

## The relationship between providing a balanced menu and the incidence of stunting in toddlers in Lembar Selatan village

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### ABSTRACT

**Background:** Stunting is a condition of growth failure in toddlers due to chronic malnutrition, repeated infections, and inadequate stimulation, characterized by a height that is lower than the standard for their age (Z-score  $<-2$  SD). Stunting affects learning achievement, cognitive development, and physical growth. Stunting also increases the risk of non-communicable diseases, including diabetes and heart disease, in adulthood.

**Objectives:** This research aims to determine the relationship between the frequency of stunting in toddlers in South Lembar Village, Lembar District, West Lombok Regency and the availability of balanced nutrition. Stunting is a health issue that may adversely affect physical growth, cognitive development, and future productivity. Factors contributing to stunting include insufficient dietary intake, infections, inadequate sanitation, and socio-economic conditions.

**Methods:** The used research technique is observational analytic using a cross-sectional strategy. The research sample included 213 moms of toddlers. Data were gathered via questionnaires about maternal attributes, feeding practices, and the nutritional health of children.

**Results:** Bivariate analysis using the Chi-Square test revealed a significant association between the provision of a balanced food ( $p = 0.017$ ), supplementary feeding ( $p = 0.009$ ), and exclusive nursing ( $p = 0.000$ ) and the nutritional status of toddlers.

**Conclusions:** The study's findings underscore the significance of adequate nutrition for toddlers in mitigating stunting. Consequently, enhancing parental education on good eating habits and improving availability to nutritious food is essential to mitigate stunting rates in Indonesia.

**KEYWORD:** balanced nutrition; exclusive breastfeeding; complementary feeding; stunting; toddlers

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## INTRODUCTION

Stunting is a condition of growth failure in toddlers due to chronic malnutrition, repeated infections, and inadequate stimulation, characterized by a height that is lower than the standard for their age (Z-score  $<-2$  SD). In addition to impacting physical growth, stunting also affects cognitive development, learning achievement, and increases the risk of non-communicable diseases in adulthood, such as diabetes and heart disease. This condition not only harms individuals, but also reduces community productivity and increases the country's economic burden due to high health costs(1).

Stunting is still a global and national problem. WHO sets the threshold for stunting at 20% of the total toddlers. Asia is the largest contributor with 55% of cases, followed by Africa (39%). Indonesia is the fifth country with the highest prevalence of stunting after India, China, Nigeria, and Pakistan. Based on the Indonesian Nutritional Status Survey (SSGI), the prevalence of stunting in Indonesia decreased from 24.4% in 2021 to 21.6% in 2022, but is still below the annual target of 3.4% to reach 14% in 2024(2).

The factors causing stunting are very complex, including inadequate nutritional intake, infectious diseases, less than optimal parenting patterns, poor sanitation, and socio-economic factors such as poverty and low parental education(3). The direct causes are lack of nutritious food consumption and repeated infections that inhibit nutrient absorption, while indirect causes include

poverty, poor sanitation, and lack of nutrition education and access to health services. The causes of stunting can be controlled through preventive efforts.

One of the efforts to prevent stunting is to fulfill optimal nutrition through the provision of vitamin A, deworming drugs, balanced menus, complementary feeding, and exclusive breastfeeding. Vitamin A plays an important role in bone growth and the immune system, so its deficiency can inhibit a child's growth (4). Giving deworming medication is also important because worm infections can interfere with nutrient absorption and cause malnutrition which leads to stunting(5).

Providing a balanced menu with sufficient nutrient intake is crucial to support child growth. A healthy diet plays a role in optimal nutritional status, while a lack of variety and appropriate amounts of food can worsen the risk of stunting. Complementary feeding given since the age of six months also greatly affects child growth. The quality, quantity, and cleanliness of complementary feeding must be considered, because poor sanitation can cause gastrointestinal infections that affect child growth. Providing complementary feeding before the age of six months increases the risk of diarrhea and food allergies, while delays in providing complementary feeding can cause malnutrition(6).

Exclusive breastfeeding for the first six months of life plays an important role in preventing stunting, because it contains all the nutrients that toddlers need. WHO and UNICEF recommend exclusive

breastfeeding for six months, followed by complementary feeding until the age of two years. Breast milk plays a role in reducing the risk of infection, increasing cognitive intelligence, and strengthening the emotional bond between mother and child(7).

