



The Relationship Between Exclusive Breastfeeding and Frequent Antenatal Care Visits with Stunting Incidence in Under-Five in Sadai Village, Working Area Sungai Panas Primary Health Care Batam City

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A B S T R A C T

Stunting is a short and very short body condition that exceeds a -2 SD deficit below the median length or height. Stunting is a public health problem because it is associated with an increased risk of morbidity and mortality, delayed motor development, and stunted mental growth. The purpose of this research is to determine the relationship between exclusive breastfeeding and the frequency of antenatal care visits with the incidence of stunting in known and the dominant factor that causes stunting in toddlers is known. This study was a quantitative study with a Case Control design and involved 23 mothers whose toddlers were diagnosed with stunting as respondents (cases) and 23 mothers whose toddlers were not diagnosed with stunting (as controls). This research was conducted in the Sadai sub-district, the working area of the Sungai Panas Public Health Center in Batam. Data processing and analysis chi square test (bivariate) and multiple logistic regression (multivariate). The results of the analysis using the chi square test showed that there was a significant relationship between exclusive breastfeeding and the frequency of antenatal care visits with the incidence of stunting. The results of the multivariate analysis show variables the dominant influence on the incidence of stunting is the variable Frequency of Antenatal Care visits. The government, if it wants to reduce the prevalence of stunting in Sadai village, the working area of the Sungai Panas Health Center, should increase education to the public, especially pregnant women, about the importance of regular quality pregnancy checks according to the rules.

INTRODUCTION

Stunting is a condition of too short stature or stunting of a person as measured by looking at the Z-score based on height based on age. Stunting is a serious problem that must be addressed immediately (Gasparinho & , Maria Helena Gonçalves, Assucênio Chissaque, Giovani L. Silva, 2022). As many as 43% of children or around 162 million children under the age of 5 in low- and middle-income countries are believed to be at risk of losing their potential for development and stunted growth which can experience morbidity and death, causing financial losses (Blessing Jaka Akombi, 2017). Millions of children around the world are not only stunted in their growth and development, but also experience health problems that affect cognitive development which is not optimal so that the ability to understand is slower for children of their age (Kencana Sari, 2021). The causes of stunting are multifactor, namely most of them are inadequate nutritional conditions (Republic of Indonesia Ministry of Health, 2019).

Three main sources of the importance of intervention in the first 1000 days of live birth, namely (Barirah Madeni, Hasritawati, 2023): 1) nutritional needs (high protein or as a food supplement given from conception to 2-3 years of age); 2) analysis of 54 nationally representative surveys from low- and middle-

income countries shows a universal pattern of steep decline in height-for-age Z-score (HAZ) in children from birth to 23 months of age, without evidence of additional impairment

between the ages of 24 and 59 months (Upadhyay et al., 2022); 3) the prenatal period (adequate nutrition during pregnancy, the importance of pregnancy visits to get the right information so as to reduce gestational age as a 20% contributor to stunting (Leroy, 2014).

(UNICEF, 2021) states that one way to treat stunting is exclusive breastfeeding for the first 6 months without any other additional food. Exclusive breastfeeding contributes 30% to preventing stunting, in other words preventing stunting as a form of fulfilling one of the nutritional needs in the first 1000 days of life. Research result (Amaha & Woldeamanuel, 2021) stated that each visit to the ANC clinic reduced the likelihood of stunting by 6.8% ($p < 0.0001$). The likelihood of being stunted decreased by 7% ($p = 0.028$) for each class a girl spent in school.

Maternal and child health problems contributing to stunting are as follows: Before pregnancy: anemia 32% (Amaha & Woldeamanuel, 2021). Pregnant women – giving birth: Anemia 48.9%, (pregnant women: Anemia 48.9% and KEK 17.3%) besides that it is also found in pregnant women with a 28% risk of complications. Infants – Toddlers: Born prematurely 29.5%, Low Birth Weight 6.6%, Birth Length <48

cm 19.4%, Toddlers with diarrhea 9.8%, Toddlers with pneumonia 1.7%, Toddlers with malnutrition and malnutrition 7.1 %.(Kemenkes RI., 2021).

