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The Relationship Between Breastfeeding Position and the Occurrence of Regurgitation In Infants Aged 0-6 Months

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ABSTRACT

One of the problems in the breastfeeding process is regurgitation. Efforts to prevent regurgitation include training in the proper breastfeeding technique. Hold the baby upright so that the air swallowed while sucking can be released. This research analyzes the relationship between breastfeeding position and the occurrence of regurgitation in infants aged 0-6 months in Songgokerto village, Batu city. This study is designed as quantitative research with a cross-sectional approach and uses a post-test only study. Therefore, all mothers with children aged 0-6 months in the Songgokerto sub-district became respondents in this study. The sample size in this study was 30 mothers who have infants aged 0-6 months who experience regurgitation. Univariate data analysis and bivariate analysis with anova test and linear regression test analysis. Analysis result of t count > t table, which is -2.918 > -2.056. This means that there is a significant relationship between Breastfeeding Position and the Occurrence of Regurgitation. The statistical analysis result shows that F count > F table, which is 33.305 > 2.975. This indicates a significant relationship between the variable Breastfeeding Technique (X) and Occurrence of Regurgitation (Y). The analysis result of the R-squared value for variable X (Breastfeeding Position) is 0.794, meaning that the breastfeeding position affects the occurrence of regurgitation by 79.4%, while the remaining 20.6% is influenced by other factors not studied. The significant relationship between breastfeeding position and the occurrence of regurgitation.

1. INTRODUCTION

The early stages of an infant's life, particularly at the ages of 0 to 6 months, represent a critical period in the growth and development of the digestive system. During this time, infants still have an immature gastroesophageal reflex, making them susceptible to regurgitation, which is the return of stomach contents to the esophagus that often appears like vomiting. Although considered normal in most infants, excessive regurgitation can lead to discomfort, weight loss, and even anxiety for parents. Breast milk contains essential nutrients for the growth and development of the baby, as well as immune substances that protect the baby from diseases. One of the issues that babies face while breastfeeding is reflux (Regurgitation). One factor that is suspected to influence the occurrence of regurgitation

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is the breastfeeding position. The position of the baby while breastfeeding can affect the process of air entering the stomach, intra-abdominal pressure, and the smooth flow of breast milk. Knowledge about the correct breastfeeding position is very important to reduce the risk of regurgitation and improve the quality of breastfeeding.

Reflux, or commonly referred to by the medical term Regurgitation, is the return of ingested breast milk after feeding. Regurgitation is a natural occurrence, especially during the first six months of age. Reflux is a normal condition that often occurs in babies under six months old. As the baby ages, particularly after six months, reflux (regurgitation) is experienced less frequently (Nursalam et al., 2018).

The frequency of regurgitation is about 25% for those who regurgitate more than 4 times at the beginning of birth, and half of newborns experience regurgitation 1-4 times daily until they are 90 days old. 30% of mothers feel anxious when their babies regurgitate breast milk, where tension is associated with recurrence (66%) and the amount of regurgitation (9%) (IDAI, 2022).

Regurgitation is a natural occurrence, especially during the first 6 months of age. Regurgitation is a common physiological condition in infants, particularly those aged 0-6 months, due to an immature digestive system. One of the contributing factors to the occurrence of regurgitation is improper breastfeeding positions. Efforts to prevent regurgitation include training on proper breastfeeding techniques. Ensure the baby can expel any air swallowed while nursing (Samsurii, 2019). Additionally, providing an upright position (Marlean, 2020). Babies are less likely to experience regurgitation when breastfed in a more upright position, making it more difficult for breast milk to flow back easily.

2. METHODE

This study is designed as quantitative research with a cross-sectional approach and uses a post-test only design where the independent and dependent variables are observed only once at the same time. The sample in this study consisted of 30 respondents using a total sampling technique, where all mothers with infants aged 0-6 months in the Songgokerto village were respondents in this research. This type of research is chosen considering that the goals to be achieved include efforts to explain the relationships and influences that are the questionnaire as a primary data collection tool.

Data analysis is the activity that takes place after data from all respondents or other data sources has been collected. The activities in data analysis include grouping data based on variables and types of respondents, presenting data for each variable studied, and performing calculations to test the proposed hypotheses (Sugiono, 202). Simple linear regression analysis is a linear relationship between the independent variable (X) and the dependent variable (Y). This analysis is used to determine the direction of the relationship between the independent variable and the dependent variable, whether the independent variable is positively or negatively related, and to predict the value of the dependent variable when the value of the independent variable increases or decreases. The data used is usually on an interval or ratio scale.

