FACTORS RELATED TO STUNTING INCIDENCE

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ABSTRAK : FAKTOR-FAKTOR YANG BERHUBUNGAN DENGAN KEJADIAN STUNTING

Latar Belakang: Stunting adalah gangguan pertumbuhan dan perkembangan otak pada anak yang disebabkan karena kekurangan asupan gizi dalam waktu lama, infeksi berulang, dan kurangnya stimulus psikososial. Anak stunting akan memiliki tingkat kecerdasan yang tidak maksimal. Ada beberapa faktor yang bisa menyebabkan anak menjadi stunting, diantaranya adalah dari faktor ibu yakni kurangnya gizi ibu selama masa kehamilan karena tidak tahu tentang makanan yang seharusnya dikonsumsi semasa hamil. Angka kejadian stunting di wilayah kerja Puskesmas Pinang Jaya tahun 2021 yaitu sebesar 2,8% (15 kasus dari 530 balita), di tahun 2022 sebesar 3,6% (24 kasus dari 663 balita), sedangkan pada bulan Januari 2023 sebesar 3% (21 kasus dari 686 balita).

Tujuan: mengetahui faktor-faktor yang berhubungan dengan kejadian stunting di wilayah kerja Puskesmas Pinang Jaya.

Metode: Jenis penelitian ini adalah kuantitatif, menggunakan rancangan case control. Populasi penelitian ini adalah seluruh ibu yang mempunyai balita stunting dan tidak stunting masing-masing 21 responden, menggunakan purposive sampling. Variabel independen pada penelitian ini adalah pendidikan, ASI esklusif, berat badan lahir, pendapatan dan pengetahuan, Variabel dependen adalah stunting. Uji stastistik menggunakan uji Chi-Square.

Hasil: Ada hubungan pendidikan ibu (p=0,029; OR=5,20), ASI esklusif (p=0,014; OR=6,2), pengetahuan (p=0,012; OR=6,9) dan tidak ada hubungan berat badan lahir (p=0,408), pendapatan (p=0,751) dengan stunting. Saran bagi ibu hamil khususnya yang berisiko tinggi untuk memeriksakan kehamilannya setiap bulan dan berperilaku hidup bersih dan sehat.

Kata Kunci: Pendidikan, ASI Eksklusif, Pendapatan, Berat Badan Lahir, Pengetahuan, Stunting

ABSTRACT

Background: Stunting is a disorder of growth and brain development in children caused by prolonged malnutrition, repeated infections, and lack of psychosocial stimulus. Stunted children will have a level of intelligence that is not optimal. There are several factors that can cause children to become stunted, including the mother's factor, namely the mother's lack of nutrition during pregnancy because she does not know about the food that should be consumed during pregnancy. The incidence of stunting in the Pinang Jaya Community Health Center work area in 2021 was 2.8% (15 cases out of 530 toddlers), in 2022 it was 3.6% (24 cases out of 663 toddlers), while in January 2023 it was 3% (21 cases of 686 toddlers).

Objective: Determine the factors related to stunting incidence in the working area of the Pinang Jaya Community Health Center.

Method: This type of research is quantitative, using a case-control design. The population of this study were all mothers who had stunted and non-stunted toddlers, each of 21 respondents, used purposive sampling. The independent variables in this study were education, exclusive breastfeeding, birth weight, income and knowledge. The dependent variable is stunting. Statistical test using the Chi-Square test.

Results: There is a relationship between mother's education (p=0.029; OR=5.20), exclusive breastfeeding (p=0.014; OR=6.2), knowledge (p=0.012; OR=6.9) and no relationship to body weight birth (p=0.408), income (p=0.751) with stunting. Advice for pregnant women, especially those at high risk, to have their pregnancy checked every month and to live a clean and healthy life.

Keywords: Education, Exclusive Breastfeeding, Income, Birth Weight, Knowledge, Stunting

INTRODUCTION

Stunting is a disorder of growth and development in children caused by prolonged malnutrition, repeated infections, and a lack of psychosocial stimulus. Stunted children will have a level of intelligence that is not optimal. Stunting

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makes children more susceptible to disease and reduces productivity. So it can be concluded that stunting is a condition in which a person's height is shorter than the height of other people of the same age (Seksi Kesehatan Keluarga dan Gizi Kota Bandar Lampung Tahun 2022).