However, the practice of providing vitamin A, anthelmintic, balanced menus, complementary feeding, and exclusive breastfeeding is still not optimal. Many toddlers receive complementary feeding too early or too late, the coverage of vitamin A and deworming medicine is still low, and exclusive breastfeeding is still far from the target. Economic factors, lack of nutrition education, and limited access to health services are the main obstacles in efforts to prevent stunting. Therefore, a more effective strategy is needed to increase public awareness and expand the reach of nutrition programs to reduce stunting rates in Indonesia.

A preliminary study conducted in Lembar Selatan Village found that mothers who have toddlers do not understand the importance of vitamin A, giving anthelmintic, giving a balanced menu, giving additional food, exclusive breastfeeding. They still give complementary foods, such as bananas and sweet tea even though the baby is less than six months old. They give less varied food or a monotonous menu. In addition, there are toddlers who do not get vitamin A and anthelmintic. This will certainly have an impact on the growth and development of children which is disrupted and not optimal for their age.

Based on these explanations, researchers are interested in further examining the relationship between providing a balanced menu and the incidence of stunting in toddlers in Lembar Selatan, Lembar District, West Lombok Regency.

## **MATERIALS AND METHODS**

This study is an analytical observational study, to determine the effect of independent variables on dependent variables, that is the relationship between providing a balanced menu and the incidence of stunting in toddlers. Research time from November-December 2024. The population was all mothers who had toddlers in Lembar Selatan Village, Lembar District, West Lombok Regency, totaling 213 people. The sample consisted of a portion of the accessible population that could be used as research subjects through sampling, which is the process of selecting a population that can represent the existing population. The sampling technique used simple random sampling, namely by randomly selecting a sample of 213 people.

The variables in this study include independent variables, namely maternal education, maternal job, income, provision of vitamin A, provision of deworming medicine, provision of a balanced menu, provision of complementary feeding, provision of exclusive breastfeeding and the dependent variable, namely the nutritional status of toddlers. The data analysis used was the Kruskal-Wallis test as an alternative of Chi-

Square test because the data was categorical.

## RESULTS AND DISCUSSION

### RESULTS

Based on the results of data collection, the research results were obtained in the form of respondent characteristics as follows.

**Table 1. Respondent Characteristics**

| Characteristics         | n   | %    |
|-------------------------|-----|------|
| Mother's education      |     |      |
| Bachelor                | 11  | 5.2  |
| Senior High School      | 83  | 39   |
| Junior High School      | 71  | 33.3 |
| Elementary School       | 32  | 15   |
| No Education            | 16  | 7.5  |
| Mother's Job            |     |      |
| Farmer                  | 11  | 5.2  |
| Self-employed           | 28  | 13.1 |
| Laborer                 | 5   | 2.3  |
| Government employees    | 7   | 3.3  |
| Others                  | 162 | 76.1 |
| Income                  |     |      |
| Enough                  | 166 | 77.9 |
| Not enough              | 47  | 22.1 |
| Vitamin A               |     |      |
| Given                   | 210 | 98.6 |
| Not given               | 3   | 1.4  |
| Anthelmintic            |     |      |
| Given                   | 207 | 97.2 |
| Not given               | 6   | 2.8  |
| Balanced Menu           |     |      |
| Given                   | 188 | 88.3 |
| Not given               | 25  | 11.7 |
| Complementary Feeding   |     |      |
| >6 months               | 188 | 88.3 |
| <6 months               | 25  | 11.7 |
| Exclusive breastfeeding |     |      |
| Yes                     | 188 | 88.3 |
| No                      | 25  | 11.7 |

|                            |            |            |
|----------------------------|------------|------------|
| Toddler nutritional status |            |            |
| Normal                     | 118        | 55.4       |
| High                       | 6          | 2.8        |
| Short                      | 79         | 37.1       |
| Very short                 | 10         | 4.7        |
| <b>TOTAL</b>               | <b>213</b> | <b>100</b> |

Based on the **Table 1** results of the study, most respondents had a high school education of 83 people (39%), worked in other fields of 162 people (76.1%), had sufficient income of 166 people (77.9%), were given vitamin A of 210 people (99.6%), were given deworming medicine of 207 people (97.2%), were given a balanced menu of 188 people (88.3%), were given MP-ASI >6 months of 188 people (88.3%), were given exclusive breastfeeding of 188 people (88.3%), and the nutritional status of toddlers was normal of 118 people (55.4%).

