

# Analysis of the Implementation of the Measles Rubella (Mr) Immunization Program in Preschool Age Children 3-6 Years in Gorontalo Regency

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**Abstract.** *The purpose of this research is to identify the characteristics that contribute to the effective implementation of a measles rubella (MR) vaccination program in preschool children aged 3-6 years in the Gorontalo District. The purpose of this study is to collect comprehensive data on the implementation of the measles rubella (MR) vaccination program in preschool children, particularly in Limboto District, Gorontalo Regency, as measured by communication, resources, monitoring evaluation, perception, attitude, and anxiety. The research method employed is survey. The stages of the activities are as follows: survey activities on-site, data gathering, and data processing. The research period runs from the start of the year to the conclusion of the implementation year. The statistical analysis revealed a link between communication factors, perceptions, attitudes, and anxieties, but no association between resource variables and assessment monitoring and the execution of the MR vaccination program. Then, the findings of multivariate analysis on each variable are used to create the final modeling that is most closely connected to the application of MR immunization.*

**Keywords:** : Implementation, Rubella Measles Immunization, Gorontalo

Received: November 19, 2021

Received in Revised: December 16, 2021

Accepted: January 11, 2022

## INTRODUCTION

Measles and rubella are infectious diseases transmitted through the respiratory tract caused by viruses that can cause serious complications in the form of pneumonia, diarrhea, meningitis and can even cause death (Ameli, 2015). Meanwhile, rubella is an acute mild disease that infects children and young adults which can cause teratogenic effects, if this rubella attacks pregnant women in the first trimester. There is no treatment for measles and rubella but these diseases can be prevented. Immunization with the MR vaccine is the best way to prevent both diseases.

Indonesia is now committed to achieving measles elimination and controlling rubella/Congenital Rubella Syndrome (CRS) by 2020. In 2011, WHO recommended that

all countries that have not introduced the rubella vaccine and have used 2 (two) doses of measles vaccine in routine immunization programs to include the rubella vaccine in routine immunization programs. Based on the results of surveillance and immunization coverage, routine measles immunization alone is not sufficient to achieve the measles elimination target. So to achieve acceleration of rubella/CRS control, the government made efforts to provide additional MR immunization before the introduction of MR vaccine into routine immunization. In the implementation of providing additional MR immunization, the Gorontalo Provincial government collaborates with various sectors to achieve the target of providing MR immunization to children aged 9 months to <15 years with high coverage which will be carried out simultaneously in August-September 2018.

Based on Pusdatin data, the number of targets for MR immunization for children aged 9 months to 15 years in Gorontalo Province is 309,402 people. And Gorontalo Regency has the highest number of children amounting to 98,554 people. The Gorontalo government targets 95% of MR immunization achievements in this period. Pre-school children are scheduled to receive direct immunization in schools, namely Early Childhood Education (PAUD) and Kindergarten (TK). The success of the implementation of the MR immunization program, especially for preschool children, is influenced by many factors, considering that invasive measures given to preschool children have their own different approaches from other age groups, excessive actions from health workers can cause rejection and result in trauma to the child. Coupled with the phenomenon in the field, the spread of news related to Post-Immunization Adverse Events (AEFI) which is considered a side effect of MR immunization, and parental doubts regarding the halallness of the raw materials of the MR immunization vaccine, so many parents decide not to immunize their children for various reasons.

## **METHODS**

The research was carried out at PPIT Lukmanul Hakim Kindergarten, Sapta Krida Kindergarten, Menara Ilmu PAUD located, Kemala Bhayangkari 06 located, ABA Bolihungga Kindergarten, Candra Buana Kindergarten located in Limboto District, Gorontalo Regency. using a survey research type, with the aim of describing information related to the factors that influence the successful implementation of the Measles Rubella (MR) immunization program in preschool children aged 3-6 years. The research approach used is health analytical research. This is intended to determine the most influential factors in the successful implementation of the MR immunization program for preschool children in Limboto District, Gorontalo Regency.

