Proceeding of 4th Pontianak International Health Conference
ISSN : XXXX-XXXX, Volume 1, Edisi 1, Pages 36-44

Analysis of Predictions Relating to Sensitive Factors *Stunting* in West Kalimantan Province (Study Analysis of 2021 Bkkbn Family Data Collection and 2021 SSGI)

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ABSTRACT

Prevention *stunting* requires integrated and comprehensive nutritional interventions, including specific nutritional interventions and sensitive nutrition. The contribution of sensitive nutrition interventions will reduce nutritional problems, one of which is stunting by 70%, and is in the non-health sector. The large role of the non-health sector or sensitive interventions in overcoming nutritional problems, in this case the prevalence of stunting, deserves more attention. The aim of this research was to determine the determinants of sensitive nutritional intervention factors (non-health) on the incidence of stunting in West Kalimantan Province area. This research uses quantitative research methods with a Secondary Data Analysis (ADS) approach. Utilizing secondary data in question is data from SSGI results, West Kalimantan Provincial Food Plantation Service and data from the 2021 KALBAR BKKBN. This data is then processed systematically and objectively. The statistical analysis that will be carried out includes univariable and bivariable analysis with tests*Chi Square* and multivariable with *path analysis*. The research results show that there are still households where clean water is not available and toilets are unhealthy. The majority of mothers are/have used birth control. Only 11.89% of mothers had attended classes for pregnant women and 8.71% had attended classes for toddlers. Birth length ≥48 cm and exclusive breastfeeding reduce stunting in toddlers. Men have a higher chance of stunting than women. Low food intake, and having a history of disease increases stunting in toddlers. The increase in exclusive breastfeeding is influenced by the mother's use of family planning and is statistically close to significant. Complete immunization status in children under five reduces the risk of pneumonia and a history of illness in children. Mothers who attend toddler classes increase the completeness of immunization status in toddlers.

Keywords: Secondary Data Analysis, Determinants, Stunting

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INTRODUCTION

Stunting is a condition where the body is so short that it exceeds a deficit of <-2 SD in population length or height based on standards*World Health Organization* (Indonesian Ministry of Health, 2010). Indonesia makes toddlers short or commonly called *stunting* is one of the priority nutritional problems (Ministry of Health of the Republic of Indonesia, 2018). Indonesia is the 17th country out of 117 countries that has complex nutritional problems. This is proven by the still high prevalence of stunting (Achadi, 2014).

Prevalence *stunting* in children under five (5) years of age is relatively high and has not shown a significant decline over the past 10 years. Prevalence *stunting* Nationally among children under five years of age was 36.2%, 35.6%, 37.2% and 30.8% respectively in 2007, 2010, 2013 and 2018 (Riskesdas, 2018). Meanwhile, based on data from the 2021 Indonesian Nutrition Status Survey (SSGI), figures obtained *stunting* amounting to 24.4%. Meanwhile, the stunting rate for West Kalimantan Province based on nutritional status monitoring data in 2016 was 34.9% and increased in 2017 to 36.5%, and finally based on the 2021 SSGI it was 29.8%.

Prevalence is still high *stunting* in West Kalimantan and where the national target that must be achieved by 2024 is 14%, requiring the implementation of cross-sector interventions (specific and sensitive) in an integrated manner at the central and regional levels (Ministry of Health of the Republic of Indonesia, 2020). Various programs related to stunting prevention have been implemented, but they have not been effective and have not occurred on an adequate scale. Prevention *stunting* requires integrated and comprehensive nutritional interventions, including specific nutritional interventions and sensitive nutrition (TNP2K, 2018). The contribution of sensitive nutrition interventions will reduce nutritional problems, one of which is stunting by 70%, and is in the non-health sector (Rosha et al., 2016). The large role of the non-health sector or sensitive interventions in overcoming nutritional problems, in this case the prevalence of stunting, deserves more attention.

There are 12 activities that can contribute to reducing stunting through sensitive nutrition interventions, namely, providing and ensuring access to clean water, providing and ensuring access to sanitation, fortifying food, providing access to health services and Family Planning (KB),

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providing Health Insurance National (JKN), provides Maternity Insurance, provides parenting education for parents, provides Early Childhood Education (PAUD), provides community nutrition education, provides sexual and reproductive health education, as well as nutrition for adolescents, provides social assistance and security for poor families, and increasing food and nutritional security (TNP2K, 2018).

