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The role of family's sociodemographic status at incidence of stunting in Senggreng village, Malang regency

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Abstract

Nutritional problems are still a major public health problem in Indonesia. Malnutrition generally occurs in toddlers because, at that age, children experience rapid growth. One of the health indicators that is assessed for its success in achieving the SDGs is the nutritional status of children under five. Toddlers are a group that is vulnerable to malnutrition, which will be marked by stunting. Stunting (shortness) is a linear growth disorder caused by chronic malnutrition or chronic or recurrent infectious diseases, as indicated by a z-score for height for age (height/age) less than -2 SD. Cases of stunting in children can be used as a predictor of the low quality of a country's human resources. Stunting causes poor cognitive ability, low productivity, and an increased risk of disease, resulting in long-term losses for Indonesia. This study used an analytic observational method and was conducted in the working area of Sanggreng Village, Malang Regency and the data analysis uses SPSS. In this study, 24 stunting samples were taken from the child population in Sanggreng Village, Malang district. The results of the descriptive analysis showed that the proportion of male stunting and female was almost the same. Parental education and work were not related to intake of stunting ($p > 0.05$). According to the study results, the most dominant cause of stunting is a history of exclusive breastfeeding. Toddlers who get exclusive breastfeeding have a 9.3 times smaller risk of stunting than toddlers who don't get exclusive breastfeeding, or exclusive breastfeeding provides a protective effect against stunting in toddlers. This is due to the proportion of stunting problems found at the age of less than 2 years. Ideally, a child will receive exclusive breastfeeding until the age of 6 months. In this study, exclusive breastfeeding was given at most until the age of 20–24 months (9%) and then at the age of 6–9 months. In this study, it was also found that 18 children had been given breast milk at the beginning of 6 months of life (18%), and 4 other populations were given breast milk and other foods in the form of formula milk.

Keywords: Family; Sociodemographic; Incidence; Stunting; Senggreng.

1. Introduction

Nutritional problems are still a major public health problem in Indonesia. Malnutrition generally occurs in toddlers because, at that age, children experience rapid growth. Toddlers are a nutritionally vulnerable group in a community where that period is a transitional period between when they are weaned and when they start following an adult diet [1].

One of the health indicators that is assessed for its success in achieving the SDGs is the nutritional status of children under five. Toddlers are a group that is vulnerable to malnutrition, which will be marked by stunting. Stunting (shortness) is a linear growth disorder caused by chronic malnutrition or chronic or recurrent infectious diseases, as

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indicated by a z-score for height for age (height/age) less than -2 SD. Stunting describes a chronic malnutrition status during the growth and development period from the beginning of life [2].

The incidence of stunting in children under five is a major nutritional problem. Efforts to improve the nutritional status of the community, including reducing the prevalence of stunting under five, are one of the four health development priorities that are the main targets in the 2015–2019 Medium-Term Development Plan. Globally, Indonesia is the country with the fourth-largest prevalence of stunting; in 2017, the prevalence of stunting (height/age) in children under five in Indonesia was 36% [3].

Globally, around 1 in 4 toddlers are stunted [4]. Until now, Indonesia has been facing nutritional problems, namely energy and protein deficiency (KEP), which causes the problem of stunting in children under five. According to the results of the 2018 Riskesdas, the national prevalence of short toddlers is 32.81 percent. It consists of 12.92 percent of very short toddlers and 19.89 percent of short toddlers. In general, there has been a decrease from 2013 [5].

Stunting is caused by multi-dimensional factors, including the first 1000 days of a child's life (HPK), which are reflected in the factors of exclusive breastfeeding, proper MP-ASI provision, factors of mother's knowledge regarding health issues, including issues of clean and healthy behavior and sanitation (PHBS), nutrition before pregnancy and during pregnancy, infectious diseases in children, and complete immunization, which can affect infectious diseases and child morbidity [5].

In 2015, a PSG (Pemantauan Status Gizi/Nutrition Status Monitoring) survey was conducted to monitor and evaluate program activities and achievements. Based on PSG data for the last three years, stunting has the highest prevalence compared to other nutritional problems such as undernutrition, thinness, and obesity. Based on the 2015 PSG results, the prevalence of short toddlers in Indonesia is 29%. This figure decreased in 2016 to 27.5%. However, the prevalence of short toddlers increased again to 29.6% in 2017 [6].

Stunting in toddlers needs special attention because it can cause delays in physical growth, mental development, and health status in children. Stunted children have a greater possibility of growing into unhealthy adults. Stunting in children is also associated with an increased vulnerability of children to diseases, both communicable and non-communicable. Stunting is also at risk of increasing the incidence of overweight and obesity, which can then increase the risk of degenerative diseases. Cases of stunting in children can be used as a predictor of the low quality of a country's human resources. Stunting causes poor cognitive ability, low productivity, and an increased risk of disease, resulting in long-term losses for Indonesia [5].