### The Relationship Between Mother's Education and Toddler Nutritional Status

The relationship between mother's education and toddler nutritional status showed in **Table 2**.

Based on **Table 2**, the results of the study illustrate that most mothers who graduated from higher education had normal toddler nutritional status of 5 children (45.5%) out of 11 children, mothers who graduated from high school had normal toddler nutritional status of 46 children (55.4%) out of 83 children, mothers who graduated from junior high school had normal toddler nutritional status of 39 children (54.9%) out of 71 children, mothers who graduated from elementary

**Table 2. The relationship between mother's education and toddler nutritional status**

| Mother's Education | Toddler Nutritional Status |            |              |             |               | p-value |
|--------------------|----------------------------|------------|--------------|-------------|---------------|---------|
|                    | Normal                     | High       | Short        | Very Short  | Total         |         |
| Bachelor           | 5<br>45.50%                | 1<br>9.10% | 3<br>27.30%  | 2<br>18.20% | 11<br>100.00% | 0.577   |
| Senior High School | 46<br>55.40%               | 2<br>2.40% | 31<br>37.30% | 4<br>4.80%  | 83<br>100.00% |         |
| Junior High School | 39<br>54.90%               | 1<br>1.40% | 30<br>42.30% | 1<br>1.40%  | 71<br>100.00% |         |
| Elementary School  | 19<br>59.40%               | 1<br>3.10% | 10<br>31.20% | 2<br>6.20%  | 32<br>100.00% |         |
| No education       | 9<br>56.20%                | 1<br>6.20% | 5<br>31.20%  | 1<br>6.20%  | 16<br>100.00% |         |

school had normal toddler nutritional status of 19 children (59.4%) out of 32 children, and mothers who did not attend school had normal toddler nutritional status of 9 children (56.2%) out of 16 children.

Based on the results of statistical tests, there was no relationship between maternal education and toddler nutritional status.

### **The Relationship Between Mother's Job and Toddler Nutritional Status**

The relationship between mother's job and toddler nutritional status showed in the following table.

Based on **Table 3**, the results of the study with 213 respondents illustrate that most mothers who work as farmers have

**Table 3. The relationship between mother's job and toddler nutritional status**

| Mother's Job        | Toddler Nutritional Status |             |              |             |                | p-value |
|---------------------|----------------------------|-------------|--------------|-------------|----------------|---------|
|                     | Normal                     | High        | Short        | Very Short  | Total          |         |
| Farmer              | 5<br>45.50%                | 1<br>9.10%  | 4<br>36.40%  | 1<br>9.10%  | 11<br>100.00%  | 0.244   |
| Self-employee       | 16<br>57.10%               | 1<br>3.60%  | 9<br>32.10%  | 2<br>7.10%  | 28<br>100.00%  |         |
| Laborer             | 2<br>40.00%                | 1<br>20.00% | 1<br>20.00%  | 1<br>20.00% | 5<br>100.00%   |         |
| Government employee | 6<br>85.70%                | 0<br>0.00%  | 1<br>14.30%  | 0<br>0.00%  | 7<br>100.00%   |         |
| Others              | 89<br>54.90%               | 3<br>1.90%  | 64<br>39.50% | 6<br>3.70%  | 162<br>100.00% |         |

normal toddler nutritional status of 5 children (45.5%) out of 11 children, mothers who work as traders have normal toddler nutritional

status of 16 children (57.1%) out of 28 children, mothers who work as laborers have normal toddler nutritional status of 2 children

(40.0%) out of 5 children, mothers who work as civil servants have normal toddler nutritional status of 6 children (85.7%) out of 7 children, and mothers who work in other fields have normal toddler nutritional status of 89 children (54.9%) out of 162 children. Based on the results of statistical tests, there is no relationship between the mother's job and the nutritional status of toddlers. This is proven by the p value = 0.244 ( $p > 0.05$ ).