This study aims to analyze sensitive nutritional intervention factors related to handling stunting in West Kalimantan province based on secondary data, such as BKKBN data, SSGI 2021, Riskesdas 2018. The target hope can provide a clearer picture of the characteristics of treatment *stunting*. Furthermore, this study will group them based on handling performance characteristics *stunting* carried out outside of health. By preparing recommendations from the secondary data analysis study of policies based on the grouping of performance levels, it is hoped that this can provide improvements in handling strategies *stunting* and focus more on problems, so that the budget spent is more efficient in handling stunting in the future (Lestanto et al., 2021).

The analysis in this study uses the Path Analysis method which aims to provide an estimated picture of the magnitude and significance of hypothesized causal relationships between variables (Ayuningrum and Murti, 2019). The analysis was carried out mainly on sensitive nutritional intervention factors, so that it would be easier to determine problems and recommendations related to interventions to reduce prevalence *stunting*.

RESEARCH METHODS

This research uses quantitative research methods with a Secondary Data Analysis (ADS) approach. Secondary Data Analysis (ADS) is a method that utilizes secondary data as the main data source. Utilizing secondary data in question is data from SSGI results, the KALBAR Provincial Food Plantation Service and data from the 2021 KALBAR BKKBN. This data is then processed systematically and objectively. The statistical analysis that will be carried out includes univariable and bivariable analysis with tests*Chi Square* and multivariable with *path analysis*.

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RESULTS AND DISCUSSION

Bivariate Data Characteristics

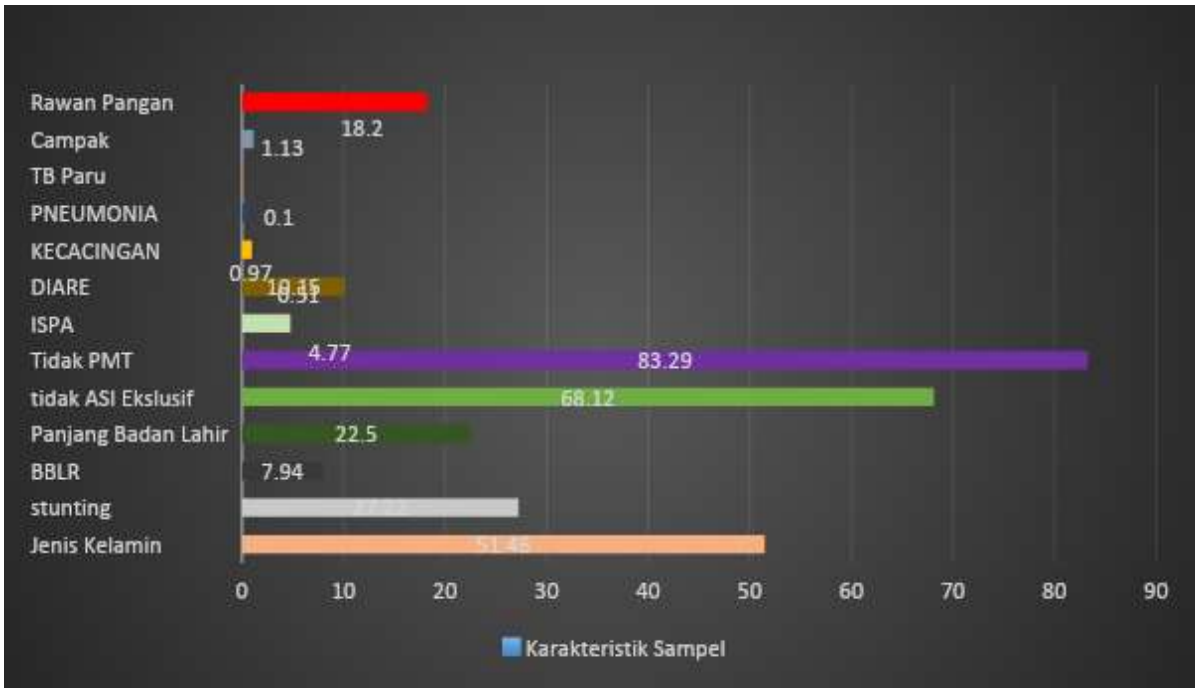

Figure 1. Sample Characteristics

The total sample for this study was 1,951 with the percentage of men being 51.46% and women being 48.54%. The percentage of children in the stunting category is 27.22%. As many as 7.94% of children had a history of low birth weight, 22.5% of children had a history of birth length <48 cm. As many as 68.14% of toddlers are not exclusively breastfed and 83.29% of toddlers are not given additional food (PMT). The child's health history revealed that 4.77% of children had suffered from ARI, diarrhea (10.15%), pneumonia (0.51%), pulmonary TB (0.10%), measles (1.13%), and worms (0.97%). There are still families who are food insecure, namely 18.20% (Figure 1).

