
Effectiveness of Stunting Prevention Interventions Through MOCUGA Services Based on IEC (Information, Education, and Communication) Education Methods for Families

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Abstract

Public knowledge about stunting prevention is correlated with the government's ability to provide health education services. The implementation of IEC Method through MOCUGA, which was initiated by Representatives BKKBN of Banten, is considered to increase public knowledge about stunting. This program, which is still considered premature, requires effectiveness measures that are output-oriented. Therefore, it is necessary to measure the effectiveness of MOCUGA intervention program for public knowledge level about stunting prevention. This research uses an experimental approach with a one group pre-test and post-test design. Data collection came from 95 respondents, selected from the population of Families at Risk of Stunting (KRS) in Sangiang Village, Lebak Regency of Banten Province. The collected data was analyzed using the t-test and Cohen's effect size method. It was found that 87.5% of mothers who had babies under two years old (Baduta), had the lowest level of knowledge about stunting prevention compared to other categories at the time of the pre-test. The level of very good knowledge about stunting prevention during the pre-test was determined by the prospective bride and groom (Catin) at 25%. Knowledge before and after the IEC education intervention through the MOCUGA program showed a difference of $p = 0.034$ and a correlation level of $r = 0.397$. However, the effectiveness of the MOCUGA intervention treatment is still classified as having a small effect of -0.22 , on the impact of KRS knowledge about stunting prevention.

Keywords: *Stunting, MOCUGA, Effectiveness, Knowledge, Intervention.*

Introduction

Stunting is still a major issue in Banten Province. One (1) out of five (5) toddlers in Banten Province experiences stunting. This ratio is a representation of the results of the Indonesian Nutrition Status Survey of the Ministry of Health (Kemenkes) (2022), which stated that the stunting prevalence rate in Banten Province in 2022 reached 20%. This situation shows that the government's performance achievements have not been able to meet the national target set in accordance with Presidential Regulation (Perpres) Number 72 of 2021 concerning the Acceleration of Reducing Stunting, amounting to 14% by 2024. The Banten Provincial Government is required to be able to accelerate the achievement of reducing stunting rates. Considering that there is only one year left to meet the targets that have been set.

Stunting is a disruption in the growth and development of children due to chronic malnutrition and recurrent infections, which is characterized by their length or height being below the standards set by the minister who handles government affairs in the health sector (Perpres, 2021). The dangers of stunting have been proven to be immediate and long-term, including increasing morbidity and mortality rates. According to Montenegro et al. (2022), stunted children have long-term consequences for society as well as risk markers for children's cognitive and motor development deficits, the development of non-communicable chronic diseases, greater susceptibility to infection, and functional changes (decreased muscle mass, high mortality rates/ morbidity, and reduced productive capacity). In line with Agostoni et al. (2023), who stated that stunting can have long-term impacts on individuals and society, including lower cognitive abilities and education, lower adult wages, and loss of productivity. The research results of Akseer et al. (2022), revealed that Brazil, India and Indonesia lost the median income of private sector workers, reaching more than 1 billion USD/month due to a workforce that experienced stunting during childhood.

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In general, the causes of stunting in toddlers can be grouped into direct and indirect factors. According to Ruswati et al. (2021), the practice of providing exclusive colostrum and breast milk (ASI), children's consumption patterns, and infectious diseases suffered by children are direct causal factors that influence children's nutritional status and can have an impact on stunting. Meanwhile, the indirect causes are access and availability of food as well as sanitation and environmental health. This shows that the issue of stunting is a multidimensional problem.

The high complexity of the stunting problem is characterized by the involvement of multiple determinant factors that cause stunting, which influence each other (interdependence). According to Wicaksono et al. (2020), the risk of stunting is influenced by the context in which a child is born and raised, including interdependent influences, such as political economy, health and health services, agriculture, food systems, water and sanitation, and the environment. environment to education and community culture.

Education cannot be denied as one of the determinants of stunting. The World Health Organization (WHO) developed a conceptual framework regarding stunting, where there are 4 educational factors that can influence stunting; (1). Access to quality education; (2). Competent teaching staff; (3). Competent health educators and (4). Infrastructure (Nkurunziza et al. 2017). Previous research states that the most dominant factor causing stunting in children aged 24-59 months is the mother's education level (Setiawan et al. 2018). Semba et al. (2008), measuring the increase in formal education for mothers in Indonesia can lead to a reduction of between 4.4% and 5% in the likelihood of children experiencing stunting, while formal education on the part of fathers causes a 3% reduction in the likelihood of stunting in children. Bentley's (2011) research, developing a parent education program by promoting age-appropriate eating patterns, showed a positive impact on caregiver behavior, as well as child weight and height.

Community knowledge and understanding does not appear by itself. This will be closely related to the capacity of health education services provided by the government. Until now, the achievements of health education services, especially regarding preventing stunting, have not been able to cover the entire community. One of them is the researcher's analysis regarding data from the 2022 Family Population and Family Planning Agency (BKKBN) Family Data Collection, which shows that 20%-21% of families in Banten Province have not been exposed to information on family development, population and family planning programs as well as stunting reduction acceleration programs, either through media and officers. This condition is proven to be in line with the low level of understanding of the Banten community regarding stunting prevention. Based on the report from the Banten Province Stunting Reduction Acceleration Team (TPPS) semester 1 of 2023, the public's understanding of stunting in Banten is relatively uneven and for the most part is still relatively low. Where the achievement has only been to meet 42% of the 70% target that has been set.

