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Review: Analisis Kadar Protein Pada Anak Stunting di Kalimantan Selatan

Review: Analysis of Protein Levels in Stunted Childern in Southern Kalimantan

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Abstrak. Stunting menjadi salah satu permasalahan global dengan perkembangan tumbuh anak lebih pendek dari anak seusianya. Banyak faktor yang memperngaruhi hal ini termasuk protein, sehingga, tujuan review penelitian untuk mengetahui ada hubungan kadar protein dengan kejadian stunting pada anak di Kalimantan Selatan. Metode yang dapat dilakukan adalah pengumpulan data-data melalui literature review dari beberapa jurnal. Bedasarkan data yang diperoleh Provinsi Kalimantan Selatan memiliki prevalensi stunting sebesar 11,9%. Terdapat adanya hubungan anatara kadar protein dengan kejadian stunting pada anak.

Keywords: Analisis, Kadar Protein, Stunting.

Abstract. *Stunting is a global problem that causes children to grow and develop shorter than their peers. Many factors influence this, including protein. Thus, the purpose of the study was to determine whether there is a relationship between protein levels and the incidence of stunting in children in South Kalimantan. The method that can be done is to collect data through a literature review from several journals. Based on the data obtained, South Kalimantan Province has a stunting prevalence of 11.9%. Then, based on the research, there is a relationship between protein levels and the incidence of stunting in children.*

Keywords: Analysis, Protein Level, Stunting.

INTRODUCTION

One of the worldwide issues that has to be taken into account is stunting. One of the biggest barriers to a child's growth is stunting (Andrew, 2014). A toddler is said to be stunted or short if his height or length is inappropriate for his age. (Kemenkes RI, 2020; Torizellia et al., 2023). An estimated 149.2 million children globally, or 22% of all toddlers, suffer from stunting, according to data from the World Health Organization (WHO). The stunting rate in Indonesia then rose to 21.6% in 2022, according to statistics from the National Nutritional Status Survey (SSGI) (Setiyawati et al., 2024). For more precise statistics, Tanah Bumbu Regency in South Kalimantan reached 25.7% in 2018, whereas Banjar Regency reached 29.1%. Hulu Sungai Utara Regency has the highest stunting prevalence rate (31.03%), according to the South Kalimantan Provincial Health Office (2019).

Banjar Regency had the lowest percentage at 13.4%, followed by Balangan Regency at 26.79% and Hulu Sungai Tengah Regency at 14.3%. Balangan Regency has the highest stunting prevalence in 2020, at 26.2%. The stunting prevalence in Banjarbaru City was 17.3% in 2020, greater than the norm for South Kalimantan Province, whereas the province's stunting prevalence was 11.9% in 2020 (South Kalimantan Provincial Health Office, 2020; Suhaimi & Harianto, 2022).

Because kids grow longer or taller over time due to starvation, stunting is typically the result of ongoing nutritional issues (Kemenkes RI, 2017; Suhaimi & Harianto, 2022). Factors such as a weak economy, malnourished pregnant women and lack of nutritional intake in children can cause stunting. (Lestari et al., 2014; Setiyawati et al., 2024). Stunting can also result from a lack of calories and protein, eating meals that don't include enough breast milk, not having family support, being immunized for a long time, and having signs of infectious illnesses. Stunting is caused by several factors, including a lack of calories and protein, eating meals that include subpar breast milk, not receiving long-term social support, not being immunized, and having signs of infectious illnesses (Torizellia et al., 2023). The aim of the study was to determine whether there was a relationship between protein levels and the incidence of stunting in children.

METHOD

The method used is a literature review. Starting from searching for data on stunted children in various journals and official websites. Followed by selecting more accurate data. After that, searching for journals regarding the relationship between the incidence of stunting and low protein levels. All journals searched were based on data obtained from journals and articles found in Google Chrome on Google Scholar. The search used the Indonesian language; the keywords used included “analysis”, "protein level’, and "stunting.

RESULT AND DISCUSSION

Based on several studies that have been conducted and collected, the following results were obtained:

Table 1. Data of stunting childern in Southern Kalimantan

No.	Writer	Year	Title	Method	Result
1	Triawanti, Adriana Palimbo, Norhasanan, Sudjatmiko Setyobudihono, dan Tyas Ningrum Rahmadayanti	2021	Analysis of Risk Factors of Stunting in Sourh Kalimantan	This study uses secondary data sourced from PK21 BKKBN 2021, SSGI 2021, and BPS South Kalimantan. Data analysis uses Pearson and Spearman correlation statistical tests and quadrants.	South Kalimantan has a stunting prevalence of 30% which is included in the red zone. Banjar Regency has the highest stunting prevalence in the province, which is 40.2 and Tanah Bumbu Regency has the lowest prevalence, which is 18.7%.
2	Directorate general of regional development development - ministry of home affairs	2024	Monitoring the implementation of 8 integrated stunting reduction intervention convergence actions	Implementation of convergence action through stunting measurement and publication	South Kalimantan has a prevalence of stunting cases of 8.2% with a total of 259,313 children.

