

The Effectiveness of Balanced Nutrition for Improving the Nutrition of Stunted Children

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ABSTRACT

One of the problems of growth and development in children is stunting, the cause of stunting is not consuming balanced nutritious food so that it greatly affects the process of growth and development of children under five. The specific objective to be achieved in this study is to analyze the effectiveness of providing balanced nutrition to stunted children. The research design used a quasi-experimental research design with one group pre and post-test design. The sample used is a random sampling of 45 children under five. Data collection tools with observation sheets and anthropometric tools. From the results of the Wilcoxon statistical test on the weight variable, the significant number or probability value (0.008) is much lower, the standard is significantly lower than 0.05 or ($p <$), then H_0 is rejected and H_1 is accepted, which means that there is an effect of balanced nutrition on recovery. nutritional status of stunting children in the work area of the Tangerang District Health nutritional status of stunting children in the work area of the Tangerang District Health

Keywords: *Balanced nutrition food, Nutritional status, Stunting*

BACKGROUND

Growth and development disorders have become a global problem, one of which is stunting, this nutritional problem is experienced by toddlers in the world, especially in developing countries, in 2018 around 22.2% or 150.2 million children under five in the world experienced stunting. Stunting is indicated by the Z-score (TB/U) of height versus age less than -2SD. The short category is less than -2SD and the very short category is less than -3SD. In 2019, 1 in 3 children under five or around 149 million children under five in the world suffers from stunting², in Asia (55%) and in Africa (39%)³.

Based on data from Riskesdas, stunting events in Indonesia from 2013-2018 decreased from 37.2% to 30.8%³, but in 2020 there was an increase due to the COVID-19 pandemic⁴. This number is estimated to increase by 15% due to the decline in people's purchasing power during the COVID-19 pandemic².

In 2017 Indonesia entered the third country in the Southeast Asia Region (SEAR) after Timor Leste and India, as the country with the highest prevalence of stunting (Ministry of Health, 2018), while in 2018 according to East Asia and Pacific (EAP) Indonesia was in second place with an average of children under 5 years experiencing stunting, wasting and obesity.

The prevalence of stunting in toddlers in Banten province in 2019 was 24.11%, while in 2018 it was around 26.6% with the percentage of short toddlers 17.00% and very short toddlers 9.60%⁵. The prevalence of nutritional status (TB/U) in children aged 0-59 months in Banten Province, namely Lebak, ranks first with the percentage of very short toddlers

17.61% and short toddlers 22.58%, followed by Pandegelang 19.38% and short toddlers 20, 09%, very short toddlers 14.18% and short toddlers 17.86%, the city of attacking toddlers very short 10.99% and short toddlers 13.69%, Cilegon city very short toddlers 7.23 % and short toddlers 16.09%, Tangerang very short toddlers 7.93% and short toddlers 15.30%, southern Tangerang city very short toddlers 3.13% and short toddlers 16.72% and lastly Tangerang city 3.11% and 15.96% short toddlers⁵. Stunting prevalence that reaches 20% or more will be a health problem.

The preliminary study was conducted at the Tangerang District Health Center. The decline in stunting rates every year is because the Republic of Indonesia Health Service including the Tangerang District Health Office has carried out health promotions about stunting. Interventions that have been carried out are counseling on balanced nutrition for children and parents as well as being given additional food, but the implementation has not yet reached whether the child is at home eating with balanced nutrition or not so that when measuring the nutritional status of children every month there is no increase.

The specific objective to be achieved in this study is to analyze the effectiveness of providing balanced nutrition to stunting children so that the results of this study are expected to provide an improvement in the nutritional status of stunted children in society in general and in the work area of the Tangerang Regency Office, especially regarding balanced nutrition. This research is also expected to be a concern for parents and health workers, especially nurses, to improve community knowledge and skills in the ability to fulfill stunting children's nutritional intake, so that they can improve

nutritional status and can optimize the growth and development of stunting children.