#### Relationship Between Mother's Income and Toddler Nutritional Status

The relationship between mother's income and toddler nutritional status showed in the following table. Based on **Table 4**, the results of the study with 213 respondents illustrate that most mothers who have sufficient income have normal toddler nutritional status of 93 children (56.0%) out of 166 children and mothers who do not have sufficient income have normal toddler

nutritional status of 25 children (53.2%) out of 47 children.

Based on the results of statistical tests, there is no relationship between maternal income and toddler nutritional status. This is proven by the p value = 0.166 ( $p > 0.05$ ).

#### The Relationship Between Vitamin A Provision and Toddler Nutritional Status

The relationship between vitamin A provision and toddler nutritional status showed in the following table.

Based on **Table 5**, the results of the study with 213 respondents illustrate that most mothers who give vitamin A to their children have normal toddler nutritional status, as many as 117 children (55.7%) out of 210 children and mothers who do not give vitamin A to their children have normal toddler nutritional status, as many as 1 child (33.3%) out of 3 children. Based on the results of statistical tests, there is a relationship

**Table 4. Relationship between mother's income and toddler nutritional status**

| Income     | Toddler Nutritional Status |            |              |            |                | p-value |
|------------|----------------------------|------------|--------------|------------|----------------|---------|
|            | Normal                     | High       | Short        | Very Short | Total          |         |
| Enough     | 93<br>56.00%               | 3<br>1.80% | 64<br>38.60% | 6<br>3.60% | 166<br>100.00% | 0.166   |
| Not Enough | 25<br>53.20%               | 3<br>6.40% | 15<br>31.90% | 4<br>8.50% | 47<br>100.00%  |         |

**Table 5. The relationship between vitamin a provision and toddler nutritional status**

| Vitamin A Provision | Toddler Nutritional Status |             |              |             |                | p-value |
|---------------------|----------------------------|-------------|--------------|-------------|----------------|---------|
|                     | Normal                     | High        | Short        | Very Short  | Total          |         |
| Given               | 117<br>55.70%              | 5<br>2.40%  | 78<br>37.10% | 10<br>4.80% | 210<br>100.00% | 0.015   |
| Not given           | 1<br>33.30%                | 1<br>33.30% | 1<br>33.30%  | 0<br>0.00%  | 3<br>100.00%   |         |

between mothers who give vitamin A to their children and the nutritional status of toddlers. This is proven by the p value = 0.015 ( $p < 0.05$ ).

#### The Relationship Between Deworming and Toddler Nutritional Status

The relationship between anthelmintic provision and toddler nutritional status showed in the following table. Based on **Table 6**, the results of the study with 213 respondents illustrate that most mothers who gave their children deworming medicine had normal toddler nutritional status, as many as 116 children (56.0%) out of 207 children and mothers who did not give their children deworming medicine had normal toddler nutritional status, as many as 2 children (33.3%) out of 6 children.

Based on the results of statistical tests, there was no relationship between mothers who gave their children deworming medicine

and toddler nutritional status. This is proven by the p value = 0.084 ( $p > 0.05$ ).

#### The Relationship Between Providing a Balanced Menu and Toddler Nutritional Status

The relationship between balanced menu provision and toddler nutritional status showed in the following table. Based on **Table 7**, the results of the study with 213 respondents illustrate that most mothers who provide a balanced menu to their children have normal toddler nutritional status, as many as 109 children (58.0%) out of 188 children and mothers who do not provide a balanced menu to their children have short toddler nutritional status, as many as 11 children (44.0%) out of 25 children.

