

## **BREASTFEEDING/ COMPLEMENTARY FEEDING BEHAVIOR AND FOOD DIVERSITY OF STUNTING TODDLERS IN NORTH SUMATRA**

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### **ABSTRACT**

#### **KEYWORDS**

stunting; varied diets in family; breast milk; weaning food feeding behavior; education background

The study aims to evaluate the relationship between breastfeeding/complementary feeding behavior and food diversity with the incidence of stunting in toddlers in North Sumatra. SSGI (Nutritional Status Study of Indonesia) survey in 2021 found that prevalence of stunted infants in Sumatera Utara province is still higher (25.8%) than the national limit. It is known that stunting is multifactorial condition with breastmilk/weaning food feeding behavior as one of the contributing factors. Furthermore, family's attitude toward consuming wide variety diets is also considered as factors related to stunting. Secondary data from SSGI 2021 involving 10,755 households was used in this study. STATA application was used to help analyzing the data. Statistical analysis was conducted by using Chi Square and showed that breastmilk/weaning food feeding behavior, and varied diets in family were not contributing factors of stunting in Sumatera Utara province. However, the study found educational background was significant contributing factor to stunting ( $p = 0.000$ ). The study suggest other approach, such as qualitative measure may be used in future study to investigate factors attributable to stunting.

### **INTRODUCTION**

Stunting is one of the nutritional problems that causes short toddlers or their height does not match their age or their age. Around 22.2% or 150.8 million children under five in the world were stunted in 2017. Even so, this figure was much lower when compared to the prevalence of stunting in the world in 2000, which was 32.6% of the world (RI Ministry of Health, 2018). Based on a report from the Joint Child Malnutrition Elites, 2018 that around 55% of stunted toddlers come from Asia, the remaining 39% are from Africa. There are around 83.6 million stunted toddlers in Asia, the largest proportion coming from South Asia (58.7%) and the smallest in Central Asia (0.9%) (RI Ministry of Health, 2018).

The prevalence of stunting under-fives in Indonesia has decreased for almost 2 decades, as reported by the 2007 Basic Health Research (Riskesmas) of 36.8%, 37.2% in 2013, 30.8% in 2018. Meanwhile, the results of the 2019 Indonesian Toddler Nutritional Status Study (SSGBI) show that the prevalence of stunting under-fives is 27.7% and the latest data from the 2021 Indonesian Nutritional Status Study (SSGI) is around 24.4% (Litbangkes, 2021). In a different case, in North Sumatra Province, the prevalence of stunting was found from the results of Riskesmas in a row in 2007: 42.1%, 2013: 36.9%, 2018: 32.4%. Meanwhile, based on data from SSGBI 2019, the prevalence of stunting under five in North Sumatra is around 30.1% and finally SSGI 2021 is 25.8%. Based on the data above, for now the prevalence of stunting under five in North Sumatra in 2021 is still higher than the national coverage, even though on average there has been a decline in this province and ranks 17<sup>th</sup> (Litbangkes, 2021).

The causes of stunting are multifactorial, one of which is poor parenting practices, including a lack of maternal knowledge regarding health and nutrition before and during pregnancy, as well as after the mother gives birth. Some facts and available information show that 60% of toddlers aged 0-6 months do not get breast milk (ASI) exclusively, and 2 out of 3 toddlers aged 0-24 months do not receive complementary foods for breast milk (MP-ASI). MP-ASI is given/started to be introduced when toddlers are over 6 months old. Apart from functioning to introduce new types of food to babies, MP-ASI can also meet the nutritional needs of the baby's body which can no longer be supported by breast milk, as well as form the body's resistance and the development of the toddler's immune system against food and drink (Indonesia, 2017).

In addition, family parenting plays a role in fulfilling nutrition for toddlers, especially in providing a variety of foods according to toddlers' needs. Even though some families care, because of household income, the distance is far to the market so that families will find it difficult to buy a variety of food for their toddler's needs (Nabuuma et al., 2021).

