Research Article

Factors Affecting the Management of Stunting in Banten Province

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Abstract. Indonesia had the 5^{th} highest prevalence of stunting among toddlers in Asia in 2018 with 30.8%. Banten is a province where handling stunting has been made a priority. Apart from leading to stunted growth, stunting is also associated with less than optimal brain development, which causes poor mental and learning abilities, and poor school performance. The purpose of this study was to determine the factors associated with stunting prevention in Banten province. The questionnaire used in this study was created by the researchers and contained 45 questions. This was a randomized controlled clinical trial. The independent variables were specific interventions (nutrition, environmental sanitation, clean water, family latrines), and the dependent variable was stunting prevention. Respondents in this study included 276 toddlers. Height was obtained by measuring the average height of the children before and after administration of the interventions. Statistical analysis was through the t test. According to the results, there was a significant relationship between sanitation of the home environment and family income with the incidence of stunting in children under five in Banten province. It is therefore recommended that the Government should form a nutrition kitchen in each posyandu.

Keywords: management of stunting countermeasures, height, weight, sensitive nutrition, toddler

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1. Introduction

Indonesia is the 5th highest country in stunting prevalence in toddlers in Asia [1]. In 2018, 30.8% of children under five in Indonesia experience stunting. In Banten province it is the 5th province which has become the priority in handling stunting in Java (Riskesda, 2018)[2]. According to the 2016 Balanced Nutrition guideline, 27.5% of Indonesian children under five are in the short category with the highest percentage in the provinces of West Sylawesi, NTT and Banten. This means that growth is not optimal for around 8 million children in Indonesia, or one in three children in Indonesia (Kalundang et al., 2017) [3,4] The Banten Provincial Health Office has coordinated with the district / city Healh Office and the puskesmas once again conducted a nutritional status survey of children under five with Electronic Community Based Nutrition Recording and Reporting (EPPGBM). and 28,465 suffer from malnutrition. From this data it can be seen that in

Banten the number of Stunting has increased from year to year. The increase occurred due to the lack of people's purchasing power as a result of poverty and the lack of public knowledge about the nutrition of children under five. If left unchecked and not handled properly, children's growth will be stunted, stunting is also associated with suboptimal brain development, leading to poor mental abilities and interest in learning, as well as poor school performance. The Indonesian government in overcoming the problem of stunting through two frameworks of specific nutrition interventions and sensitive nutrition interventions. The Banten Provincial Health Office through the Health Office is determined to eradicate malnutrition in a number of cities and regencies, with the pattern of establishing nutrition posts and re-activating the existence of Integrated Service Posts (Posyandu) in endemic areas of malnutrition.

2. Method

2.1. Research Design

The design of this study was analytic observation using a Randomized Controlle Clinical Trial (RCT) design with patterns of intervention, control, randomization. The independent variables are specific nutrition interventions (target parents of children 6-60 months) and sensitive nutrition interventions (environmental sanitation, clean water), while the dependent variable is management of stunting countermeasures

2.2. Data Analysis

The normality test with Kolmogorav Smirnov will be conducted first to see the data distribution of data normality. When the data are normal, the univariate analysis uses the mean and standard deviation. Calculation of data analysis using SPSS Version 22 software. T-Test was used to test the mean difference in height of children under five before and after giving PMT (supplementary feeding). While the factors related to the incidence of stunting were analyzed using the Chi Square test with a confidence level of 95% (α = 0.05%). Cross-sectional analytic study aimed to see the relationship between several variables and more practical intervention, control, randomization to be carried out.

2.3. Population of this research is toddler in Banten Province

Data collection is by questionnaire. The research questionnaire was made by the researcher himself with 15 knowledge questions with 3 answer choices, and 30 questions using a Liket scale. Next, the researchers asked for instrument reviews from 3 nursing experts from scientific groups (Management, KMB, and Maternity). Experts provide input on the questionnaire used by researchers. After being repaired according to the input of experts, so that ”Valid” and ”Reliable” instruments, before being used, a ”pre-test” trial was carried out on 30 people who were not included in the sample. The results of the trial with the product moment, obtained a value of r > 0.2 or r calculated above the r table, then the question item is declared valid. In the reliability test using Chronbach's Alpha. Alpha value obtained> 0.7 means it is acceptable. After that, the questi questionnaire will be given directly to the survey officer/enumerator who will be given to the respondent by answering a checklist to the answers that have been provided.

When filling out the respondent's questionnaire, they were in their own homes, in Pandeglang Regency and Lebak Regency. The population of this study was toddlers in Banten Province

3. Result and Discussion

Exposure Respondent data obtained are shown in table 1.

