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# The Relationship between Feeding Practices and Personal Hygiene Practices with Stunting Incidents in the Coastal Area of Muna Regency

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### ABSTRACT

**Introduction:** Stunting is a condition of failure to thrive in babies (0-11 months) and toddlers (12-59 months) resulting from chronic malnutrition, especially in the first 1,000 days of life so that the child is too short for his age. Malnutrition occurs when the baby is in the womb and in the early days after the baby is born, but stunting only appears after the child is two years old. This research aims to find out about the Stunting Incident Prediction Model in the Coastal Area of Muna Regency.

**Method:** This type of research is quantitative using a cross-sectional design (Cross Sectional Study). The sample in this study was 322 mothers who had toddlers aged 12-59 months in the coastal area of Muna Regency.

**Result:** There were 258 toddlers or (80.1%) and 64 stunted toddlers or (19.9%). Of the 322 respondents who had good feeding practices, there were 283 respondents or (87.9%) and those who had poor feeding practices were 39 respondents or (12.1%). Of the 322 respondents whose hygiene practices were good, there were 186 respondents or (57.8%) and those with poor hygiene practices were 136 respondents or (42.2%).

**Conclusion:** The nutritional status of children under five is very important to pay attention to because it has a large and long-lasting impact on the child's health status, physical and mental development as well as the child's productivity as an adult.

### Introduction

Stunting is a condition of failure to thrive in babies (0-11 months) and toddlers (12-59 months) resulting from chronic malnutrition, especially in the first 1,000 days of life so that the child is too short for his age. Malnutrition occurs when the

baby is in the womb and in the early days after the baby is born, but stunting only appears after the child is 2 years old. Stunting affects brain growth and development. Stunted children also have a higher risk of suffering from chronic diseases in adulthood. In fact, stunting and malnutrition are

estimated to contribute to a reduction of 2-3% of Gross Domestic Product every year.

Stunting is a fairly big health problem. It is estimated that in 2010 there were 169 million children or 26.3% of children worldwide and 99 million children or 28.1% of children in Asia experienced stunting, and it is estimated that in 2013, there were around 161 million children or 24.5% of children in Asia. % of children worldwide and 91 million children or 25.3% of children in Asia experience stunting.<sup>[1]</sup>

According to WHO in 2018, the average prevalence of short toddlers in the Southeast Asia Region in 2005-2017, which was in first place, was from East Leste at 50.2%, in second place was India with a prevalence of 38.4%, Indonesia was in second place. third with a prevalence of 36.4%, fourth is Bangladesh at 36.1%, fifth is Nepal with a stunting prevalence rate of 35.8%, while Butan is in sixth at 33.6%, Myanmar is at 2 .2%, North Korea at 27.9%, Maldives at 20.3%, Sri Lanka at 17.3%, and finally Thailand with a prevalence rate of 10.5%.<sup>[2]</sup>

Data on stunting sufferers collected by the World Health Organization released in 2019 states that the Southeast Asia region is still the region with the highest stunting prevalence rate (31.9%) in the world after Africa (33.1%) and Indonesia, including in the sixth country in the South-East Asia region after Bhutan, Timor Leste, Maldives, Bangladesh and India, namely 36.4%.<sup>[3]</sup> Several countries whose stunting rates exceed the standards set by WHO (20%) are in the Oceania region 41.4%, Central Africa 36.4%, East Africa 32.6%, West Africa 30.9%, South Asia 30.7% , Southeast Asia 27.2 % , South Africa 23.3 %.<sup>[4]</sup>

Basic Health Research data shows a decline in stunting rates, starting in 2013 there was a 37.2% prevalence of stunting rates. In 2007, the prevalence of stunting was 36.8%. In 2010, the prevalence of stunting was 35.6%. and in 2018 the prevalence of stunting was 30.8%, but this figure is still far from the health development target of 14% in 2024.<sup>[5]</sup>

The development of stunting cases in Southeast Sulawesi Province has increased, namely in 2016 under five were 20.64% stunted and 8.93% were very short. In 2017, 21.2% of toddlers were short and 15.2% were very short. In 2018, 18.6% of children under five were short and 10.1% were very short. The percentage of short

toddlers (TB/Age) in Southeast Sulawesi Province among toddlers based on the Height by Age (TB/U) index includes the very short and short categories. The e-PPBGM data shows that 3.2% of the students are very short and 8.9% of the students are short. For toddlers, the 2019 SSGBI results were 31.44%, the 2021 SSGI results stated that the percentage of stunting (very short and short) was 30.2%. Based on e-PPGBM data, 3.1% of toddlers are very short and 10.2% of toddlers are short.<sup>[6]</sup>

