Family Characteristics of Stunting in Lebong Regency

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ARTICLE INFO

A B S T R A C T

Lebong is the district with the third-highest stunting rate in Bengkulu Province. Family characteristics, especially the mother, can affect the incidence of stunting in children. This study aims to determine the relationship between family characteristics and the incidence of stunting in the Lebong Regency, Bengkulu Province. The study used a case-control approach with a population of all children under five in the Lebong Regency. Sampling using purposive sampling technique obtained as many as 116 people (58 cases and 58 controls). Data were collected using a questionnaire that had passed the validity and reliability test stages. Furthermore, the collected data were analyzed by univariate, bivariate and multivariate (multiple linear regression analysis). Family characteristics, most of the mothers married at the age of 21 years (58.6%), pregnant at the age of 21-35 years (72.4%), Parity (82.8%), Types of Contraceptives IUDs and Injections (90.5%) Mother's education graduated from high school (51.70%), education graduated from high school (51.70%). The employment of housewives (60.30%) and the number of family members is 2-4 people (81.90%). There is a relationship between maternal age at marriage, gestational age and maternal education with the incidence of stunting in the Lebong Regency. Mother's education is the most dominant factor associated with the incidence of stunting. Stunting prevention can be done by increasing maternal education or providing education to mothers with low education.

Karakteristik Keluarga Terhadap Kejadian Stunting di Kabupaten Lebong

A B S T R A K

Lebong merupakan kabupaten dengan angka stunting tertinggi ketiga di Provinsi Bengkulu. Karakteristik keluarga terutama ibu dapat berpengaruh terhadap kejadian stunting pada anak. Untuk mengetahui hubungan karakteristik keluarga dengan kejadian stunting di Kabupaten Lebong Provinsi Bengkulu. Penelitian menggunakan pendekatan kasus control dengan populasi seluruh balita di Kabupaten Lebong. Pengambilan sampel menggunakan teknik purposive sampling, diperoleh sebanyak 116 orang (58 kasus dan 58 kontrol). Data dikumpulkan menggunakan kuesioner yang sudah melewati tahap uji validitas dan reliabilitas. Selanjutnya data yang terkumpul dianalisis univariat, bivariat dan multivariat (analisis regresi linier berganda). Karakteristik keluarga sebagian besar ibu menikah pada usia ≥ 21 tahun (58,6%), hamil pada usia 21-35 tahun (72,4%), Paritas (82,8%), Jenis Kontrasepsi IUD dan Suntik (90,5%) Pendidikan Ibu tamat SMA (51,70%), Pekerjaan Ibu Rumah Tangga (60,30%) dan Jumlah anggota keluarga 2-4 orang (81,90%). Terdapat hubungan antara usia ibu menikah,

usia hamil dan Pendidikan ibu dengan kejadian stunting di Kabupaten Lebong. Pendidikan ibu merupakan faktor yang paling dominan berhubungan dengan kejadian stunting. Pencegahan stunting bisa dilakukan dengan meningkatkan Pendidikan ibu atau memberikan edukasi pada ibu yang berpendidikan rendah.

INTRODUCTION

The prevalence of stunting in Asia reaches 21.8 percent, only slightly below the global average of 22 percent (Global Nutrition Report, 2021). In Indonesia, the average prevalence of stunting is 21.55 percent (Laksono, 2019). The main cause of stunting is due to the unfulfilled factor of nutrition both while still in the womb and after birth. However, the awareness of parents and health workers that the status of children is stunted when they are two years old (Budiastutik, 2019) (Lestari et al., 2018). In addition to intake, other direct causes are infectious diseases (Perumal et al., 2021).

If it is not immediately addressed, stunting will have an impact on children both now and in the future. Stunting affects children's brain development, a study revealed that stunted children had lower cognitive scores than normal children (Alam et al., 2020). If the stunting problem is sustainable, it will affect the quality of human resources in Indonesia.

In developing countries stunting is also influenced by low birth weight (LBW) factors, low maternal education, living in the village, not having a minimum of four pregnancy checks, incomplete immunization, not exclusive breastfeeding. (Budiastutik, 2019). According to Sustainability, there are several risk factors for stunting in elementary school children such as low parental opinion, large number of family members, low maternal education, mother's occupation and breakfast habits (Lestari et al., 2018).

