Poverty, Feeding Behavior, and Stunting Incidence in Semarang City

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Purpose: This research was conducted in 2022 to describe a picture of poverty, feed behavior, and the incidence of stunting in the city of Semarang.

Method: The data collection method uses structured interviews with 384 samples of families at risk of stunting using the proportional random sampling method. Methods of processing and analyzing data with descriptive statistics (Chi-Square).

Results: The results showed that the number of respondents in the poor category was 238 respondents (62.0%) consisting of 224 respondents (58.3%) who had stunted toddlers and as many as 14 respondents (3.6%) who did not have stunted toddlers. Meanwhile, 146 respondents (38.0%) were in the non-poor category, consisting of 115 respondents (29.9%) who had stunted children under five and 31 respondents (8.1%) who did not have stunted children. The results of data analysis using the Chi-Square test obtained a p-value of 0.000 (p > 0.05), which means that there is a relationship between poverty and stunting.

Conclusion: Respondents in the poor category are 0.232 times more likely to have stunting toddlers. In addition, there was also a difference in the feeding behavior of toddlers in families at risk of stunting in the city of Semarang.

Keywords: Stunting at Risk Families, Health Determinants, Poverty, Feeding Behavior, Nutrition

INTRODUCTION

Stunting is a chronic malnutrition problem caused by inadequate nutritional intake for a long time due to the provision of food that does not meet nutritional needs (Black et al., 2017). Based on Nutrition Status Monitoring (PSG) data in 2019, the prevalence of stunting in Indonesia was recorded at 27.67%. This figure is still above the standard set by WHO that the prevalence of stunting in a country should not exceed 20 percent. The prevalence of stunting in Central Java according to PSG data also shows an increasing development from 2014 to 2017, namely: 22.6%; 24.8%; 23.9%, and finally 28.5%. While the prevalence in Semarang City is 21.0% (Dinkes, 2019) Tackling stunting is one of the targets of the Sustainable Development Goals (SDGs) which is included in the 2nd sustainable development goal, namely eliminating hunger and all forms of malnutrition by 2030 and achieving food security. The target set is to reduce the stunting rate by up to 40%, from 24.4% in 2021 to 14% in 2024.

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Malnutrition at an early age increases infant and child mortality, causes sufferers to get sick easily and has a body posture that is not optimal for an adult (Santosa et al., 2022). In addition, stunting can affect toddlers in the long term, namely disrupting their health, education, and productivity in the future (Gani et al., 2021). Stunted toddlers tend to have difficulty achieving physical and psychomotor growth and development potential (Alderman et al., 2019). Stunting that occurs in childhood is a risk factor for increased mortality, cognitive abilities, low motor development, and imbalanced body functions (Rezapour et al., 2016).

The magnitude of the impact of stunting has made the government pay great attention to this problem. Based on the 2018 National Strategy for the Acceleration of Stunting Prevention, the government has made efforts to accelerate the reduction of stunting, but the stunting rate has not yet reached the WHO minimum target. This is due to the following constraints: 1) Stunting prevention programs are not yet effective, 2) Coordination of implementation of specific and sensitive nutrition interventions at all levels related to planning, budgeting, implementation, monitoring, and evaluation is not optimal, 3) Ineffective and efficient allocation and utilization of resources and sources of funds, 4) Limited capacity and quality of program implementation, 5) There is still a lack of advocacy, campaigns, dissemination related to stunting, and various prevention efforts (Ministry of National Development Planning, 2018).

Data from the 2021 Indonesian Nutrition Status Study (SSGI) shows that the stunting rate for Central Java Province is still high at 20.9%, as is the case for Semarang City, which is still high. The SSGI 2021 results show that Semarang City is one of the regencies/cities in Central Java where the prevalence of stunting is still high above the provincial average of 21.33% (Ministry of Health RI, 2021). In addition to the high prevalence of stunting, the City of Semarang also has a large number of families that have the potential to be at risk of stunting, namely 171,662 (40.73%) families of the total families, namely 421,435 families. The Semarang City Population Control and Family Planning Service focuses on stunting management in 34 sub-districts that have formed KB Villages (Quality Family Villages). Based on data from the results of the Semarang City Health Service's weighing operation in 2021, shows that the stunting prevalence rate for the City of Semarang is 3.10% or 1,367 out of 44,058 children under five who were weighed.

