

Relationship of Exclusive Breastfeeding Indicators and Complete Basic Immunization against the Incidence of Stunting in the 10 Special Locations of Stunting Prevention Programs in Banggai Regency

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Abstract

This study aims to determine the relationship between exclusive indicators of breastfeeding and complete basic immunization against the incidence of stunting in 10 special Locations of stunting prevention programs in Banggai Regency in 2018 and 2019. This type of research is part of a longitudinal study with a cross sectional design. The data used in this study were secondary data on indicators of a healthy Indonesia program with a family approach (PIS-PK) in 10 villages where the stunting prevention program was located in the Banggai Regency in 2018-2019. The data analysis technique in this study used SPSS. The results showed that the normal nutritional status in 2018 was 114 (61.3%) of respondents, and the nutritional status of stunting in 2018 was 72 (38.7%) of respondents. There were 121 (65.1%) complete basic immunizations and 65 (34.9%) incomplete basic immunizations. Respondents who gave exclusive breastfeeding were 93 (50.0%) and those who did not exclusively breastfeed were 93 (50.0%). In 2019 the normal nutritional status was 105 (64.8%) of respondents, and the nutritional status of stunting was 57 (35.2%) of respondents. There were 110 complete basic immunizations (67.9%) and incomplete basic immunizations there were 52 (32.1%). Respondents who gave exclusive breastfeeding were 87 (53.9%) and those who did not exclusively breastfeed were 75 (46.3%). After carrying out specific interventions in 10 special Locations of Banggai Regency in 2018-2019, there was a decrease in the prevalence of stunting. Then there was an increase in the coverage of complete basic immunization indicators and coverage of exclusive breastfeeding indicators, and there was the effect of complete basic immunization and the coverage of indicators of offering exclusive breastfeeding on the incidence of stunting in 10 special Locations of stunting prevention programs in Banggai Regency in 2019 after specific interventions.

Keywords: Stunting, Complete Basic Immunization, Exclusive Breastfeeding

1. Introduction

Malnutrition in developing countries in the form of malnutrition and malnutrition has a more serious impact on economic development and poverty (Rachmi et al., 2016). According to the global nutrition report, malnutrition causes significant economic losses of up to 11 percent of

the annual Gross Domestic Product (GDP) in Africa and Asia (IFPRI, 2016). To date, progress towards ending all forms of malnutrition has been insufficient and limited, and it remains a major concern in most countries (Eshete et al., 2020).

Stunting is one of the most common forms of chronic malnutrition (Kemenkes, 2014). Stunting or shortness is one of the indicators of chronic nutritional status that describes stunted growth caused by long-term malnutrition. The limit for stunting according to WHO is height for age based on the Z-score equal to or less than -2 SD below the standard average (Campisi et al., 2017). Based on data from UNICEF, in 2018 there were 21.9% or around 149 million children under 5 years of age in the world who were stunted, but this figure has decreased when compared to the stunting rate in 2000, which was 32.6%. More than half of stunting children in the world come from Asia (55%) while more than a third (39%) live in Africa. Of the 81.7 million stunted children under five in Asia, the highest proportion came from South Asia (57.9%) and the lowest proportion in Central Asia (0.8%) (Kemenkes, 2017). Indonesia is the third country with the highest average prevalence of stunting in 2005-2017 after India and Timor Leste (United Nations Children's Fund, World Health Organization and Group & World Bank, 2019).

In Indonesia, stunting is a serious problem and also a major nutritional problem that is being faced. If this problem is chronic, it will affect cognitive function (Rahmawati et al., 2020). Toddlers who are stunted will have a level of intelligence that is not optimal, make children more susceptible to disease, and affect their productivity in the future. In the end, stunting can largely hamper economic growth, increase poverty, and increase inequality in Indonesia (Risksedas, 2018). Indonesia plays a role in preventing stunting at the international level by becoming part of the Scaling Up Nutrition (SUN) Movement starting in December 2011. SUN is a global movement with the principle that all people in the world have the right to good food and nutrition. Government efforts to reduce stunting rates in Indonesia have been carried out through several health policies through the Indonesian Ministry of Health's programs, including provision of additional food, the first 1000 days of life and Healthy Indonesia with a Family Approach (PIS-PK) (Kemenkes, 2016).

The most decisive thing in order to reduce the prevalence of stunting is that it is necessary to carry out intervention in the first 1,000 days of life (HPK). The framework for stunting interventions carried out by the Government of Indonesia is divided into two, namely specific nutrition interventions by the health sector which contributed 30% and sensitive nutrition interventions by the non-health sector which contributed 70% (Kemenkes, 2014).