Families with children more than two and under five years of age have the opportunity to experience stunting. In addition, stunting is also influenced by factors such as birth weight of children, prenatal care, male gender and wealth index (Titaley et al., 2019). The education of the father and mother has an effect on stunting, the higher the education of the father and mother, the smaller the risk of having a child with stunting. Family income is the factor most related to the incidence of stunting, children born to families with low incomes are 6,625 times at risk of experiencing stunting when compared to children born to families with high incomes (Utami et al., 2019).

The prevalence of stunting in Bengkulu Province is 29.4 percent, this figure exceeds the national prevalence of stunting (Kemenkes RI, 2018). In Bengkulu Province itself, there are seven districts with percentages above 29 percent. The prevalence of stunting in Lebong Regency is the third highest detention center (34.4%) in Bengkulu Province.

METHOD

The research was conducted using quantitative methods with a case-control approach. The research was conducted in the working areas of the Semelako, Taba Atas, Tes and Sukaraja sub-district health centers. Lebong Regency from September to November 2018. The population is all toddlers in Lebong Regency. The sample was taken by purposive sampling technique with a total sample of 116 mothers who have toddlers, with the distribution of 58 stunting people (cases) and 58 people who were not stunted (controls). The sample inclusion criteria in this study were babies born at term, mothers who had children aged 6-59 months in August 2018, natives of Lebong district, not physically disabled, excluding children with special needs and willing to be respondents. While the exclusion criteria are respondents who move residence and there are complications.

Table 1
Distribution of Puskesmas names and number of samples of children under five

Public health center	Stunting	Non-Stunting
Sukaraja	15	15
Taba Atas	18	18
Tes	15	15
Semelako	10	10
Total	**58**	**58**

The characteristics measured in this study were the age of the married mother, the age of the pregnant mother, parity, the type of contraception used, the mother's education, the mother's occupation and the number of family members. Characteristics and stunting data were collected using a questionnaire that had been tested for validity and reliability. After the data was collected, the data analysis stage was then carried out, which consisted of univariate analysis, bivariate analysis using Chi Square test and multivariate using multiple logistic regression test.

The stunting measurement results consist of very short if < -3 SD, short if -3 SD up to -2 SD and normal -2 SD up to 2 SD. The age of married mothers was grouped into age 21 years and < 21 years. The age of pregnant women consisted of 21 and 35 years and < 21 and 35 years. Parity 2 children and > 2 children. The types of contraception used consisted of injections, IUDs, implants and pills. Mother's education consists of graduating from high school and not graduating from high school. Furthermore, the mother's work consists of not working and working.

RESULTS AND DISCUSSION

The analysis shows the frequency distribution of family characteristics of stunted toddlers can be seen in table 1. The table 1 shows the characteristics of the families of children under five, mostly aged 20 years (58.6%), age at pregnancy ≥ 21 – 35 years (72.4%), number of children 2 people (82.8%), types of contraception used IUD and injection were used (90.5%), the mother's education was high school graduation (51.70%), the mother's occupation was household head (60.30%), the number of family members was 2-4 (81.90%) and the stunting status was 50%.

Furthermore, the results of the bivariate analysis of the relationship between family characteristics and the incidence of stunting can be seen in table 2.

Table 1
Distribution of Stunting Frequency and Family Characteristics (N=116)

Variable	Frequency	%
Stunting		
Non-Stunting	58	50
Stunting	58	50
Karakteristik Keluarga		
Age of Married Mother (Years)		
≥ 21	68	58,6
< 21	48	41,4
Mother's Age at Pregnancy (Years)		
≥ 21 - 35	84	72,4
< 21 ang > 35	32	27,6
Parity		
≤ 2 people	96	82,8
> 2 people	20	17,2
Contraceptive Type		
IUDs and Injections	105	90,5
Pill	11	9,5
Mother's Education		
High school graduate	60	51,70
No high school graduate	56	48,30
Mother's Occupation		
Housewife	70	60,30
Work	46	39,70
Number of family members (person)		
2 - 4	95	81,90
> 4	21	18,10

Source: Results of research data processing

The results of bivariate analysis showed that from the control group, 44 people aged 21 years and 14 people aged < 21 years were found. Meanwhile, in the case group, there were 24 people aged 21 years and 34 people aged < 21 years. The p value obtained is 0.000, it can be concluded that there is a relationship between maternal age and the incidence of stunting. Married mothers aged < 21 years are at risk of 4,452 times having stunting children.

