**Journal of Health and Behavioral Science**
Vol. 5, No. 3, September 2023, pp. 342~352

# Feeding Patterns and Stunting Among Toddlers in Tanjung Karangan Village

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**Abstract**. The UNICEF report states that the prevalence of stunting in children under the age of five (toddlers) in 2019 reached 21.3%. Toddlers are active consumers where they can choose the food they like. Parenting patterns of feeding toddlers play an important role in their growth and development, because they are closely related to the health and intelligence of children. Inappropriate feeding parenting will have an impact on nutritional deficits so that it will trigger stunting. The purpose of this study was to determine the relationship between feeding parenting and the incidence of stunting. This study is a quantitative study with a cross-sectional research design. Respondents were 48 people, who were selected by purposive sampling technique. The data were processed by statistical tests and analyzed descriptively. The results showed that there were 22.9% of respondents experiencing stunting and most of the respondents had a feeding pattern in the right category (79.2%). The results of the analysis stated that the parenting style of feeding ($p < 0.001$), family income ($p = 0.015$), and the mother's last education ($p = 0.001$) were related to the incidence of stunting. The conclusion of this study is that feeding parenting in the inappropriate category has a risk of stunting 38 times compared to toddlers who are given feeding parenting in the appropriate category (PR = 38,000, 95% CI: 5,494 – 262,851). The results of this study are expected to be an evaluation for parents so that they can pay attention to feeding parenting patterns so that children can grow and develop according to their age stages.
***Keywords:*** *Feeding Pattern, Stunting, Toddlers*

**Abstrak.** Laporan UNICEF menyebutkan bahwa prevalensi stunting anak dengan usia dibawah lima tahun (Balita) di tahun 2019 mencapai 21,3 %. Balita adalah konsumen aktif yang mana mereka bisa memilih makanan yang mereka sukai. Pola asuh pemberian makan pada balita berperan penting terhadap tumbuh kembangnya, karena berkaitan erat dengan kesehatan dan kecerdasan anak. Pola asuh pemberian makan yang tidak tepat akan berdampak pada defisit nutrisi sehingga akan memicu terjadinya stunting. Tujuan penelitian ini yaitu untuk mengetahui hubungan antara pola asuh pemberian makan dengan kejadian stunting. Penelitian ini merupakan penelitian kuantitatif dengan desain penelitian cross-sectional. Responden berjumlah 48 orang, yang dipilih dengan teknik purposive sampel. Data diolah dengan uji statistik dan dianalisis secara deskriptif. Hasil penelitian menunjukkan bahwa terdapat 22,9% responden mengalami stunting dan sebagian besar responden memiliki pola pemberian makan dalam kategori tepat (79,2%). Hasil analisis

menyatakan bahwa pola asuh pemberian makan (p<0.001), pendapatan keluarga (p= 0.015), dan pendidikan terakhir ibu (p= 0.001) berhubungan dengan kejadian stunting. Kesimpulan penelitian ini adalah pola asuh pemberian makan dalam kategori tidak tepat berisiko stunting 38 kali dibandingkan balita yang diberi pola asuh pemberian makan dalam kategori tepat (PR = 38,000, 95% CI: 5,494 – 262,851). Hasil penelitian ini diharapkan menjadi evaluasi untuk para orang tua agar dapat memperhatikan pola asuh pemberian makan agar anak dapat tumbuh dan berkembang sesuai dengan tahapan usianya.
***Kata kunci:*** *Pola Pemberian Makan, Stunting, Balita*

Article history:
Received : 1 October 2022
Received in revised form : 28 November 2022
Accepted : 7 August 2023
Available online : 10 September 2023

## Introduction

The development of a nation faces a major challenge in building high-quality, healthy, intelligent, and productive human resources. One of the factors influencing the quality of human resources is nutritional intake. The Indonesian government is currently focused on finding solutions to one of the nutritional problems, which is stunting or child shortness. Hindered growth is an indicator of malnutrition due to inadequate long-term food intake, inadequate food quality, increased morbidity, and inappropriate height growth (Ernawati, F., Rosmalina, Y., & Permanasari, 2013).