According to research conducted in South Sulawesi, it was found that food diversity is closely related to the incidence of stunting. The conclusion from the results of the study explains that food diversity is not only in terms of quantity, but quality also affects the incidence of stunting (Basri et al., 2021). The diversity of food in toddlers is strongly influenced by the parenting style of the mother in the family, especially the mother's ability to process food and regulate the toddler's diet. However, this is inseparable from the family economy which can result in food insecurity (Nurdin et al., 2019). The opinion above is also in line with the results of other research that stunting is related to family knowledge and attitudes about nutrition which is one of the determining factors of stunting (Rahmawati et al., 2020).

Therefore, the behavior of mothers in breastfeeding and providing diverse food needs, especially for toddlers, plays an important role in fulfilling balanced nutrition. Even though there are many factors that might cause stunting in toddlers, in this case the researchers limited it, only focusing on the two factors that have been described previously. Based on the above, the researchers are interested in researching the behavior of breastfeeding and food diversity of stunting toddlers in North Sumatra which aims to find out whether there is a relationship between mother's behavior in breastfeeding and consumption of family food diversity with the incidence of stunting toddlers. The results of this study can be used as material for strategic studies to prevent stunting in toddlers.

## RESEARCH METHODS

This study was an analytical observation using secondary data. Data was obtained from the 2021 SSGI (Indonesian Nutritional Status Study) document obtained from the Research and Development of the Central Indonesian Ministry of Health. All data in SSGI 2021 specifically for North Sumatra consisting of 25 regencies and 8 cities. The data was analyzed using the Chi Square test using the STATA application. The sample in this study consisted of all households that participated as SSGI respondents in 2021 and recorded in the document, consisting of the work of fathers and mothers as many as 10,755 households, while in education fathers and mothers had different numbers, respectively 10533, 10662. Likewise, the data on breastfeeding behavior, specifically in mothers who have babies 0-5 months and 6-23 months, respectively 890, 3208. Likewise, data on the consumption of family food diversity amounted to 10297. The difference in data varies likely due to the categories of subvariables and several other factors. Examples of educational variables consist of formal education categories, so outside these categories are not counted. This study was conducted from March to August 2022. The variables of this study are limited to the characteristics of respondents consisting of

work, education of fathers and mothers, breastfeeding behavior by mothers in their toddlers, and consumption of family food diversity

## RESULTS AND DISCUSSION

Based on the research that has been done, it can be analyzed some secondary data about the characteristics of respondents who have stunted children in North Sumatra, which have been collected and presented in Table 1. Based on Table 1 on family characteristics from the SSGI document such as the occupation of fathers and mothers, it is known that stunting also occurs in parents (fathers and mothers) who work, a higher percentage than those who do not work. This is in line with the results of the Chi Square test that the incidence of stunting in toddlers has nothing to do with working or not working parents, or in other words working parents (meaning fathers and mothers) or not working have opportunities. The jobs of these parents include civil servants, military, police, BUMN/BUMD, private employees, self-employed, farmers/farm labourers, fishermen, workers/drivers/ojek/helpers and others. The majority of the father's and mother's occupations are farmers/farm labourers, respectively around 39.2%, and 30.4% of the total number of respondents.

However, this is not the case for the educational characteristics of fathers and mothers, the presentation of stunting is greater at the secondary education level (SMA). This is in line with the results of the Chi Square test that the education level of the father and mother is related to the incidence of stunting (0.000), or in other words there is a real tendency for stunting in toddlers to occur more in fathers and mothers with secondary education (SMA) levels.

The following are Tables 2 and 3 about how the behavior of breastfeeding by mothers to their babies aged 0-5 months / also MPASI for ages 6-23 months on the incidence of stunting in North Sumatra.