Maternal age during pregnancy showed that in the control group there were 51 people aged 21 -35 years and 7 people aged < 21 and > 35 years. While in the control group there were 33 people aged 21 -35 years and as many as 25 people aged < 21 and > 35 years. The p value obtained is 0.000, it can be concluded that there is a relationship between maternal age during pregnancy and the incidence of stunting. Mothers who are pregnant at the age of <21 and 35 years have a 5,519 times risk of having stunting children.

The parity of the control group mothers was obtained by 49 people with 2 children and 9 people with more than 2 children. Meanwhile, in the case group, there were 47 people with 2 children and 11 people with > 2 children. The value of p value obtained is 0.806, it can be concluded that there is no parity relationship with the incidence of stunting.

The types of contraception in the control group were 52 people with IUD and injection and 6 pills. While in the case group, namely IUD and injection, there were 53 people and 5 pills. The value of p value obtained is 1,000, it can be concluded that there is no relationship between the type of contraception and the incidence of stunting.

Maternal education in the control group found 38 people graduated from high school and 20 people did not graduate from high school. Meanwhile, in the case group, 22 people graduated from high school and 36 people did not graduate from high school. The value of p value obtained is 0.005, it can be concluded that there is a relationship between education and the incidence of stunting. Mothers with education not completing high school are at risk of 8,838 times having stunting children.

Table 3
Relationship of Family Characteristics with Stunting Incidence

characteristics	Nutritional status				Total		P value	OR	95% CI
	Non-Stunting		Stunting						
	n	%	n	%	n	%			
Age of Married Mother (Years)									
≥ 21 years	44	75,9	24	41,4	68	58,6	0,000	4,452	2,007-9,876
< 21 years	14	24,1	34	58,6	48	41,4			
Mother's Age at Pregnancy (Years)									
≥ 21 -35 years	51	87,9	33	56,9	84	72,4	0,000	5,519	2,144-14,209
< 21 and > 35 years	7	12,1	25	43,1	32	27,6			
Parity									
≤ 2 people	49	84,5	47	81	96	82,8	0,806		
> 2 people	9	15,5	11	19	20	17,2			
Contraceptive Type									
IUDs and Injections	52	89,7	53	91,4	105	90,5	1,000		
Pill	6	10,3	5	8,6	11	9,5			
Mother's Education									
High school graduate	38	65,5	22	37,9	60	51,7	0.005	8,838	1,457-6,634
No high school graduate	20	34,5	36	62,1	56	48,3			
Mother's Occupation									
Housewife	37	63,8	33	56,9	70	60,3	0,569		
Work	21	36,2	25	43,1	46	39,7			
Number of family members (person)									
≤ 4 people	47	81	48	82,8	95	81,9	1,000		
> 4 people	11	19	10	17,2	21	18,1			

Source: Results of research data processing

Mother's occupation in the control group was found as many as 37 people did not work and 21 people worked. Furthermore, in the case group, 33 people were not working and 25 people were working. The value of p value obtained is 0.569, it can be concluded that there is no relationship between the type of contraception and the incidence of stunting.

The number of family members in the control group was 47 people 4 and 11 people > 4. While in the case group it was obtained as many as 48 people 4 and 10 people > 4. The p value value was 1,000, it can be concluded that there is no relationship between the number of family members and the incidence stunting.

Table 4
Results of Multivariate Analysis of Maternal Characteristics with Stunting

Variable	OR	P value
Age of Married	0,289	0,007
Pregnancy Age	0.319	0,033
Education	3,138	0,008

Source: Results of research data processing

The results of the multivariate analysis showed that the education variable (p value = 0.008) was the most dominant factor associated with stunting in Lebong Regency. Mothers with education who did not graduate from high school were 3,138 times more likely to have stunted children when compared to mothers with high school education.