RESEARCH METHOD

The research design that will be used in this study is a quasi-experimental research design with one group pre and post-test design. The sample used in this study was a random sampling of 45 respondents. Data collection tools with observation sheets and anthropometric tools. This study was analyzed using the Wilcoxon Test.

In the beginning, researchers conducted observations and measurements of TB, provided balanced nutritional food, and after that provided education related to providing balanced nutrition education, researchers observed eating given according to a balanced nutritional menu for 1 month and after that, TB was re-measured with anthropometry.

The number of samples in this study is stunted children in the work area of the Tangerang District Health Office, especially the work area of the Public Health Center in the Rajeg Health Center and the Kemeru Public Health Center in Tangerang Regency as many as 45 stunted children.

RESULTS

The results of the restoration of nutritional status after being given a balanced nutrition treatment for one month can be seen from changes in the weight and height of the respondents.

In the variable Height with positive nutritional status recovery as many as 10 respondents (22.2%) and negative nutritional status recovery as many as 0 respondents and recovery of nutritional status did not experience recovery seen from the height there were 35 respondents (77.8%). From the results of the Wilcoxon statistical test on weight, variable obtained a significant number or probability value (0.008) much lower standard significance from 0.05 or ($p <$), then the data H_0 is rejected and H_1 is accepted which means there is an effect of Provision of balanced nutritional food on the restoration of nutritional status in stunting children in the work area of the Tangerang

District Health Office. Likewise, the height variable obtained is significant or the probability value (0.002) is significantly lower than 0.05 or ($p <$), then the H_0 data is rejected and H_1 is accepted which means that there is an effect of providing balanced nutrition on the restoration of nutritional status in stunted children in the work area of the Tangerang District Health Office.

DISCUSSION

Nutritional status of children seen for TB before and after intervention

Feeding Balanced nutrition	improvement of nutritional status				Ties		P- value
	Positive		Negative		n	%	
	n	%	n	%			
TB – Pre Test	10	22.2	0	0	35	77.8	0.002
TB- Post Test							

*positive : increase after treatment

*negative : decrease after treatment

*Ties : no difference after treatment

This study found the effect of providing balanced nutritional food on the improvement of nutritional status in stunting children. This is in line with the results of research on a macro and micronutrient intake on the incidence of stunting in toddlers in the work area of Sumber Urip Health Center, Rejang Regency, obtaining data that there is a significant relationship with the value of p 0.008 ($p < 0.05$) between protein intake and the incidence of stunting in toddlers aged 24-59 months⁷. This is not in line with the results of the study that the level of protein intake on the incidence of stunting did not show statistically significant results, meaning that there was no relationship between protein intake and the incidence of stunting in toddlers aged 24-59 months⁸

The results of the study on the growth and development of stunting toddlers in the Simpang Tiga Health Center Work Area, Aceh Besar Regency with a description of the growth of stunting toddlers in the very short category, namely 51.4% and then experiencing dubious development of 21.6% so that the picture growth and development of stunting toddlers there are 19 respondents (51.5%) with very short growth and 9 respondents (24.3%) have dubious development, 10 respondents (27.0%) have appropriate development⁹

The results of the study on the relationship between protein intake and height gain in stunting children in the working area of the Umbrella Rejo Health Center showed that there were 14 stunting children (47%) aged 6-12 months and 16 people (53%) aged 13-24 months. The results of the paired t-test analysis, which was followed for 3 months, showed that protein intake could increase/increase body weight and height in stunting children. The protein consumed was in the form of

vegetable protein by 20 people (67%) and animal protein by 10 people (33%)¹⁰

The increase in height is also influenced by maternal factors, in line with the results of the research. Maternal factors related to moderate and severe stunting in Ethiopian children, which was conducted in 2016 based on a health survey, the results of the analysis were maternal education, the number of antenatal care visits and delivery places became the most important predictor of child stunting in Ethiopia. Therefore, empowering women, increasing access to family planning and ANC services, and addressing maternal malnutrition are important factors that should be included in policies aimed at reducing child stunting in Ethiopia. In addition, every centimeter increase in maternal height reduces the likelihood of stunting by 0.5% ($p = 0.01$).

