The relationship between the feeding practices of adolescent mothers and the incidence of stunting among toddlers at *Puskesmas* in the Sleman Region

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Abstract
Based on data from the Indonesian Nutritional Status Survey (*SSGI*) 2022 across 33 provinces, the stunting rate decreased from 24.4% in 2021 to 21.6% in 2022, showing a decline of 2.8%. In the Special Region of Yogyakarta (*DIY*), the prevalence of stunting among children under five in 2022 was 16.4%. Specifically, the prevalence of short stature among children under five in Sleman Regency was 15% (Ministry of Health RI, 2022). Parenting-related behaviors, particularly inadequate or poor feeding practices, are also contributing factors to stunting. This includes limited maternal knowledge about fulfilling nutritional needs during pregnancy, as well as the nutritional preparation required before conception (Evy, 2021). This study aims to determine the relationship between adolescent mothers' feeding practices and the incidence of stunting in toddlers. This study employed correlational design with cross-sectional approach. The sample consisted of 32 adolescent mothers who had children aged 12–36 months and were registered at *Puskesmas* (Community Health Center) Sleman. The results showed that among the toddlers of adolescent mothers, 22 were not stunted, while 10 experienced stunting. In terms of feeding practices, both poor and good practices were reported equally, with 16 respondents each. The *Chi-Square* test yielded an Asymp. Sig. value of 0.002 ($p < 0.05$), indicating a significant relationship between adolescent mothers' feeding practices and stunting incidence. It is recommended that further research be conducted with broader coverage and more diverse variables to enhance understanding of the relationship between adolescent mothers' feeding practices and stunting in toddlers.

Keywords: adolescent mothers; parenting practices; stunting; toddlers

1. Introduction

According to the WHO (2022), there are 148.1 million children under the age of 5 who experience stunting, wasting, and overweight, with a prevalence of 22.3% stunting, 13.7 million *wasting*, and 5.6% *overweight*. This prevalence has decreased, but based on WHO criteria, it is still classified as high (>20%). In addition, data in Indonesia to date has not separated stunting caused by nutritional factors from non-nutritional factors (genetic, hormonal, or familial factors) (WHO, 2022).

Based on data from the 2022 Indonesian Nutrition Status Study (SSGI) in 33 provinces, the stunting rate decreased from 24.4% in 2021 by 2.8% to 21.6% in 2022. In 2022, the prevalence of stunting in toddlers in DIY was 16.4%. The highest prevalence of short stunting in 2022 was in Gunung Kidul (23.5%) and the lowest in Yogyakarta City (13.8%). In Kulon Progo District (15.8%), Sleman District (15%), and Bantul District (14.9%) (Kemenkes RI, 2022).

Teenage pregnancy is more likely among stunted children, taking into account maternal education, birth weight, and maternal height. Teenage pregnancy significantly increases the risk of stunting in children compared to mothers who become pregnant after the age of 20. Teenage pregnancy carries a higher risk than pregnancy in women over the age of 20. Teenage pregnancy has a greater chance of resulting in premature birth or low birth weight. Teenage pregnancy is usually unplanned, and teenage mothers are not yet ready, either physically or psychologically. Furthermore, teenage pregnancy is more common in economically disadvantaged populations, and teenage mothers tend to have little experience in child rearing and tend to have low levels of education (Kurnianingrum, 2021).

According to data from the Yogyakarta Health Department (Dinkes Yogyakarta) in 2023 across 5 districts or cities in Yogyakarta, the number of teenage births in 2023 is as follows. In 2023, there were 302 teenage births in DIY, of which 18 (5.96%) were aged 10-14 years, 163 (53.9%) were aged 15-17 years, and 121 (40%) were aged 18 years. The highest number of teenage births in 2023 was in Sleman Regency with 88 births (29.1%), and the lowest was in Yogyakarta City with 26 births (8.6%). In Gunung Kidul Regency, there were 85 people (28.1%), in Bantul Regency there were 73 people (24.1%), and in Kulon Progo Regency there were 30 people (9.9%) (Yogyakarta Health Office, 2024).

The provision and quality of food for infants are highly dependent on the mother's knowledge and education as well as the availability of food ingredients. Mothers' awareness of good nutrition for their children plays an important role in determining food quality. The results of the study show that families with poor nutritional awareness tend to increase the risk of stunting in toddlers by 1.22 times compared to families with good nutritional awareness (Atica, 2020).

2. Methods

This research method is correlational, which is research aimed at explaining the relationship between two variables, namely the dependent variable and the independent variable. This study uses a cross-sectional approach. The sample in this study consisted of 32 teenage mothers with toddlers aged 12-36 months in the Sleman Community Health Center area. The statistical test used was the Chi-Square test.