The distribution of respondents according to the age of children under five who experience Stunting is there are 12 children (4.3%) aged less than 12 months, 77 children (27.9%) aged 13-24 months, 46 children (16.7%) aged 25 -36 months and the largest respondents were 88 children (31.9%) aged 37-48 months and 53 children (19.2%) aged 48-60 months. The distribution of respondents according to the work of parents who experience stunting is that there are mostly 205 children (74.3%) parents working as laborers / farmers, 61 children (21.1%) whose parents work as traders and 10 children (3.6%) parents work as a civil servant / private. The distribution of respondents according to the education of parents of children under five who experience stunting is the majority there are 200 children (72.5%) parents with elementary / junior high school education, 68 children (24.6%) parents have high school education and 8 children (2.9%) parents college education. Distribution of respondents according to the knowledge of parents of children under five who experience stunting is that there are mostly 193 children (69.9%) whose parents have less knowledge, but the remaining 83 children (30.1%) parents have

Table 1: Characteristics of Respondents (n=276)

No	Characteristics of Respondents	n (%)n	Presentation%
1	Age <12 months 13-24 months 25 -36 months 37 -48 months 48 -60 months Total	12 77 46 88 53 276	4.3% 27.9% 16.7% 31.9% 19.2% 100%
2	Parent's occupation Farm workers Trade Civil Servants / Private Total	205 21 10 276	74.3% 21.1% 3.6% 100%
3	Parent Education Elementary / middle school High school College Total	200 68 8 276	72.5% 24.6% 2.9% 100%
4	Mother's Knowledge Well Less Total	83 193 276	30.1% 69.9% 100%
5	Breastfeeding for Children Exclusive ASI is not exclusive Total	42 234 276	15.2% 84.8% 100%
6	Health services Always Sometimes Never Total	169 90 17 276	61.2% 32.6% 6.2% 100%
7	Environment sanitation Always Sometimes Never Total	29 142 105 276	10.5% 51.4% 38.1% 100%
8	Family Income <1,000,000 1,000,000-2,000,000 > 2,000,000	203 68 5	73.6% 24.6% 1.8%
9	Weight Normal weight Malnutrition Malnutrition Total	171 88 17 276	62.0% 31.9% 6.2% 100%
10	Height Normal Stunting Total	150 126 276	54.3% 45.7% 100%

good knowledge. Distribution of respondents according to exclusive breastfeeding of parents to stunted children under five namely, there are 42 children (15.2%) parents breastfeed exclusively on children, and 234 children (84.8%) parents give non-exclusive breastfeeding to children. Distribution of respondents according to the use of health services by parents who have stunting children is that there are 169 children (61.2%) parents have brought their children to health services, 90 children (32.

Distribution of respondents according to the home environmental sanitation of parents who have stunting children is that there are 29 children (10.5%) parents always maintain the cleanliness and tidiness of their home environmental sanitation, mostly there are 142 children (51.4%) their parents sometimes sometimes maintain cleanliness and tidiness sanitation of the home environment, and 105 children (38.0%) whose parents never pay attention to environmental sanitation the month, 69 children (24.6%) whose parents earn 1,000,000 - 2,000,000 per month, and only 5 children (1.8 %) whose parents earn more than 2,000,000 per month. The distribution of respondents according to the weight status of stunting children under five is that there are mostly 171 children (62.0%) having normal weight, 88 children (31.9%) underweight, and 17 children (6. 2%) suffer from malnutrition. Distribution of respondents according to the status of

stunting toddlers is mostly 150 children (54.3%) having normal height, but 126 children (45.7%) have short height despite intervention.

4. Discussion

4.1. Criteria for Responde to Stunting Management

Growth and development of children should go according to their age but many factors affect the growth and development of children, from the results of this study Distribution of respondents according to the age of children under five who experience Stunting is there are 12 children (4.3%) aged less than 12 months, 77 children (27.9%) aged 13-24 months, 46 children (16.7%) aged 25-36 months and the largest respondents were 88 children (31.9%) aged 37-48 months and 53 children (19.2%) aged 48-60 months. In this study the highest score of stunting children was at the age of 37-48 months, where at this age children began to play a lot, including running, jumping, throwing, kicking a ball, climbing and so on, in children aged 4 years really active so that a lot of energy comes out, therefore adequate nutrition is needed to balance the activities of the child as well as for growth and development. If a child's diet at this age is inadequate it will result in stunted growth and development of the child, so that many children aged 37-48 months who experience stunting. In general, children who experience chronic malnutrition, the proportion of his body will look normal, but in reality is shorter than the body of a normal child for children his age.