2. Material and methods

This study used an analytic observational method and was conducted in the working area of Sanggeng Village, Malang Regency. The population in this study was all families with toddlers in the working area of Sanggeng Village, Malang Regency. In this study, data was processed using SPSS version 24 software.

3. Results and discussion

According to the Ministry of Health (2019), because stunting is caused by multidimensional factors, multi-sectoral treatment is needed. Health workers are young workers who monitor the nutritional status of children before the age of 2 and provide knowledge about health and child development. Research by Astuti et al. (2018) also found a relationship between the ability of health workers to detect stunting, water and environmental sanitation, parenting styles, place of delivery, and genetic factors. Therefore, not only the role of health workers but also that of parents is very important in overcoming stunting by providing good nutrition for children.

In this study, 24 stunting samples were taken from the child population in Sanggeng Village, Malang district. Maternal age ranged below 30 years for as many as 3 people (12.5%), 30-35 years for 8 people (54.2%), and there were 8 people aged over 35 years. Provision of iron is generally given to 19 people (79.2%), 4 people are not always given (16.7%), and 1 person is not given. Folic acid was always given to 13 samples (54.2%), not always given to 6 people, and never given to 5 people. Iodine salt is always given to 21 people (87.5%), not always given to 2 people, and never given to 1 person. Pregnancy control was generally carried out once a month for 19 people (79.2%) and not always for 1 person, 6 times per pregnancy for 1 person. Complementary food (MPASI) was given to 16 people (66.7%) at the most, and 19 people (79.2%) were given breast milk at the start. The highest breastfeeding age was at the age of 1-3 months (66.75) in 16 people; 4 samples were given under 1 month (16.7%). In this study, exclusive breastfeeding was given for more

than 20 months to 24 months in 9 people (37.5%), and in 6 people it was given for 3 to 20 months (25%). In the first 6 months of life, 18 people were given ASI (75%) and 4 samples were given ASI and others (16.7%). Children are generally given food every morning, afternoon, and evening. Most families income is below 3 million rupiah (17%). Vegetables were sometimes given to 16 people (66.7%). Feeding vegetables initiative to 16 samples and other variations (66.7%) The majority of side dishes were given to 23 samples (95.8%) and not to 1 sample (4.2%). Deworming was given once every 6 months to 21 children (87.5%) and more than once every 6 months to 2 children (8.3%), and 1 child had not been given deworming medication. Boiled water was given to all samples for drinking (100%), and hand washing was always carried out in 23 samples (95.8%).

Table 1 Sample Demographic Characteristics

Demographics Characteristics	Frequency	%
Age		
< 30 years old	3	12.5%
30-35 years old	13	54.2%
> 35 years old	8	33.3%
Iron		
Always	29	79.2%
Not always	4	16.7%
Not given	4.2	4.2%
Folic acid		
Always	13	54.2%
Not always	6	25%
Not given	5	20.8%
Iodine salt		
Always	21	87.5%
Not always	2	8.3%
Not given	1	4.2%
Pregnancy control		
9x/pregnancy	10	23.8%
1x/month	20	47.6%
6x/pregnancy	12	28.6%
Not always	1	4.2%
Complementary food (MPASI)		
<2 months	3	12.5%
3 months	1	4.2%
6 months	16	66.7%
> 6 months	3	12.5%
Not given	1	4.2%
Initially given		
Breast milk (ASI)	19	79.2
Other than breast milk (ASI)	5	10.8

Breastfeeding age		
<1 month	4	16.7
1-3 months	16	66.7
>3 months	2	8.3
Did not breastfeed	2	8.3
Exclusive breastfeeding (ASI)		
<3 months	4	16.7
3-6 months	6	25
>20 months – 24 months	9	37.5
Until now	3	12.5
Did not breastfeed	2	8.3
The first 6 month of life given		
Breast milk (ASI)	18	75
Breast milk (ASI) and others	4	16.7
Feeding time		
Morning, afternoon, evening	10	41.7
Morning, evening	5	20.8
Uncertain	9	37.5
Family's income		
<3 million	17	70.8
3-5 million	5	20.8
>5 million	2	8.3
Vegetables		
Always	3	12.5
Not always	16	66.7
Not given	5	20.8
Feeding initiative		
Without vegetables	8	12.5
Spoon feeding vegetables and food variations	16	66.7
Side dishes		
Yes	23	95.8
No	1	4.2
Deworming medication		
Every 6 months	21	87.5
> 6 months	2	8.3
Not yet given	1	4.2
Boiled water		
Yes	24	100

No	0	0
Washing hands		
Yes	23	95.8
No	1	4.2

Globally, one-fifth of pregnant women experience iron deficiency anaemia during pregnancy. A meta-analysis showed that anaemia during the first or second trimester increased the risk of prematurity and low birth weight, whereas antenatal iron supplementation significantly reduced anaemia in the mother. The World Health Organization (WHO) recommends 60 mg daily of iron and 400 g of folic acid during pregnancy for settings with a high prevalence of anaemia in pregnancy (>40%). In most South Asian countries, health facilities and public health workers distribute iron and folic acid (IFA) supplements. However, coverage is still low (ranging from 25% in Afghanistan to 75% in the Maldives). In this study, folic acid and iron supplementation were always given during pregnancy to prevent stunting.