Based on the results of statistical tests, there is a relationship between mothers who provide a balanced menu to their children and the nutritional status of toddlers. This is

**Table 6. The relationship between anthelmintic provision and toddler nutritional status**

| Anthelmintic Provision | Toddler Nutritional Status |             |              |             |                | p-value |
|------------------------|----------------------------|-------------|--------------|-------------|----------------|---------|
|                        | Normal                     | High        | Short        | Very Short  | Total          |         |
| Given                  | 116<br>56.00%              | 5<br>2.40%  | 77<br>37.20% | 9<br>4.30%  | 207<br>100.00% | 0.084   |
| Not given              | 2<br>33.30%                | 1<br>16.70% | 2<br>33.30%  | 1<br>16.70% | 6<br>100.00%   |         |

**Table 7. The relationship between balanced menu providing and toddler nutritional status**

| Balanced menu | Toddler Nutritional Status |            |              |             |                | p-value |
|---------------|----------------------------|------------|--------------|-------------|----------------|---------|
|               | Normal                     | High       | Short        | Very Short  | Total          |         |
| Given         | 109<br>58.00%              | 5<br>2.70% | 68<br>36.20% | 6<br>3.20%  | 188<br>100.00% | 0.017   |
| Not given     | 9<br>36.00%                | 1<br>4.00% | 11<br>44.00% | 4<br>16.00% | 25<br>100.00%  |         |

proven by the p value = 0.017 ( $p < 0.05$ ).

### The Relationship Between Complementary Foods Provision and Toddler Nutritional Status

The relationship between complementary foods provision and toddler nutritional status showed in the following table. Based on **Table 8**, the results of the study with 213 respondents illustrate that most mothers who provide complementary feeding to their children > 6 months have normal toddler nutritional status of 110 children (58.5%) out of 188 children and mothers who do not provide complementary feeding < 6 months to their children have short toddler nutritional status of 12 children (48.0%) out of 25 children.

Based on the results of statistical tests, there is a relationship between mothers who provide complementary feeding to their

children and the nutritional status of toddlers. This is proven by the p value = 0.009 ( $p < 0.05$ ).

### The Relationship Between Exclusive Breastfeeding And Toddler Nutritional Status

The relationship between exclusive breastfeeding and toddler nutritional status showed in the following table. Based on **Table 9**, the results of the study with 213 respondents illustrate that most mothers who provide exclusive breastfeeding to their children have normal toddler nutritional status, as many as 112 children (59.6%) out of 188 children and mothers who do not provide exclusive breastfeeding to their children have short toddler nutritional status, as many as 13 children (52.0%) out of 25 children. Based on the results of statistical tests, there is a relationship between mothers

**Table 8. The relationship between complementary foods provision and toddler nutritional status**

| Complementary Foods Provision | Toddler Nutritional Status |            |              |             |                | p-value |
|-------------------------------|----------------------------|------------|--------------|-------------|----------------|---------|
|                               | Normal                     | High       | Short        | Very Short  | Total          |         |
| >6 bulan                      | 110<br>58.50%              | 5<br>2.70% | 67<br>35.60% | 6<br>3.20%  | 188<br>100.00% | 0.009   |
| <6 bulan                      | 8<br>32.00%                | 1<br>4.00% | 12<br>48.00% | 4<br>16.00% | 25<br>100.00%  |         |

**Table 9. The relationship between exclusive breastfeeding and toddler nutritional status**

| Exclusive Breastfeeding | Toddler Nutritional Status |             |              |             |                | p-value |
|-------------------------|----------------------------|-------------|--------------|-------------|----------------|---------|
|                         | Normal                     | High        | Short        | Very Short  | Total          |         |
| Yes                     | 112<br>59.60%              | 3<br>1.60%  | 66<br>35.10% | 7<br>3.70%  | 188<br>100.00% | 0       |
| No                      | 6<br>24.00%                | 3<br>12.00% | 13<br>52.00% | 3<br>12.00% | 25<br>100.00%  |         |

who provide exclusive breastfeeding to their children and the nutritional status of toddlers. This is proven by the  $p$  value = 0.000 ( $p < 0.05$ ). Based on the results of statistical tests, there is no relationship between the mother's job and the nutritional status of toddlers. This is proven by the  $p$  value = 0.244 ( $p > 0.05$ ).

## DISCUSSION

### Respondent Characteristics

Based on the results **Table 1** of the study, most respondents had a high school education of 83 people (39%). The level of education plays an important role in understanding children's health and nutrition. Education helps individuals obtain better information related to health. Mothers with higher education have a better understanding of parenting patterns and child nutrition. This is supported by research Husnaniyah et al. (2020) which states that highly educated mothers are more aware of the importance of nutritious food and infection prevention, thus contributing to optimal child growth(9).

