



ANALYSIS OF THE INFLUENCE OF PARENTING ON THE INCIDENCE OF STUNTING IN TODDLERS

Syarifah A'ini*, Nofi Susanti, Dewi Agustina

Public Health Study Program, Faculty of Public Health, Universitas Islam Negeri Sumatera Utara, Jl. Lapangan Golf, Kampung Tengah, Pancur Batu, Deli Serdang, North Sumatera 20353, Indonesia

*srfhaii07@gmail.com

ABSTRACT

In 2023, there will be an increase in the prevalence of stunting in the Puskesmas working area, decreasing from 31 stunted toddlers to 35 stunted toddlers compared to the previous year. Meanwhile, the target for reducing the stunting rate in Medan City by 2024 is 14.92%. The research aims to analyze the influence of parenting styles on the incidence of stunting in the area, with a focus on parental practices/support for children in feeding practices personal hygiene practices, and environmental sanitation. This research uses a quantitative approach with an observational case-control design. The sample size was 70 respondents who were divided into two groups, namely 35 respondents in the case group and 35 respondents in the control group. The results of this study show that there is an influence between parental practices/support in providing food ($p\text{-value}=0.000$) and personal hygiene/hygiene practices and environmental sanitation on the incidence of stunting in the working area of the Terjun Community Health Center ($p\text{-value}=0.006$) with an Odds value The ratio ($OR<1$) indicates that these factors have a weak or protective influence on the incidence of stunting. From the results of this research, it can be concluded that parental practices/support in providing food and personal hygiene practices and environmental sanitation influence the incidence of stunting, but positively as protective factors against the incidence of stunting in the working area of the Terjun Community Health Center.

Keywords: parenting patterns; stunting; toddlers

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INTRODUCTION

Indonesia is currently still faced with nutritional problems that greatly impact the quality of Human Resources (HR) in the future. Stunting is a nutritional problem that currently requires special attention in Indonesia because the incidence of stunting in toddlers is still high. According to WHO (2020), stunting is short or very short based on length/height according to age, < -2 SD on the WHO growth curve which occurs due to conditions of failure to thrive caused by inadequate nutritional intake and/or recurrent/chronic infections that occur in 1000 HPK (Kemenkes RI, 2022). However, until now the community has not openly realized that stunting is a serious problem, this is because there is still a lack of knowledge about the causes, impacts, and prevention of stunting (Arshwati, 2019).

According to WHO data, in 2019, globally 144 million children under the age of 5 were stunted, 47 million and, 38 million overweight out of all children under 5 years were stunted in 2019 which was 21.3%. Stunting has steadily declined over the past decade, with 148.1 million or 22.5% of children under the age of 5 worldwide affected in 2022 (WHO, 2023).

Based on data from the 2022 Indonesian Nutritional Status Survey (SSGI), it was found that there was a decrease in North Sumatra Province stunting prevalence by 4.7%, namely in 2021 from 25.8% to 21.1% in 2022. Although there has been a decrease, there are still 8 regencies/cities in North Sumatra Province whose stunting prevalence rates have increased, namely Deli Serdang, Tebing Tinggi, Serdang Bedagai, Tanjung Balai, North Tapanuli, West Nias, Humbang Hasundutan, and Central Tapanuli. There are also districts with stunting prevalence rates above 30%, namely South Tapanuli, Padang Lawas, Mandailing Natal, West Phak-phak, and Central Tapanuli. Meanwhile, there are 6 districts/cities that are the locus of stunting evaluation, namely Medan City, Serdang Bedagai, Coal, Dairi, West Phak-phak, and Simalungun (BKKBN, 2023).

Medan City is one of the districts/cities still the focus location of stunting evaluation. In 2022, there are 364 stunted children spread across 21 sub-districts. The sub-district that has the highest number of stunting toddlers is Medan Belawan District with 96 toddlers. Meanwhile, the sub-districts that have the lowest number of stunting toddlers are Medan Perjuangan and Medan Tembung Districts with 1 stunting toddler each. Then, in 2023, the number of stunting toddlers in Medan City will decrease, namely 251 stunting toddlers. The prevalence rate of toddlers with "Very Short" status was 123, and those with "Short" status were 128. Of the 41 Puskesmas located in the Medan City area, 1 puskesmas has experienced an increase in stunting prevalence rates, namely the Terjun Village Puskesmas Working Area. From the recapitulation of the results of stunting toddlers in 2023, at the Puskesmas Desa Terjun, the stunting prevalence rate is 35 toddlers. This figure is an increase from the previous 2022, which was 31 stunted toddlers. Among them, the prevalence rate of toddlers with "Very Short" status is as many as 19 toddlers, and toddlers with "Short" status are as many as 16 toddlers (Medan City Health Office, 2023).