According to the study results, the most dominant cause of stunting is a history of exclusive breastfeeding. Toddlers who get exclusive breastfeeding have a 9.3 times smaller risk of stunting than toddlers who don't get exclusive breastfeeding, or exclusive breastfeeding provides a protective effect against stunting in toddlers [7]. This is due to the proportion of stunting problems found at the age of less than 2 years. Ideally, a child will receive exclusive breastfeeding until the age of 6 months [8]. In this study, exclusive breastfeeding was given at most until the age of 20–24 months (9%) and then at the age of 6–9 months. In this study, it was also found that 18 children had been given breast milk at the beginning of 6 months of life (18%), and 4 other populations were given breast milk and other foods in the form of formula milk.

After the age of 6 months and above, children begin to receive complementary foods for ASI (MP-ASI), and their gross motor development begins to increase so that they need more nutrients. However, some of the problems that arise are toddlers having difficulty eating, accompanied by the quality and quantity of breast milk, which decrease with increasing age of the child, so that up to 24 months of age can be considered an adaptation period to be able to consume foods that are nutritionally appropriate. After toddlers are weaned, at the age of 24 months and over, they will begin to be able to adapt to consuming more food than before weaning. Therefore, nutritional problems, including stunting, are not experienced by children over 24 months of age. In this study, complementary foods were given at 6 months of life, followed by breastfeeding for 20 to 24 months.

However, the results of other studies conclude that exclusive breastfeeding is not the only factor that contributes to the incidence of stunting in children. Optimal complementary feeding must also be considered. Family economic status is influenced by several factors, including parents' occupation, parents' education level, and the number of family members. Family economic status will affect the ability to fulfill family nutrition needs and the ability to obtain health services. Children in families with low economic levels are more at risk of experiencing stunting because of their low ability to fulfill nutrition needs, increasing the risk of malnutrition. The results of research conducted in Semarang City regarding stunting showed that families with low socioeconomic levels were 11 times more likely to experience stunting [9]. The results of other studies in Maluku Province regarding stunting and family income showed that low family income variables were risk factors for stunting [10].

For child characteristics, gender and a history of diarrhea are consistent risk factors for stunting. A previous review also revealed that gender and childhood infections contribute to stunting. Although stunting has been shown to affect 52.3% of girls and 47.7% of boys, other studies have revealed that boys have a much higher risk of stunting than girls. Episodes of diarrhea have been shown to be a risk factor for stunting [11]. In a study by Elba (2020), it was stated that a history of frequent diarrhea in the last 3 months and poor hygiene practices increased the risk of stunting by 3,619 and 4,808 times in toddlers aged 24–59 months. Where the diarrhea was caused by a digestive infection [12]. Treatment of helminthiasis includes worm treatment, water sanitation, and environmental hygiene [12]. The government, families, communities, and children all have an important role to play in worm prevention. This can be prevented by the mother's behavior, such as regular medication. Compliance with taking anthelmintic drugs must be directed by health workers, and children's compliance actions are still dominated by parents. Children are not yet able to take deworming drugs themselves [13]. The prevalence of helminthiasis in children in Indonesia is still high, ranging from 2.7 to 60.7%. Therefore, prevention of helminth infections has been carried out since children were 2 years old. An example is giving worm medicine. This is because in children aged 2 years, there has been contact with the soil, which is a source of transmission of worm infections [14].

4. Conclusion

Nutritional problems are still a major public health problem in Indonesia, and stunting is a child problem with associated morbidity in the future. Stunting involves several risk factors. Risk factors related to demographics include maternal age at pregnancy, supplementation of iron and folic acid, and iodized salt. Pregnancy control is also seen as important for evaluating fetal development. After the birth process, it is important to provide nutrition during early life, including exclusive breastfeeding and then giving complementary foods. Providing nutrition when complementary foods are consumed must also take into account the side dishes and vegetables that are consumed. Prevention of stunting is also important in terms of good hygiene, including washing hands, consuming deworming medications to prevent diarrhea, and drinking boiled water.

Compliance with ethical standards

Acknowledgments

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Disclosure of conflict of interest

The authors declare no conflict of financial or ideological interest.

Statement of ethical approval

All authors declare that all experiments have been examined and approved by the leader of Senggreng village, Malang regency.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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