Stunting is caused by multi-dimensional factors, one of which is the lack of access to nutritious food (Febriana & Nurhaeni, 2019). Adequate intake of nutrients in food is a determining factor for children's growth, therefore the food consumed must be able to meet all nutritional needs (Mahmudiono et al. ., 2018). Consumption of varied or diverse foods from various foodstuffs can complement or contribute to meeting daily nutritional needs (Basri et al., 2021).

The purpose of this study is to provide an overview of poverty, feeding behavior in children under five, and the incidence of stunting in the city of Semarang. Stunting in toddlers is a consequence of several factors that are often associated with poverty including nutrition, health, sanitation, and the environment (Woldeamanuel & Tesfaye, 2019). Problems with the nutritional status of children, in general, are the impact of an imbalance in the intake and output of nutrients (nutritional imbalance), in addition to errors in choosing the foodstuffs consumed (Ahmad et al., 2018); (Soesanti et al., 2020). Several previous studies used the general public as the research population, while this study involved families at risk of stunting based on screening indicators in PK21 data (2021 Family Data Collection) in Semarang City as the study population. It is hoped that the results of this research will yield an effective, efficient, convergent, and integrated method or strategy for dealing with stunting in the city of Semarang.

METHODS

This research is a quantitative descriptive study, in which researchers want to know the description of poverty, feeding behavior, and the incidence of stunting in the city of Semarang. The descriptive research design was chosen because the researcher tries to photograph the events and events that are

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the center of his attention, then describes or describes them as they are so that it does not require any treatment or manipulation of variables, because the symptoms and events already exist and the researcher just needs to describe them. The quantitative approach is intended as a type of approach whose findings are obtained through statistical procedures or other calculations.

This research was conducted in the city of Semarang. This city was chosen because based on the results of SSGI 2021 it has a stunting prevalence rate (21.3%), this figure is higher than the province (20.9%), as well as the prevalence of families with a high risk of stunting when compared to other districts/cities in Central Java Province. Based on the results of the 2021 Family Data Collection, the number of families at risk of stunting in Semarang City is 171,622 families and 49% (83,397 families) have toddlers. The determinants of stunting in the city of Semarang are also complex because of the diverse characteristics of the community, starting from urban and rural communities, so researchers focus more on interventions for families at risk of stunting with toddlers. It is hoped that improving the nutritional status of families of toddlers at risk of stunting will accelerate the reduction in stunting rates at the Semarang City level.

For survey research, the formula that can be used is usually binomial proportions. If the population size (N) is known, then the study sample is calculated using a cross-sectional formula so that the minimum research sample is 384 families at risk of stunting.

The variables analyzed in this study are related to poverty, feeding behavior, and the incidence of stunting in the city of Semarang. These variables are analyzed descriptively by presenting charts, tables, and narratives to get a comprehensive picture.

RESULTS

Poverty and Stunting Incidence

Based on Figure 1 it can be seen that the number of respondents who had stunted toddlers was 88.28% while those who were not stunted were 11.72%. Then the number of research respondents who were poor (61.98%) was greater when compared to respondents who were not poor (38.02%) meaning that the majority of families at risk of stunting in
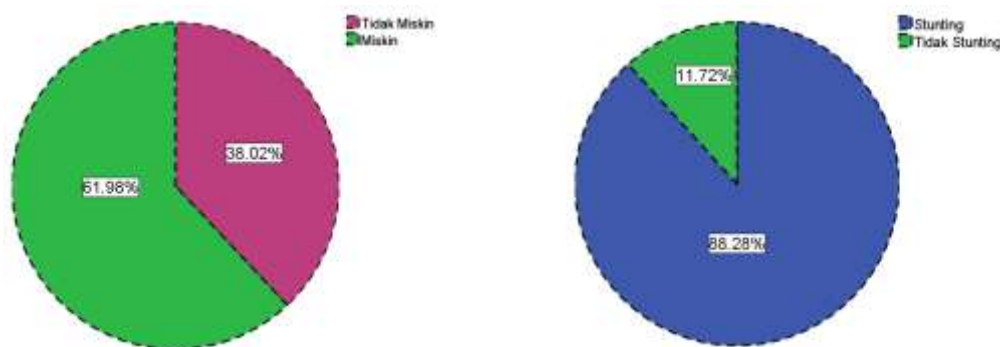

Semarang City were poor families.

