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Analysis Of Risk Factors For Stunting In Toddlers In Urban And Rural Areas In Indonesia: An Epidemiological And Public Health Nutrition Approach

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ABSTRACT

Stunting is a condition of a body that is short for age to exceed a deficit of -2 SD (Standard Deviation) below the median standard length or height for age. Short toddlers (stunting) describe the presence of long-term nutritional problems or chronic nutrition that can be influenced by the condition of the mother or prospective mother, the fetal period and the infant or toddler period, including diseases suffered during toddlerhood. The purpose of this study was to determine the risk factors for stunting in toddlers aged 6 months - 23 months at the Pekkae Health Center, Tanete Rilau District, Barru Regency. This study is a quantitative study using an observational analytical method with a cross-sectional design. Sampling was obtained using a purposive sampling technique. The number of samples was 98 toddlers with mothers of toddlers as respondents. The data was processed and analyzed using the Chi-Square test p <0.05 in the SPSS program. The results of this study indicate that there is a significant relationship between the history of providing complementary feeding (p-value 0.031; 1.36), history of infectious diseases (p-value 0.005; 1.41), maternal knowledge about toddler nutrition (p-value 0.031; 1.36) and economic factors (p-value 0.000; 2.71) with the incidence of stunting. There is no significant relationship between the history of providing exclusive breastfeeding, toddler immunization, maternal height and the mother's last level of education with the incidence of stunting with a p-value> 0.005. The most dominant factor in the results of this study is the family's economic factor.

INTRODUCTION

Toddlerhood is a period of rapid growth and development. Starting from the first day of pregnancy, birth of the baby until the age of 2 years or what is known as the "golden period" or "critical period". At this time, toddlers are very sensitive to the environment so that more attention is needed, especially nutritional adequacy. If nutritional needs are not met during this period, the child's growth and development will be hampered. It is known that the fastest growth and development of the brain also occurs in the first five years of life. Thus, the quality of children is a reflection of healthy and optimal growth and development. One indicator of growth is the height or length of the toddler's body (Ni`mah Khoirun and Nadhiroh, 2015; Hidayat, 2017; Suryana and Fitri, 2019). Stunting is a condition of a body that is short according to age to exceed a deficit of -2 SD (Standard Deviation) below the median standard length or height according to age.

Short toddlers (stunting) describes the existence of long-term nutritional problems or chronic nutrition that can be influenced by the condition of the mother or prospective mother, the fetal period and the infant periodor toddler, including diseases suffered during toddlerhood (Wellina, Kartasurya and Rahfilludin, 2016; Rambitan, Purba and Kapantow, 2019). Based on UNICEF data in 2017, there were 151 million (22%) toddlers experiencing stunting. Meanwhile, based on WHO data in 2016, the prevalence of stunted toddlers in the world was 22.9% and the nutritional condition of short toddlers was the cause of 2.2 million of the majority of toddlers in the world who experienced underweight, stunting and wasting came from the African and Asian continents and more than half of stunted toddlers in the world came from Asia 55%, while 39% lived in Africa. Compared to several neighboring countries, the prevalence of short toddlers in Indonesia (36%) was the highest compared to Myanmar (35%), Vietnam (23%), Malaysia (17%), Thailand (16%), and Singapore (4%) (UNICEF, 2017; WHO, 2016). Indonesia is included in the third highest stunting country in the South-East Asian Region after East Timor and India, although the percentage of stunting in Indonesia fell from 37.8% in 2013 to 27.67% in 2019, this figure is still relatively high. Based on the 2018 Basic Health Research (Riskesdas), the nutritional status of toddlers in Indonesia has improved from 2013 to 2018, the prevalence of stunting decreased from 37.2% to 30.8%, but this figure is still relatively high because the prevalence of short toddlers becomes a public health problem if the prevalence is 20% or more. Therefore, the percentage of stunted toddlers in Indonesia is still high and is a health problem that must be addressed (WHO, 2019; Riskesdas, 2018). Based on Nutritional Status Monitoring (PSG) data for the last three years, stunting has the highest prevalence compared to other nutritional problems such as malnutrition, thinness, and obesity. It is known that the prevalence of short or very

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 (PSG, 2015; Ministry of Health of the Republic of Indonesia, 2018).