Banggai Regency is one of the pilot districts for combating stunting in Indonesia. Stunting prevention program activities in Banggai Regency itself has been carried out since 2015 through the preconception posyandu program. This preconception Posyandu is not far from the role of Unhas through its teaching staff in developing this innovation. Unhas has sent 4 researchers consisting of 2 master students and 3 doctoral students. Postgraduate students have completed their research in 2017 through research "The Effect of Micro-Nutrients on Hemoglobin Concentration in Preconceptual Women in Banggai Regency" and "Study on the

Implementation of Integrated Service Management for Preconceptual Women in Banggai Regency "

The research activity of the Longitudinal Study of Rescuing 1000 HPKs, has been carried out in collaboration between the Development Planning, Research and Development Agency of Banggai Regency and the Hasanuddin University Faculty of Public Health through baseline data collection starting in 2018. This research aims to obtain a model to save the first 1000 days of life (HPK) in Banggai District, which started from the preconception period and continued with pregnancy until the child was 2 years old. The implementation activity by the FKM Unhas Research Team has helped the Banggai Regency Government in assisting the stunting prevention and response program through the planning and program development stages.

Implementation of PIS-PK activities in the district. Banggai has been implemented in 10 locus villages, namely Balanga, Jaya Bakti, Bolobungkang, Boitan, DondoSoboli, Lontos, Koili, Indang Sari, Former B and Batu Simpang in 2018-2019 with one of the results of model development by doctoral students FKM UNHAS with the program 1 PK 100 KK which is continuously updated and surveillance is conducted every 3 months to show that the intervention is carried out regularly.

Based on the background description above, the researchers wanted to see how the effect of specific interventions from indicators of a healthy Indonesia program with a family approach (PIS-PK) on the prevalence of stunting in 10 loci of stunting prevention programs in Banggai Regency in 2018-2019.

2. Methods

This research is part of a Longitudinal Study of the Acceleration of Nutrition Improvement through Saving the First 1000 Days of Life (HPK) in collaboration between BAPPEDA Banggai Regency with FKM UNHAS since 2016. This research is a cross sectional study 2 times in the same population or a time series study using secondary data analysis method. The data used in this study are secondary data for indicators of the Healthy Indonesia Program with a Family Approach (PIS-PK) in 10 villages where the stunting prevention program locus in Banggai Regency in 2018-2019.

This study uses secondary data or data that has been previously collected, where the data collection was carried out in 10 locus villages in Banggai Regency, namely Balanga, Jaya Bakti, Bolobungkang, Boitan, DondoSoboli, Lontos, Koili, Indang Sari, Former B and Batu Simpang villages in 2018 and 2019. The population in this study was all households that had been recorded in 10 locus villages in Regency. Banggai, namely Balanga, Jaya Bakti, Bolobungkang, Boitan, DondoSoboli, Lontos, Koili, Indang Sari, Former B and Batu Simpang villages in 2018 and 2019 totaling 5266 families. The sample in this study were all households that met the inclusion criteria, namely families who had children measured by anthropometry and had PIS-PK data totaling 348 families.

3. Results and Discussion

The following is the frequency distribution of the research variables in 2018 and the changes that occurred in 2019.

Table 1. Frequency Distribution of Respondents Based on Research Variables in 10 Locals of Stunting Prevention Program, Banggai Regency Years 2018-2019

Research Variable	2018		2019	
	n	%	n	%
Nutritional Status				
Normal	114	61.3	105	64.8
Stunting	72	38.7	57	35.2
Complete Basic Immunization				
Yes	121	65.1	110	67.9
No	65	34.9	52	32.1
Exclusive Breastfeeding				
Yes	93	50.0	87	53.9
No	933	50.0	75	46.3

Source: Secondary Data, 2018. Secondary Data, 2019.

Based on the table above, it can be seen that after specific interventions were carried out in 10 villages, the district locus. Banggai in 2018-2019 there was a decrease in the prevalence of stunting by 3.5%, from 38.7% to 35.2%. Then for the coverage of the PIS-PK indicator after specific intervention there was an increase in the complete basic immunization indicator by 2.8% and the indicator for exclusive breastfeeding by 3.9%.