The majority of respondents work in other fields, which can affect the incidence of stunting. Father's employment is related to family income, which determines access to nutritious food and health services. Mother's employment also affects childcare patterns. According to the previous study(10), children who are cared for directly by their mothers receive more attention, including in fulfilling their nutrition. In addition, work factors

influence a person's insight, where individuals who work have wider access to health information(11).

Most respondents have sufficient income, which is closely related to the family's ability to meet the child's nutritional needs. According to previous study (12), families with sufficient income are better able to provide nutritious food compared to those with low incomes. Family income affects purchasing power for food and affects the nutritional status of children under five years old(13).

The high vitamin A provision in this study shows the effectiveness of the supplementation program in the study area. Vitamin A plays an important role in bone growth and the child's immune system. Vitamin A deficiency can cause growth disorders that contribute to stunting. This is in line with research (14) which shows that the coverage of vitamin A provision is high in areas with good supplementation programs. Routine vitamin A provision helps increase bone matrix production and prevents growth retardation(15).

The majority of toddlers in this study had also received deworming medication, which is an important step in preventing parasitic infections that can inhibit nutrient absorption. Compliance in administering deworming medication is influenced by the role of health workers and parental awareness. Previous study (16) found that routine deworming can reduce the prevalence of worm infections and contribute to preventing

stunting. The mother's education factor also influences awareness of deworming in children(17).

Providing complementary foods after the age of six months also shows high awareness among mothers(18). The majority of toddlers in this study had also received exclusive breastfeeding for the first six months. WHO recommends exclusive breastfeeding as the main strategy in preventing stunting. Breast milk contains all the nutrients babies need, increases immunity, and supports cognitive development (19).

### **The Relationship Between Mother's Education and Toddler Nutritional Status**

Based on the results **Table 2** there was no relationship between maternal education and toddler nutritional status. This is proven by the p value = 0.577 ( $p > 0.05$ ). The results of this study are in line with previous study which found no relationship between education level and stunting incidence (20), (21). Mother's education cannot be used as a benchmark for good nutritional knowledge. Formal education that parents have been pursuing may be different from health education. So it is also possible that parents have less knowledge about health (nutrition). Mothers who have good nutritional knowledge will be able to shape good eating behavior in children.

Mother's education is basic for achieving good toddler nutrition. The mother's education level is related to the mother's ease

in receiving information about nutrition and health from outside. Mothers with a higher level of education will find it easier to receive information from outside, compared to mothers who have a lower level of education. The mother's education level is related to the mother's ease in receiving information about nutrition and health from outside. Mothers with a higher level of education will find it easier to receive information from outside, compared to mothers who have a lower level of education.

The results of this study, mothers who have a high level of education also have toddlers with stunting problems and mothers who have a low level of knowledge. This is because the level of education is a risk factor or basic cause of nutritional problems in toddlers and there are still many other risk factors that can cause stunting in toddlers.

### **The Relationship Between Mother's Job and Toddler Nutritional Status**

Based on the results **Table 3** there is no relationship between the mother's job and the nutritional status of toddlers. This is proven by the p value = 0.244 ( $p > 0.05$ ). The results of this study are in line with previous research which found no relationship between work and stunting. Mother's work is not always the main determinant of toddler nutritional status (22).

Working mothers tend to have more limited time to spend with their children compared to mothers who do not work. This time limitation can affect the level of attention

and care given to children on a daily basis. Children who are cared for directly by their mothers tend to receive more intensive attention, including meeting nutritional needs. However, it is important to note that the fulfillment of these nutritional needs is also influenced by the family's economic conditions. Other factors such as family income, access to health services, and parenting support may play a greater role in determining toddler nutritional status(23).

### **Relationship Between Mother's Income and Toddler Nutritional Status**

Based on the results **Table 4** here is no relationship between maternal income and toddler nutritional status. This is proven by the p value = 0.166 ( $p > 0.05$ ). The results of this study are in line with previous research who get no relationship between income and stunting incidents (24, 25). Income level is a factor that determines the quality and quantity of food consumed. A family's ability to buy food depends on the size of their income, families with limited income are likely to be less able to meet their food needs, especially to meet the nutritional needs of the body. However, if families with low incomes are able to manage nutritious food with simple and cheap ingredients, the baby's growth will also be good.