Figure 1. Description of Research Respondents Based on Poverty and Stunting Variables

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The results of statistical analysis related to the frequency distribution of the characteristics of respondents who have stunting toddlers in the poor category are 224 respondents (66.08%), it is known that the education level of the majority of respondents is an elementary school (14.3%), junior high school respondents (32.6%) and senior high school (47.8%). Most of them were in the age group above 31 years with 134 (59.8%) with the age of first marriage being at risk of 50 (22.3%) respondents and the age of giving birth who were still at risk of 33 people. (14.7%) of respondents.

Figure 2. Education, Age, Age of First Marriage, and Risk of Childbirth in the Family
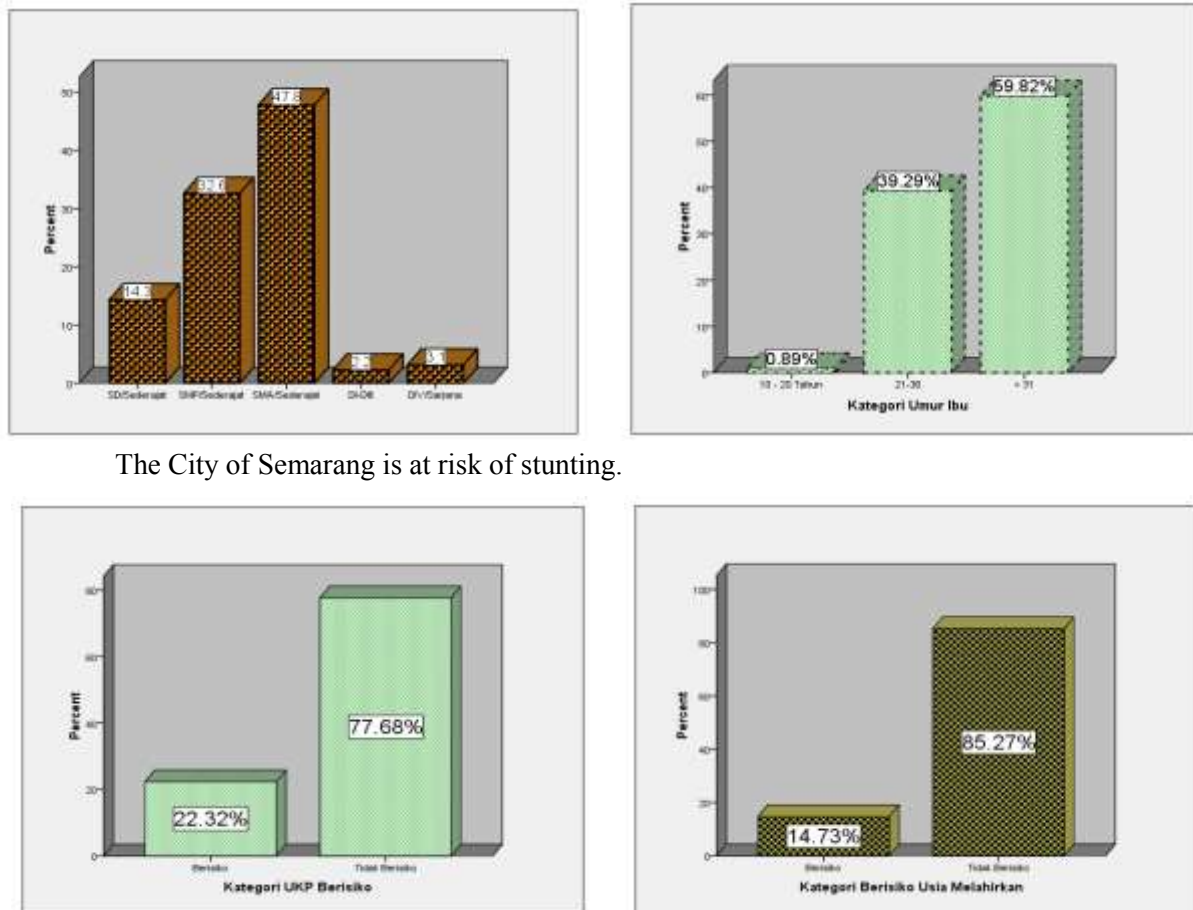
The City of Semarang is at risk of stunting.

