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THE ASSOCIATION OF UNHEALTHY SNACKS WITH STUNTING IN TODDLERS: THE ROLE OF NUTRITION EDUCATION AND POSYANDU

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Abstract

Objective: Stunting is a public health issue that reflects chronic malnutrition in toddlers, especially during critical growth periods. This study aims to analyze the relationship between the frequency of unhealthy snack consumption and the incidence of stunting in toddlers.

Methods: The study employs a cross-sectional design involving 150 toddler respondents and their parents. Data were collected through structured interviews using questionnaires, anthropometric measurements, and observations of unhealthy snack consumption frequency.

Results: The results revealed that the prevalence of stunting among toddlers was 18.7%. Additionally, 41.3% of toddlers were frequently given unhealthy snacks more than four times a week. A significant relationship was found between the frequency of unhealthy snack consumption and the incidence of stunting ($p < 0.05$). The Odds Ratio (OR) value of 3.191 indicates that toddlers frequently consuming unhealthy snacks are three times more likely to experience stunting compared to those who rarely consume such snacks. The analysis of confounding variables, including sources of nutritional information, Pos Pelayanan Terpadu (Posyandu) visits, and family involvement, showed no significant relationship with the incidence of stunting

Conclusion: The conclusion of this study is that excessive consumption of unhealthy snacks is a significant risk factor for stunting. Therefore, the recommendations include enhancing parental education on the importance of nutritious foods, reducing the

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consumption of unhealthy snacks, and promoting healthy snacks through Pos Pelayanan Terpadu (Posyandu) programs and social media. Further research with a broader scope is suggested to explore other factors influencing stunting in toddlers.

Keywords: Stunting, unhealthy snacks, toddler nutrition, Pos Pelayanan Terpadu, health education.

Introduction

Stunting is one of the most common chronic nutritional problems in Indonesia. Based on Basic Health Research (Riskesdas) data in 2023, the prevalence of stunting in children under five reached 21.6%, although this figure shows a decrease compared to the previous year, it is still far from the WHO target of below 20% [1]. Stunting is caused by various interrelated factors, including an unhealthy diet. One habit that contributes to stunting is the frequent provision of unhealthy snacks, which are often high in sugar, salt and fat, but low in essential nutrients needed for optimal growth of children under five.

Excessive consumption of unhealthy snacks can replace a balanced intake of main meals, resulting in energy deficits and essential nutrients such as protein, iron and vitamins. Data from the Central Statistics Agency (BPS) in 2022 noted that 45% of under-fives in urban areas and 35% in rural areas consume unhealthy snacks more than three times a day[2]. Low levels of nutrition education from health workers and unreliability of posyandu visits exacerbate this situation, as communities are not well-informed about the negative impacts of these diets on children's health. A study by UNICEF (2021) also showed that children who eat a diet high in sugar, salt and low in nutrients are more at risk of malnutrition, including stunting. Low levels of nutrition education from health workers

and unreliability of posyandu visits exacerbate this situation, as people are not well-informed about the negative impacts of these diets on children's health[3].

The impact of stunting is not only limited to stunted physical growth, but also affects cognitive development and individual productivity capacity in the future. Children who are stunted are more at risk of learning disabilities, low academic achievement, and difficulty competing in the workforce. In addition, economically, stunting increases the burden of health costs for families and society.

Addressing stunting requires a comprehensive approach, including interventions on unhealthy snacking habits. This study is important to identify the extent to which the frequency of unhealthy snacks is associated with stunting, as well as to understand the influence of other factors such as nutrition education by health workers and posyandu visits. The findings are expected to serve as a basis for designing more effective community-based intervention programs.

The hypothesis in this study is that there is a significant relationship between the frequency of giving unhealthy snacks and the incidence of stunting in toddlers.

Methods

This study used a quantitative design with a cross-sectional approach. The subjects of this study were toddlers aged 48 - 59 months who attended one of the private kindergartens in Lebak Regency. A stratified random sampling technique was used to ensure proportional representation from various social and economic strata. Referring to the Slovin calculation with a margin of error of 5%, it is estimated that 150 toddlers are needed as respondents. The data analysis used is univariate and bivariate analysis to see

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the relationship between the frequency of giving unhealthy snacks and the incidence of stunting in toddlers.