Stunting is a problem that is only seen after toddlers are two years old and are not immediately realized which then affects the long-term cognitive abilities and productivity (Sumarni et al., 2020). The consequences are inhibited metabolism, decreased immunity, decreased cognitive abilities, and inhibited physical growth (Handayani et al., 2019). Stunting can be prevented by exclusive breastfeeding, nutritional intake according to the needs of the body, clean living behavior, balancing between the income and expenditure of nutritional intake by doing physical activity and conducting regular monitoring of children's growth and development (Sholihah et al., 2019). Stunting prevention efforts are a shared responsibility, including parents, and not just the responsibility of the government. Parental behavior is very influential in stunting prevention. With positive behavior, parents can become more aware of the importance of stunting prevention efforts. The formation of healthy habits or behaviors in preventing stunting is based on parental awareness, including in terms of ensuring adequate nutritional intake for pregnant women, maintaining environmental sanitation, and adopting a clean and healthy lifestyle (Ahla, 2020).

Stunting is caused by a variety of factors and is not solely related to malnutrition in pregnant women or children under five (TNP2K, 2017). To prevent stunting, three aspects need to be considered, namely diet, parenting, improved sanitation, and access to clean water. Obstacles encountered include a lack of variety and adequate amount of nutrition, suboptimal parenting, and limited access to health services. The understanding of parents, especially mothers, plays an important role in parenting and family nutritional status. Therefore, it is important to provide education so that you can be aware of the importance of children's health and nutrition (2018, 2018). Efforts made by mothers to overcome stunting are often related to a lack of understanding of the condition (Septamarini et al., 2019).

Personal hygiene It is very important especially when it comes to toddlers and the role of a mother becomes very significant in maintaining their hygiene and health. Mothers' lack of understanding of clean and healthy living practices can be a contributing factor to stunting. This is because maternal hygiene affects the level of cleanliness when interacting directly with children, which in turn can increase the risk of transmitting infectious diseases to children. For example, infectious diseases such as diarrhea can easily infect children and potentially cause stunting (Nurdin et al., 2022). Research shows that toddlers who often experience diarrhea have a 3,619 times greater chance of stunting than those who rarely experience it. The absence of sanitation facilities in the household can also cause a lack of hygiene, such as inadequate hand washing after defecation or before preparing food, which can increase the risk of dirt or bacteria entering the child's body, as well as increasing the risk of disease (Mashar et al., 2021).

Parenting is a family effort to provide time, attention, and assistance in meeting the physical, mental, and social needs of children during growth and development (Bella, Fajar, et al., 2020). One of the causes of nutritional problems is often related to inadequate parenting in the family. Research findings conducted by (Bella, Fajar, et al., 2020) found that families with poor foster care had a 9 times higher risk of having poor nutritional status. Poor parenting is also associated with a high risk of stunting in children. Improper parenting in stunted children tends to experience indifference to important aspects related to nutritional problems (Noorhasanah & Tauhidah, 2021). These findings are in line with the findings examined by (Princess, 2020) which shows that the risk of stunting is 8 times greater in children who experience poor parenting than in children who receive good parenting.

The importance of a mother's knowledge and understanding of breastfeeding from the age of 0-6 months. The practice of exclusive breastfeeding of infants also has an impact on the incidence of stunting. Children who do not receive exclusive breastfeeding have the opportunity to lack the nutritional intake needed during growth and development. The high number of babies who do not receive exclusive breastfeeding is often due to the mother's lack of knowledge about the practice. Babies who receive adequate exclusive breastfeeding tend to get adequate nutrition, which can help prevent stunting (Lestari & Dwihestie, 2020). The practice of exclusive breastfeeding can be an effective effort in delaying or preventing stunting. Complementary feeding (MP-ASI) is closely related to the risk of unbalanced nutrition, which is one of the factors that contribute to stunting. Babies who don't get enough nutrients often develop iron deficiency, especially if breastfeeding is late. This is in line with the findings by (Sastria et al., 2019) Based on the results of the test analysis chi-square at continuity correction, The result was $p=0.001$ (OR=26.91) which means that there is a close relationship between the factor of exclusive breastfeeding and the incidence of stunting in children and toddlers.