DISCUSSION

There is a relationship between the age of marriage and the incidence of stunting, it was found that 58.6% of mothers who married at the age of <21 years had stunting children. This is in line with Khan's statement that mothers who marry at the age of 18 years are at risk of having stunted children. It was found as many as 44.4% of stunting under-fives, not only the married age of the mother was related to stunting. Stunting can also be influenced by place of residence, mothers who live in the village and also antenatal visits (Khan et al., 2019). Marriages carried out at a young age have an impact on the children who are born. Teen mothers who give birth to one or two children are at risk of giving birth to stunting children than mothers who do not have children (Abate et al., 2020).

Pregnant age is related to stunting, in contrast to previous studies which found there was no relationship between age during pregnancy and the incidence of stunting (Suryani et al., 2018). Gestational age does not affect the nutritional status of children. Mothers at risk of having children who are not stunted are 64.4% (Yuliastini et al., 2020). Maternal age <25 years and >35 years has been proven to contribute to stunting in children (Yuana et al., 2021).

The number of children is not related to the incidence of stunting, in this study it was found that there were 84.5% of children who were not stunted with a history of maternal parity having less than or equal to two children, this is a normal condition, the fewer the number of children, the less the risk of stunting (Abate et al., 2020). On the other hand, 81% of stunted children were found even though the maximum number of children they had was two people. This could be due to other factors such as the age of the mother at marriage. The younger the mother gets married, the longer the reproductive period.

There is no relationship between the type of contraception and the incidence of stunting. This is different from the findings of previous studies which found a relationship between contraceptive use and the incidence of stunting. Stunting generally occurs in children whose mothers have used modern contraception for at least 15 months (Flood et al., 2019). As many as 80.8% of mothers who do not use contraception have normal children (not stunting), there is a relationship between contraceptive use and the incidence of stunting (Abate et al., 2020).

There is a relationship between maternal education and the incidence of stunting. This is in line with other studies which have found that nutritional problems that occur are also caused by parents who do not have education (Khan et al., 2019). More than half of mothers with minimum education graduated from high school have children with normal nutritional status. Mother's education will affect knowledge, mothers with high school education have good knowledge with a greater percentage when compared to mothers with junior high school education (Rahmawati et al., 2019). There is a relationship between education and the incidence of stunting in children (Abate et al., 2020). Education is also often associated with the ability to find information, the more information received will form knowledge (Rahmawati et al., 2019). Changes in maternal knowledge occur after mothers receive information/education about stunting (Angraini et al., 2020). Mothers who have good knowledge of stunting are at risk of having stunted children. the better the mother's knowledge, the mother will pay more attention to the food given (Rita et al., 2019).

Work is often associated with activities and also income from work, but in this study it was found that there was no relationship between work and the incidence of stunting. It was found that 63.8% of mothers who do not work with the status of children who are not stunted. Stunting is influenced by work status, mothers who do not work will be more intense in providing care to their children. So that children stay healthy and do not experience stunting (Lestari et al., 2018). It was found that 63.8% of mothers who did not work with the nutritional status of their children were not stunted. Suryani's research reveals that work is the most dominant factor associated with stunting in Bengkulu Province. Working mothers do not provide food supervision for their children, in contrast to mothers who do not work (housewives) where their daily focus is on taking care of their children (Suryani et al., 2018).

There is no relationship between the number of family members and the incidence of stunting. This is in line with previous research which stated that the number of family members was not related to the incidence of stunting (Khairani, 2019). Fulfillment of family intake needs is influenced by family income, if the family income is middle and above the intake needs (Shahar et al., 2019)

Another study revealed that there was a relationship between the number of family members and the incidence of stunting, it was found that almost half of the stunted children had more than four family members. (Lestari et al., 2018). The large number of family members will affect the distribution of food ingredients, uneven distribution of food in each individual or different eating patterns between individuals have an impact on nutritional status (Mary et al., 2019).

LIMITATION OF THE STUDY

This study focuses on family characteristics consisting of maternal age at marriage, maternal age during pregnancy, parity, type of contraception, education, occupation, number of family members related to stunting.

CONCLUSIONS AND SUGGESTIONS

Family characteristics related to the incidence of stunting are maternal age at marriage, maternal age during pregnancy and maternal education. The most dominant family characteristic related to the incidence of stunting is maternal education.

The Health Office collaborates with the Education Office and the Office of Religious Affairs (KUA) in providing education to students as an effort to optimize the age of marriage and motivate students to continue their studies. Furthermore, mothers who marry young are advised to postpone pregnancy to maintain maternal health.

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