The incidence of stunting in Muna Regency is still relatively high. Basic health research data (2013) states that the percentage of stunting (very short and short) is 41.93%. SSGBI data (2019) shows that the percentage of stunting (very short and short) is 27.36%. Nutrition Surveillance Data (2019) shows that the percentage of stunting (very short and short) is 17.4%. Nutrition surveillance data (2020) shows that the percentage of stunting (very short and short) is 15.5%. Nutrition surveillance data (2021) shows the percentage of stunting (very short and short) is 16.9%, SSGI data (2021) shows the percentage of stunting (very short and short) is 30.8%. Based on data from the Muna Regency Health Service regarding stunting spread across 30 Community Health Centers in Muna Regency, several Community Health Centers in coastal areas are the South Wakorumba Health Center with a stunting prevalence in 2020, there were 128 cases of stunting with a stunting prevalence of 31.84%, in 2021 There were 112 cases of stunting with a stunting prevalence of 32.37%, in 2022 there will be 67 cases of stunting with a stunting prevalence of 23.59%. Batukara Community Health Center with stunting prevalence in 2020 there were 46 stunting cases with a stunting prevalence of 22.4%, in 2021 there were 49 stunting cases with a stunting prevalence of 20.68%. In 2022 there were 28 stunting cases with a stunting prevalence of 21.54%. Pasikolaga Community Health Center with stunting prevalence in 2020 there were 116 stunting cases with a stunting prevalence of 25.89%, in 2021 there were 101 stunting cases with a stunting prevalence of 24.22%, in 2022 there were 21 stunting cases with a stunting prevalence of 7.95%. Pasir Putih Health Center with stunting prevalence in 2020 there were 81 stunting cases with a stunting prevalence of 22.50%, in 2021 there were 16 stunting cases with a stunting

prevalence of 3.42%, in 2022 there were 36 stunting cases with a stunting prevalence of 21.56%. Maligano Health Center with stunting prevalence in 2020 there were 61 stunting cases with a stunting prevalence of 21.33%, in 2021 there were 90 stunting cases with a stunting prevalence of 22.22%, in 2022 there were 22 stunting cases with a stunting prevalence of 11.83%. Among several community health centers on the coast, it shows that the South Wakorumba Community Health Center is one of the community health centers that has a fairly high incidence of stunting.<sup>[7]</sup>

The reason why Muna Regency was made the area of choice for research location by prospective researchers is because of the 15 regencies and 2 municipalities in Southeast Sulawesi Province, Muna Regency in 2021 ranked third for the highest number of stunting cases, namely 30.8%.

Toddlers who do not receive exclusive breast milk are associated with the incidence of stunting in toddlers. Breast milk has many benefits, for example increasing children's immunity to disease, ear infections, reducing the frequency of diarrhea, chronic constipation and so on. Lack of breastfeeding and giving MP-ASI too early can increase the risk of stunting, especially early in life. Based on the problem description above, prospective researchers want to research the Stunting Incident Prediction Model in the Coastal Area of Muna Regency.

## Method

This type of research is quantitative using a cross-sectional study design. The sample in this study was 322 mothers who had toddlers aged 12-59 months in the coastal area of Muna Regency. The sampling technique in this research is by using a non-probability sampling method, namely Cluster Random Sampling.

## Result

**Table 1** shows that of the 322 respondents who had good feeding practices, there were 283 respondents or (87.9%) and those who had poor feeding practices were 39 respondents or (12.1%). Furthermore, of the 283 respondents who had good feeding practices, there were 236 respondents with normal nutritional status or (91.5%) and 47 respondents with stunted nutritional status or (73.4%). And of the 39 respondents who had poor feeding practices, there were 22 respondents with normal nutritional status or (8.5%) and 17 respondents with stunted nutritional status or (26.6%). The conclusion of the results is that  $X^2_{count}$  is 14,021 >  $X^2_{table}$ , namely 3,841, so there is a relationship between feeding practices and stunting in the coastal areas of Muna Regency.