The sample of this study is parents of 3-6 year old preschool children in Early Childhood Education (PAUD) and Kindergarten (TK) in Limboto Subdistrict, Gorontalo Regency who received MR immunization program services and met the inclusion criteria set by the researchers as many as 185 person. The sampling technique used in this study is the probability sampling technique, which is a sampling technique that provides equal opportunities or opportunities for each element or member of the population to be selected as a sample. The type of sampling is two-stage random sampling, namely the sampling technique is done randomly through 2 stages without regard to the existing strata in the population. To determine the size of the sampling used proportion estimation.

## RESULTS AND DISCUSSION

### Frequency Distribution Analysis

Table 1. Distribution of implementation variables, communication, resources, monitoring evaluations, perceptions and attitudes, as well as anxiety of the *mr* immunization program in preschool-aged children in Gorontalo Regency

No	Variable	Frequency	Percentage
1	Implementation		
	Immunization	93	50,3%
	Not immunized	92	49,7%
2	Communication		
	Good	173	93,5%
	Enough	12	6,5%
	Less Good	0	0%
3	Resources		
	Good	182	98,4%
	Enough	3	1,6%
	Less Good	0	0%
4	Evaluation Monitoring		
	Good	178	96,2%
	Enough	7	3,8%
	Less Good	0	0%
5	Perception		
	Good	30	15,2%
	Enough	62	31,5%
	Less Good	105	53,3%
6	Attitude		
	Good	9	4,9%
	Enough	118	63,8%
	Less Good	9	31,4%
7	Anxiety		
	Light	6	3,0%
	Keep	28	14,2%
	Heavy	151	76,6%

### Analysis of the Relationship of the Role of *MR* Immunization Program in Preschool-Aged Children

Table 2. Distribution of the role relationship of the *MR* immunization program at preschool age in Gorontalo Regency

Variable	Implementation				Total		<i>P Value</i>
	Immunization		Not immunized				
	f	%	F	%	f	%	
Communication							
Good	83	48%	90	52%	173	100%	0,018
Enough	10	83,3%	2	16,7%	12	100%	
Resources							
Good	92	50.5%	90	49.5%	182	100%	0.621

Enough	1	33,3%	2	66,7%	3	100%	
Evaluation							
Monitoring	93	51,1%	87	48,9%	178	100%	0,218
Good	2	28,6%	5	71,4%	7	100%	
Enough							
Perception							
Good	10	40%	15	60%	25	100%	
Enough	22	37,9%	36	62,1%	58	100%	0,016
Less Good	61	59,8	41	40,2	102	100%	
Attitude							
Good	3	33,3%	6	66,7%	9	100%	
Enough	52	44,1%	66	55,9%	118	100%	0,016
Less Good	38	65,5%	20	34,5%	58	100%	
Anxiety							
Light	3	50%	3	50%	6	100%	
Keep	8	28,6%	20	71,4%	28	100%	0,044
Heavy	82	54,3%	69	45,7%	151	100%	

### Multivariate Analysis

Table 3. Model ended the analyst's multivariate implementation of MR immunization program in preschool-aged children in Gorontalo Regency

No	Variable	P	Exp(B)
1	Communication	0,018	4.858
2	Perception	0,015	1.593
3	Attitude (1)	0,016	.143
	Attitude (2)		.443
4	Emergency (1)	0,044	1.583
	Emergency (1)		3.514

### Implementation of MR Immunization

The results showed that some had MR immunization with a presentation of 50.3% while they had not done MR immunization with a presentation of 49.7%. MR immunization services are carried out in each school and health center for children who are not present at school, while those who are not immunized by reason of illness, some are not present and even not allowed by parents. The implementation of the MR immunization campaign was carried out from August to September 2018. Immunization at school in advance is easier because the targets have been collected and children who have not received immunizations are easier to identify and follow up.