According to an initial survey reviewed in the working area of the Puskesmas Desa Terjun in the field of nutrition, it was found that the high rate of stunting was due to the low knowledge of mothers about stunting. As a result, the parenting given is not appropriate. Mothers usually give whatever foods are liked by children without seeing and thinking about the nutritional components needed by children in the process of growth and development. Mothers also usually often let children eat foods they like such as preferring to eat noodles instead of vegetables, eating snacks carelessly, and so on. In addition, the habit of consuming food that is not processed by the mother herself can also cause various diseases. Mothers who let their children consume food from outside can also make infectious diseases arise. The implementation of hygiene practices by mothers to children is also very important. Starting

from the practice of washing hands before and after eating, bathing 2 times a day, eating regularly 3 times a day, brushing teeth, urinating in place/toilet, and leaving the house using footwear. The aim of this research is to investigate the factors that cause high stunting rates, identify barriers to stunting prevention, and spread the effectiveness of stunting prevention programs in Indonesia with a focus on improving diet, parenting, sanitation and maternal knowledge as a collaborative effort in improving quality of Human Resources in the future.

METHOD

This type of research is an analytical survey with a research design using Case *Control*. This research area is in the Working Area of the Puskesmas Desa Terjun, Medan Marelan District, with a timeline carried out from February to March 2024. The Working Area of Puskesmas Waterfall consists of 3 villages, namely Labuhan Deli Village, Terjun Village, and Paya Pasir Village. In this study, the case population is all toddlers with stunting conditions as many as 35 toddlers in the Puskesmas Terjun Work Area obtained from secondary data from the Puskesmas Terjun. This study used a *Total Sampling* sampling technique with consideration of the *Matching Method*, namely all mothers with toddlers who experienced stunting events as many as 35 toddlers. The case samples used were 35 mothers with toddlers who were stunted, with a 1: 1 division of case samples and controls, then the control sample in this study was 35 mothers with toddlers who did not experience stunting. In this study, there are two dependent variables, namely, parental attention/support for children in feeding practices and personal hygiene and environmental sanitation practices. These dependent variables are the main focus of the study and are considered factors that may influence the independent variable, namely the incidence of stunting. Meanwhile, the independent variable of this study is the incidence of stunting. This research data was collected using an instrument in the form of a questionnaire that researchers directly gave to respondents. Direct visits were made to respondents' homes to obtain the necessary data. Then, data analysis was carried out using several approaches, namely, univariate, bivariate (*Chis Square*) analysis using $\alpha = 0.05$ and *Confidence Interval* (CI) of 95%, and multivariate to determine the influence of these variables simultaneously on the independent variable.

RESULTS

Table 1.

Frequency distribution of respondent characteristics based on subdistrict, child's age, child's gender, mother's age, mother's education, and child's nutritional status

Characteristics	f	%
Ward		
Labuhan Deli	25	35.7
Paya Pasir	20	28.6
Terjun	25	35.7
Child Age		
Baby	16	22.9
Toddler	54	77.1
Child's Gender		
Man	24	34.3
Woman	46	65.7
Mother's Age		
< 20 years	1	1.4
20 – 35 years	55	78.6

Characteristics	f	%
Ward		
Labuhan Deli	25	35.7
Paya Pasir	20	28.6
Terjun	25	35.7
> 35 years	14	20.0
Total	70	100.0
Child Nutritional Status		
Stunting	35	50.0
Normal	35	50.0
Total	70	100%
Mother's Education		
Low	42	60.0
Tall	28	40.0
Total	70	100.0