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Stunting Sensitive Factors in West Kalimantan Province

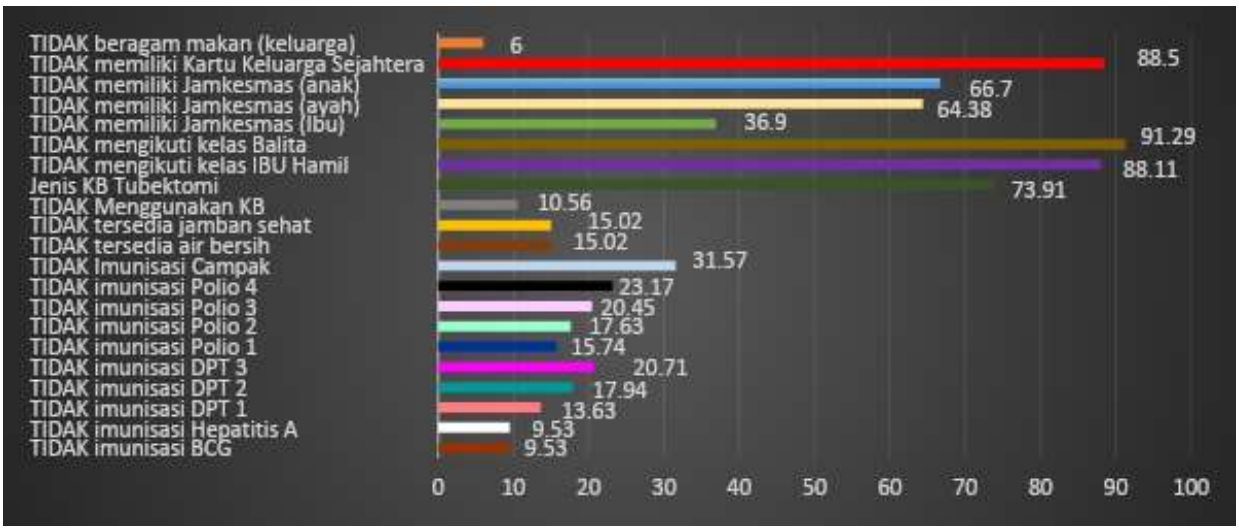

Figure 2. Overview of Stunting Risk Factors

The results in Figure 2 show that 9.53% of children did not receive BCG and Hepatitis A immunization, 13.63% of children did not receive DPT 1 immunization, 17.94% of children did not receive DPT 2 immunization, 20.71% of children did not receive DPT 3 immunization, 23.17% of children did not receive immunization Polio 4. One third of the children from the sample did not receive measles immunization (31.57%).

There are still households where clean water is not available (15.02%) and unhealthy latrines (15.02%). The majority of mothers currently/have used birth control (89.44%) with the highest percentage using the tubectomy method (73.91%). Only 11.89% of mothers had attended classes for pregnant women and 8.71% had attended classes for toddlers. As many as 36.90% of mothers do not have Jamkesmas, in addition, more than half do not have Jamkesmas, both fathers (64.38%) and children (66.70%). As many as 88.50% of families did not receive a prosperous family card. There are still families who do not have a diverse diet, namely 6% (Table 2).

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3. Direct and Indirect Causes of Stunting

Table 1. Results of multiple logistic regression analysis of determinants of stunting

Independent variable	OR	CI 95%		p
		Lower limit	Upper limit	
Child's gender (boy)	1.16	0.94	1.42	0.165
Birth length (≥48 cm)	0.59	0.47	0.75	<0.001*
Birth weight (≥2,500 g)	0.43	0.30	0.61	<0.001*
History of diarrhea (yes)	1.19	0.86	1.65	0.299
History of measles (yes)	1.54	0.63	3.73	0.342
Food sufficiency (low)	1.14	0.87	1.47	0.341
Maternal Jamkesmas ownership (yes)	0.93	0.73	1.18	0.546
Father's Jamkesmas ownership (yes)	0.77	0.60	1.00	0.054
N observations= 1,951				
Pseudo R^2= 3.19				
p<0.011				

The results of the multiple logistic regression analysis in Table 3 show that the child is male (OR= 1.16; p= 0.165), has a history of diarrhea (OR= 1.19; p= 0.299), has a history of Measles (OR= 1.54; p= 0.342), and low food adequacy (OR= 1.14; p= 0.341) increases the risk of stunting in children under five.