The Indonesian Nutrition Status Survey (SSGI) at the BKKBN National Working Meeting, Wednesday (25/1) where the prevalence of stunting in Indonesia fell from 24.4% in 2021 to 21.6% in 2022. The target I conveyed was 14% in 2024 The problem of stunting in the city of Batam in the last three years has decreased where in 2000 it was 7.21%; in 2021 it will be 6.02% and in 2022 it will be 2.24%. Even though the stunting rate at the city level has decreased, there are still many children who are stunted in the working area of the puskesmas. The number of stunted children under five is 59,466. If not handled properly, stunting will cause a state economic loss of 3% of Gross Domestic Product.

Indonesia is projected to experience a peak of productive growth (Demographic Bonus) in 2035(Kemenkes RI, 2023). However, this demographic bonus will be useless and will even become a burden to the state, if the prevalence of under-five stunting is not corrected at this time (Salwa Saif Said AL Harthi, Judie Arulappan & Zaabi, 2024). Based on this, it is necessary to handle stunting in an integrated manner from all elements (Hamid et al., 2021). Stunting research has been carried out a lot, but the research findings of this research will be valuable findings and will receive special attention from various policy makers in handling and reducing stunting in Indonesia (Rika Nurmayanti, Harsono Salimo, 2017).

METHOD

The design of a community-based case-control study was carried out from research carried out in January – February 2023 in Sadai Village, the working area of the Sungai Panas Batam Health Center in 2023. The required sample size for this research is determined by using the formula (Lemeshow, 1997) the calculation results obtained 23 people as cases and 23 people as controls.

The sampling technique uses non-probability sampling, namely systematic sampling based on the order of members of the population (Ketut, 2014), according to predetermined inclusion and exclusion criteria (secondary data from puskesmas). Children with height for age z scores for height ≤ -2 SD were enumerated as cases, whereas children with z scores for height ≥ 2 SD to z scores for height $+2$ SD were counted as controls (SYAFRIDA HAFNI SAHIR, 2022). With the following inclusion criteria: 1) Mothers under five who live in Sadai Sub-District, Batam City Health Center work area; 2) Mothers of toddlers who have toddlers diagnosed with stunting; 3) Mothers of toddlers who are willing to be respondents. While the inclusion criteria are mothers of toddlers who have toddlers diagnosed with stunting who have comorbidities such as congenital diseases or congenital abnormalities.

After the households with cases and households with controls were identified, the sample size was allocated proportionally using a systematic sampling technique from a total population of 138 individuals. The first household is selected by simple random method and the rest are selected systematically by using an odd number (Sugiyono, 2011).

Data collection procedures and instruments data was collected through house to house visits. The questionnaire was developed from various sources of information according to the research variables. The research step was to conduct home visits according to data from sampling from the population (secondary data), then face-to-face interviews were carried out with subjects who met the requirements using a questionnaire that had been developed and had been tested for validity and reliability (Masturoh & Nauri, 2018).

RESULT

This research was carried out from Januari – Februari 2023 in Sadai Village the working area of the Sungai Panas Batam Health Center. This data is collected from 46 respondents who met the inclusion and exclusion criteria

Respondent Characteristics

Table 1. Frequency Distribution of Characteristics of Mothers of Toddler

Variabel	Total	%
Mother's job		
Doesn't work	25	54,3
Work	21	47,5
Education		
Elementary School	24	52,2
High School	22	47,8
Income		
< 4.500.000,-	24	52,2
≥ 4.500.000	22	47,8
Age		
0 - 12 month	4	8,7
24 - 36 month	36	78,3
37 - 59 month	6	13,0

Table 1 describes the research respondents, in this case mothers of toddlers in the Sadai sub-district, the working area of the Sei Panas health center, Batam city, in 2023 it was found that 54.3% were not working, The majority of mothers of toddlers with a basic education level are 65.2%, with a small income of 4,500,000,- as much as 52.2%. Most of the children aged 24 to 36 months are 78.3%.