Table 1. Relationship between Poverty and Stunting Incidence in Semarang City

Poverty	Stunting events				amount		RP	p-value
	Stunting		Not Stunting					
	Σ	%	Σ	%	Σ	%		
Poor	224	58.3	14	3.6	238	62.0	0.232 (0.119-0.453)	0.000
Not Poor	115	29.9	31	8.1	146	38.0		
Jumlah	339	88.3	45	11.7	384	100.0		

Based on table 1, it is known that the number of respondents in the poor category was 238 respondents (62.0%) consisting of 224 respondents (58.3%) who had stunted toddlers and as many as 14 respondents (3.6%) who did not have stunted toddlers. Meanwhile, 146 respondents (38.0%) were in the non-poor category, consisting of 115 respondents (29.9%) who had stunted children under five and 31 respondents (8.1%) who did not have stunted children.

The results of data analysis using the Chi-Square test obtained a p-value of 0.000 (p > 0.05), which means that there is a relationship between poverty and stunting. The Prevalence Ratio (RP)

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value from the risk estimate calculation is 0.232 with 95% CI (0.119-0.453). This shows that respondents in the poor category are 0.232 times more likely to have stunting toddlers.

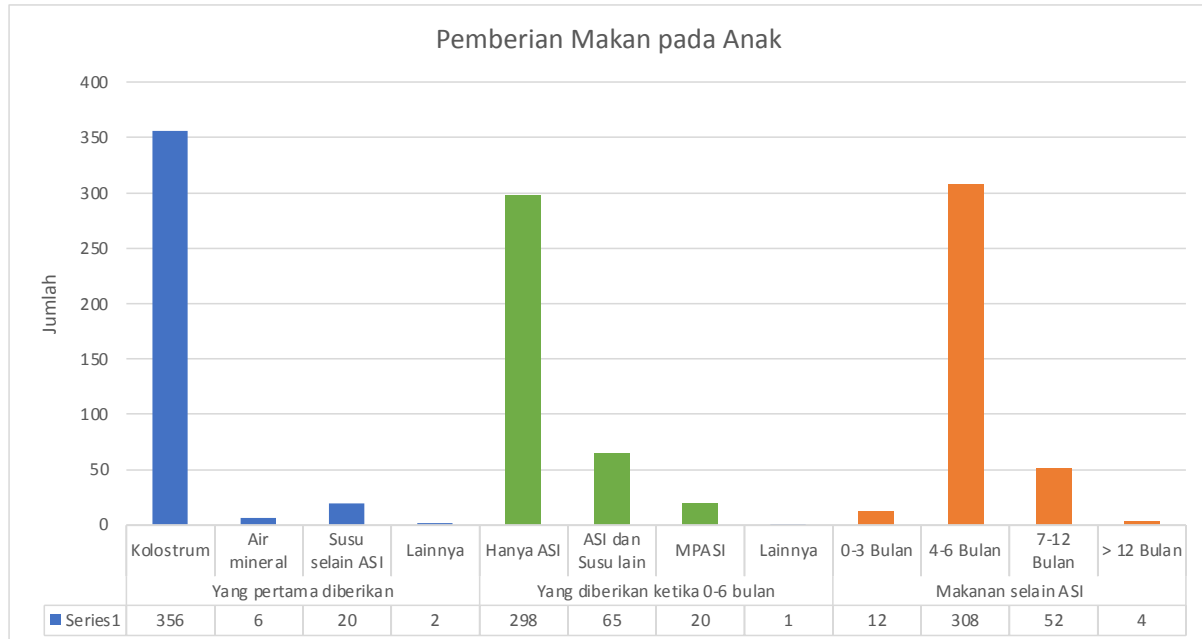***Feeding Behavior and Stunting Incidents***