Table 1, it is found that the working area of the Terjun Community Health Center consists of 3 areas, namely Labuhan Deli Village (35.7%), Paya Pasir Village (28.6%), and Terjun Village (35.7%). The ages of children in the Terjun Community Health Center working area are in the categories of infants (22.9%) and toddlers (77.1%). The maternal age found in the Terjun Community Health Center working area was 20-35 years, with 55 respondents (78.6) dominating. Maternal education in the Terjun Community Health Center work area was found to dominate maternal education in the low category by 42 respondents (60%). The gender of children in the Terjun Community Health Center work area was the most dominant, namely 46 respondents were female (65.7%). The nutritional status of children obtained in the Terjun Community Health Center work area was in the normal category as many as 35 respondents (50%) and in the stunting category as many as 35 respondents (50%).

Table 2.

Frequency distribution of parenting patterns based on mother's practices/support for feeding practices and personal hygiene and environmental sanitation practices

	f	%
Appropriate	37	52.9
Not exactly	33	47.1
Practice personal hygiene and environmental sanitation		
Good	43	61.4
Not good	27	38.6
Total	70	100.0

In table 2, the results show that the practice/support of parents towards children in the practice of providing food in the working area of the Terjun Community Health Center dominates in the right category, namely 37 respondents (47.1%). Personal hygiene and environmental sanitation practices in the work area of the Terjun Community Health Center dominate in the good category, namely 43 respondents (61.4%).

Table 3.

Results of Bivariate Analysis of the Relationship between Parental Practices/Support in Feeding Practices

Parental Practices/Support in Feeding Practices	Nutritional Status of Toddlers				Total		<i>p-value</i>
	Stunting		Normal				
	f	%	f	%	f	%	
Good	3	4,3	34	48,6	37	52,9	<i>0,000</i>
Not good	32	45,7	1	1,4	33	47,1	
Total	35	94,3	35	5,7	70	100	

The results of the bivariate analysis test prove that there is a close relationship between parental practices/support for children in feeding practices and the incidence of stunting in toddlers, with $p\text{-value}=0.000$ ($p<0.05$). This shows that there is a strong correlation between parental practices/support for children in feeding practices and the incidence of stunting in the working area of the Terjun Community Health Center. From the results of this analysis, it can be observed that the majority of mothers who have parental practices/support for their children in the practice of giving inappropriate food to their toddlers have toddlers who experience stunting, with a percentage of 45.7%. Meanwhile, of all respondents, mothers who had parental practices/support for their children in proper feeding practices had a much lower percentage of stunted toddlers, namely 4.3%.

Table 4.

Results of Bivariate Analysis of the Relationship between Personal Hygiene Practices and Environmental Sanitation

Practice personal hygiene and environmental sanitation	Nutritional Status of Toddlers				Total		<i>p-value</i>
	Stunting		Normal				
	f	%	f	%	f	%	
Good	9	12.9	34	48.6	43	61.4	0,000
Not Good	26	37.1	1	1.4	27	38.6	
Total	35	50.0	35	50.0	70	100	

The results of the bivariate analysis show that there is a strong relationship between personal hygiene practices and environmental sanitation with the incidence of stunting in toddlers, with $p\text{-value}=0.000$ ($p<0.05$). This indicates that there is a strong correlation between personal hygiene practices and environmental sanitation with the incidence of stunting among toddlers in the working area of the Terjun Community Health Center. From the results of this analysis, it can be seen that mothers who practice good personal hygiene and environmental sanitation for their toddlers have a low percentage of stunted toddlers, namely 8.6%. Meanwhile, of all respondents, mothers who had poor personal hygiene and environmental sanitation practices had a much higher percentage of stunted toddlers, namely 41.4%.

Table 5.

Results of Logistic Regression Analysis of the Influence of Parenting Patterns on the Incident of Stunting in the Working Area of the Terjun Community Health Center

Parenting	<i>p-value</i>	OR	95% CI
Parental Practices/Support in Feeding Practices	0,000	0,003	0,000 – 0,058
Practice personal hygiene and environmental sanitation	0,006	0,014	0,001 – 0,280

The results of the logistic regression analysis explain that all independent variables, namely parental practices/support for children in feeding practices and personal hygiene and environmental sanitation practices, have significant values ($p<0.005$). These results indicate that these two variables have a significant influence on the incidence of stunting in the working area of the Terjun Community Health Center.

