
Original Articles: Quantitative Research

**COMPARISON OF BODY WEIGHT INFANTS AGED 6 TO 12 MONTHS IN
EXCLUSIVE AND NON-EXCLUSIVE BREASTFEEDING**

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agussulistyowati78@gmail.com**Keywords:**

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Page Number: 119-124**Abstract**

Background: Breast milk is an adequate food for babies in the process of growth and development because its content such as nutrients and protective factors play a role increasing the speed of metabolism and growth thus as to reduce infant morbidity and mortality.

Objective: The purpose of this study was to compare the body weight of infants aged 6-12 months between exclusive and non-exclusive breastfeeding.

Methods: The method used that descriptive-comparative research design. Samples in the study were taken using the Total Sampling method. It was 70 respondents divided into two groups namely exclusive breastfeeding and non-exclusive breastfeeding. The data were taken using a *Kartu Menuju Sehat* (KMS, Standard Growth Charts) and analyzed using the Chi-Square test with a meaning level of 5% ($\alpha=0.05$).

Result: There were 21 (60%) infants with normal body weight that received exclusive breastfeeding and 19 (54.2%) infants with more body weight that received non-exclusive breastfeeding. The results of the hypothesis test using Chi-Square obtained a p-value of 0.006 ($P<0.05$).

Conclusion: The early days of life are very important for infants regarding to their nutrition. Breastfeeding mother need support from the family thus the infants could get exclusive breastfeeding.

INTRODUCTION

Naturally, breast milk is "equipped" with milk-digesting enzymes so that the baby's digestive organs easily digest and absorb breast milk nutrients. On the other hand, the digestive system of early infants does not have enough enzymes to digest food. Exclusive breastfeeding is important for babies because breast milk contains ideal and sufficient nutrients to ensure optimal growth and development until the age of 4 months or even 6 months, both quantitative and qualitative (Nilakesuma et al., 2015). Babies who get other foods such as bananas will only get a lot of carbohydrates so that the nutrients that enter are not balanced as a result the baby will be overweight. Formula milk does not contain enzymes, because enzymes will be easily damaged if heated, in the absence of enzymes, the baby will be difficult to absorb fat, causing more susceptible to disease (Roesli, 2010).

Based on observations at one time in Desa Urangagung, it was found that many mothers worked so that they could not meet the needs of exclusive breastfeeding but chose to use non-exclusive breastfeeding (formula milk) as a substitute and sometimes had been given additional foods such as porridge or bananas so that the baby was full and not whiny. The Ministry of Health targets exclusive breastfeeding coverage of up to 80%. Regionally in East Java in 2020, it was 66.90%. In Sidoarjo in 2020, the coverage of exclusive breastfeeding was 63.35% of cases and the coverage of exclusive breastfeeding was 63.15% in 2021, still below the target of the Ministry of Health (Kemenkes RI 2020).

In the first 1000 days of life babies really need perfect nutrition, where at this time experts also mention the term the golden age to support the process of growth and development. Poor nutritional status will affect disruption in growth and development in the future which has an impact on the generation of the nation's children (Amir et al., 2019). In terms of nutrition, breast milk contains antibodies and protection that affect the prevention of a disease related to the process of growth and development, besides that breast milk also plays a role in the process of growth and development because biologically and physiologically, the highest metabolic and growth speed occurs in this period (Nilakesuma et al., 2015).

METHODS

Study Design

This type of research was descriptive-comparative design.

Settings

This research was conducted in February-March 2023 in Urangagung Village, Sidoarjo Sub-District, Sidoarjo Regency.

Research subject

The population in this study was mothers who had babies of 6-12 months in Urangagung Village, Sidoarjo Sub-District, Sidoarjo Regency with total sampling technique. There were 70 respondents that divided into two groups namely exclusive breastfeeding and non-exclusive breastfeeding.

Instruments

The data on exclusive and non-exclusive breastfeeding was taken using *Kartu Menuju Sehat* (KMS, Standard Growth Charts).

Data collection

The collection procedure was carried out with applying for permission to conduct research to the authority of Urangagung Village, Sidoarjo Sub-District, Sidoarjo Regency. After getting the permission, the researcher determined the population to be used in the researcher was mothers who have babies 6-12 months and willing to be respondents. After approaching the respondent, the

researcher explained the purpose of the research. If the respondent agree to be participated, the researcher will provide an approval sheet (inform consent).

Data Analysis

In this study, Chi Square Test used to compare the infants' body weight between groups with a value of 0.05.