Figure 3. Toddler feeding behavior in families at risk of stunting

From Figure 3 it can be explained that when a child is born, 93% of respondents are given colostrum, 1% are given mineral water, 5% are given milk other than breast milk, and 1% are given other drinks. Then when the children were aged 0-6 months, 77% of respondents stated that children were only given breast milk, 16% were given breast milk and other milk, and 5% were given MP ASI. In more detail, it can be seen that children began to be given food other than breast milk at the age of 0-3 months by 3% of respondents, at the age of 4-6 months by 82% of respondents, at the age of 7-12 months by 14% of respondents, and more than 12 months by 1% of respondents.
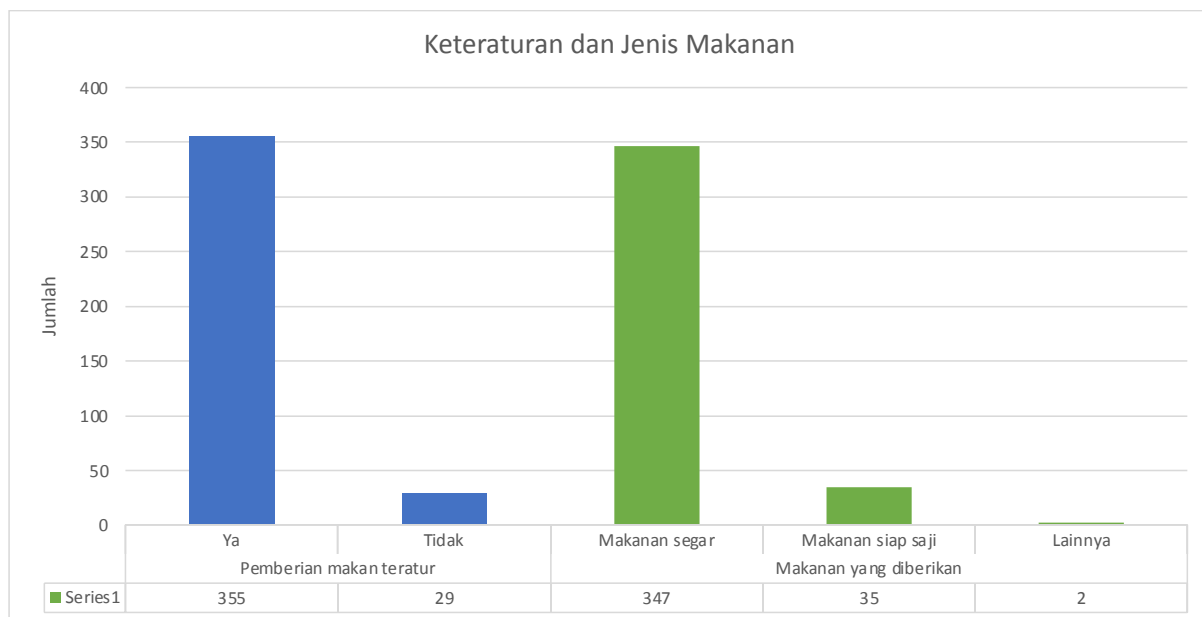

Figure 4. Regularity and Types of Food for Toddlers in Families at Risk for Stunting

From Figure 4 it can be explained that 92% of respondents regularly provide food to their children, and 8% of respondents stated that they are not regular in providing food to children. Then 90% of