3. Results and Discussion

3.1. Respondent Characteristics

Table 1. Frequency Distribution of Respondent Characteristics

Characteristics	Frequency (N)	Percentage (%)
Mother's Age		
17 years	8	25.0
18 years	11	34.4
19 years old	13	40.6
Highest level of education		
Elementary	2	25.0
Junior High School	8	34.4
High School	22	40.6
Occupation		
Working	13	40.6
Not working	19	59.4
Child's Gender		
Female	16	50
Male	16	50
Child's age		
12–24 months	20	62.5
25–36 months	16	37.5
Total	**32**	**100**

Based on Table 4.1 above, it can be seen that most mothers are 19 years old, totaling 13 people (40.6%), and the highest level of education among teenage mothers is high school, totaling 22 (40.6%). it is known that most respondents are unemployed, totaling 19 people (59.4%), it can be seen that the characteristics of respondents based on the gender of the child are the same, totaling 16 (50.0%), and based on the age of the child, it can be seen that most are aged 12-24 months, totaling 20 children (62.5%).

3.2. Feeding Patterns and Nutritional Status

Table 2. Distribution of Parenting Patterns and Nutritional Status

Characteristics	Frequency	Percentage
Feeding Practices		
Poor	16	50
Good	16	50.0
Stunting Incidence		
Stunting	10	31.2
No Stunting	22	68.8
Total	**32**	**100**

Based on Table 4.2 above, it can be seen that the frequency distribution of feeding patterns among adolescent mothers shows the same result, namely 16 (50.0%) in the good and less than good categories.

It can be seen above that 22 respondents (68.8%) were not stunted, while stunting occurred in toddlers aged 12–31 months.

3.3. Characteristics of the Relationship Between Adolescent Mothers' Feeding Patterns and Stunting Incidence in Toddlers at Health Centers in the Sleman Region

Table 3. Crosstab Relationship Between Teenage Mothers' Feeding Patterns and Stunting Incidence in Toddlers at Health Centers in the Sleman Region

Variable	Stunting Incidence	
	Stunting	No Stunting
Feeding Practices		
Poor	9	7
Good	1	15
Age		
17 years old	2	6
18 years old	5	6
19 years old	3	10
Highest level of education		
Elementary	0	2
Junior High School	1	7
High School	9	13
Occupation		
Working	6	7
Not working	4	15
Child's Gender		
Female	6	10
Male	4	12
Child's age		
12–24 years	6	14
25–36 years	4	8

3.4. Distribution of the Relationship between Teenage Mothers' Feeding Patterns and Stunting Incidence in Toddlers at Community Health Centers in the Sleman Region

Table 4. Relationship between Teenage Mothers' Feeding Patterns and Stunting Incidence in Toddlers at Community Health Centers in the Sleman Region

Feeding Practices	Incidence of Stunting				Total		*P-value*
	Stunting		Non-Stunting				
	F	%	F	%	F	%	*Fisher*
Poor	9	56.2	7	43.8	16	50	0.002
Good	1	6.2	15	93.8	16	50	
Total	10	31.2	22	68.8	32	100	

Based on Table 4, the results of the combined analysis between feeding patterns and nutritional status of 32 adolescent mothers showed that 22 toddlers (68.8%) were not stunted and 10 (31.2%) toddlers were stunted, with adolescent mothers having the same results (16 mothers, 50.0%). The *Chi-Square* test results obtained a significant value (p) of 0.002 with a significance level of 0.05. The test results obtained p=0.002 (p<0.05). Ho is accepted and Ha is rejected if p>0.05. Therefore, based on the test results, Ho is rejected and Ha is accepted, so it can be concluded that there is a specific relationship between the feeding patterns of adolescent mothers and the incidence of stunting in infants in the Sleman Health Center area.

4. Conclusion

Based on the results of the study conducted on the relationship between the feeding practices of adolescent mothers and the incidence of stunting in the Sleman Health Center area, the following conclusions can be drawn:

1. Respondents at the Sleman District Health Center included 8 mothers aged 17 years (25.0%), 11 mothers aged 18 years (34.4%), 13 mothers aged 19 years (40.6%), with 20 toddlers aged 12-24 months (62.5%) and 16 toddlers aged 24-36 months (37.5%).
2. Respondents at the Sleman District Health Center showed similar results (50.0%) with good and poor parenting patterns towards toddlers aged 12-36 months, with 10 toddlers (31.2%) suffering from stunting and 22 toddlers (68.8%) not suffering from stunting.
3. The statistical test using *Chi-square* yielded a significant value (p) of 0.002 (p<0,05) which means that there is a relationship between the feeding practices of adolescent mothers and the incidence of stunting in the Sleman Health Center area, with a moderate strength of relationship (0.475).

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