Result

Table 1
Frequency distribution of respondents based on the incidence of stunting (TB/U nutritional status)

Category	Frequency	Percent
Stunting	28	18,7
Normal	122	81,3
Total	**150**	**100**

Table 2
Frequency distribution of respondents based on the frequency of unhealthy snacks

Category	Frequency	Percent
Often	62	41,3
Rarely	88	58,7
Total	**143**	**100**

Table 3.
Frequency distribution of Respondents based on confounding variables (Source of information, posyandu visits, family involvement).

Variable	Category	Frequency	Percent
Source Of Nutrition Information	Non-Health Worker	45	30
	Health Worker	105	70
Posyandu Visit	Not On Scedhule	35	23,3
	On Scedhule	115	76,7
Family Involvement	Not Involved	30	20
	Involved	120	80
	Total	**150**	**100**

Table 4
Relationship between the frequency of giving unhealthy snacks and the incidence of stunting (Nutritional Status of Toddlers TB/U)

Independent Variable	Category	Stunting (TB/U)				Total		P-Value
		Yes		No				
		n	%	n	%			
Unhealthy snack frequency	Often	18	29	44	71	62	100	0,000
	rarely	10	11,4	78	88,6	88	100	
Total		**28**	**18,7**	**122**	**81,3**	**150**	**100**	

Table 5
Relationship between Confounding Variables and Nutritional Status of Toddlers PB/U

Confounding Variabel	Category	Stunting (TB/U)				Total		P-value
		Yes		No				
		n	%	n	%	n	%	
Source Of Nutrition Information	Non-Health Worker	11	24,4	34	75,6	45	100	0,234
	Health Worker	17	16,2	88	83,8	105	100	
Posyandu Visit	Not On Scedhule	8	22,9	27	77,1	35	100	0,467
	On Scedhule	20	17,4	95	82,6	115	100	
Family Involvement	Not Involved	7	23,3	23	76,7	30	100	0,463
	Involved	21	17,5	99	82,5	120	100	

Discussion

The proportion of stunted toddlers was higher in the category of children who were often given unhealthy snacks (29%) than those who were rarely given unhealthy snacks (11.4%). With a significance level of α = 0.05, there is a statistically significant relationship between the frequency of giving unhealthy snacks and the incidence of stunting in toddlers. The Odds Ratio (OR) value of 3.191 (95% CI 1.355-7.517) indicates that toddlers who are often given unhealthy snacks have a 3 times higher risk of experiencing stunting than toddlers who are rarely given unhealthy snacks. This shows the importance of interventions to reduce the consumption of unhealthy snacks among toddlers.

Repeated consumption of unhealthy foods can replace the consumption of nutritious foods, so children do not get enough nutrients to support optimal growth [4]. Research by Wardani et al. found that consumption of unhealthy snacks increases the risk of stunting in toddlers[5]. The habit of giving unhealthy snacks can be influenced by taste preferences, ease of access, and lack of information about the negative effects of these foods. Nutrition intervention programs that involve educating parents about the dangers of.

None of the confounding variables had a significant association with the incidence of stunting. Therefore, the relationship between the frequency of unhealthy snacks and the incidence of stunting in children under five can be considered independent of these variables.

Confounding variables are factors that can affect the relationship between independent and dependent variables[6]. In this study, confounding factors did not have a significant effect on the incidence of stunting A similar study by Widyaningsih also found that nutrition education from non-healthcare sources and irregular Posyandu visits did not always have a direct relationship with children's nutritional status[7].

These results may suggest that the provision of unhealthy snacks is a major factor influencing the incidence of stunting in this study population. Further research is needed to explore the role of other confounding variables, such as socioeconomic conditions and access to nutritious food.

The prevalence of stunting in toddlers in this study of 18.7% is still a concern. The frequency of giving unhealthy snacks more than 4 times a week contributed significantly to the risk of stunting in toddlers with an Odds Ratio of 3.191. No significant association was found between confounding variables (sources of nutrition information, Posyandu visits, and family involvement) and the incidence of stunting. These results emphasize the importance of controlling the consumption of unhealthy snacks and the need for better education to parents in supporting optimal growth and development of toddlers.

The government and health institutions should increase educational programs for parents on the importance of nutritious feeding and the negative impact of unhealthy snacks on child growth. There should be a special program at Posyandu that focuses on promoting

healthy snacks as an alternative and providing training to health cadres. Campaigns on the dangers of unhealthy snack consumption through social media, television, and local communities need to be conducted intensively. Research with a broader scope and involving other factors such as parenting, economic status, and access to nutritious food is recommended to understand the main causes of stunting more comprehensively.

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