The following table presents the results of the normality test for each research variable in the 10 locus of the district stunting prevention program. Banggai in 2018 and 2019

Table 2. Results of Research Variable Normality in 10 Locus of Stunting Prevention Program Banggai Regency in 2018 and 2019

Research Variable	2018			2019		
	Sig	Normalitas	Uji	Sig	Normalitas	Uji
Complete Basic Immunization	0.200	Normal	Independent Samples T Test	0.016 0.006	Not Normal	Mann Whitney
Yes	0.200					
No						
Exclusive Breastfeeding	0.200	Normal	Independent Samples T	0.005	Not Normal	Mann

Yes	0.200	Test	0.009	Whitney
No				

Source: Primary Data, 2020

Based on table 2, the results of testing the normality of the research variable data in 2018 showed that the results were indicators of delivery in health facilities, complete basic immunization and exclusive breastfeeding with a value of $p > 0.05$, which means that the data was normally distributed and tested using the independent samples T-test. The results of testing the normality of research variable data in 2019 obtained results, namely indicators of complete basic immunization and exclusive breastfeeding with a p value < 0.05 , which means the data is not normally distributed and tested using the Mann Whitney test.

Table 3. Independent Sample T Test Results Effect of PIS-PK indicators on Stunting Prevalence in 10 Locus of Stunting Prevention Program, Banggai Regency Year 2018

	Average (s.b)	Score p	Difference (IK95%)
Complete Basic Immunization			
Yes(n = 121)	- 1.47	0.398	0.18 (-0.24 – 0.60)
No(n = 65)	- 1.65		
Exclusive Breastfeeding			
Yes(n = 121)	- 1.39	0.133	0.28 (-0.09 – 0.65)
Nos(n = 65)	- 1.67		

Source: Primary Data, 2020

Based on the table above, the test results using the Independent sample T test obtained that the average value of HAZ between the 2 groups was -1.47 for the group of children who did complete basic immunization, while for the group of children who did not complete basic immunization the average score was -1.65. Thus, statistically descriptive it can be concluded that there is a difference in the average HAZ value between the two groups. Furthermore, it can be seen that the average difference is 0.18. This value indicates the difference between the HAZ values of the two groups and the difference between these differences is -0.24 to -0.60 (95% Confidence interval of the difference lower upper).

The results of the test using the Independent sample T test obtained that the average Z-score between the 2 groups was -1.39 for the group of infants who received exclusive breastfeeding, while for the group of infants who did not get exclusive breastfeeding the average score was -1.67. Thus, statistically descriptive it can be concluded that there is a difference in the average Z-score between the two groups. Furthermore, it can be seen that the average difference is 0.28. This value indicates the difference between the Z-score values of the two groups and the difference between these differences is -0.09 to -0.65 (95% Confidence interval of the difference lower upper).

Table 4. Mann-Whitney Test Results Effect of PIS-PK indicators on Stunting Prevalence in 10 Locus of Stunting Prevention Program, Banggai Regency of 2019

	Median	Minimum- Maximum	Score p
Complete Basic Immunization			
Yes(n = 110)	- 1.18	-4.21 – 4.92	0.000
No(n = 52)	- 2.54	-4.97 – 1.07	
Exclusive Breastfeeding			
Yes(n = 87)	- 1.05	-4.97 – 4.92	0.000
No(n = 75)	- 2.53	-4.26 – 1.73	
No(n = 85)	-1.71	-4.73 – 2.23	

Source: Primary Data, 2020

Based on the table above, the test results using Mann Whitney obtained a median Z-score of -1.18, a minimum Z-score of -4.21 and a maximum Z-score of 4.29 for the group of children who did complete basic immunization and a median Z-score of -2.548, a value The minimum Z-score was -4.97 and the maximum Z-score was 1.07 for the group of children who did not complete basic immunization. The results of the test using Mann Whitney obtained a median Z-score of -1.05, a minimum Z-score of -4.97 and a maximum value of Z- score 4.92 for the group of infants who are exclusively breastfed, and the median Z-score -2.53, the minimum Z-score -4.26 and the maximum Z-score 1.73 for the group of infants who are not exclusively breastfed.

Table 5. Comparison of the Results of Bivariate Analysis of Independent Variables to Dependent Variables in 10 Locals of the Stunting Prevention Program, Banggai Regency in 2018 and 2019

Variable	Category	%		p-value	
		2018	2019	2018	2019
Complete Basic Immunization	Yes	65.1	67.9	0.398	0.000
	No	34.9	32.1		
Exclusive Breastfeeding	Yes	50.0	54.9	0.133	0.000
	No	50.0	45.1		

Source: Primary Data, 2020

Based on this table, it can be seen that the comparison of the results of the analysis of the independent variable on the dependent variable in 2018 and 2019. For the complete basic immunization variable, in 2018 it shows a p-value of 0.398 (> 0.05) which means there is no effect and in 2019 it shows p. -value of 0.000 (< 0.05), which means that there is an effect of the complete basic immunization variable on the prevalence of stunting at 10 loci of stunting

prevention programs in Banggai Regency. So it can be concluded that there is a difference in the effect of the complete basic immunization variable on the prevalence of stunting in 2018 and 2019.