Relationship between Exclusive Breastfeeding and Stunting

Table 2 The Relationship between Exclusive Breastfeeding and Stunting

	Stunting				OR 95 % CI	P value
	Yes	%	No	%		
Unexclusive Breastfeeding	18	78,3	7	30,4	8,229	0,003
Exclusive Breastfeeding	5	21,7	16	69,6		
Total	23	100	23	100		

The Table shows The majority of toddlers who experience stunting in the Sadai sub-district, the working area of the Sei Panas Community Health Center, do not provide exclusive breastfeeding, as much as 78.3%. The results of the Chi Square test showed a p-value of 0.003, meaning that there is a significant relationship between exclusive breastfeeding and the incidence of stunting. The results of OR calculations show that babies who are not given exclusive breast milk will be 8,229 times more likely to experience stunting.

Relationship between Antenatal Care Visits and Stunting Events

Tabel 3. Relationship between Antenatal Care Visits and Stunting Events

Antenatal care Visits	Stunting				OR 95 % CI	P value
	Yes	%	No	%		
Unmatch	17	73,9	9	39,1	4,407	0,037
Match	6	26,1	14	60,9		
Total	23	100	23	100		

Table 3 shows that mothers of toddlers who do not carry out pregnancy checks according to the regulations are 73.9% more likely to experience stunting. The results of statistical tests using Chi Square

showed a p -value = 0.037, meaning that there was a relationship between Ante Natal Care (ANC) visits and the incidence of toddler stunting. The OR calculation results show that pregnant women who do not carry out pregnancy checks according to the regulations will be at risk of stunting 4,407 times in their toddlers.

Multiple regression test

Furthermore, the results of the multivariate test using the multiple regression test obtained the strong value of the β effect from the ANC visit of 0.168, meaning that there was an effect of ANC visits on the incidence of stunting of 16.8%. And it was also obtained that the effect of exclusive breastfeeding was 0.096, meaning that there was an effect of exclusive breastfeeding on the incidence of stunting of 9.6%. Thus it can be concluded that the variable that has the dominant influence on the incidence of stunting is the variable ANC visits.

DISCUSSION

The results of hypothesis testing with statistical tests using the Chi Square test obtained a p value of 0.003, meaning that there is a significant relationship between exclusive breastfeeding and stunting. The OR calculation results show that babies who are not given exclusive breastfeeding will be at risk of 8,229 times experiencing stunting. These results are supported by research (Louis et al., 2022), stated that the results of the chi square test obtained $p = 0.000$ ($0.000 < 0.05$), meaning that there is a relationship between exclusive breastfeeding and the incidence of stunting in toddlers. Meanwhile, in the odds ratio test, the value of $OR = 61$ was obtained, which means that children who are not exclusively breastfed have a 61 times greater chance of experiencing stunting compared to toddlers who are exclusively breastfed. Exclusive breastfeeding can reduce the risk of occurrence.

These results are supported by the theory (Ministry of Villages, Development of Disadvantaged Regions & Indonesia, 2017), Stunting is a condition where a person's height is shorter than the height of other people of the same age. Stunting can be caused directly or indirectly. The direct causes include: 1) chronic lack of nutrient intake, 2) the occurrence of infectious diseases resulting in metabolic disorders and increased nutritional needs. Indirect causes of stunting can be caused by mothers under five who have poor nutritional status before and during the mothers pregnancy (Zhang et al., 2024), lack of knowledge, economic factors, and environmental sanitation (Vita Camelia & Jannah, 2020). This result is also supported by the theory that services are still limited, including ANC services-Ante Natal Care (health services for mothers during pregnancy (Munanadia, 2022).

The results of this study are in line with research (Diani Magasida & Erawati, 2022), stated that the quality of antenatal care was significantly related to the incidence of stunting, including the frequency of

antenatal care visits and the standard of antenatal care, but the quality of antenatal care was not significantly related to the incidence of stunting, namely the place of antenatal care visits. Furthermore, the results of this study also reveal the dominant factor that influences stunting in the Sadai sub-district, namely the variable frequency of antenatal care visits.

CONCLUSION

Based on the results of the data analysis and discussion that has been described, this study concludes that exclusive breastfeeding, the frequency of visits to maternal services during pregnancy (antenatal care), is significantly related to the occurrence of stunting and the frequency of visits to maternal services during pregnancy (antenatal care) is a variable. which is the most dominant as a cause of stunting so that it must receive special attention. If the government wants to reduce the prevalence of stunting in the Sadai sub-district, the working area of the Sungai Panas Health Center, it should increase counseling to the public, especially pregnant women, about the importance of regular quality prenatal check-ups according to the rules.

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