1. Work Factor

Parent's work affects family income, if parents work as laborers / farm laborers with a small income it will have an impact on family purchasing power in meeting daily food needs. The results of the analysis of the relationship between parental work and stunting status of children under five were obtained in parents whose work was farmer / laborer as many as 93 (45.4%) experienced stunting, in children whose parents worked as traders there were 29 children (47.5%) who experienced stunting and in the parents of children who work as civil servants / private, there are 4 children (40.0%) who experience stunting. In this study, most of the work of parents of children under five who experience stunting are unskilled laborers and sharecroppers with very little income, so they are not sufficient for their daily needs. The statistical test results obtained p value of 0.224 so it can be concluded that there is no significant relationship between work and the incidence of stunting in children under five in Banten Province. The results of this study are not related because the respondents in this study were respondents who were

Table 2: Bivariate Analysis

Variable Sensitive	Category	Stunting		Total	P. Value	OR 95% CI
		Normal	Stunting			
Profession	Farm workers	112 54.6%	93 45.4%	205 100.0%	0.224	1,204 (1,454-4,468)
	Trade	32 52.5%	29 47.5%	61 100.0%		
	Civil Servants / Private	6 60.0%	4 40.0%	10 100.0%		
	Total	150 54.3%	126 45.7%	276 100.0%		
Education	Elementary / middle school	106 53.0%	94 47.0%	200 100.0%	0.22	.756 (.760 - 0.297)
	High school	40 58.8%	28 41.2%	68 100.0%		
	PT	4 50.0%	4 50.0%	8 100.0%		
	Total	150 54.3%	126 45.7%	276 100.0%		
Knowledge	Well	42 50.6%	41 49.4%	83 100.0%	0.002	6,402 (6,326-0276)
	Less	108 56.2%	85 43.8%	193 100.0%		
	Total	150 54.3%	126 45.7%	276 100.0%		
Giving ASI	Exclusive breastfeeding	39 92.9%	3 7.1%	42 100.0%	0.022	4,225 (4,755-2,454)
	ASI is not exclusive	111 47.4%	123 52.6%	234 100.0%		
	Total	150 54.3%	126 45.7%	276 100.0%		
Health services	Always	92 54.4%	77 45.6%	169 100.0%	0.071	0.417 (0.416 - 0.076)
	Sometimes	50 55.6%	40 44.4%	90 100.0%		
	Never	8 47.1%	9 52.9%	17 100.0%		
	Total	150 54.3%	126 45.7%	276 100.0%		
Environment sanitation	Always	13 44.8%	16 55.2%	29 100.0%	0.007	3,783 (3,788-0189)
	Sometimes	85 59.9%	57 40.1%	142 100.0%		
	Never	52 49.5%	53 50.5%	105 100.0%		
	Total	150 54.3%	126 45.7%	276 100.0%		
Family Income	<1,000,000	110 54.5%	92 45.5%	202 100.0%	0.071	2,116 (2,417 - 0.004)
	1,000,000 - 2,000,000	37 52.9%	32 47.1%	69 100.0%		
	2,000,000	3 60.0%	2 40.0%	5 100.0%		
	Total	150 54.3%	126 45.7%	276 100.0%		

Table 3: Probability Analysis (n = 276)

TB variable	The mean	Elementary school	SE	P value	N
Pre PMT TB	85,161	47.28	2.84	0.440	276
PMT Post TB	87,310	11.15	0.67		

intervened by the Provincial Government of Banten in supplementary feeding (PMT) activities in addition to other parties who also helped. This study is in line with research conducted by (Wanda L et al)(3) the relationship between work status and the incidence of stunting in children under five is not found to be significant. this is because there is PMT assistance from the government so that many children under five rise in height from stunting to normal. Research in the city of Semarang was found by working mothers,

4.2. Education Factors

Education is one of the factors that influence one's behavior, education can also mature one's mindset so that he can choose and make the right decisions. According to Azwar (2012).[5] The results of the analysis of the relationship between parental education and height status of children under five years old were obtained in parents whose education was elementary / junior high, there were 94 (47.0%) who experienced stunting, in children whose parents had high school education there were 28 children (41.2%) who experienced stunting, while parents of children whose education up to college were 4 children (50.0%) who experienced stunting. The statistical test results obtained p value of 0.22, it can be concluded that there is no significant relationship between education and Stunting status of children under five in Banten Province. The results of the study are not in line with research conducted (Wanda Lestari et al 2017)[6] which states that the level of education is significantly related, namely mothers with low education are at risk 2.4 x their children are stunted compared to mothers with higher education, but this study agrees with research conducted by Astuti FD et al (2013: 7)[7] Which states there is no relationship between the level of education and the nutritional status of children, because in line with the current technological development, mothers with low education can easily access information from various media so that the mother's knowledge can increase. While the opinion of Notoatmodjo (2012)[8] says the higher the level of education, the more material, material and knowledge possessed to achieve good behavior change.