### **The Relationship Between Vitamin A Provision and Toddler Nutritional Status**

Based on the results **Table 5** here is a relationship between mothers who give

vitamin A to their children and the nutritional status of toddlers. This is proven by the p value = 0.015 ( $p < 0.05$ ). The results of this study are in line with research Fatimah & Chondro (2020) which found that there was a relationship between mothers who gave vitamin A to their children and the incidence of stunting (14). Vitamin A intake is a micro-nutrient that contributes to the incidence of stunting in children aged 12-60 months. Vitamin A deficiency can increase a child's risk of infectious diseases. Therefore, children who suffer from vitamin A deficiency will experience growth failure. Vitamin A is needed for the development of bones and epithelial cells that form enamel in tooth growth (26). Children who do not receive vitamin A supplementation have a 2.40 greater risk of suffering from stunting compared to those who receive vitamin A(27).

### **The Relationship Between Deworming and Toddler Nutritional Status**

Based on the results **Table 6** there was no relationship between mothers who gave their children deworming medicine and toddler nutritional status. This is proven by the p value = 0.084 ( $p > 0.05$ ). The results of this study are in line with research which found no relationship between mothers who gave their children deworming medication and the incidence of stunting (16, 28). This shows that giving deworming medication alone is not enough to prevent stunting without other more comprehensive interventions, such as improving diet, improving

sanitation, and health education for parents. Children who experience stunting generally have less than optimal nutritional intake. Worm infections can worsen nutritional status, but giving deworming medication alone is not enough to overcome this problem. Improving diet with adequate protein, vitamin, and mineral intake plays a greater role in preventing and treating stunting(29).

### **The Relationship Between Providing a Balanced Menu and Toddler Nutritional Status**

Based on the results **Table 7** there is a relationship between mothers who provide a balanced menu to their children and the nutritional status of toddlers. This is proven by the  $p$  value = 0.017 ( $p < 0.05$ ).

A balanced menu is a menu that contains all types of nutrients needed by the body in the right amounts. This means that the menu must include carbohydrates, proteins, fats, vitamins, minerals, and water in the right portions so that the body can function properly and healthily. Important elements in a balanced menu include carbohydrates, the body's main source of energy, which can be obtained from rice, wheat, potatoes, sweet potatoes, and others. There is also protein which is important for the growth and repair of body tissue, which can be obtained from meat, eggs, milk, fish, nuts, and others. Another component is fat which plays an important role in the absorption of vitamins, supports cell health,

and maintains body temperature, which can be obtained from oil, nuts, and animal sources. In addition, vitamins, minerals and water which are important for various body functions can be obtained from fruits, vegetables, and animal sources, as well as maintaining the balance of body fluids and various other body functions. The results of this study are in line with research which found that there is a relationship between mothers who provide a balanced menu to their children with the incidence of stunting (30).The relationship between a balanced menu and stunting is very close. Toddlers who consume inadequate nutrition have a higher risk of stunting. Fulfilling balanced nutrition, which includes breakfast, sufficient water consumption, and plenty of fruits and vegetables, is important to prevent stunting. The Balanced Nutrition Guidelines provide guidance to achieve this. Ensuring adequate nutritional intake is a crucial step in efforts to prevent stunting in children. Providing good food to toddlers is very important as an effort to meet nutritional needs and improper eating patterns will result in excess or lack of nutritional intake. A mother who has instilled good nutritional eating habits from an early age will certainly be very easy to direct her child to eat because the child has been exposed to good food from an early age. Good nutritional status occurs when the body gets good nutritional intake, thus allowing physical growth and general health to be as good as possible. Nutritional status occurs when the body experiences a lack or excess

of nutrients. Providing food to toddlers aims to provide and obtain important nutrients needed by the body for its growth and development process. Nutrients play a role in maintaining and restoring children's health and are useful as a source of energy to carry out daily activities. In addition to physical food, children also need other things to achieve optimal growth and development, namely the attention and attitude (care) of parents in feeding them. Mistakes in choosing food for children will have a negative impact on children both now and in the future (30).