**Table 2** shows that of the 322 respondents who practiced good hygiene, there were 186 respondents or (57.8%) and those who had good hygiene practices were 136 respondents or (42.2%). Furthermore, of the 186 respondents whose hygiene practices were good, there were 157 respondents with normal nutritional status or (60.9%) and those with stunted nutritional status were 29 respondents or (45.3%). And of the 136 respondents whose hygiene practices were deficient, there were 101 respondents with normal nutritional status or (39.1%) and 35 respondents with stunted nutritional status or (54.7%). The conclusion of the results is that  $X^2_{count}$  is 4,459 >  $X^2_{table}$ , namely 3,841, so there is a relationship between hygiene practices and stunting in the coastal areas of Muna Regency.

**Table 1.**  
**The Relationship Between Feeding Practices and Stunting in Coastal Areas**  
**Muna Regency**

Stunting Incident	Feeding Practices				Total		Statistical Test
	Good		Not enough				
	n	%	n	%	n	%	
Normal	236	91.5	22	8.5	258	100.0	X <sup>2</sup> count = 14,021 X <sup>2</sup> table = 3,841
Stunting	47	73.4	17	26.6	64	100.0	
Total	283	87.9	39	12.1	322	100.0	

**Table 2.**  
**The Relationship Between Personal Hygiene Practices and Stunting in Coastal Areas**  
**Muna Regency**

Stunting Incident	Personal Hygiene Practices				Total		Statistical Test
	Good		Not Enough				
	n	%	n	%	n	%	
Normal	157	60.9	101	39.1	258	100.0	X <sup>2</sup> count = 4,459 X <sup>2</sup> table = 3,841
Stunting	29	45.3	35	54.7	64	100.0	
Total	186	57.8	136	42.2	322	100.0	

## Discussion

### The Relationship Between Feeding Practices with Stunting Incidents in the Coastal Area of Muna Regency

Based on the research results, it shows that of the 322 respondents who had good feeding practices, there were 283 respondents or (87.9%) and those who had good food practices were 39 respondents or (12.1%). Furthermore, of the 283 respondents who had good feeding practices, there were 236 respondents with normal nutritional status or (91.5%) and 47 respondents with stunted nutritional status or (73.4%). And of the 39 respondents who had poor feeding practices, there were 22 respondents with normal nutritional status or (8.5%) and 17 respondents with stunted nutritional status or (26.6%). The conclusion is that there is a relationship between the incidence of stunting and feeding practices where the

calculated X<sup>2</sup> is 14.021 > from the X<sup>2</sup> table 3.481 and the alpha value is <0.05.

This cannot be separated from other factors, namely the respondent's low income, so there is very little interest in buying food. Apart from that, it is caused by mothers not managing their eating patterns according to the time of day which has been set. If a feeding schedule is not formed, the child's eating pattern will not be formed. A feeding schedule is very important to monitor meal frequency and nutritional needs according to the child's needs.

This is in line with research conducted, a retrospective cohort study was conducted using the Pasua and Majengo cohort of mother-child pairs in urban Moshi registered from 2002 to 2017. Approximately 3355 mother-child pairs were included in the analysis. Appropriate complementary feeding practices are assessed using WHO IYFP indicators such as age at introduction of solid, semi-solid or soft foods.<sup>[9]</sup>

Food, minimum dietary diversity, and minimum meal frequency. Nutritional status (stunting, wasting, and wasting) was determined. Most children (91.2%) were given soft/semi-solid/solid food before six months of age, 40.3 percent had low feeding frequency, and 74 percent had low dietary diversity. Earlier introduction of complementary foods at 0–1 month of age was statistically significantly associated with higher risk of wasting and underweight (ARR 2.9, 95% CI 1.3–6.3; and ARR 2.6, 95% CI 1.3–5.1 respectively). Children with low minimum meal frequency had a higher risk of stunting, wasting and underweight (ARR 2.9, 95% CI 2.3–3.6; ARR 1.9, 95% CI 1.5–2.5 and ARR 1.9, 95% CI respectively 1.5–2.4). Children with a low minimum dietary diversity were more likely to be stunted than were the cases with their peers receiving a minimum dietary diversity (ARR 1.3, 95% CI 1.01–1.6). The results of the analysis of the relationship between feeding practices and children's nutritional status showed that the majority of parents were less than optimal in feeding their children, parents who were optimal in feeding their children had a relationship with the child's nutritional status. There are many children who are fed inappropriately; Improper practice of providing additional food makes children prone to malnutrition. Our study supports that introducing complementary foods, providing minimum dietary diversity, and minimum feeding frequency at six months of age are equally important in improving the nutritional status of children.<sup>[9]</sup>