DISCUSSION

Parental Practices/Support for Children in Feeding Practices

Based on bivariate test analysis on parental practice/support for children in feeding practices, it was found to be associated with the incidence of stunting ($p\text{-value} = 0.000$). Logistic regression analysis shows that parental practice/support for children in feeding practices has a $p\text{-value of } < 0.05$ ($p\text{-value} = 0.000$) which means it influences the incidence of stunting. From these results, the *Odds ratio* (OR=0.003) was obtained, which means that parental practice/support for children in feeding practices has a weak influence or as a protector against stunting events. These findings align with (Rahman, 2018) which reinforces that feeding patterns affect the incidence of stunting in toddlers. However, these findings are not in line with the findings examined by (Qolbiyah et al., 2021) which proves that there is no link between feeding practices and stunting events ($p = 0.945$). Improper and appropriate feeding practices are characterized by breastfeeding, complementary feeding (MP-ASI), and food preparation and storage (Bahtiar, 2019). The practice of feeding children has a very important impact on improving their nutritional condition. Starting from when choosing, providing, preparing, and delivering food in a way that suits nutritional needs (Mekonnen et al., 2021).

The process of feeding babies begins by preparing them for exclusive breastfeeding through Early Initiation of Breastfeeding (IMD). It also emphasizes the importance of breastfeeding and providing appropriate complementary foods (MP-ASI). IMD provides incentives to mothers to continue breastfeeding, including exclusive breastfeeding and breastfeeding with additional food until the age of two (Assriyah et al., 2020). The importance of providing breast milk and complementary foods (MP-ASI) is emphasized in the practice of feeding. This involves paying attention to breastfeeding frequency, feeding frequency, MP-ASI portions, variety and form of food given, including staple foods, vegetables, fruit, nuts, and animal side dishes, as well as other factors such as hand washing, cooking water, and avoiding smoking, as well as ensuring breastfeeding continues for up to two years. Non-compliance in how to provide breast milk and MP-ASI is a factor causing stunting. Infants who do not receive breast milk and complementary foods according to standards have a 0.083 times higher risk of stunting (Wandini et al., 2021). Information provided to mothers regarding timely breastfeeding shows the importance of starting complementary feeding when the baby reaches 6 months of age. Toddlers who received MP-ASI before reaching 6 months of age had a 3,868 times more likely risk of being stunted than toddlers who began receiving MP-ASI at 6 months of age. Therefore, understand the importance of the right time in giving complementary milk to their babies to prevent the risk of stunting and ensure their child's growth and development for mothers (Hidayah et al., 2019).

Poor feeding practices for mothers will be related to toddlers with stunting events. This is due to the tendency of mothers to fulfill their children's food desires without paying attention to their nutritional value, rarely serve varied and nutrient-rich foods at home, and provide children to consume food carelessly without paying attention to nutritional quality. Foods that should be given, such as milk, fruits, cereals, and others are often not prioritized (Hanani & Susilo, 2020). To improve a child's nutritional status, it is important to provide food healthily, making sure the food provided contains adequate nutrients and portions. Food given to infants and toddlers should meet energy and nutritional needs according to their stage of development. It is important to draw up a balanced menu, considering existing food ingredients, eating habits, and what the child wants. In addition, food should also be served in shapes and portions that are by the child's condition, so that they can consume it comfortably and get the nutrients needed (Bella, Misnaniarti, et al., 2020).

In parental attention/support in feeding practices also includes food preparation and storage. Food hygiene is important to pay attention to when preparing food. Food that is poorly maintained clean and contaminated can cause health problems such as diarrhea or worms in children. In addition, the cleanliness of food presenters and the tools used such as spoons, bowls, glasses, plates, and others are important to ensure food safety. According to Soenardi, some aspects that need to be considered in preparing and storing food are ensuring clean eating and cooking utensils, storing food without contamination, avoiding pollution, washing hands using soap before giving food to both mothers and family members who provide food and snacks should be made by themselves. It is also important to maintain the cleanliness of food equipment in food processing and presentation by the requirements set by Kepmenkes RI Number 942 / Menkes / SK / VII / 2003. This aims to prevent microorganisms that can cause disease in the community. Foodstuffs include all languages, whether processed or unprocessed, including food additives and helpers. Securing foodstuffs practically aims not only to keep them from spoiling but also to protect against pollution. This includes various aspects, including protection from contamination brought by the food itself and environmental factors that can enter the food (Sukmawati et al., 2021).