The prevalence of stunted toddlers in Barru Regency is 33%. The percentage of stunting in Barru Regency in 2017 was 9.1%, 2018 was 28.6%, and 2019 was 17.4%. Based on the results of the Barru Regency PSG in 2019, the percentage of stunting in the Pekkae health center work area was 42.3% and in 2020 based on temporary calculations in January-June, the percentage of stunting increased to 52.4%, the second highest after the Madello health center, which was 56.3%. Initial data obtained the number of stunting in the health center work area in Barru Regency in 2020 was 1,613 children. Toddlers aged 6-23 months who experienced stunting at the Pekkae health center in January-October were 328 toddlers (PSG, 2015; Barru Regency Health Office, 2020). Stunting in Indonesia occurs during the period of providing complementary foods, where breast milk is unable to meet the nutritional needs of infants. Based on previous research, the risk factors for stunting at the age of 0-59 months are the practice of breastfeeding, the practice of providing complementary foods, maternal education, family economic factors, and infectious diseases such as ARI, malaria and diarrhea. Lack of nutrition in the early stages of life will inhibit optimal physical growth and cognitive development which will have an impact on the future of toddlers (Hagos et al., 2017; Chowdhury et al., 2020). Stunting will cause long-term impacts, namely disruption of physical, mental, intellectual and cognitive development. Children who are stunted up to the age of 5 years will be difficult to improve so that it will continue into adulthood and can increase the risk of offspring with low birth weight (LBW). Toddlers who are over two years old who experience stunting will find it difficult to catch up with their growth. Because, the age of more than two years tends to be unable to catch up with growth and the treatment given is only limited to improving the quality of life.

Therefore, researchers take the age of 6-23 months to conduct early detection of stunting risk factors so that they can be addressed or carried out fast and appropriate treatment (Apriluana and Fikawati, 2018). Currently, the government's priority in reducing the incidence of stunting is to focus on the first 1000 days of life, because providing nutrients for a thousand days starting from conception until the child is two years old is a critical period for the health, welfare and success of children in the future. Indonesia is currently participating in the program (SUN - Scaling Up Nutrition), a movement that aims to provide everyone with nutritious food.

RESEARCH METHODS

Univariate Analysis

Univariate analysis aims to explain or describe the characteristics of each research variable. This analysis produces a frequency distribution and percentage of each variable.

Bivariate Analysis

Bivariate analysis aims to determine the interaction of two variables, either comparative, associative or correlative (Suryono, 2010). Bivariate analysis is carried out on two variables that are suspected of being related and to determine the significance of the relationship, the p value is used using Chi-Square analysis and the magnitude of the risk using RP (Prevalence Ratio). All hypotheses for unpaired nominal and ordinal categories use Chi-Square test data analysis (Sopiyudin, 2014).

RESULTS

Univariate analysis was conducted to determine the distribution of each variable studied. The variables studied included a history of exclusive breastfeeding, a history of complementary feeding, a history of infectious diseases, toddler immunization, maternal height, maternal education, maternal knowledge of toddler nutrition and family economic factors. a. History of exclusive breastfeeding. Measurement of the history of exclusive breastfeeding includes providing colostrum to toddlers, providing only breast milk for 6 months to toddlers and providing fluids other than breast milk for 6 months to toddlers. Based on the provision of colostrum in the stunting group, more toddlers received colostrum, namely 61 (71.8%) toddlers out of 72 toddlers who experienced stunting compared to toddlers who were not given colostrum, namely 11 (15.3%) toddlers. Meanwhile, the provision of colostrum in the non-stunting group was 24 (92.3%) and only 2 (7.7%) toddlers were not given colostrum. Based on the history of exclusive breastfeeding in the stunting group, more toddlers were given exclusive breastfeeding, namely 43 (59.7%) compared to toddlers who were not given exclusive breastfeeding, namely 29 (40.3%) toddlers. Meanwhile, the history of exclusive breastfeeding in the non-stunting group was also more given exclusive breastfeeding, namely 18 (69.2%) compared to

toddlers who were not given exclusive breastfeeding, namely 8 (30.8%) toddlers. Based on the provision of fluids other than breast milk in the stunting group, more toddlers were not given fluids other than breast milk, namely 43 (59.7%) toddlers compared to toddlers who were given fluids other than breast milk, namely 29 (40.3%) toddlers.