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respondents stated that they gave fresh food to their children, 9% gave ready-to-eat food, and 1% gave other food.
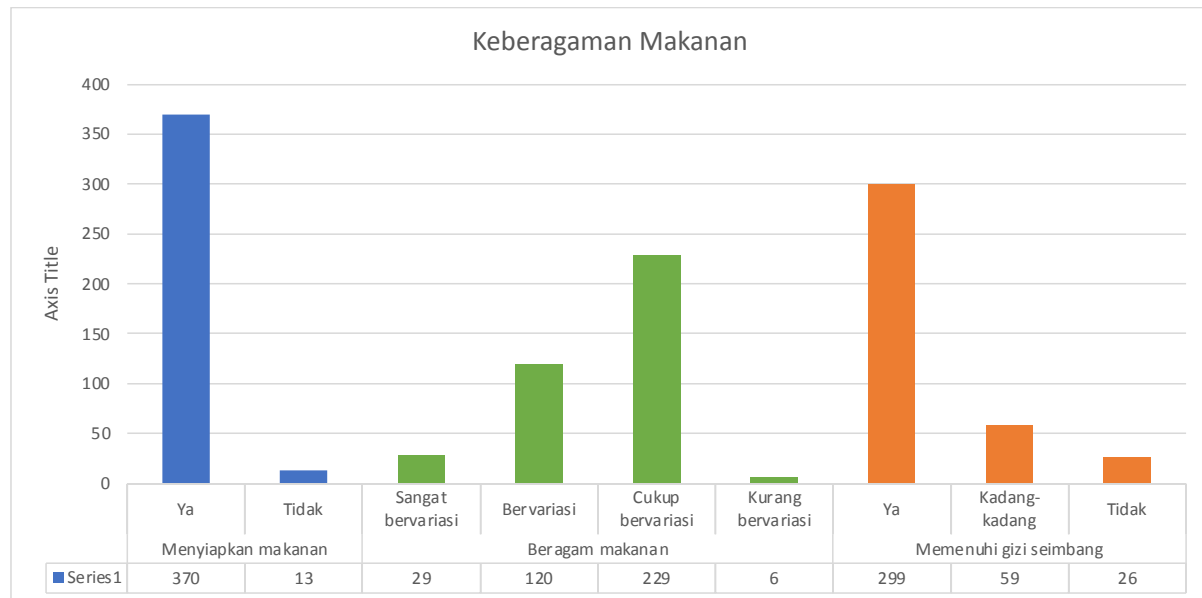

Figure 5. Regularity and Types of Food for Toddlers in Families at Risk for Stunting

From Figure 5 it can be explained that 97% of respondents stated that they always prepared it and only 3% stated that they did not always prepare food for their children. Then 8% of respondents stated that the variety of food provided varied greatly, 31% of respondents stated that it is varied, 60% of respondents stated that it was quite varied, and 1% of respondents stated that it was less varied. Furthermore, 78% of respondents stated that the food served fulfilled balanced nutrition, 15% stated that it sometimes fulfilled it, and 7% stated that the food served did not fulfill balanced nutrition.

DISCUSSIONS

Poverty can affect the incidence of stunting in toddlers. Economic factors in this case such as income and spending on food can represent poverty. Income will affect the fulfillment of family nutrition and opportunities to attend higher formal education. The poverty that cannot be controlled can result in a family being unable to meet food needs with good quantity and quality. The decline in the quality of food consumption marked by limited purchases of food sources of protein, vitamins, and minerals will result in malnutrition, both macro, and micronutrients.

The number of poor people in Semarang City in 2021 reached 84.45 thousand people (4.56%), an increase of 4.87 thousand people compared to 2020 which amounted to 79.58 thousand people (4.34%). 68% have an income below the UMK (the lowest is Rp. 1,958,169.69 and the highest is Rp. 3,060,348.78) (BPS Kota Semarang, 2020).