Children with birth length ≥48 cm (OR= 0.59; p <0.001) and birth weight ≥2,500 grams (OR= 0.43; p <0.001) reduce the risk of stunting in children under five and this is statistically significant. Fathers who have health insurance reduce the risk of stunting in children under five and this is statistically significant (*marginally significant*) (OR= 0.77; p= 0.054). Mothers who have health insurance reduce the risk of stunting in children under five, but this is not statistically significant (OR= 0.93; p= 0.546).

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INDIRECT CAUSES **DIRECT CAUSE**

Figure 3. Results of path analysis using GSEM on the determinants of stunting risk in toddlers

The results of path analysis using GSEM on the determinants of stunting risk in toddlers show that the risk of stunting in children is directly influenced by gender, birth length, exclusive breastfeeding, food intake, history of disease, and history of pneumonia. The risk of stunting in children is indirectly influenced by family planning use, immunization history, participation status in pregnant women's classes, and participation status in toddler classes.

Birth length ≥48 cm decreases *logo* (possible) stunting in toddlers and is statistically significant (b= -0.69; 95% CI= -0.92 to -0.46; p <0.001). Exclusive breastfeeding reduces *logo* (possible) stunting in toddlers, but statistically not significant (b= -0.03; 95% CI= -0.24 to 0.19; p= 0.805).

The male gender has*logo* The (possibility of) stunting is higher than women, but not statistically significant (b= 0.15; 95% CI= -0.06 to 0.35; p= 0.158). Low food intake (b= 0.21; 95% CI= -0.04 to 0.47; p= 0.103), had a history of illness (b= 0.20; 95% CI= -0.09 to 0.48; p= 0.173), and had a history of pneumonia (b= 0.25; 95% CI= 0.71 to -1.07; p= 0.156) increases*logo* (possible) stunting in toddlers but is not statistically significant. Exclusive breastfeeding increases low food intake and

is statistically significant (b= 0.40; 95% CI= 0.16 to 0.64; p= 0.001). Mothers who have health insurance reduce low food intake in toddlers and this is statistically significant (b= -0.57; 95% CI= -0.81 to -0.34; p <0.001). The increase in exclusive breastfeeding was influenced by the mother's use of contraception and was statistically close to significant (b= 0.31; 95% CI= -0.02 to 0.63; p= 0.066).

Complete immunization status in children under five reduces the risk of pneumonia (b= -1.42; CI 95%= -2.77 to -0.06; p= 0.041) and history of illness in children (b= -0.10; CI 95%= -0.36 to 0.16; p= 0.449). Mothers who attended toddler classes increased the completeness of immunization status in toddlers (b= 0.05; 95% CI= -0.28 to 0.38; p= 0.767). Maternal participation in the toddler class increased with maternal participation in the pregnant mother class (b= 4.61; 95% CI= 4.15 to 5.08; p <0.001).

CONCLUSION

The conclusion of this study shows that the risk of stunting In children is influenced directly by several factors, such as gender, birth length, exclusive breastfeeding, food intake, history of illness, and history of pneumonia. Apart from that, factors such as family planning use, immunization history, and participation in classes for pregnant women and toddlers also influence the risk of stunting indirectly. Research also highlights that there are still households that lack access to clean water and proper sanitation. There is also low maternal participation in classes for pregnant women and toddlers, as well as a lack of health insurance for many families. There are still less diverse eating patterns found in several households. The research results also confirm that birth body length greater than or equal to 48 cm and the practice of exclusive breastfeeding can reduce the risk of stunting in toddlers. In addition, men have a higher risk of experiencing stunting than women. Other factors such as low food intake and a history of illness also increase the risk of stunting in toddlers. Having health insurance for mothers can reduce the risk of low food intake in toddlers, while complete immunization status in children can reduce the risk of pneumonia and a history of illness.

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