Stunting is a disorder of growth and development in children due to chronic malnutrition and repeated infections, which is characterized by their length or height being below the standard (Peraturan Presiden Nomor 72 Tahun 2021). Stunting is also the height that is below the 3rd or 2nd percentile standard deviation on the normal growth curve that applies to that population. Height for age can be used to assess nutritional status in the past, measurements of body length can be made by yourself and are cheap and easy to carry. Meanwhile, the weakness is that height does not increase quickly, so it is less sensitive to nutritional problems in the short term. Stunting has the potential to slow brain development, with long-term effects in the form of mental retardation, low learning ability, and the risk of developing chronic diseases such as diabetes, hypertension, and obesity.

The World Health Assembly (2012) explains that stunting in toddlers is one of the most significant obstacles to human development. Stunting is a state of having a very short body that exceeds a deficit of 2 standard deviations below the median length or population height based on standards from the World Health Organization. The time that is important for whether or not stunting occurs is the first 1000 days of life, which are 270 days during pregnancy and 730 days until the child is 2 years old. This time is very important because it is a golden period for children. Brain development will develop rapidly at this age. Likewise with the growth and development of children. So what must be considered during the first 1000 days of life is to protect the health and nutrition of children from the time they are in the womb until they are 2 years old.

Therefore, in order to get the appropriate the first 1000 days of life, there are a number of things that must be considered, such as that mothers must be healthy and have good nutritional status, have regular prenatal checks, eat a balanced nutritional diet, initiate early breastfeeding and exclusive breastfeeding, be monitored for growth and development, and get complete basic immunization and vitamin A capsules.There are several factors that can cause a child to become stunted, including the mother's factor, namely malnutrition during pregnancy due to not knowing about the foods that should be consumed during pregnancy, irregular pregnancy checks, and the postpartum period. Infant factors include babies with low birth weight (less than 2500 grams), usually babies born prematurely before 37 weeks of gestation, and twins. Factors for children include babies only getting breast milk until the age of 6 months. Other factors that influence the incidence of stunting are family income, environmental sanitation, and other factors.

The WHO standard regarding the prevalence of stunting is less than 20%. The reduction target for 2024 in Indonesia is 14%. Based on the results of the Indonesian Nutritional Status Survey (2022), the stunting rate has fallen from 24.4% (2021) to 21.6% (2022). Stunting in Lampung province in 2022 will be 15.8%, while in 2021 it will be 18.8%. Stunting in Bandar Lampung City was 11.1% (2022). The incidence of stunting at the Pinang Jaya Health Center in 2021 was 2.8% (15 cases out of 530 toddlers), in 2022 it was 3.6% (24 cases out of 663 toddlers), and in January 2023 it was 3% (21 cases out of 686 toddlers).

The purpose of this study was to determine the factors related to stunting incidence in the working area of the Pinang Jaya Community Health Center.

RESEARCH METHODS

This research used a quantitative type and a case-control design. The research was carried out in February– June 2023 at the Community Health Center of Pinang Jaya Bandar Lampung City. The population in this study were mothers who had toddlers in the working area of the Pinang Jaya Community Health Center in January 2023, namely 686 people, used purposive sampling The independent variables were education, knowledge, exclusive breastfeeding, family income, and birth weight. The dependent variable is the incidence of stunting. The measuring instrument used in this study was a checklist. Data analysis used the Chi-Square test.

RESEARCH RESULTS

Univariate analysis

Table 1

Variable	f	%
Stunting		
Yes	21	50,0
No	21	50,0
Level of education		
Low	18	42,9
High	24	57,1

Exclusive Breastfeeding		
No	21	50,0
Yes	21	50,0
Income		
Low	28	61,9
High	16	38,1
Knowledge		
Poor	17	40,5
High	25	59,5
Birth Weight		
Low	7	16,7
Normal	35	83,3

The frequency distribution of higher education (>SMA) was 24 respondents (57.1%) compared to the lower education group (junior high school, elementary school, no school) of 18 respondents (42.9%). The frequency distribution of mothers who give exclusive breastfeeding was 21 people (50%), the same as not giving exclusive breastfeeding. As many as 21 people (50%), family income is still low below the regional minimum wage (2.9 million), namely 28 people (61.9%), and 16 people (38.1%) have high income according to regional minimum wage and more than regional minimum wage. Mothers' knowledge was higher in the group with good knowledge of child nutrition care patterns by 25 respondents (59.5%) compared to the group with less knowledge about child nutrition care patterns by 17 respondents (40.5%) and the normal delivery group by 35 respondents (83.3%) compared to mothers who gave birth with low birth weight (<2500 grams), which only amounted to 7 respondents (16.7%).