Ethical Consideration

A written request was made to conduct research on the Village Midwife in Urang Agung as the head of the Posyandu (No. 262/SPPD/D/III/2023). The researcher ensured the ethical consideration has been placed including the willingness of participation, anonymity, and confidentiality.

RESULTS

Table 1. Characteristics of Respondents Based on Mothers' Age, Mothers' Education, Mothers' work, and Body Weight of Infants at Urangagung Village, Sidoarjo Sub-District, Sidoarjo Regency on February-March 2023 (n = 70).

Characteristics	Exclusive Breastfeeding		Non-Exclusive Breastfeeding	
	n	%	n	%
Mothers' Age				
20-25 years	10	28.6	8	22.9
26-30 years	15	42.8	12	34.3
31-35 years	10	28.6	15	42.8
Mothers' Education				
Elementary	2	5.7	4	11.4
Junior	11	31.4	8	22.9
High school	12	34.3	14	40
Academy/College	10	28.6	9	25.7
Mothers' Work				
No work	12	34.3	12	34.3
Private/ Self-employed	16	45.7	20	57.1
Civil servants	7	20	3	8.6
Body Weight of Infants				
Less	5	14.3	8	22.9
Normal	21	60	8	22.9
More	9	25.7	19	54.2

Sources: Questionnaire Data, February-March 2023.

As shown on Table 1, the majority of mothers' age in exclusive breastfeeding group was 26-30 years old (42.8%), and the majority of mothers' age in non-exclusive breastfeeding group was 31-35 years old (42.8%). Mothers' education both in exclusive breastfeeding group and non-exclusive breastfeeding group was high school (34.3% and 40%, respectively). Mothers' work in

both exclusive breastfeeding group and non-exclusive breastfeeding group was private/ self-employed (45.7% and 57.1%, respectively). Body weight of infants aged 6 to 12 months on the exclusive breastfeeding group was normal (60%), and body weight of infants aged 6 to 12 months on the non-exclusive breastfeeding group was more (54.2%).

Table 2. Chi-Square Test

	Value	df	Asymptomatic Significance (2-sided)
Pearson Chi-Square	10.091 ^a	2	.006
Likelihood Ratio	10.390	2	.006
Linear-by-Linear Association	1.278	1	.258
N of Valid Cases	70		

a. 0 cells (0.0%) have expected count of less than 5. The minimum expected count is 6.50

Referring to Table 2, the Pearson Chi-Square value was 0.006 that means there was effect of exclusive breastfeeding on body weight infants aged 6 to 12 months.

DISCUSSION

Based on Table 1, there were differences between exclusive and non-exclusive breastfeeding on body weight of infants 6-12 months old. For exclusive breastfeeding, most of the normal weight was 21 respondents (60%) and non-exclusive breastfeeding was mostly by more weight as many as 19 respondents (54.2%). The infants who are exclusively breastfed, their nutritional needs obtained are in accordance with those needed in the baby's body; while infants who are fed formula milk get excess nutrition than the body needs both because the content of formula milk is fatter than protein (Saputro, 2017).

Based on the results of the Chi-square test, there was a significant difference body weight of infants aged 6 to 12 months between exclusive and non-exclusive breastfeeding. The results of this study are in accordance with the results of the research (Febrianti, 2019) that there is a significant difference between exclusive and non-exclusive breastfeeding on body weight. Exclusive breastfeeding provides a role with relative nutrition and the benefits obtained are very many, among others, because the baby will get adequate nutrition and immunity from various diseases (IDAI 2010). Based on another study that conducted in Palembang (Saswita, R. and Dian, 2019), there was a difference body weight between exclusive and non-exclusive breastfeeding that the whey protein content of 60% in breast milk is known to increase muscle mass. Changes in body weight in formula milk result in inappropriate growth and development because formula milk contains high sugar lactose which often results in

excessive weight in children and formula milk also often causes allergies because there are nutrients in formula milk that are not suitable so that it often interferes with children's growth (IDAI 2010).

LIMITATION

There is no limitation in this study.

CONCLUSION

The initial stages of life are crucial for infants in terms of their nutritional needs. Breastfeeding mother need support from the family thus the infants could get exclusive breastfeeding.

AUTHOR CONTRIBUTION

Agus Sulistyowati: Conceptualization, methodology, writing-review and editing, writing-original drafts supervision

Dini Prasetyo Wijayanti: Visualization, and project administration.

Faida Annisa: Software, and writing in English.

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Agus Sulistyowati : None.

Dini Prasetyo Wijayanti : None.

Faida Annisa : None.

CONFLICT OF INTEREST

There is no conflict of interest in this study.

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