Based on table 2, it can be seen that there is no good or bad relationship between breastfeeding behavior by mothers and the incidence of stunting in North Sumatra, or in other words, the history of breastfeeding from 0-5 months ( $p = 0.3587$ ) does not affect the incidence of stunting because these two sub-variables have the same opportunities. Likewise, Table 3 shows that the behavior of mothers who are good or not good in giving complementary foods to their children from 6-23 months of age has nothing to do with the incidence of stunting in children in North Sumatra, or in other words these two sub-variables have the same opportunity for stunting to occur.

Furthermore, it can be observed in Table 4 below about how the consumption of family food diversity can affect stunted children under five in North Sumatra as follows.

Based on Table 4 above, it can be seen that the consumption of food diversity in families, whether diverse or not, has nothing to do with the incidence of stunting in North Sumatra based on the results of the Chi Square test ( $p = 0.6784$ ), although from the percentage of stunting, food consumption that does not vary is higher.

## Discussion

### *Characteristics of the family*

Based on data analysis from Table 1, it can be seen that parents who work have a greater tendency for their children to experience stunting than those who do not work. The search results for SSGI North Sumatra secondary data for 2021 show that the majority of the types of work of the respondents' fathers and mothers are farmers/farm labourers. There is a difference in what is meant by farmers/farm workers in the secondary data. The farmers in question are workers in their own fields/land and will then get results from their land, while farm laborers are workers on someone's land, and will get wages from the land owner.

If we pay attention to the sampling of respondents in the SSGI document, then 54.25% are spread in urban areas and 45.75% in rural areas. Meanwhile, based on data from the BPS (Central Statistics Agency) of North Sumatra for 2020, the majority of the work of the population of North Sumatra is 38.48% in the agricultural sector. Based on this, North Sumatra is still dominated by an agrarian society structure which is characterized by ownership of agricultural land and the economic capacity of each group based on the results of processing their agricultural land.

In the structure of an agrarian society, farm workers occupy the lowest position because the economic ability of farm workers is lower than that of landlords who are the top layer and have a number of lands to lease and cultivate to other farmers. Then the layer in the middle is occupied by farmers who own the land and processed by himself. Meanwhile, the lowest layer is occupied by farm workers who do not have agricultural land to cultivate themselves, so they have to work for other farmers who rent out their agricultural land. Thus, it can be concluded that the structure of an agrarian society is not only marked by the ownership of agricultural land, but also the economic capacity of each group based on the results of processing their agricultural land.

Therefore, based on the data above, even though both parents work, it is possible that their child will suffer from chronic malnutrition which causes stunting. This is probably due to some families being unable to prepare a variety of foods for their children. It can be seen in Table 4 that the percentage of stunting is higher in these families, even though there is no difference in statistical tests.

Unlike the case with the level of education that stunting children occur mostly in fathers and mothers with secondary education (SMA / SMK) or in other words there is a relationship between the incidence of stunting in children with the level of education of fathers and mothers. Based on data from Sakernas (National Labor Force Survey) in August 2021, the Open Unemployment Rate (TPT) in North Sumatra is 6.33%, which is dominated by secondary school graduates compared to other education graduates, which is 8.36% and the lowest is elementary education down (low) at 3.71%. This shows that out of 100 people in the labor force, there are about six unemployed. If it is related to the domicile of TPT, around 8.35% are in urban areas, twice as high as those in rural areas (3.96%). Based on the results of Sakernas, it also shows that there are three jobs that absorb the most labor are the agriculture, forestry and fisheries sectors 35.62%. Based on the analysis of the data above, it is possible that fathers and mothers with secondary education levels may be unemployed or work in other informal sectors such as agriculture, forestry, fisheries and others. This may cause low family economies so they are unable to prepare a variety of food for their children.