Toddlers with normal weight and meeting the standards are often considered normal by most people, thereby overlooking the issue of linear growth. However, toddlers are vulnerable to stunting. Toddlers with stunting experience slow and short skeletal growth due to insufficient nutritional needs and prolonged illness. Stunting can lead to future low growth capacity, both physical and cognitive, impacting the child's future productivity.

According to UNICEF (2020), the prevalence of stunting in children under five years of age in 2019 reached 21.3%. Additionally, based on three years of Nutritional Status Monitoring (PSG) data, short stature has the highest prevalence compared to other nutritional problems such as undernutrition, thinness, and obesity. The

prevalence of short toddlers increased from 27.5% in 2016 to 29.6% in 2017 (Fadilah, Tara Nur., Sri Dinengsih., 2015). One of the districts/cities with a high incidence of stunting is the Muara Enim district. There are 16.76% of toddlers categorized as very short and 17.61% categorized as short based on the TB/U index (South Sumatra Provincial Health Office, 2019).

Children under five years old are commonly known as toddlers, an age range from above one year to five years old. Toddlers are active consumers who can choose the food they like. At this stage, they can already say "no" to invitations. Children aged 3-5 years old begin to interact with their environment. Moreover, they explore new things as part of the learning process, thus requiring optimal nutritional intake. The quality of a good child can be obtained by fulfilling the aspects of growth and development, leading to an optimal future (Susanty et al., 2014).

The feeding pattern of toddlers needs careful attention because their food intake depends on the adults caring for them. Toddlers need special attention to what they consume. Food intake in toddlers plays a crucial role in their growth and development because it contains nutrients closely related to a child's health and intelligence. If nutritional intake is not optimal, it can lead to growth and developmental disorders, resulting in a "lost generation," and the nation will lose high-quality human resources (Welasasih & Bambang, 2012). Therefore, a good eating pattern needs to be developed to avoid negative interactions from nutrients entering the body (Purwani et al., 2013).

Tanjung Karangan Village, Muara Enim District, is an area focused on stunting according to the letter from the Director of Health and Community Nutrition Number 04877/Dt. 5.1/04/2020. One indirect factor causing stunting is the feeding pattern. An improper feeding pattern can adversely affect a child's quality of life. This is because the feeding pattern affects nutrition, growth, and weight gain in children. By conducting this research, it can strengthen the theoretical knowledge about the relationship between feeding patterns and the occurrence of stunting. Therefore, researchers are interested in studying the relationship between feeding patterns and

the incidence of stunting in toddlers aged 3-5 years in Tanjung Karangan Village, Muara Enim District.

## Method

This study utilized a cross-sectional research design and adopted a quantitative approach. The sampling technique employed was purposive sampling to determine the research sample. The study involved 48 toddlers aged 3-5 years old in Tanjung Karangan Village, Muara Enim. The collected data consisted of primary data encompassing respondent characteristics, including the mother's highest education level and family income, the feeding patterns of parents for toddlers aged 3-5 years in Tanjung Karangan Village, Muara Enim, collected through interviews with mothers. Additionally, stunting data, which included the height of 3-5-year-old toddlers in Tanjung Karangan Village, Muara Enim, was gathered through direct anthropometric measurements of the toddlers.

Apart from primary data, the study also incorporated secondary data involving toddler characteristics such as the child's name, place & date of birth, and gender, obtained from Posyandu (integrated health service posts) data. Data collection was conducted directly in Tanjung Karangan Village, Muara Enim. Characteristics of toddlers and their mothers were obtained through interviews and questionnaire completion. Feeding pattern data for toddlers were collected through interviews and questionnaire completion with the mothers. Additionally, toddler height data were obtained through direct anthropometric measurements.

Statistical analyses conducted in this study included chi-square and Fisher's exact tests. Furthermore, validity and reliability tests were performed to assess the questionnaire's accuracy and precision regarding feeding patterns.