The linear model used is:

$Y = a + b1X1 + e$

Where:

Y = Dependent variable

a =Price of Y when X = 0 (constant price)

b =Regression coefficient directional number

X =Independent variable testing is conducted with the formula:

$t = r \frac{\sqrt{n}-2}{\sqrt{1}-r2}$

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a. t calculated > t0.05 means that the independent variable in this case, breastfeeding position (X) has a significant relationship or influence on the occurrence of regurgitation (Y) in Songgokerto village, Batu city.

b. t calculated < t0.05 means that the independent variable in this case, breastfeeding position (X), does not have a significant relationship or influence on the occurrence of regurgitation (Y) in Songgokerto village, Batu city.

The hypothesis of the relationship between the independent variable and the dependent variable can be tested using regression analysis.

a. If F> F0.05, it means that the independent variable significantly affects the dependent variable simultaneously.
b. If F ≤ F0.05, it means the independent variable does not significantly affect the dependent variable.

3. RESULTS AND DISCUSSION

Characteristics of the Research Subject.

This research, conducted in the working area of Songgokerto village in Batu city from February to June 2025, took a sample of 30 mothers with babies aged 0-6 months who experienced regurgitation, with general data presented as follows: **General Description**

Table 1.1 Characteristics of Respondents Based on Age

No	Age (years)	n	Percentage (%)
1	≤20	3	10.00
2	21 – 35	22	73.33
3	>35	5	16.67
	Total	30	100.00

The characteristics of the respondents show that the majority of the respondents used in this study are aged 21 – 35 years, which accounts for 73.33% (22 people), while the rest, 16.67% (5 people), are over 35 years old, and a small portion ≤20 years old, which accounts for 10.00% (3 people).

Table 1.2 Characteristics of Respondents Based on Education

No	Age (years)	n	Percentage(%)
1	Higher Education	5	16.67
2	Senior high school	13	43.33
3	Junior high school	10	33.33
4	Elementary school	2	6.67
	total	30	100.00

The characteristics of the respondents indicate that the majority of respondents used in this study are high school graduates, accounting for 43.33% (13 people), followed by junior high school graduates at 33.33% (10 people), college graduates at 16.67% (5 people), and 6.67% (2 people) are elementary school graduates.

Table 1.3 Characteristics of Respondents Based on the Gender of the Baby

No	Gender	n	Percentage (%)
1	Male	18	60.00
2	Female	12	40.00
	total	30	100.00

The characteristics of the respondents indicate that the respondents used in this study mostly have male babies, which account for 60.00% (18 people), while the remaining have female babies, accounting for 40.00% (12 people).

Table 1.4 Characteristics of Respondents Based on Infant Age

No	Age (years)	n	Percentage(%)
1	0	4	13.33

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2	1	3	10.00
3	2	5	16.67
4	3	6	20.00
5	4	1	3.33
6	5	6	20.00
7	6	5	16.67
	total	30	36.67

The characteristics of the respondents above show that the majority of the respondents used in this study have babies aged 3 months and 5 months, each accounting for 20.00% (6 people). The rest have babies aged 2 months and 6 months, each accounting for 16.67% (5 people), have babies aged 0 months at 13.33% (4 people), have babies aged 1 month at 10.00% (3 people), and 3.33% (1 person) are aged 4 months.

1.) Special Data

Based on the descriptive statistical analysis of the Breastfeeding Position variable (X) and the Occurrence of Regurgitation (Y) as shown in the table below:

Table 2.1 The average value of the breastfeeding position variable (X), the incidence of regurgitation (Y)

No	Variabel	Rata-rata	Ter-kecil	Ter-besar	Standar Deviasi
1	Posisi Menyusui (X2)	7.27	4	9	1.51
2	Kejadian Gumoh (Y)	4.70	3	8	1.76

Based on Table the average of the Breastfeeding Position variable (X) is 7.27 with a minimum value of 4 and a maximum value of 9, with a standard deviation of 1.51, and the average of the Regurgitationing Incident variable (Y) is 4.70 with a minimum value of 3 and a maximum value of 8, with a standard deviation of 1.76.