Another study that was conducted in Gunung Kidul 2015 found that most of the parents in the stunting toddler group had basic education (92.86%) with the majority of their work being farmers (66.97%) and generally earning below the regional minimum wage (<UMR) of around 59.82%. The researcher further explained that there is a relationship between education and employment or income with stunting in the area (Ngaisyah, 2015). In line with that, research in the village of Kualu Tambang Kampar explains that stunting is related to the level of education and parental income (Wahyuni & Fithriyana, 2020). Other researchers also explained in their report that the prevalence of stunting in Indonesia is very high and has a very strong relationship with morbidity, parental education level and family socio-economic status (Soekatri et al., 2020). In line with all of this, another study conducted in Bangladesh also found that the educational level of the father and mother is related to the incidence of stunting in children (Rahman et al., 2021).

### *The behavior of giving ASI/MPASI mothers to their children*

Based on the analysis of the SSGI secondary data analyzed, it is known that the behavior of breastfeeding/complementary feeding has no relationship with the incidence of stunting in North Sumatra, although there is a tendency for bad behavior to have a slightly higher percentage of stunting than good ones. If we review what is meant by the behavior of giving ASI/MPASI, it is stated that it is good if it is given according to the age of the toddler. For example, to find out breastfeeding behavior based on the SSGI questionnaire, questions were asked starting from whether early breastfeeding initiation (IMD) was carried out immediately after birth, to what age exclusive breastfeeding was given, to the type of complementary food given after 6 months of age.

Although the results of the Chi Square test did not show a relationship between breastfeeding/complementary feeding behavior and the incidence of stunting in North Sumatra, this is in line with other research conducted in East Nusa Tenggara in 2014, which explained that the proportion of toddlers experiencing stunting was 49%, while the proportion of exclusive breastfeeding for toddlers was 61% and the proportion of early complementary breastfeeding was 36.8%, but exclusive breastfeeding and early complementary breastfeeding were not factors that influenced the occurrence of stunting in toddlers (Zogara et al., 2014). In line with this research, another study conducted in Gorontalo explained that stunting occurs not due to factors such as exclusive breastfeeding or complementary breastfeeding, but one of them is due to variations in the provision of complementary foods (Nurdin et al., 2019).

This is different from other studies which explain that the habitual patterns of mothers in breastfeeding their children such as exclusive breastfeeding and when complementary foods are given are related to the incidence of stunting (Firdausya & Hardini, 2020)(Larson et al., 2019).

#### ***Consumption of a variety of family foods***

Based on an analysis of secondary data from the SSGI 2021 document, there is no relationship between consumption of a variety of family foods and the incidence of stunting in North Sumatra. Even so, there is a greater tendency for stunting to occur in families with diversified food consumption. The diversity of food in question is when feeding infants who have been given complementary foods or children with a variety of foods such as staple foods, food sources of animal/vegetable protein, vegetables and fruit. This question was carried out using the 24-hour recall method.

Other researchers explained that stunting was found more commonly in mothers who gave complementary foods which were monotonous and not varied when compared to varied ones. In addition, the researcher found that stunting was more often found in toddlers with the habit of consuming snacks or who liked to eat instant noodles  $\geq 3$  times a week (Nurdin et al., 2019). This is because snacks or instant noodles are sourced from basic ingredients or carbohydrates, so by consuming this type of food children will be full quickly. If this condition occurs frequently, children's nutritional needs for growth are not met.

Various types of food are needed for the child's growth period because it fulfills the necessary elements of nutritional balance such as carbohydrates, proteins, vitamins and minerals. Therefore, in fulfilling daily food these 3 elements must be fulfilled. Other researchers explained that fulfilled nutritional sources are one of the factors that influence the incidence of stunting in children (Kragel et al., 2020)

## CONCLUSION

Based on the results of SSGI 2021 secondary data analysis, it can be concluded that family characteristics, breastfeeding/complementary feeding behavior and consumption of a variety of foods are not related to the incidence of stunting in North Sumatra. It is recommended to carry out further qualitative research on the behavior of breastfeeding/complementary feeding or specific types of food related to the incidence of stunting, so that alternatives for stunting prevention can be identified.

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