To prevent stunting, a balanced diet is essential. Improving diet is one of the main aspects. The recommended diet includes sources of protein (such as tempeh, tofu, chicken, and fish), nuts, eggs, chicken liver, fruits, and vegetables. Also pay attention to parenting and sanitation. The food provided should be nutritious and easy to digest. Make sure your child gets all the nutrients needed for optimal growth and development.

### **The Relationship Between Providing Complementary Foods and Toddler Nutritional Status**

Based on the results **Table 8** there is a relationship between mothers who provide complementary feeding to their children and the nutritional status of toddlers. This is proven by the  $p$  value = 0.009 ( $p < 0.05$ ). The results of this study are in line with previous research which found that there was a relationship between mothers who gave

complementary foods to their children and the incidence of stunting (31).

Provision of appropriate complementary foods plays a very important role in the growth and development of children. Adequate complementary foods in terms of both quality and quantity will support optimal nutritional status and prevent the incidence of stunting in toddlers. Education for mothers regarding the right time to start complementary foods (age 6 months), types of food that are in accordance with children's nutritional needs, and the correct pattern of giving needs to be continued. In addition, health programs that support the fulfillment of toddler nutrition must also be strengthened in order to reduce the incidence of stunting in the community.

### **The Relationship Between Exclusive Breastfeeding and Toddler Nutritional Status**

Based on the results **Table 9** there is a relationship between mothers who provide exclusive breastfeeding to their children and the nutritional status of toddlers. This is proven by the  $p$  value = 0.000 ( $p < 0.05$ ). Based on the results of statistical tests, there is no relationship between the mother's job and the nutritional status of toddlers. This is proven by the  $p$  value = 0.244 ( $p > 0.05$ ). The results of this study are in line with research which found that there was a relationship between exclusive breastfeeding and the incidence of stunting (32). Exclusive breastfeeding is one of the efforts to meet nutritional

needs during infancy. Breast milk is the best food for babies immediately after birth (33). Exclusive breastfeeding can meet the nutritional needs of babies and support optimal growth and development so that it can affect the nutritional status of babies. Breast milk is recommended until the child is 2 years old. For babies aged 6-8 months, breast milk still meets 70% of the calorie needs, for babies aged 9-11 months it can meet 55% of the calories while for babies aged 12-23 months it can meet 40% of the calories. This will meet the nutritional needs of the baby up to the age of 2 years (34). Thus, breastfeeding, especially exclusive breastfeeding, will help reduce the incidence of malnutrition and stunted growth which generally occurs at this age. In addition, breast milk also has complete antibodies so that babies who receive breast milk will suffer less often from illness and will reduce the number of infant morbidity and mortality (35).

## CONCLUSION AND RECOMMENDATION

Based on the results of the study, it was found that most of the characteristics of the respondents were high school graduates as many as 83 people (39%), working in other fields as many as 162 people (76.1%), having sufficient income as many as 166 people (77.9%), giving Vitamin A as many as 210 people (99.6%), giving deworming medicine as many as 207 people (97.2%), giving a balanced menu as many as 188 people (88.3%), giving MP-ASI > 6 months as many as 188 people (88.3%), giving Exclusive

Breastfeeding as many as 188 people (88.3%), and normal toddler nutritional status as many as 118 people (55.4%).

Based on the results of the analysis, it was found that there was no relationship between Education ( $p = 0.577$ ), work ( $p = 0.244$ ), income ( $p = 0.166$ ), giving deworming medicine ( $p = 0.084$ ) with toddler nutritional status. Meanwhile, the variables of vitamin provision ( $p=0.015$ ), balanced menu ( $p=0.017$ ), provision of complementary feeding (0.009), and provision of breast milk ( $p=0.000$ ) are related to the nutritional status of toddlers.

For Health Workers, especially midwives, it is hoped that they will be more active in providing counseling related to the provision of vitamin A, the provision of deworming drugs, the provision of balanced menus, the provision of complementary foods, the provision of exclusive breastfeeding in community forums so that the community is more aware of the importance of factors that cause stunting.

For Educators, it is hoped that they can continue to work together with health institutions and can be used as a means of community service in providing information to the community, especially mothers who have toddlers, so that the community is more aware of the importance of factors that cause stunting.

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