Table 2.2 of the calculated F value analysis on the relationship between breastfeeding position and the occurrence of regurgitation

Sumber Variabel	Jumlah Kuadrat	Derajat Bebas	Kuadrat Tengah	F $_{hitung}$	F_{tabel} (0,05)
Regresi	71.654	3	23.885	33.305	2.975
Galat	18.646	26	0.717		
Total	90.300	29			

From the results of the descriptive statistical analysis of the variables above, it can be seen that there is a significant relationship between the use of a pacifier, breastfeeding position, and burping technique with the occurrence of regurgitation, as evidenced by the calculated F value being greater than the table F value, i.e., 33.305 > 2.975.

Table 2.3 The value of the t-test analysis on the relationship between breastfeeding position and the occurrence of regurgitation.

Variabel	R	R Square	t_{hitung}	t_{tabel} (0,05)
X	0.891	0.794	5.344 -2.918 -2.370	2.056

From the results of the descriptive analysis of the variables above, it can be seen that there is a significant relationship between the breastfeeding position and the incidence of regurgitation, evidenced by the value of variable X (Breastfeeding Position), where the calculated t is greater than the table t, namely -2.918 > -2.056. The R-squared value of variable X is 0.794, which means that the Breastfeeding Position (X) affects the Incidence of Regurgitation (Y) by 79.4%, while the remaining 20.6% is influenced by other factors not studied.

DISCUSSION

Data analysis regarding the relationship between the use of a sling, breastfeeding positions, and burping techniques with the incidence of regurgitation, where based on the regression ANOVA table the value for variable X (Breastfeeding Position) shows that the t-value obtained is greater than the t-table value, which is -2.918 > -2.056, indicating a significant relationship between breastfeeding positions and the incidence of

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regurgitation in infants aged 0-6 months in the Songgokerto sub-district, Batu city. According to Rizki Natia Wiji, 2023, it is stated that a good breastfeeding position should have the baby held with one arm, the baby's head placed at the curve of the mother's elbow, and the baby's bottom placed on the arm. The baby's head should not be tilted back, and the baby's bottom should be supported with the mother's palm, the baby's stomach should be against the mother's body, the baby's head facing the breast, and the baby's ears and arms should be in a straight line.

The results of the research above are supported by the statement of Purnamaningrum (2020), which states that regurgitation occurs in infants because the valve between the stomach and the esophagus (throat) is not yet perfect, where one of the causes is the improper breastfeeding position. The mother's incorrect position while breastfeeding, such as not using a pillow to support the baby's body, the ear and arm not being in a straight line, and the baby's head leaning back, makes the baby swallow air while breastfeeding, thus causing the baby to experience regurgitation. The same thing is stated by Widyastuti (2022) that babies will experience regurgitation less frequently if breastfed in the correct position, such as a more upright position, with the ear and arm on a straight line, and the baby's head not leaning back, so that breast milk does not flow back easily. Burping the baby shortly after breastfeeding and giving breast milk little by little but frequently can usually help to address regurgitation.

Khasanah (2021) also added that to support the success of breastfeeding in infants, mothers need to understand the correct breastfeeding positions, which can reduce the occurrence of regurgitation in babies. One of the causes of breastfeeding failure is due to the mother's mistake in positioning and placing the baby while breastfeeding. Breastfeeding can be done in several positions. The common breastfeeding positions include sitting, standing, or lying down. Although breastfeeding skills can be naturally mastered, mothers still need to understand the correct breastfeeding position. The results of the above study are also supported by research conducted by Vembrianna (2022) titled "The Relationship Between Breastfeeding Technique and the Occurrence of Regurgitation in Infants Aged 0-6 Months," which concluded that there is a relationship between breastfeeding methods and the occurrence of regurgitation in infants aged 0-6 months with a p-value of 0.002 < 0.05.

4. CONCLUSION

The results show that there is a relationship between breastfeeding position and the occurrence of Regurgitation. The significance value indicates that this combination of variables is statistically related to an increased likelihood of Regurgitation; these factors should be considered in efforts to prevent Regurgitation. It is recommended to provide counseling and health education for mothers with infants aged 0-6 months, such as the correct breastfeeding position. Healthcare workers are expected to provide comprehensive education regarding safe and comfortable breastfeeding positions during the postpartum period, both in health service facilities and during home visits. It is recommended for other researchers to conduct further studies with a larger sample size and to consider other factors such as breastfeeding frequency, breastfeeding duration, and the medical conditions of the infants that may affect regurgitation. In addition, the use of direct observation methods can enhance the validity of the results.

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