## Result

Table 1. Univariate Analysis Results

| No | Variables | Category | n | % |
|---|---|---|---|---|
| 1 | Gender | 1. Male | 27 | 56,3 |
| | | 2. Female | 21 | 43,8 |
| 2 | Family Income | 1. Low | 26 | 54,2 |
| | | 2. High | 22 | 45,8 |
| 3 | Mothers Education | 1. Low | 28 | 58,3 |
| | | 2. High | 20 | 41,7 |
| 4 | Feeding Pattern | 1. Inappropriate | 10 | 20,8 |
| | | 2. Appropriate | 38 | 79,2 |
| 5 | Stunting | 1. Yes | 11 | 22,9 |
| | | 2. No | 37 | 77,1 |
| Total | | | 48 | 100 |

It's noted that out of 48 toddlers, 27 (56.3%) are males and 21 (43.8%) are females. Additionally, 26 mothers of the toddlers (54.2%) come from families with low income. There are also 28 mothers (58.3%) with a low level of education. Moreover, 10 toddlers (20.8%) received an inappropriate feeding parenting pattern, while 11 toddlers (22.9%) experienced stunting.

Table 2. Characteristics of Toddler Ages

| Variables | Mean ± SD | Median (Min-Max) |
|---|---|---|
| Toddler Ages | 47,42 ± 51,69 | 47 (36-58) |

Based on the table above, the average age of toddlers is 47.42 months. The youngest toddler is 36 months old, and the oldest is 60 months old, with a median of 58 months.

Table 3. Relationship between Feeding Patterns and the Incidence of Stunting

| Feeding Patterns | Stunting | | | | Total | | *p-value* | PR 95% CI |
|---|---|---|---|---|---|---|---|---|
| | Yes | | No | | | | | |
| | n | % | n | % | n | % | | |
| Inappropriate | 10 | 100 | 0 | 0 | 10 | 100 | 0,000 | 38,000 (5,494 – 262,851) |
| Appropriate | 1 | 2,6 | 37 | 97,4 | 38 | 100 | | |
| Total | 11 | 22,9 | 37 | 77,1 | 48 | 100 | | |

The number of stunted toddlers with inappropriate feeding parenting patterns was 10 individuals (100%), while there was 1 person (2.6%) experiencing stunting with appropriate feeding patterns. The Fisher exact test resulted in a p-value = 0.000, indicating an extremely weak association between feeding parenting patterns and the occurrence of stunting. Toddlers subjected to inappropriate feeding parenting patterns face a 38 times higher risk of stunting compared to those receiving appropriate feeding patterns (PR = 38.000, 95% CI: 5.494 – 262.851).

Table 4. The Relationship between Mother's Education and Stunting

| Mother's Education | Stunting | | | | Total | | *p-value* |
|---|---|---|---|---|---|---|---|
| | Yes | | No | | | | |
| | n | % | n | % | n | % | |
| Low | 11 | 39,3 | 17 | 60,7 | 28 | 100 | 0,001 |
| High | 0 | 0 | 20 | 100 | 20 | 100 | |
| Total | 11 | 22,9 | 37 | 77,1 | 48 | 100 | |

There were 11 children (39.3%) experiencing stunting from mothers with a low level of education. The statistical analysis using the Fisher exact test resulted in a p-value of 0.015, indicating a very weak relationship between the mother's last education and the occurrence of stunting. The PR value = ∞, indicating that the PR value couldn't be calculated due to an empty cell, resulting in an infinite PR value.

Table 4. Relationship between Family Income and the Incidence of Stunting

| Family Income | Stunting | | | | Total | | *p-value* | PR 95% CI |
|---|---|---|---|---|---|---|---|---|
| | Yes | | No | | | | | |
| | n | % | n | % | n | % | | |
| Low | 10 | 38,5 | 16 | 61,5 | 26 | 100 | 0,015 | 8,462 (1,173 – 61,020) |
| High | 1 | 4,5 | 21 | 95,5 | 22 | 100 | | |
| Total | 11 | 22,9 | 37 | 77,1 | 48 | 100 | | |

The number of toddlers from low-income families categorized as stunted is 10 (38.5%), and there is 1 toddler (4.5%) experiencing stunting from a high-income family. From the statistical analysis using the Chi-square test with a p-value of 0.015,

it indicates a very weak association between family income and the occurrence of stunting. Toddlers from low-income families are at an 8.4 times higher risk of stunting compared to toddlers from high-income families (PR = 8.462, 95% CI: 1.173 – 61.020).