In line with the results of research on energy, protein, and fat intake with the incidence of malnutrition in toddlers aged 24-59 months in Suci Village, Gresik, it was found that toddlers are very vulnerable to nutritional problems such as stunting which will occur at the age of 24-36 months. Moreover, toddlers with low birth weight are at risk for slow growth and development. The fulfillment of another nutritional status such as adequate energy intake affects the nutritional status of children under five with $p = 0.007$. Likewise, protein intake has a significant relationship between protein intake and the nutritional status of children under five with $p = 0.039$ ¹²

Feeding children with balanced nutrition before and after the intervention

The results of research conducted by researchers found that there was a significant effect of children under five being given balanced nutrition before and after the intervention. The results of this study are in line with other research conducted at the POSYANDU in the village of Tegal Kunir lor mauk which was conducted on children aged 3-5 years totaling 77 respondents. The results showed that there was a relationship between feeding practices and nutritional status with a value ($p = 0.000 < 0.05$)¹³. These results are in line with other research on the effect of diet on the nutritional status of children under five in the working area of the Astana Japura Health Center, Cirebon Regency, with the results of the study that there are still toddlers with poor nutritional status. From this research, it is expected that the Astanajapura Health Center can provide services to the community, especially families with toddlers by prioritizing primary services in the form of promotive and preventive, by conducting health education in order to improve the health status of the community, especially in improving the health status of the community. nutritional status of children under five by reducing and suppressing the incidence of malnutrition or malnutrition¹⁴.

One of the ways to provide balanced nutrition to children is the provision of protein, this is in line with research that there is a significant relationship between protein intake and

the incidence of stunting in toddlers aged 0-59 months at the Sukamulya Health Center Work Area, Cikuya, Pakuhaji, Tangerang Regency in 2019 with a p -value of $0.037 < 0.05$ and OR 0.276. There is also a significant relationship between energy intake and the incidence of stunting in children aged 0-59 months with a p -value of $0.047 < 0.05$ and OR 3.300¹⁵.

In line with the results of the study regarding the relationship between protein intake and height gain in stunted children in the working area of the Payung Rejo Health Center, the results showed that there were 14 stunting children (47%) aged 6-12 months and 16 people (53%) aged 13-24 months. The results of the paired t-test analysis followed for 3 months showed that protein intake could increase/increase weight and height in stunted children. The protein consumed was in the form of vegetable protein by 20 people (67%) and animal protein by 10 people (33%)¹⁰.

In line with research results Regarding the relationship between protein intake and height gain among stunting children in the working area of the Umbrella Rejo Health Center, the results showed that there were 14 stunting children (47%) aged 6-12 months and 16 people (53%) aged 13-24 months. The results of the paired t-test analysis, which was followed for 3 months, showed that protein intake could increase/increase body weight and height in stunting children. The protein consumed was in the form of vegetable protein by 20 people (67%) and animal protein by 10 people (33%)¹⁰.

The provision of balanced nutrition is in line with research conducted in Myanmar in 2015-2016 regarding the Feeding and Nutritional Status of Children Aged 6-23 months, it was found that of 1,222 children aged 6-23 months, 20% were stunted and 43% had moderate anemia. Where the PMBA practice given is 25% diverse foods, 85% are still given breast milk and 59% are given iron-rich foods. Breastfeeding reduces the incidence of stunting. Based on the results of the study, it is said that male sex, perception of small birth size, children of short stature, and children of working mothers are significant predictors of stunting. The study concluded that stunting in Myanmar is a major public health challenge that requires urgent action¹⁶. Children should be fed a diverse food group including iron-rich foods according to the complementary feeding guidelines of the World Health Organization (WHO).

CONCLUSION

Stunting is a nutritional problem that has a negative impact on the achievement of optimal growth and development in children. One of the causes of stunting is the problem of chronic malnutrition so that which greatly affects the growth and development process of toddlers. The specific objective to be achieved in this research is to analyze the effectiveness of providing balanced nutrition to stunting children.

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