According to the researcher's assumption, parental practice/support in feeding practices can be considered starting from exclusive breastfeeding, continued breastfeeding (complementary foods), when complementary foods are given, frequency and portion of feeding, food hygiene, cleanliness of mothers or caregivers who provide food to children and control the consumption of snacks outside that children want. Parental practice/support in feeding practices in the work area of Puskesmas Terjun is related to the behavior of mothers or caregivers with knowledge and attitudes of mothers toward children's nutritional needs.

Personal hygiene and environmental sanitation practices

In this study, bivariate analysis results were obtained on personal hygiene practices and environmental sanitation on the incidence of stunting in the work area of the Terjun Health Center ($p\text{-value}=0.000$). This is evidenced by 27 respondents in the bad category and as many as 26 respondents who are stunted (37.1%). These findings align with (Ningsih et al., 2023) with earned value $p\text{-value}=0.000$ ($p<0.05$) which means There is a close relationship between environmental hygiene and sanitation with the prevalence of stunting under five. However, these findings do not align with the (Maryani, 2023) in Babakan Ciseeng sub-district which said that there was no link between environmental sanitation and stunting. From the results of logistic regression analysis, personal hygiene and environmental sanitation practices have a value of $p\text{-value}=0.006$ ($p<0.05$) which means that the practice of personal hygiene and environmental sanitation influences the incidence of stunting. However, from the results of logistic regression analysis obtained an *Odds ratio* ($OR=0.014$) which means that the practice of personal hygiene and environmental sanitation has a weak influence or as a protective factor on the incidence of stunting.

These findings explain that mothers who care about environmental hygiene and sanitation practices have a positive influence on the nutritional status of their children. In the working area of Puskesmas Terjun, there are 48.6% of children of normal height can be attributed to good environmental hygiene and sanitation practices. These findings are consistent with the findings made (by Aisah et al., 2019) which found a close relationship between *personal hygiene* and the incidence of stunting ($p=0.000$) with a value *Odd Racing* (OR) of 0.116 ($OR<1$) indicating that *personal hygiene* as a protective factor against the incidence of stunting. Likewise with environmental sanitation, its relationship to the incidence of stunting is also significant ($p=0.000$) with a value *Odd Racing* (OR) of 0.143 ($OR<1$) indicating that

environmental sanitation also acts as a protective factor against stunting. According to Niga and Purnomo, the child's growth process is influenced by children's hygiene practices through increased efforts to prevent vulnerability to infectious diseases. In terms of hygiene, both personal hygiene practices and environmental sanitation play a role in the process of child growth and development.

The findings concluded that the majority of mothers did not teach toddlers to clean their hands before eating and after defecation. This happens because toddlers often do not eat alone, but are fed by parents, as a result, there is an assumption that there is no need to wash hands before feeding toddlers. Many mothers also only occasionally apply the habit of cleaning their hands using soap before giving food to toddlers. According to (Herawati et al., 2020) Mothers who only occasionally treat the habit of washing hands with soap before giving food to toddlers are 3,923 times more likely for toddlers to be stunted. This is due to the possibility of microorganisms that are on the mother's hands entering ingested by toddlers while eating. According to the researcher's primary and secondary research, it can be said that the practice of personal hygiene and environmental sanitation plays an important role as a protective factor against the incidence of stunting in toddlers in the work area of Puskesmas Terjun. Personal hygiene and environmental sanitation practices can be considered by the mother or caregiver, the child, where the child can explore his environment and the environment around where the child lives.

CONCLUSION

Based on the has obtained in this study there is an influence between parenting style based on parental practices/support on the incidence of stunting in the work area of the Puskesmas Terjun with the value ($p\text{-value} = 0.000$) and the influence of personal hygiene and environmental sanitation practices on the incidence of stunting in the work area of the Puskesmas Terjun with values $p\text{-value}=0.006$ with a value of ($OR<1$) which means it has a weak influence or is a protective factor against the incidence of stunting.

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