The right feeding pattern is a feeding pattern that suits the type of food, amount of food and the child's eating schedule. Based on this research, the majority of respondents have implemented appropriate feeding patterns for stunted toddlers in the short category. This is because the feeding patterns obtained in this study only describe the current situation of children under five. The nutritional status of stunted toddlers is an accumulation of previous eating habits, so the feeding pattern on a particular day cannot directly affect their nutritional status. The key to success in fulfilling children's nutrition lies with the mother. Good eating habits really depend on the mother's knowledge and skills in how to prepare adequate food nutritional requirements.<sup>[10]</sup>

For this reason, it is hoped that parents can apply the right feeding style to their children, so

that eating habits are formed to support the child's growth. Apart from that, it is hoped that the results of this research will provide additional input and information for officers health in preventing stunting in the work area.

### **The Relationship Between Personal Hygiene Practices with Stunting Incidents in the Coastal Areas of Muna Regency**

The research results showed that of the 322 respondents who practiced good hygiene, there were 186 respondents or (57.8%) and those who had good hygiene practices were 136 respondents or (42.2%). Furthermore, of the 186 respondents whose hygiene practices were good, there were 157 respondents with normal nutritional status or (60.9%) and those with stunted nutritional status were 29 respondents or (45.3%). And of the 136 respondents who had poor feeding practices, there were 101 respondents with normal nutritional status or (39.1%) and 35 respondents with stunted nutritional status or (54.7%). The conclusion is that there is a relationship between the incidence of stunting and hygiene practices where the calculated  $X^2$  is 4,459 > from the  $X^2$  table 3,481 and the alpha value is <0.05.

Habit Washing hands with soap by mothers is a parenting pattern related to hygiene and health. Hand washing habits are also a determining factor in the degree of environmental health risk. Washing hands with soap can reduce the risk of diarrhea by up to 45% and reduce the risk of stunting by 15%.

This is in line with the research conducted right by<sup>11</sup> namely research that aims to assess WASH practices and their relationship with the nutritional status of children under five in the semi-pastoral community of Arusha. This research was conducted on mother-child pairs from 310 households in the four villages of Monduli and Longido involved. The prevalence of stunting, wasting, anemia, and diarrhea were 31.6%, 15.5%, 4.5%, 61.2%, and 15.5%, respectively. Children with diarrhea 2 weeks before the survey ( $P = 0.004$ ), children who used surface water for household purposes ( $P < 0.001$ ),

and children with uneducated mothers ( $P = 0.001$ ) had an increased risk of stunting and being underweight. The prevalence of undernutrition among children under five in the studied population is alarming and may be associated with poor WASH practices and other sociocultural factors.<sup>[11]</sup>

Caregivers of toddlers and toddlers who have good hygiene practice habits, such as washing their hands using a gun Using soap after defecating and before eating can reduce the risk of children getting stunted by 14% and washing their hands with soap before eating reduces the risk of stunting by 15%. Good hygiene behavior carried out by mothers or caregivers of toddlers can have a protective effect against the incidence of stunting.<sup>[11]</sup>

The results of this study are not in line with the other research which obtained the results that washing hands with soap for mothers who do not meet the requirements is a risk factor for stunting because it has  $OR > 1$ .<sup>[12]</sup> The quality of washing hands with soap in this study has no relationship with the incidence of stunting, because the control group had 68.4% of respondents who do not have the quality of the habit of washing hands with soap that meets the requirements, this percentage is not too different from the case group which has 89.5% of respondents who do not have the quality of the habit of washing hands with soap that meets the requirements. The group of cases that do not have the quality habit of washing hands with soap that meets the requirements may be exposed to other factors that cause stunting, such as the quality of sanitation facilities that do not meet the requirements and the behavior of residents who do not meet the requirements, thus making their children more at risk of stunting and experiencing stunting.

## Conclusion

There is a relationship between feeding practices and personal hygiene practices and the incidence of stunting in the Coastal Area of Muna Regency. So, there is a need to increase education regarding the incidence of stunting or rules for parenting patterns in children, which is one of the efforts to obtain good nutritional status for each child.

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