4.3. Knowledge

According to (Aini & Agustin, 2018) in Notoatmodjo (2012)[9] states that knowledge (knowledge) is the result of knowing, this happens after someone senses a certain object. Sensing occurs through the five senses namely vision, hearing, smell, taste and touch. The results of the analysis of the relationship between toddler height and parental knowledge obtained data there are 41 children (49.4%) who experienced stunting in parents who have good knowledge, while in parents who lack knowledge as many as 85 children (43.8%) who experienced stunting Notoatmdjo (2012).[10] A person's knowledge has a very close relationship with the level of education he has, and the level of knowledge possessed by an individual, illustrates the level of education he has, for example is a mother with a high level of education will definitely try to learn to give food to children according to their age, both in terms of type of food, food composition and timing of administration. The statistical test results obtained p value 0.002 so it can be concluded that there is a significant relationship between parental knowledge and stunting status of children under five in Banten province while the OR value of 6.402 means that parental knowledge is lacking in food and nutrition, a 6.4 x chance of their child suffering from stunting . The results of this study are in accordance with research (Khoirun Ni'mah et al, 2015)[11] which states the provision of quality ingredients and food menus for toddlers in an effort to improve nutritional status will be realized if the mother has a good level of knowledge about nutrition.

4.4. Exclusive ASI

Fikadu et al.,(2014)[12,13] in southern Ethiopia who state that underfives who cannot breastfeed exclusively for the first 6 months of life are at greater risk of stunting. Some reasons mothers do not give exclusive breastfeeding because if only breastfed fussy children can not sleep soundly so that children aged 3 months have been given food in the form of fruit and biscuits, besides the reason a little breast milk so that it is not enough to meet the needs of the baby.

4.5. Health services

Health services for the community are very important in order to improve public health, because health services do not only provide treatment but involve several aspects such as promotive, preventive, curative and rehabilitative. In promoting for example

with balanced nutrition, the results of the analysis of the relationship between health services with the height status of toddlers are obtained from parents who always bring their toddlers to health services to improve or seek treatment as many as 77 (45.6%) who experience stunting, in children who his parents sometimes bring their children to health services, there are 40 children (44.4%) who experience stunting and in parents who have never brought their children to health services there are 9 children (52.9%) who experience stunting. Statistical test results obtained p value 0, 071, it can be concluded that there is no significant relationship between health services and the incidence of stunting in children under five in Banten Province. This study is different from the research of (Rahmawati & Dewi Sartika, 2020),[14,15] which states that there is a relationship between health services and stunting for various reasons so that mothers do not bring their children to the posyandu, among others; the location is far, there are no close posyandu and the service is incomplete, the level of regularity of the mother to the posyandu to bring her toddlers is still low, resulting in delays in the detection of child growth disorders. Health services are still sensitive to changes in the economic situation. Disruption of the economic situation will disrupt community and family accessibility to health services, **Sensitive Nutrition Interventions**

4.5.1. Environmental Sanitation

Environmental sanitation, the provision of clean water, family toilets, cleanliness, both personal hygiene and environmental hygiene play an important role in children's growth and development, stunting can also occur in children who live in environments with inadequate sanitation and hygiene. The results of the analysis of the relationship between height status of children under five with environmental sanitation obtained data on children under five whose sanitation of the home environment is always good there are 16 children (55.2%) who experience stunting, and in children under five whose environmental sanitation is sometimes good there are 57 children (40.1%) experienced stunting while in poor and dirty environmental sanitation 53 (50.5%) experienced stunting. Poor sanitation is associated with infectious diseases such as diarrhea and intestinal helminth disease repeatedly in children,https://www.alodokter.com)[16] The statistical test results obtained p value 0.007, it can be concluded that there is a significant relationship between environmental sanitation and the incidence of stunting in children under five in Banten province. Environmental sanitation is closely related to the incidence of stunting in this study because the environment is where children live and play everyday, if the conditions are dirty, dirty water sources, dirty and untreated

latrines will cause diarrhea, intestinal worms and respiratory tract infections that occur repeatedly, so that the child's appetite is reduced plus the nutritional quality that is indeed lacking so that the child suffers from malnutrition and short stunting clean and healthy life due to the unavailability of clean water, latrines and poor environmental sanitation management which has the effect of pollution of the living environment. Cahyono's research (2016)[17,18] states that poor environmental sanitation is 3,978 X at risk of stunting in children, meaning that the probabilities of a toddler with poor sanitation have a 4X chance of being stunted more than good sanitation. According to Soetjiningsih (2013).[19]