The government has made various efforts, especially by the BKKBN as the chief executive, to accelerate stunting reduction. One of them is implementing the Mobile Love Family (MOCUGA) Caring for Stunting service program which was initiated by Banten BKKBN Representatives this year. The MOCUGA innovation program is an intervention that aims to increase public understanding regarding stunting, using car media that can provide direct outreach services to the community based on the IEC education approach. This program, which is still considered premature, requires effectiveness measures that are oriented towards the output (output) of the goal. In this way, it can be set as a measurable Employee Performance Target (SKP). Not just at the level of conception and imaging, but can be implemented substantively. Therefore, researchers are interested in measuring the effectiveness of the MOCUGA program. This aims to determine the level of understanding achieved by the Banten

community regarding stunting prevention, as a measure of the success of implementing IEC education from the MOCUGA program for the Banten Province BKKBN Representative.

Method

This research uses an experimental approach with a one group pre-test and post-test design. Experimental research is research that is used to find the effect of certain treatments on others under controlled conditions. Controlled conditions mean that the results of the research are converted into numbers. For the analysis used is statistical analysis. In general, this research design can be described as follows (Sugiyono, 2009).

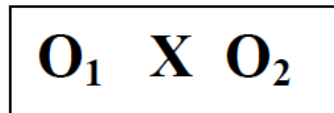


Figure 1. One Group Pre-Test and Post-Test Scheme

Information:

- X = Treatment given (independent variable)
- O1 = Pre-test experimental group
- O2 = Post-test experimental group (after being given treatment).

The data collection technique was carried out on one group selected from the population of Families at Risk of Stunting (KRS) using a simple random sampling method. Pre-test and post-test surveys were conducted on each respondent using a questionnaire instrument. There are 10 closed question items in the form of multiple-choice questions related to stunting. The research locus chosen was KRS who lives in Sangiang Tanjung Village, Kalanganyar District, Lebak Regency, Banten Province. Based on sample calculation (n) using the Krejcie and Morgan formula with a confidence level of 95%, a total of 95 KRS respondents were obtained. Which consists of 8 prospective brides (Catin), 14 pregnant women (Bumil), 17 postpartum mothers (Bulin) and 56 mothers with babies under two years old (Baduta).

Each questionnaire answer was tested for validity, reliability and normality using the IBM SPSS Statistics 20 application. The results of the validity test with a significance level of 5%, showed that all questionnaire statements had a calculated r value in the range of 0.288-0.658. This value is known to be greater than the r_{table} value of 0.202, so the questionnaire can be declared valid. Reliability testing was carried out using the Cronbach's Alpha formula. The results of the reliability test are presented in Table 1, a value of 0.694 was obtained. Based on the test results, the questionnaire can be declared reliable.

Table 1. Reliability Test Result

Cronbach's Alpha	N of Items
.694	10

Table 2 shows the results of the Kolmogorov Smirnov normality test with pre-test and post-test significance values of 0.118 and 0.143 respectively. These two values are greater than the significance value of $p\text{-value} < \alpha = 0.05$. This shows that the pre-test and posttest data are normally distributed. After the questionnaire data is declared valid, reliable and normally distributed, a T-test can be carried out. This test aims to determine the extent of the influence

of the implementation of the KIE education program, the Banten Province BKKBN Representative's MOCUGA program, in increasing public understanding regarding stunting.

Table 2. Data Normality Test Res

		Pre test	Post test
N		95	95
Normal Parameters ^{a,b}	Mean	34.37	40.74
	Std. Deviation	25.445	27.142
	Absolute	.122	.118
Most Extreme Differences	Positive	.122	.106
	Negative	-.099	-.118
Kolmogorov-Smirnov Z		1.190	1.148
Asymp. Sig. (2-tailed)		.118	.143

a. Test distribution is Normal.

b. Calculated from data.

Table 3 shows the average pre-test score of 34.37 and post-test 40.74. Where the standard deviation value (Std. Deviation) for the pre-test is 25.445 and the posttest is 27.142. Both data have a standard deviation smaller than the mean value. Thus, the mean data values, both pre-test and post-test, can be used as a representation of the entire data.

Table 3. Standard Deviation Test

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PRETEST	34.37	95	25.445	2.611
	POSTEST	40.74	95	27.142	2.785

Results and Discussion

MOCUGA Program

The MOCUGA program to care about stunting is an innovation initiated by the Banten Province BKKBN Representative. This program is a rebranding (renewal) of the Family Planning Information Unit Car (MUPEN KB). Various updates have been made both in terms of the physical appearance and facilities of the vehicle, as well as expanding its operational functions. Not only as an extension service unit for population and family planning programs, but also as a vehicle capable of providing IEC education services in order to accelerate stunting reduction.