Fluids other than breast milk that mothers gave to toddlers in this study were, such as formula milk, honey, rice water, and sugar water. History of complementary feeding Measurement of the history of complementary feeding includes the first age of complementary feeding, frequency of complementary feeding, type of complementary feeding and the amount of complementary feeding given Based on the results of the research that has been conducted, it was found that the first age of complementary feeding was ≥ 6 months in both the stunting and non-stunting groups. In the stunting group, 71 (96.8%) toddlers were given complementary feeding for ≥ 6 months and only 1 (1.4%) toddler was given complementary feeding for <6 months. Meanwhile, in the non-stunting group, all toddlers were given complementary feeding for ≥ 6, namely 26 (100.0%) toddlers. Based on the results of the research that has been conducted, it was found that the highest frequency of MP-ASI at the age of the first MP-ASI given to toddlers was 3 times a day, namely 43 (59.7%) toddlers in the stunting group and 2 times a day as many as 20 (76.9%) in toddlers who were not stunted. Based on the age of 6-8 months of giving MP-ASI, it was found that the highest frequency of MP-ASI was given 3 times a day, namely 70 (97.2%) in the stunting group and 3 times a day in as many as 26 (100.0%) in the non-stunting group. Based on the age of 9-11 months of giving MP-ASI, it was found that the highest frequency of MP-ASI was given 3 times a day, namely 72 (100.0%) toddlers in the stunting group and 3 times a day, namely 24 (92.3%) toddlers in the non-stunting group.

Based on the age of 12-23 months, the provision of MP-ASI was found to be the highest frequency of MP-ASI given 3 times a day, namely 60 (100.0%) toddlers in the stunting group and 3 times a day, namely 19 (90.5%) toddlers in the non-stunting group. Based on the type of first complementary feeding given to toddlers, it was found that the most common type of complementary feeding was strained rice porridge, namely 42 (58.3%) toddlers in the stunting group and the type of complementary feeding was cereal porridge, namely 16 (61.5%) toddlers in the non-stunting group. Based on the type of complementary feeding at the age of 6-8 months, it was found that the most common type of complementary feeding was strained rice porridge, namely 54 (75.0%) toddlers in the stunting group and the type of complementary feeding was strained rice porridge, namely 14 (53.8%) toddlers in the non-stunting group.

DISCUSSION

Based on the type of MP-ASI given at the age of 9-11 months, it was found that the most common type of MP-ASI was rice, namely 44 (61.1%) toddlers in the stunting group and the type of MP-ASI was rice porridge, namely 24 (92.3%) toddlers in the non-stunting group. Based on the type of MP-ASI given at the age of 12-23 months, it was found that the most common type of MP-ASI was rice, namely 43 (71.7%) toddlers in the stunting group and in the non-stunting group the most common type of MP-ASI was rice, namely 20 (95.2%) toddlers. Based on the amount of MP-ASI given, the largest amount of the first MP-ASI given to toddlers was 2-3 tablespoons, namely 61 (84.7%) toddlers in the stunting group and 17 (65.4%) toddlers in the non-stunting group.

Based on the age of 6-11 months of MP-ASI provision, the largest amount of MP-ASI was ½ small bowl or equivalent to 125 ml, namely 66 (91.7%) toddlers in the stunting group and 23 (88.5%) toddlers in the non-stunting toddler group. Based on the age of 9-11 months of MP-ASI provision, the largest amount of MP-ASI was ½ small bowl or equivalent to 125 ml, namely 52 (72.2%) toddlers in the stunting group and 16 (61.5%) toddlers in the non-stunting toddler group. Based on the age of 12-23 months of MP-ASI provision, the largest amount of MP-ASI was ¾ to 1 small bowl measuring 250 ml, namely 46 (76.7%) toddlers in the stunting group and 19 (90.5%) toddlers in the non-stunting toddler group.

CONCLUSIONS AND RECOMMENDATIONS

1. The history of providing complementary feeding to toddlers is a significant risk factor for stunting in toddlers aged 6 months - 23 months at the Pekkae Health Center, Tanete Rilau District (p = 0.031; RP 1.36).
2. The history of infectious diseases in toddlers is a significant risk factor for stunting in toddlers aged 6 months - 23 months at the Pekkae Health Center, Tanete Rilau District (p = 0.005; RP 1.41).

3. Maternal education is a significant risk factor for stunting in toddlers aged 6 months - 23 months at the Pekkae Health Center, Tanete Rilau District (p = 0.015; RP 1.44).
4. Mother's knowledge about toddler nutrition is a significant risk factor for stunting in toddlers aged 6 months - 23 months at the Pekkae Health Center, Tanete Rilau District (p = 0.031; 1.36).
5. Family economic factors are a significant risk factor for stunting in toddlers aged 6 months - 23 months at the Pekkae Health Center, Tanete Rilau District (p = 0.000 RP 2.71). and History of Exclusive Breastfeeding, toddler immunization, maternal height are not significant risk factors for stunting in toddlers aged 6 months - 23 months at the Pekkae Health Center, Tanete Rilau District (p = > 0.005).

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