Table 2. Data from the results of protein level analysis on stunting cases in Southern Kalimantan

No.	Writter	Year	Title	Methods	Result
1.	Verrenisa Melati Haryani, Dittasari Putriana & Ririn Wahyu Hidayati	2023	Animal Protein Intake is Related to Stunting in Toddlers in the Minggir Health Center Work Area	The method used is analytical observational with a cross-sectional design.	The results of the study showed that more than half of toddlers experience stunting (56%). As many as 46% of toddlers have insufficient animal protein intake. S

2.	Ahmad Suhaimi, Yudhi Harianto & Alpisah	2022	Level of Animal Protein Consumption and Its Relation to Stunting Incidence in Toddlers	Quantitative descriptive research, the data analysis technique used is chi square analysis using the SPSS 20 application.	Based on the results of the study from 60 samples, the level of animal protein consumption was 22 toddlers in the less category, 18 toddlers in the moderate category, and 20 toddlers in the good category. It can be concluded that the level of animal protein consumption is related to the incidence of stunting in Hantakan District, Hulu Sungai Tengah Regency.
3.	Jumrah Sudirman, Hasriani Saleng, Nurjannah Supardi, & Rahayu Eryanti Kusniyanto	2023	Relationship between food intake (protein) and the incidence of stunting in toddlers	The type of research used is an analytical survey with a cross-sectional study.	The study showed statistical test analysis p value = $0.039 < \alpha = 0.05$ which means there is a significant relationship. Therefore, there is a significant influence between protein intake and stunting in toddlers.

Stunting is a condition of growth failure in toddlers (under five years of age) caused by chronic malnutrition, repeated infections, and limited psychosocial stimulation so that children are shorter for their age (Sindhughosa & Sidiartha, 2023) Stunting in toddlers can occur due to a lack or low quality of protein-containing essential amino acids (Golden, 2009). One factor that directly influences stunting is nutrient intake, especially a lack of energy, protein, and zinc intake. Based on the data that has been collected, the results obtained are that the average results obtained are that protein levels indirectly affect stunting cases in children. This is because, in cases of stunting that occur, it is found that the level of protein consumption is quite low compared to children who are not stunted (Suhaimi & Harianto, 2022).

Protein is needed to build, maintain, and repair body tissues. Protein deficiency causes growth retardation and bone maturity. Sufficient energy intake but insufficient protein will still pose a risk of stunted growth in toddlers. Bone growth is influenced by Insulin-like Growth Factor-1 (IGF-1) by stimulating the proliferation and differentiation of chondrocytes in the epithelial growth plate by directly acting on osteoblasts. Low protein intake can inhibit the production and effects of IGF-1 due to impaired mineral absorption in bone mass. In this case, animal protein has aromatic amino acids including phenylalanine, tyrosine, and tryptophan which have been shown to increase serum IGF-1 levels higher than non-aromatic amino acids in vegetable protein. In addition, animal protein also contains micronutrients related to growth such as iron, zinc, selenium, calcium, and vitamin B12 so it will have more

influence on stunting when compared to vegetable protein (Sindhughosa & Sidiartha, 2023)

The results of this study are in line with the research of Paramita Anisa (2012) entitled "Factors Related to the Incidence of Stunting in Toddlers Aged 25-60 Months in Kalibaru Village, Depok in 2012" showing a significant relationship between protein intake and the incidence of stunting in toddlers in Kalibaru Village, this can be seen from the value of p = 0.011 (p <0.05). Likewise, research conducted by Asrar Hadi & Boediman (2009) on toddlers in the Nuaulu tribe, Central Maluku Regency stated the same thing as this study, which showed that the proportion of short toddlers was more common in toddlers whose protein intake was lacking than in toddlers whose protein intake was sufficient (Sudirman et al., 2023).

CONCLUSION

Protein consumption is a critical component of growth, and chronic malnutrition, recurring illnesses, and a lack of psychosocial stimulation can all contribute to stunting in children under five. Protein deficiency causes growth retardation and bone maturity. Stunted children frequently consume low amounts of protein, particularly from animal sources, according to research, which has a detrimental effect on bone formation and the synthesis of growth hormones like Insulin-like Growth Factor-1 (IGF-1). The strong correlation between stunting incidence and poor protein consumption emphasizes how crucial it is to implement interventions to enhance nutritional quality, particularly protein, in order to prevent and treat stunting. As a result, combating stunting necessitates a comprehensive strategy that involves raising nutritional intake, focusing on the health of expectant mothers, and educating the public about the value of nutrition in promoting healthy child development.

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