Bivariate analysis

Of the 21 respondents in the case group, 13 respondents (72.2%) had low education, and 8 respondents (33.3%) had higher education, whereas of the 21 respondents in the control group, 5 respondents (27.8%) had low education, and 16 respondents (66.7%) had high education. This showed that there is a relationship between maternal education and stunting, OR= 5.20, which means that mothers with low education have a 5.2 times greater risk of experiencing stunting when compared to mothers with higher education.

Table 2

Variable	Stunting				P-value	OR 95% CI
	Yes		No			
	F	%	f	%		
Level of education						
Low	13	72,2	5	27,8	0,029	5,2
High	8	33,3	16	66,7		1,3-19,7
Exclusive Breastfeeding						
No	15	71,4	6	28,6	0,014	6,2
Yes	6	28,6	15	71,4		1,6-23,8
Income						
Low	12	46,2	14	53,8	0,751	-
High	9	56,2	7	43,8		
Knowledge						
Poor	13	76,5	4	23,5	0,012	6,9
High	8	32,0	17	68,0		1,7-28,0
Birth Weight						
Low	5	71,4	2	28,6	0,408	-
Normal	16	45,7	19	54,3		

In the case group, 15 respondents (71.4%) were not exclusively breastfed, and 6 respondents (28.%) were exclusively breastfed. Whereas of the 21 respondents in the control group, 6 respondents (28.6%) were not exclusively breastfed, 15 respondents (71.4%) had exclusive breastfeeding. This showed that there is a relationship between exclusive breastfeeding and stunting, OR= 6.2, which means that mothers who are not exclusively breastfed have a 6.2 times greater risk of experiencing stunting when compared to mothers who are exclusively breastfed.

It is known that of the 21 respondents in the case group, 5 respondents (71.4%) had low birth weight, the remaining 16 respondents (45.7%) were born normal, and of the 21 respondents in the control group, 2 respondents (28.6%) were born with low birth weight, and the remaining 19

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respondents (54.3%) were born normal. This showed that there is no relationship between birth weight and stunting.

Of the 21 respondents in the case group, 12 respondents (46.2%) have low income (<2.9 million), 9 respondents (56.2%) have high income, and of the 21 respondents in the group control, 14 respondents (53.8%) have low income, and 7 respondents (43.8%) have high income. This showed that there is no relationship between income and stunting.

Of the 21 respondents in the case group, 13 respondents (76.5%) had poor knowledge, 8 respondents (32%) had good knowledge, and of the 21 respondents in the control group, 4 respondents (23.5%) had poor knowledge and 17 respondents (68%) had good knowledge. This showed that there is a relationship between knowledge, OR=6.9, which means that mothers with poor knowledge have a 6.9 times greater risk of experiencing stunting when compared to mothers with good knowledge.

DISCUSSION

The Relationship between Education and Stunting Of the 21 respondents in the case group, 13 respondents (72.2%) had low education, and 8 respondents (33.3%) had higher education, whereas of the 21 respondents in the control group, 5 respondents (27.8%) had low education, and 16 respondents (66.7%) had high education. This showed that there is a relationship between maternal education and stunting, OR= 5.20, which means that mothers with low education have a

5.2 times greater risk of experiencing stunting when compared to mothers with higher education. This study were in line with the theory that one of the factors that influences the incidence of stunting in toddlers is the mother's education. Based on Persagi (2013), mothers with low education are at risk of giving birth to stunted children by 42.7%. While mothers with higher education, from junior high school to tertiary education, have a risk of giving birth to stunted children of 33.8% (Indriani & Nodia, 2018).

According to Lestari in Wirawan (2016), the level of education is a person's activity in developing abilities, attitudes, and forms of behavior. Mustamin's research in South Sulawesi Province reveals that 27.7% of mothers with less education have stunted toddlers, while 27.3% of mothers with a good education have normal toddlers. There is a relationship between the level of education of mothers and the incidence of stunting in toddlers.