## Discussion

The research findings show that 20.2% of toddlers are fed with an inappropriate feeding pattern. This occurs because parents give in to the children's food preferences without considering their nutritional needs. This is further exacerbated by the majority of families having low economic statuses compared to the local minimum wage. The variety of food types provided by parents remains inadequate. Most respondents offer side dishes with rice since children tend to dislike consuming vegetables. Moreover, the portion sizes provided to children are often inappropriate. Most children only consume half of their required protein portion for their age. The feeding pattern significantly impacts a toddler's growth. An inappropriate diet can affect a toddler's nutritional status. Additionally, most mothers of toddlers have only completed education up to junior and senior high school, aligning with Noviyanti et al.'s research (2020) stating that a mother's education level affects a toddler's feeding pattern.

The statistical Fisher exact test analysis yielded a value of p = 0.000, indicating a correlation between the feeding pattern and the occurrence of toddler stunting. This aligns with Rahman's study (2018), which asserts a unidirectional influence between feeding patterns and stunting. According to Pribadi (2016), there's a relationship between feeding practices and stunting. This occurs as many mothers tend to let their children be if they refuse to eat, which represents a neglectful feeding pattern, indicating the mother's lack of insistence on the child's eating. Furthermore, Niga & Purnomo (2016) suggest that poor feeding practices increase the risk of stunting by 2,037 times compared to adequate feeding practices. However, Agustina & Hamisah's study (2019) indicates no association between the feeding pattern and the occurrence of stunting with a p-value of 0.189.

A mother's education is one of the factors influencing a child's nutritional status. The Fisher exact test yielded a p-value = 0.001, signifying a relationship between a mother's education and the occurrence of toddler stunting. This aligns with Husnaniyah et al.'s research (2020), establishing a correlation between a mother's education level and stunting, where lower maternal education increases the risk of toddler stunting. A mother plays a role in making decisions regarding home food consumption, forming a child's eating habits, planning diverse daily menus, and purchasing groceries for the family. Therefore, it's hoped that mothers with higher education possess insights into providing the best nutrition for their children, preventing stunting and other diseases.

However, a different perspective is presented by Septikasari et al. (2016), stating that education does not decrease the risk of malnutrition in children since higher maternal education does not guarantee a good knowledge of child nutrition. Additionally, the study suggests that education has a positive impact on health maintenance, such as family nutrition fulfillment. Still, high education levels could influence social value changes, affecting healthy lifestyle patterns, such as serving fast food to children. Hence, mothers with lower education levels have a less significant impact on stunting occurrences.

The chi-square statistical analysis results indicate a relationship between family income and the occurrence of stunting with a value of p = 0.015. This aligns with Mirna et al.'s study (2019), establishing a relationship between family income and the prevalence of stunting in children aged 2-5 years. According to Lestari et al. (2014), children from low-income families have an 8.5 times higher risk of stunting than those from high-income families. Adequate income allows parents to meet both primary and secondary needs for children. Moreover, economically stable families can access better healthcare services. However, Hapsari (2018) asserts no significant association between family income and the occurrence of stunting. This is because low-income families can manage nutritious meals using simple and inexpensive ingredients, ensuring proper infant growth. Conversely, when families have high

income, the allocation of funds for meeting a child's nutritional needs might not be effective. Therefore, family income does not significantly affect the occurrence of stunting.

The researcher acknowledges several limitations in this study. The research was conducted during the village's integrated health post (Posyandu) days, but some mothers could not attend for various reasons. Consequently, the researcher conducted door-to-door visits to reach the maximum number of respondents. During these visits, some mothers declined to be interviewed due to personal reasons.

## Conclusion

A proper feeding pattern significantly impacts a child's quality of life. This is because the feeding pattern influences a child's nutritional intake, subsequently affecting their health status. Hence, there is a correlation found between the feeding pattern, the mother's education level, and family income with the incidence of stunting among toddlers aged 3-5 years in the Tanjung Karangan Village, Muara Enim District.

## Acknowledgements

The researcher extends heartfelt thanks to all parties involved in this research.

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