The MOCUGA program was officially introduced on November 7 2023. The existence of MOCUGA as a mobility unit for KIE counseling is predicted to be able to increase family understanding regarding stunting prevention. Given its capabilities, it makes it possible to reach remote or remote outreach target locations, as well as terrain that is difficult to reach (extreme) using ordinary vehicles. In this way, more families can be exposed to information and educated on stunting prevention.

The education method at MOCUGA is supported by vehicles that are equipped with IEC media facilities as an outreach tool, both in the form of print, electronic and outdoor media. These include posters, flyers, audio, audio visual (films) and Chatterbot (automated

consultation service) which are used as tools to convey messages related to stunting prevention. Including the availability of Family Planning Counselors (PKB) as educators who are part of the implementation of IEC regarding facts, procedures, actions and providing community motivation in preventing stunting.



Figure 1. KIE MOCUGA Education Services Program

The MOCUGA program in relation to this research is a treatment for the experimental group. Treatment was carried out once for each KRS criteria (Catin, Bumil, Bulin and Baduta) over a period of 1 week. Starting one day after the pre-test and before the post-test takes place. An overview of the process of implementing KIE education treatment for each KRS target is shown in Figure 1.

Correlation Analysis Results

The correlation test results in Table 4 show that the correlation coefficient value for pre-test and post-test data is 0.397 with a significance level of 0.000. Where the significance value is smaller than the probability value of 0.05. This indicates that there is a significant positive relationship between pre-test and post-test data.

Table 4. Correlation Test

	N	Correlation	Sig.
Pair 1 PRETEST & POSTEST	95	.397	.000

t-Test Test Results

The t test is used to determine whether there are differences in treatment results. Based on the data presented in Table 5, it is known that the significance value (2-tailed) is 0.034 with a confidence level of 95% (significance level 0.05). This shows that there is a positive difference between the pre-test and post-test results. Thus, it can be stated that the KIE educational treatment strategy of the MOCUGA program has been proven to increase the knowledge of Families at Risk of Stunting (KRS) regarding stunting prevention.

Table 5. T-test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 PRETEST - POSTEST	-6.368	28.921	2.967	-12.260	-.477	-2.146	94	.034

Determinants of KRS Knowledge Level and MOCUGA Effectiveness

Table 6 shows the level of KRS's least knowledge regarding stunting prevention at the time of the pre-test, determined by mothers who have babies under two years (Baduta) at 87.5%. The level of KRS's knowledge regarding stunting prevention was very good during the pre-test, determined by the prospective bride and groom (Catin) by 25%. The influence of the MOCUGA KIE education program on all KRS was able to increase very good understanding by 9.5% from 4.2% to 13.7%.

Knowledge before and after the IEC educational intervention through the MOCUGA program showed a difference (0.034; t-test) with a sufficient level of influence (correlation (r)) of 0.397. Based on the t-test, it is known that the mean value is -6.368 with a Std. Deviation is 28.921. This shows that the effectiveness level of the MOCUGA intervention is -0.22. This means that based on the level of Cohen's effect criteria, the MOCUGA intervention treatment has a small effect size.

Table 6. Level of Knowledge of Families at Risk of Stunting Regarding Stunting Prevention

KRS Category	Knowledge level	Pre-Test		Post-Test	
		n	%	n	%
Prospective Bride	Very good	2	25,0	3	37,5
	Good	2	25,0	1	12,5
	Enough	1	12,5	2	25,0
	Not enough	3	37,5	2	25,0
	TOTAL	8	100	8	100
Pregnant Women	Very good	1	7,1	4	28,6
	Good	1	7,1	0	0,0
	Enough	6	42,9	4	28,6
	Not enough	6	42,9	6	42,9
	TOTAL	14	100	14	100
Postpartum Mother	Very good	0	0,0	0	0,0
	Good	2	11,8	2	11,8
	Enough	0	0,0	0	0,0
	Not enough	15	88,2	15	88,2
	TOTAL	17	100	17	100
Mother Has Baby Below Two Years	Very good	1	1,8	6	10,7
	Good	5	8,9	6	10,7
	Enough	1	1,8	3	5,4
	Not enough	49	87,5	41	73,2
	TOTAL	56	100	56	100
Families at Risk of Stunting	Very good	4	4,2	13	13,7

KRS Category	Knowledge level	Pre-Test		Post-Test	
		n	%	n	%
	Good	10	10,5	9	9,5
	Enough	8	8,4	9	9,5
	Not enough	73	76,8	64	67,4
	TOTAL	95	100	95	100

Conclusion

As many as 87.5% of mothers who had babies under two years old (Baduta), had the lowest level of knowledge about stunting prevention compared to other categories at the time of the pre-test. The KRS's very good level of knowledge regarding stunting prevention during the pre-test was determined by the prospective bride and groom (Catin) at 25%. Knowledge before and after the IEC education intervention through the MOCUGA program showed a difference of $p = 0.034$ with a sufficient level of influence, namely $r = 0.397$. However, the effectiveness of the MOCUGA intervention treatment is still considered to have a small effect of -0.22, on the impact of KRS knowledge about stunting prevention.

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