The majority of young mothers' education has graduated from elementary and junior high schools, where this education is a social problem related to culture and the environment. Society has a culture of women not needing high school. Education shapes health behavior in three ways, assisting understanding of good health knowledge and behavior, providing opportunities to get adequate employment and income, and providing opportunities to obtain adequate support from social and psychological factors (Braveman et al.,

2011; Ergerter, 2011). Investment in education is one way to break the chain of stunting problems. Parents who are highly educated have better opportunities to get decent jobs and income, so that the needs for nutrition, health facilities, education, environment, and good parenting styles for children will be fulfilled (Bradley, 2002).

The Relationship between Exclusive Breastfeeding and Stunting

In the case group, 15 respondents (71.4%) were not exclusively breastfed, and 6 respondents (28.%) were exclusively breastfed. Whereas of the 21 respondents in the control group, 6 respondents (28.6%) were not exclusively breastfed, 15 respondents (71.4%) had exclusive breastfeeding. This showed that there is a relationship between exclusive breastfeeding and stunting, OR= 6.2, which means that mothers who are not exclusively breastfed have a 6.2 times greater risk of experiencing stunting when compared to mothers who are exclusively breastfed. The results of this study are in line with research conducted by Satri (2019), shown that there is a relationship between consumption of iron tablets, early breastfeeding initiation), exclusive breastfeeding and stunting.

Other research stated that the causes of stunting occur since pregnancy due to a lack of nutrition at that time, initiation of early breastfeeding less than 1 hour after birth or not at all, breastfeeding stops <6 months and the frequency of breastfeeding is not sufficient, and complementary feeding <6 months or >12 months, and the food given does not vary with frequency and texture that is not age-appropriate (Anggryni, 2021).

Exclusive breastfeeding is defined as breastfeeding without supplementation with food or other drinks except medicine. After 6 months, breast milk cannot meet the needs of minerals such as iron and zinc, so to meet these needs, complementary foods that are rich in iron must be given. Premature babies, babies with low birth weight, and babies who have hematological disorders who do not have adequate iron reserves at birth generally require iron supplementation before the age of 6 months,

which can be given together with exclusive breastfeeding.

Based on theory and observations, researchers argue that breastfeeding is very important, but the timing of breastfeeding and complementary breastfeeding also contribute to producing optimal nutritional status. Exclusive breastfeeding for the first 6 months of a baby's life followed by optimal complementary feeding is a public health intervention that efficiently supports toddler growth (Krebs and Hambidge, 2007). Conversely, exclusive breastfeeding for too long or giving complementary breastfeeding too early is also associated with the incidence of stunting in children.

The Relationship between Birth Weight and Stunting

It is known that of the 21 respondents in the case group, 5 respondents (71.4%) had low birth weight, the remaining 16 respondents (45.7%) were born normal, and of the 21 respondents in the control group, 2 respondents (28.6%) were born with low birth weight, and the remaining 19 respondents (54.3%) were born normal. This showed that there is no relationship between birth weight and stunting.

Birth weight is categorized into three categories, low birth weight (<2500 grams), normal birth weight (2500-3999 grams), and excess birth weight (4000 gram). Low birth weight is a factor that influences the incidence of stunting in toddlers. Based on the results of research at the Lima Puluh Community Health Center, out of 22 toddlers with low birth weight, 16 toddlers of them (72.7%) experienced stunting (Fitri, 2018). Babies with a low birth weight are 0.11 times more at risk of experiencing stunting than normal (Afroh, 2016). There is a significant relationship between the history of low birth weight and stunting. A baby with a low birth weight will experience many difficulties in adapting and maintaining life outside the uterus, so the risk of death increases before reaching 7 days of age. And babies with low birth weight have a nutritional intake that is not optimal.

Birth weight was not related to stunting, and the researchers argued that out of 42 respondents, 7 respondents showed that mothers born with low birth weight at the Pinang Jaya Community Health Center were already low, and from the 7 respondents who experienced stunting, there were 5 people, meaning that stunting was at the Pinang Jaya Community Health Center and was not caused by birth weight but influenced by other factors such as education, knowledge, and exclusive breastfeeding.

