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The Effect Of Supplementary Feeding (Supplementary Feeding) On Increasing The Height Of Stunted Toddlers In The Work Area Of Community Health Center Wanaraja Garut District

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Abstract

Stunting is a significant nutritional problem related to the growth and development of children under five years of age who have insufficient length or height compared to their age. This condition is measured by length or height that is more than minus two standard deviations of the median child growth standard. Toddler stunting is a chronic nutritional problem caused by many factors such as socioeconomic conditions, maternal nutrition during pregnancy, infant morbidity, and lack of nutritional intake in infants. Stunted toddlers in the future will have difficulty in achieving optimal physical and cognitive development. The World Health Organization (WHO) in 2021 showed that the prevalence of stunting was 22% or 149 million children under the age of five. In Indonesia, the percentage of very short in toddlers aged 0-23 months (baduta) in Indonesia is 12.8%, while the percentage of short is 17.1% (Ministry of Health, 2020). The prevalence of stunting in Garut Regency in 2021 according to SSGI (Indonesian Nutrition Status Study) decreased to 35.2%. The highest contributor to the stunting rate in Garut is in Wanaraja District with 262 (28.9%) stunted toddlers out of 907 measured toddlers. To help the nutritional needs of toddlers, the government developed a Supplementary Feeding program. This study aims to analyze the effect of Supplementary Feeding on increasing the height of stunting toddlers using a Quasi Experiment design with a Pretest and Posttest only control group design approach, sample calculation using Experiment sample calculation with random sampling technique. Data were analyzed using Paired T-Test analysis with a significance level of 0.05. The results showed that there was an effect of Supplementary Feeding (Supplementary Feeding) on increasing the height of stunted toddlers in the Wanaraja Health Center Working Area, Garut Regency.

Keywords: Moringa, Stunting, Supplementary Feeding, Toddler

INTRODUCTION

Stunting is a significant nutritional problem related to the growth and development of toddlers who have less length or height when compared to age. Stunting is caused by prolonged and inappropriate nutritional intake, resulting in chronic nutritional problems. The incidence of stunting in Indonesia in 2021 is 24.4%, West Java is one of the provinces that contributes to high stunting rates while

the stunting rate in Garut Regency in 2021 (35.2%). The highest contributor to the stunting rate is in Wanaraja District, 262 (28.9%) toddlers are stunted out of 907 toddlers who have been measured. In the working area of the Wanaraja Health Center in September 2022 there were 690 stunted toddlers (Wardita et al., 2021).

Toddlers are one of the nutritionally vulnerable groups that really need special attention because of the negative impact caused when suffering from stunting (Wulandari & Kusumastuti, 2020). Stunting in toddlers can interfere with optimal physical and cognitive development and inhibit productivity, creativity in adulthood to be vulnerable to disease (Ernawati, 2020). Supplementary feeding (Supplementary Feeding) is an activity of providing food to toddlers in a safe and quality processed form along with other supporting activities by paying attention to aspects of food quality and safety and containing nutritional values in accordance with target needs (Wahyudin & Perceka, 2019).

To improve nutrition in stunting toddlers, researchers provide processed food with local wisdom which is included in the Supplementary Feeding type of nugget stick modification innovation derived from vegetables, animal protein and vegetable protein (Juce & Zulaikha, 2021). The main target of supplementary feeding is toddlers aged 2-5 years categorized as stunted based on the results of measuring length/height according to age (TB/U) worth less than minus two standard deviations (<-2 SD) with a duration of 60 days of eating according to

consumption rules (Fathurrahman et al., 2023).

The complex nutritional content of stick nuggets includes moringa vegetables 329 calories, 5.2 grams of fat and 29.4 grams of protein. Chicken contains 150 calories, 3 grams of fat and 28.74 grams of protein (Yuwanti et al., 2021). Tofu contains 78 calories, 4.34 grams of fat, 1.93 grams of carbohydrates and 10.90 grams of protein. Eggs contain 154 calories, 12.40 grams of protein and 10.80 grams of fat. Therefore, it has the potential to be processed into one of the processed food ingredients such as nuggets which can be used as an ingredient to fulfill nutrition in stunted patients (Hartini et al., 2023). Supplementary feeding innovation in the form of nugget sticks is an innovation movement to improve nutrition and overcome stunting in toddlers for 60 days.