4.5.2. Family income

The economic status of the family is important in the growth and development of children because with sufficient family income, the mother will easily meet the nutritional needs and other basic needs. In this study the results of the analysis of the relationship between family income and height status children under five are obtained in families with an income <R. 1.,000,000 there are 92 (45.5%) who experience stunting, in children whose parents earn Rp. 1,000,000 - Rp. 2,000,000. there were 32 children (47.1%) who were stunted and the parents with income> Rp. 2,000,000 there were 2 children (40.0%) who experienced stunting. Low economic status is considered to have a significant impact on the likelihood of children becoming thin and short (UNICEF.2013).[20] The statistical test results obtained p value 0.002, so it can be concluded that there is a significant relationship between family income and stunting status of children under five in Banten Province. Very family incomet plays an important role in sustaining the nutritional needs of families, with the condition of these expensive foodstuffs, the purchasing power of people in Banten is very declining in all fields, don't just buy other necessities to buy food alone is difficult, coupled with very small incomes so the incidence of stunting is very high in Banten. The results of this study concur with the results of the study of Wanda Lestari et al (2017)[20,21] there is a significant relationship between family income and the incidence of stunting in children, namely children with low economic status have a chance of 7.8 x stunting compared to children with high family income. Also the opinion of Khoirun Ni'mah et al (2015)[22] family income is a factor that is highly related to the incidence of stunting in children under five. According to Bishwakarma (2011)[23] Families with good economic status will be able to get better public services such as education, health services, road access, and others so that it can affect the

nutritional status of children. In addition, family purchasing power will also increase so that the family's condition for food nutrition will be better.

4.5.3. Analysis of the Stunting Management Program

Obtained measurement of the average body weight of children before being given PMT is 10,500 grams with a standard deviation of 7.08. the weight measurement after PMT administration was 11,678 grams with a standard deviation of 2.51. Statistical test results obtained the value of P Value 0.007, it can be concluded that there is a significant difference between body weight before being given PMT and Body Weight after being given PMT. The results of measurements of body weight before being given supplementary food with a container given additional food obtained SD value (standard deviation) 7.08 - 2.51 and the value of P value <0.05, then there is a significant relationship between body weight before being given additional food with after being given additional food, where there is an average weight gain in children under five, this is because the food provided is sufficient to meet the balanced nutritional value, and the amount of food provided is almost completely consumed by the children, from the results of monitoring during PMT given, basically stunted children in Banten Province have good appetite, causes of deficiency Nutrition and stunting in children under five is due to both the amount and quality of food nutrition provided by parents to their children is less than adequate in the long term from pregnancy until now so that children experience chronic malnutrition. The results of analysis on height obtained an average measurement of children's height before being given a PMT is 85,161 m with a standard deviation of 47.28. in height measurements after giving PMT is 87,310 grams with a standard deviation of 11.15, Statistical test results obtained the value of P Value 0.440, it can be concluded that there is no significant difference between height before being given a PMT and height after being given a PMT. From the results of statistical tests on children's height obtained P value> 0.05 then there is no significant difference between height before being given PMT and after being given PMT, this is because the increase in children's height is still low and have not gotten the results as expected because the interventions given have been running for 3-6 months so the height increase is not yet satisfactory.

5. Conclusion

In the specific nutrition variable, the relationship between toddler height status and parental knowledge is a significant relationship marked by bivariate test results with a P value <0.05. While the relationship between parental work, parental education and the use of health services by families with high status of toddlers in Banten Province there is no significant relationship.

On sensitive nutrition variables, a significant relationship between sanitation of the home environment (clean water supply, family latrines, waste disposal) and family income with the incidence of stunting in children under five in Banten province. Bivariate analysis with a p value <0.05 shows that the most dominant and very influential on the success of the prevention of stunting in children under five in Banten Province is the sensitive nutrition variable. Although the bivariate statistical test with the T Test to see the difference between height before being given PMT and after being given PMT there was no significant relationship, but the measurement of children's height manually there was an increase after the child was given an intervention of approximately 2-5 cm.

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