The Relationship between Income and Stunting

Of the 21 respondents in the case group, 12 respondents (46.2%) have low income (<2.9 million), 9 respondents (56.2%) have high income, and of the 21 respondents in the group control, 14 respondents (53.8%) have low income, and 7 respondents (43.8%) have high income. This showed that there is no relationship between income and stunting. According to the theory, income affects the nutrition and formal education of a family. Malnutrition can result from low knowledge and low education. Based on research conducted by Nadhiroh (2017), there is a relationship between low-income families and stunting. Based on Nasikhah's research (2018), it was found that low income was a factor in stunting. For a long time, poverty resulted in the inability of families to afford good food.

The results of this study are not in line with Aini's research, which shows that there is a significant relationship between per capita income and the incidence of stunting in toddlers. Low economic status is considered to have a significant impact on the possibility of children being thin and short (Aini, Nugraheni, & Pradigdo,2018).

The economy is an investment in reducing stunting. With an increase in the economy, an increase in nutritional status will also occur, so that stunting can be prevented. Growth failure is caused by a lack of nutrition. Women with stunting will also produce stunted offspring, resulting in a cycle of poverty and a decline in human resources that is not easy to break. Economic status is the root of nutritional problems. Economic status greatly influences family purchasing power, access to adequate education, quality health services, and the fulfillment of adequate food needs. The results of the study stated that children born to families with low economic status have a higher risk of suffering from malnutrition when compared to children from rich families (Delpeuch et al., 2000; Dekker et al., 2010; Chirande et al., 2015; Akombi et al., 2017; Kusnanto, 2018).

The Relationship between Knowledge and Stunting

Of the 21 respondents in the case group, 13 respondents (76.5%) had poor knowledge, 8 respondents (32%) had good knowledge, and of the 21 respondents in the control group, 4 respondents (23.5%) had poor knowledge and 17 respondents (68%) had good knowledge. This showed that there is a relationship between knowledge, OR=6.9, which means that mothers with poor knowledge have a 6.9

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times greater risk of experiencing stunting when compared to mothers with good knowledge.

The results of this study are in line with the existing theory that mothers knowledge of toddler nutrition, family per capita income, and exclusive breastfeeding are also factors that influence the incidence of stunting in toddlers. It showed that mothers' knowledge about under-five nutrition is a risk factor for stunting (Aini, Nugraheni & Pradigdo, 2018). Knowledge is the result of knowing, and this occurs after a person senses a certain object, namely sight, hearing, smell, taste, and touch (Notoatmodjo, 2017).

The results of this study are in line with Aini's research (2018), which shown that the proportion of toddlers who experience stunting is higher in mothers with poor knowledge (31.1%), low family income (71.1%), and non-exclusive breastfeeding (62.2%). There is a relationship between mother's knowledge, family income and history of exclusive breastfeeding and the incidence of stunting in children aged 1–24 months in Talaga Community Health Center, Majalengka Regency.

Based on their theory and observations, the researchers argued that the results of this study indicate that there is a correlation between low education and knowledge about parenting. Higher education provides greater opportunities to capture information, including information and knowledge in the field of nutrition, so that this knowledge can be applied to good parenting for their children (Emamian et al., 2013). In contrast, parents with low education tend to have limited knowledge and ability to apply knowledge (El Taguri, 2008), so that the risk of malnutrition (Nashikah, 2012) and poor parenting patterns in children becomes higher (Mushtaq, 2011; Vitolo, 2008). Based on the observation, low education with only junior high school graduation is one of the factors for marriage and pregnancy at a young age, pregnancy at a young age is aprecursor to stunting, the younger the gestational age, the higher the risk of stunting. High education influences a person not to marry at a young age, namely under 20 years.

CONCLUSION

There is a relationship between maternal education (p=0.029; OR=5.20), exclusive breastfeeding (p=0.014; OR=6,2), knowledge (p=0.012; OR=6,9) and stunting. There is no relationship between low birth weight (p=0.408), income (p=0.751) and stunting.

SUGGESTION

For the Community Health Center to be able to provide training for health workers on stunting prevention and management. Midwives are expected to improve ante natal care services, including classes for pregnant women, classes for mothers under five, counseling on the importance of exclusive breastfeeding, and an example for mothers. Nutritionists are expected to be more active in providing health education about stunting and counseling about balanced nutrition. For health promotion, it is expected to provide counseling about personal hygiene, healthy and clean life behavior, and others. Pregnant women, especially those at high risk, are expected to be active in having their pregnancies checked every month so that healthy pregnancies can be controlled by living a clean and healthy life and participating in family planning programs.

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