According to WHO, height gain from birth to age 1 is about 25 cm, from age 1 to age 2 is about 13 cm per year and age 2 to age 3 is about 9 cm per year. While from the age of 4 years to puberty is 5 cm per year. By calculating the increase in 3 years, the average height of toddlers aged 2-5 years is about 0.5 cm per month (Madina et al., 2022). Therefore, researchers are interested

in researching about. The Effect of Supplementary Feeding (Supplementary Feeding) on Increasing Height of Stunting Toddlers in the Working Area of the Wanaraja Health Center, Garut Regency.

RESEARCH METHOD

This research is a Quasi experimental design research is a research method used to look for the effect on something that is given treatment on others under conditions that can be controlled (Rahayu et al., 2021). This research design uses the One Group Pretest-Posttest Design approach, which is one group used for research, which is given treatment. Measurements are made repeatedly within a certain period of time (Putri et al., 2022a).

The research was conducted in the Working Area of the Wanaraja Health Center, Garut Regency. Population is the entire research subject that will be examined (Putri et al., 2022b). In this study the population was stunted toddlers in the Wanaraja Health Center working area. The sample used is a random sample based on area (Cluster Random Sampling). The number of samples taken was 15 samples, in this study the researcher added a sample of 10% of the total sample counted to anticipate the drop so that the total sample in this study became 17 samples. The type of data in this study is secondary data, namely from the Posyandu baby cohort and anthropometric measurements. The instruments used to obtain primary data in this study were monitoring and observation sheets.

The monitoring sheet is in the form of a Food Frequency Questionnaire Form and food record, which is a method that focuses on the process of active recording by the research subject of all food and beverages that have been consumed during a certain period of time (Putri et al., 2022c). Observation is a rating scale that will be filled in by the observer when the researcher

conducts anthropometric measurements. The analysis performed was Univariate Analysis and Bivariate Analysis. Univariate analysis to describe the characteristics of the variables studied, both independent and dependent variables (Pramulya et al., 2021).

Data presentation is presented in the form of a mean, minimum, maximum, and standard deviation table while bivariate analysis is used to determine the effect of supplementary feeding with an increase in stunting height of toddlers in the working area of the Wanaraja Health Center. The statistical test used is the t-test. statistical calculations used a meaning limit of 0.05 so that if the P value is ≤ 0.05 then there is a statistically significant effect, if $P>0.05$ then the calculated results have no significant effect.

RESEARCH RESULT AND DISCUSSION

RESULT

Table 1. Data on Height Increase of Stunted Toddlers Before and After Supplementary Feeding

Children Under 5 Years Old	Height Increase		Different
	Before	After	d2-d1
1	83.5	85	1.5
2	81	82	1
3	87	89	2
4	93	94	1
5	85	85.6	0.6
6	93.3	93.8	0.5
7	86.6	87.7	1.1
8	90	91	1
9	86.6	87.2	0.6
10	93	94.5	1.5
11	90.3	90.8	0.5
12	90.3	91	0.7
13	81	81.6	0.6
14	85	86	1
15	85.5	86.2	0.7
16	89	90	1
17	88.5	89.6	1.1

Table 2. Calculation of the Effect of Increasing Height of Stunting Toddlers Before and After Supplementary Feeding

Supplementary Feeding	N	Min	Max	Mean	St Dev
Before	17	81.0	93.3	87.565	3.8578
After	17	81.6	94.5	88.529	3.8747

Table 3. Effect of Supplementary Feeding on increasing the height of stunted toddlers before and after being given supplementary feeding

Variable	Pre post	Std ev	95% CI		t	P Value
			Lower	Upper		
Height Prepost supplementary feeding	0.8059	0.4076	1.1743	.7551	9.757	.000

Based on the data table 3, shows the difference between the average height of the pre-test toddlers and the average height of the post-test of 0.8059 and the difference between -1.1009 to -0.5108 (95% Confidence Interval of the difference lower and upper). The test results show a p value = 0.000, then Ho is rejected and Ha is accepted, meaning that there is an effect of supplementary feeding on increasing the height of stunted toddlers in the working area of the Wanaraja Health Center, Garut Regency.

DISCUSSION

The results of Supplementary Feeding administration showed that 17 toddlers before being given Supplementary feeding were all (100%) stunted. Based on the results of the study, we argue that the occurrence of stunting in the area may becaused by a lack of parental understanding of the importance of adequate nutritious food intake for the growth and development of toddlers and an economic level that is not sufficient to buy food ingredients that contain high nutrition for consumption by toddlers.