Low education will affect a person's level of knowledge, especially in this case related to good parenting. Furthermore, the level of knowledge will influence the mother's behavior in parenting practices, one of which is in feeding the child. Likewise, with the age factor, it is known that age that is too young or too old both in terms of age of marriage and age of childbirth will increase the risk of having a child who is stunted. If you are too young, the mental aspect and the function and biological structure of the body are not ready and mature to be able to give birth and care for children. Figure 6. Eating Behavior of Toddlers in Families at Stunting Risk

From the chart, it can be explained that 95% of respondents accompanied their children and 5% of respondents stated that they did not accompany them. Then as much as 50% of respondents stated that their children ate whatever was provided, 33% of respondents stated that their children were picky about types of food, 16% of respondents stated that their children had difficulty eating, and 1% of respondents did not answer. Furthermore, 38% of respondents stated that food was always eaten, 42%

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of respondents stated that food was sometimes consumed, and 20% of respondents stated that food was not consumed.

The status of the economic situation will affect the level of ability to meet food adequacy to support the fulfillment of family nutritional aspects (Damayanti & Sentosa, 2020; Ngaisyah, 2015(Hien & Kam, 2008). Similar to the study conducted by Kia et al., (Kia et al. al., 2017) who found that malnutrition often occurs in weak economic groups. Community groups with weak economic conditions are also usually identical with the characteristics of low education, slum environment, poor sanitation, and poor behavior in supporting health aspects. This is in line with the results of a study conducted by (Mulyaningsih et al., 2021) which states that poor economic status with environmental factors can increase the risk of becoming a stunted family.

However, from the results above it can also be seen that there are 115 (29.9%) respondents who are not poor (affordable) and have stunting toddlers. Women who work with sufficient income usually have limitations in providing maximum care for children, especially in terms of time, often children are left behind or entrusted to household assistants, families, or child care centers. In addition, these limitations also affect feeding behavior in children. Such as providing food or food that is not fresh and instant in nature such as nuggets and sausages so that it does not support the nutritional fulfillment aspect. The results of research conducted by (Afiatna & Maryanto, 2021), stated that the pattern of feeding carried out by parents was correlated with the adequacy of energy and protein levels in children and had an impact on the incidence of stunting.

Based on previous research, the causes of stunting occur since pregnancy due to lack of nutrition at that time, initiation of early breastfeeding less than 1 hour after birth or not at all, and breastfeeding stops for 12 months (Anggryni et al., 2021; Nirmalasari, 2020). The incidence of stunting in toddlers is also significantly influenced by exclusive breastfeeding, and good complementary breastfeeding (Nova & Afriyanti, 2018; Sumardilah & Rahmadi, 2019; Wijayanti et al., 2020)

Food intake can be related to the incidence of stunting. There is a significant relationship between the level of protein adequacy and the incidence of stunting in those under five. Children with a low level of protein adequacy are at risk of experiencing stunting (Adani & Nindya, 2017; Aisyah & Yunianto, 2021).

Children who do not meet the minimum food diversity in their daily food intake have a 2.7 times risk of becoming anemic compared to children who meet the minimum food diversity. The proportion of anemia in children aged 6–23 months is very worrying because it can increase the risk of stunting at a later age (Maulida et al., 2018).

Nutritional status, mother's height, and eating habits, instant food together as risk factors for stunting in toddlers (Yuwanti et al., 2021)

CONCLUSION

The number of respondents in the poor category was 238 respondents (62.0%) consisting of 224 respondents (58.3%) who had stunted children and 14 respondents (3.6%) who did not have stunted children. Meanwhile, 146 respondents (38.0%) were in the non-poor category, consisting of 115 respondents (29.9%) who had stunted children under five and 31 respondents (8.1%) who did not have stunted children. The results of data analysis using the Chi-Square test obtained a p-value of 0.000 (p > 0.05), which means that there is a relationship between poverty and stunting. The Prevalence Ratio (RP) value from the risk estimate calculation is 0.232 with 95% CI (0.119-0.453). This shows that respondents in the poor category are 0.232 times more likely to have stunting toddlers. In addition, there was also a difference in the feeding behavior of toddlers in families at risk of stunting in the city of Semarang.

This research needs to be followed up with policy recommendations or further research in the form of implementing stunting prevention strategies in the city of Semarang.

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CONFLICT OF INTEREST
The authors have no conflicts of interest associated with the material presented in this paper.

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