In the exclusive breastfeeding variable, in 2018 it shows a p-value of 0.133 (> 0.05) which means there is no effect and in 2019 it shows a p-value of 0.000 (< 0.05) which means that there is an effect of the exclusive breastfeeding variable on the prevalence of stunting at 10 loci stunting prevention program in Banggai Regency. So it can be concluded that there is a difference in the effect of the exclusive breastfeeding variable on the prevalence of stunting in 2018 and 2019.

The results of the PIS-PK data collection show that after the intervention the coverage of indicators for children who were given complete immunization increased from 2018, namely 65.1% to 67.9% in 2019. The main obstacle to successful immunization of infants and children in the health care system namely low awareness which is influenced by the level of knowledge and attitudes of mothers towards the actions of mothers in bringing their babies to be immunized and the absence of community needs (Nurhikmah&Nuryuniarti, 2019). Interventions carried out to improve this complete immunization indicator are by making promotional efforts, including activating more education and socialization of the importance of immunization for infants, school children, women, and pregnant women, thus it is hoped that the knowledge of mothers about the benefits of immunization will encourage them to be more concerned and willing to carry out immunizations without hesitation (Mamonto et al., 2014).

Immunization is an effort to actively generate/increase a person's immunity to a disease so that if one day they are exposed to the disease they will not get sick or only experience mild illness (Figdoretal., 2012; Lestari, 2019). Based on the results of data analysis, it shows that in 2018 the p-value was 0.398 (> 0.05) which means that there is no effect of the complete basic immunization variable on the prevalence of stunting in the 10 locus of stunting prevention programs, while in 2019 the p-value was 0.000 (< 0.05) which means that there is an effect of the complete basic immunization variable on the prevalence of stunting in 10 stunting prevention program locus in Banggai Regency. This is in line with the research conducted by Nasrul, et al, which showed that incomplete basic immunization is a risk factor for the incidence of stunting of children aged 6-23 months in Bonto Ramba sub-district, Jeneponto Regency (Nasrul et al., 2016).

Toddlers whose basic immunizations are incomplete are influenced by factors of the mother or family, where the mother or family is busy working until they forget to bring their child immunizations and some are sometimes lazy and neglectful. Lack of knowledge of mothers on the importance of immunizing children. Most of the children under five whose immunization was incomplete were measles (9 months of age). Where immunization must be complete for the child's immune system and to avoid disease. Research conducted by Kurniawati in 2020 found that respondents whose immunizations were incomplete were more stunted than respondents whose immunizations were complete (Kurniawan, 2020).

Based on the PIS-PK data collection, the results obtained show that after the intervention the coverage of indicators of children who were given exclusive breastfeeding increased from 2018, namely 50% to 54.9% in 2019. One of the efforts to increase the history of exclusive breastfeeding can be done through activities promotion by means of counseling and early breastfeeding counseling for pregnant women, especially pregnant women in the third trimester, so that mothers are more ready to provide ASI as early as possible without providing pre-lactal food or drinks (Fajriyahetal., 2015).

Exclusive breastfeeding (ASI) based on government regulation number 33 of 2012 is breastfeeding given to babies from birth for 6 months without adding and or replacing with other foods or drinks (except drugs, vitamins, and minerals)(WHO, 2020). Breast milk is the main and best food for babies that can maximize children's growth and development, nutritional status and reduce disease outbreaks (Pratiwi&Atzmardina, 2020). Based on the results of data analysis, the results showed that in 2018 it showed a p-value of 0.133 (> 0.05) which means there was no effect and in 2019 it showed a p-value of 0.000 (<0.05) which means that there was an effect of exclusive breastfeeding on the prevalence of stunting in 10 locus of stunting prevention programs in Banggai Regency. The results of this study are in line with the research conducted by Gani et al (2020) which shows the results are the factors that most influence the nutritional status of children in Banggai Regency, namely exclusive breastfeeding, age and use of latrines.

4. Conclusion

After carrying out specific interventions in 10 special Locations of Banggai Regency in 2018-2019, there was a decrease in the prevalence of stunting. Then there was an increase in the coverage of complete basic immunization indicators and coverage of exclusive breastfeeding indicators, and there was the effect of complete basic immunization and the coverage of indicators of offering exclusive breastfeeding on the incidence of stunting in 10 special Locations of stunting prevention programs in Banggai Regency in 2019 after specific interventions. The suggestion for the government/puskesmas is to optimize the MCH and Nutrition program which focuses on preventing stunting. It is also necessary to conduct training for cadres who wish to assist people who do not understand the provision of specific interventions.

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