The results of observations show that mothers do not pay much attention to nutritious food intake for toddlers, toddlers consume more instant food and unhealthy snacks. After the modified supplementary feeding intervention in the form of processed vegetables, animals, vegetables as much as 3 nuggets / day for 60 days, it

was found that toddlers with an average height increase of 0.8059 in each toddler.

Based on this, the researcher argues that the increase is due to an increase in nutritional intake received by toddlers from modified Supplementary Feeding. This is because there is sufficient nutritional content contained in the Supplementary Feeding that can increase height. The nutrients in question are calories, protein, fat, calcium and various vitamins and minerals, made from moringa, chicken, tofu, eggs processed into nuggets.

Moringa includes processed ingredients loaded with nutrients, especially iron in 100 grams of moringa leaves, which is 7 mg, protein and iron levels in moringa processed foods can meet the Supplementary Feeding standards for toddlers. The Supplementary Feeding program is established to help meet nutritional adequacy in toddlers, especially the provision of modified

Supplementary Food is carried out through the provision of Supplementary Feeding that has been prepared by researchers according to recipes that have been prepared by researchers then parents give stunted toddlers every day as additional food in the morning, afternoon and evening. The modified Supplementary Feeding used is stunted toddlers in the form of processed food with local wisdom which is included in the Supplementary Feeding type of moringa vegetable nugget modification innovation 329 calories, 5.2 grams of fat and 29.4 grams of protein. Chicken contains 150 calories, 3 grams of fat and 28.74 grams of protein. Tofu contains 78 calories, 4.34 grams of fat, 1.93 grams of carbohydrates and 10.90 grams of protein. Eggs contain 154 calories, 12.40 grams of protein and 10.80 grams of fat. Therefore, it has the potential to be processed into one of the processed food ingredients such as nuggets which can be used as an ingredient to fulfill nutrition in stunting sufferers.

Moringa leaves are very nutritious, especially rich in iron. There are 7 mg of iron in 100 grams of moringa leaves, the protein and iron content in moringa processed foods can meet Supplementary Feeding criteria. In addition, WHO recommends the consumption of moringa leaves for children and toddlers to strengthen the immune system and prevent malnutrition (Perceka, 2018).

Supplementary feeding for stunted toddlers can help overcome nutrition and growth problems in toddlers. Several studies have shown that supplementary feeding has a positive impact on reducing stunting rates. Pangestu et al (2023) found that the stunting prevention program at the Mamasa Health Center has been running well, including the provision of supplementary food to stunted toddlers (Simamora & Kresnawati, 2021). Setiadi & Hudaya (2021) also concluded that

supplementary feeding for stunted toddlers can support the growth and development process of children (Susanti et al., 2022). Meanwhile, (Widyaningsih et al., 2018) states that maternal age during pregnancy and exclusive breastfeeding are associated with the incidence of stunting in toddlers. Punjastuti et al., (2023) added that socio-cultural factors are also associated with stunting in toddlers. Therefore, supplementary feeding needs to consider these factors. Fitriani (2020) argues that community empowerment through the formation of stunting response cadres can help with early detection and prevention of stunting. In line with that, (T. H. S. Rahayu et al., 2022) concluded that family coaching for toddlers regarding stunting can increase the knowledge of mothers of toddlers.

Simamora & Kresnawati (2021) also emphasized the need for training and mentoring female health cadres on early detection of stunting. Setiadi & Hudaya (2021) stated that early detection of stunting through anthropometric measurements in toddlers can increase knowledge about the importance of stunting prevention. Finally, (Susianto et al., 2023) also found that supplementary feeding and nutrition education can help increase nutrient intake in stunted toddlers and their parents, which can support the growth of stunted toddlers and prevent future stunting cases. Thus, supplementary feeding for stunted toddlers needs to be supported by early detection efforts, increased community knowledge, and the participation of health cadres. The provision of Supplementary Feeding is an addition to the main food of the target toddlers and is not a substitute for the daily food of the target toddlers. The increase in height is not only due to the provision of Supplementary Feeding, but there are other factors that are thought to have contributed to increasing the body weight of toddlers targeted by the Supplementary Feeding program, such as consumption of toddlers' main food and consumption of snacks or toddler snacks.

CONCLUSION

From the results of the research that has been conducted, it can be concluded that supplementary feeding for stunted toddlers can increase the height of stunted toddlers with the results of this study the utilization of local food in overcoming stunting can be modified and researched further. Overall, the study shows that supplementary feeding and nutrition education can help increase nutrient intake in stunted toddlers and their parents, so as to support the growth of stunted toddlers and prevent future stunting cases.

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