorrect: a. 6-9 month: No Thick/thin porridge b. 9-12 month: Minced texture/diced texture d. 12-24 month: No Regular texture (family food)	31	75.6	10	24.4
Variety Complementary Feeding - Correct: a. 6-24 month: In a daily menu, fulfilling the 4 stars which are staple food, animal/plant-based dish, vegetables, and fruits. - Incorrect: a. 6-24 month: No in a daily menu,	22	53.7	19	46.3

Category Complementary Feeding	Incorrect		Correct	
	n	%	n	%
fulfilling the 4 stars which are staple food, animal/plant-based dish, vegetables, and fruits.				
***Responsif* Complementary Feeding** - Correct: a. In introducing complementary feeding the mother feeds the child directly and accompanies them. b. The child is not forced to finish the food if they do not eat it all. c. Praising the child during mealtime. - Incorrect: a. Not accompanying the child during meals. b. Forcing the child to finish their food if they don't finish it. c. Not giving praise or scolding the child if they refuse to eat.	24	58.5	17	41.5
Higyene Complementary Feeding - Correct: a. Before and after preparing or feeding meals, wash hands with clean water. b. Wash all utensils and ingredients with clean water before use. - Incorrect: c. No Before and after preparing or feeding meals, wash hands with clean water. d. No Wash all utensils and ingredients with clean water before use.	17	41.5	24	58.5

Source: Primary Data (2023)

DISCUSSION

History Exclusive Breastfeeding:

From the research results, it is evident that infants who receive exclusive breastfeeding do not necessarily guarantee good nutritional status. In fact, a significant number of infants who receive exclusive breastfeeding are underweight. This is influenced by various factors such as the child's health condition, caregiving practices, economic income, and others[8]. According to Celeste (2019), there are numerous factors that can determine the nutritional status of children, such as food intake and infectious diseases[9].

Complementary Feeding

The First Age Complementary Feeding:

From the research results, it is evident that the majority of infants receive complementary feeding at the appropriate age of 6 months. Infants given complementary feeding at inappropriate ages (either too early or too late) are at risk of various nutritional and health problems. Early introduction of complementary feeding can disrupt the digestive system, leading to issues such as diarrhea in children. Conversely, delaying the introduction of complementary feeding can result in nutritional problems like malnutrition due to long-term insufficient intake. At 6 months of age, a child's nutritional needs cannot be met solely through breastfeeding; additional nutrient-rich foods are necessary. According to Widiastuti et al. (2019), good nutritional status can be achieved when a child's body is healthy and they consume foods rich in nutrients appropriate for their age[10].

Frequency Complementary Feeding:

From the research results, it is evident that most underweight infants have inappropriate main meal and snack frequencies. This is often due to instances where the child refuses to eat movement, where mothers compensate by offering snacks more than twice a day. This practice leads to a reduction in the frequency of main meals or even refusal to eat them altogether. According to Hasanah et al. (2019), children who receive complementary feeding less than twice a day have an 80% likelihood of being underweight. Providing inappropriate frequency of meals contributes significantly to the prevalence of nutritional disorders in toddlers[11].

Amount Complementary Feeding:

From the research results, it is evident that a significant portion of complementary feeding is provided inappropriately. Underweight infants, inappropriate provision of complementary feeding is often due to giving snacks close to main meals, resulting in the child eating only a small amount and not meeting their age-appropriate feeding requirements. According to Subandary (2019), children who receive complementary feeding in quantities that do not correspond to their age have a 3,902 times higher risk of experiencing undernutrition and other nutritional problems[12]. During the period when a child transitions to receiving complementary feeding it is a critical and vulnerable time where the child is at risk of developing malnutrition[13].

Texture Complementary Feeding:

From the research results, it is evident that a significant portion of the texture of complementary feeding is inappropriate. This is often due to many mothers lacking sufficient knowledge about the appropriate texture of complementary feeding according to their child's age. If left unaddressed without further intervention, this can lead to nutritional problems and even oral

motor issues in children, making it difficult for them to progress to more advanced textures. According to Noviadri (2020), the impact of inappropriate texture of complementary feeding includes disturbances in oromotor skills and eating abilities. Additionally, children may develop picky eating habits and experience delayed speech development[14].

Variety Complementary Feeding:

From the research findings, it is evident that the variation in complementary feeding is inappropriate, largely because many children find it difficult to eat vegetables and fruits. As a result, they often consume only rice and side dishes without vegetables or fruits. Allowing this pattern to continue can lead to deficiencies in both macro and micronutrients. According to the PMBA guideline (2020), complementary feeding should consist of 4 main components, referred to as the "4 stars", which include staple foods, animal and plant proteins, vegetables, and fruits. This composition is essential to optimally support the growth and development of children during the golden age period[15.]

Responsif Complementary Feeding:

From the research results, it is evident that the responsiveness in providing complementary feeding is inappropriate, often because some children are forced to finish their meal even if they are not hungry. Children who are frequently pressured to finish their meals are at risk of developing food trauma and a decreased appetite. Therefore, it is crucial not to force children to finish their meals when they are not hungry. According to Berat (2023), children who are fed in a non-responsive or forceful manner, such as pressuring them to finish their meals, can also impact their nutritional status[16].

Hygiene Complementary Feeding:

From the research findings, it is evident that the majority of the hygiene practices during complementary feeding are appropriate. Maintaining cleanliness during complementary feeding feeding has several impacts on children, such as preventing and reducing the prevalence of infectious diseases caused by digestive system disorders and others. According to Merben (2023), in addition to ensuring the appropriateness of frequency, quantity, texture, variety, and responsiveness of complementary feeding, attention to cleanliness during complementary feeding provision is crucial to prevent children from infectious diseases such as diarrhea and gastrointestinal disorders[17].

CONCLUSION

The history of exclusive breast feeding in this study mostly indicates that infants received exclusive breastfeeding. The introduction of complementary feeding in this study mostly indicates that the timing of the first introduction is appropriate. However, the frequency, quantity, texture, variety, responsiveness, and hygiene aspects of feeding are often inappropriate.

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