### Communication

The results showed that the average MR immunization communication was good with a presentation of 93.5%. Based on statistical analysis of the communication variable, a p-value of 0.018 (p-value <0.05) was obtained, indicating a significant relationship between parental communication and the implementation of MR immunization for children in Gorontalo Regency in 2019. The success of the MR immunization campaign is not apart from the role of government, health services, and also health workers.

The results of the study are in line with the results of research by Hafid (2016) with the title of the determinants of complete basic immunization status in infants at the

Konang and Geger health centers stating that there is a significant influence between the support of health workers on the completeness of basic immunization in infants. The support of health workers is in the form of providing education. Education carried out by health workers is one of the things that is effective in improving health knowledge related to vaccination.

Based on the results of research conducted by researchers, it can be concluded that mothers who received counseling were better than mothers who did not receive counseling. At the time of counseling the mother received correct information about rubella immunization. Meanwhile, mothers who did not attend counseling only received information from neighbors and social media, which were not necessarily true. Mothers must be wise in responding to issues circulating in the community, both through social media and talk from neighbors. Mothers need to directly confirm the news by asking a more trusted party such as health workers. The participants received information from various sources such as socialization from health workers, social media, television (TV), and neighbors' talk as well as other sources of information obtained by participants which greatly impacted the decision to immunize children. Because the better the communication obtained, the better the acceptance of MR immunization.

## **Resources**

Most of the research results on resources are good with a presentation of 98.4%. In terms of resources, the assessment is in terms of services for health workers and school cadres, where immunization is carried out as well as the availability of logistics and vaccines.

According to Rahmawati, 2007 that Human Resources is very important to be studied in order to improve health services that are effective and efficient. Human Resources related to the results of basic immunization activities are needed in planning and management of basic infant immunization activities so that they can be efficient and effective according to the limited resources available at the puskesmas. The availability of supporting facilities and infrastructure is one of the factors that can affect the results of the activities of immunization officers. The condition of good facilities and infrastructure, including complete, modern, quality, and sufficient quantities will provide employee satisfaction which can then improve their performance.

## **Evaluation Monitoring**

Most of the results of the monitoring and evaluation of MR immunization research were good with a presentation of 96.2%. In this study the monitoring and evaluation of MR immunization is seen not only to monitor the ongoing work process, but in its implementation monitoring and evaluation is to compare and assess whether the performance and implementation of the activities carried out are in accordance with the standards set previously or not.

In monitoring and evaluation activities, one must be able to identify the achievement of the results of activities such as the scope of use of logistics and problems encountered during implementation, including identification of cases of AEFI that occurred and the aspects causing it. The faster monitoring and evaluation is carried out, the faster follow-up improvements can be made.

Monitoring and evaluation is carried out in order to keep activities running according to a predetermined program. Evaluation monitoring is carried out regularly and systematically, both routinely and after campaign activities. Monitoring is carried out

through recording instruments, reporting on immunization coverage and logistics, monitoring local areas and KIPI (Post Immunization Events).

### **Perception**

The results of the research on mother's perception of MR immunization were mostly unfavorable with a presentation of 53.3%. Based on statistical analysis of the perception variable, a p-value of 0.016 (p-value <0.05) was obtained, meaning that there was a significant relationship between parental perceptions and the implementation of MR immunization for children in Gorontalo Regency in 2019.

Participants who refused MR immunization said that they heard the explanation and knew about the issue that the MR vaccine contains pork so that it is forbidden to inject it. For participants who refuse MR immunization, anything that has been said to be haram can no longer be tolerated. They said this without including the evidence from the participants' statements during the interview. The issue that says that MR immunization contains elements of pigs so that it is haram is true but based on the Fatwa of the Indonesian Ulema Council (MUI) No. The MUI Fatwa No. 33 of 2018 reads.

"The fatwa decides to stipulate; First, the use of vaccines that utilize pork and its derivatives is illegal. Second, the MR vaccine product from the Serum Institute of India (SII) is illegal because in its production process it uses ingredients derived from pigs. Third, the use of product vaccines from the Serum Institute of India (SII), at this time, is permissible (permissible) because there is a condition of compulsion (syar'iiyah emergency). Halal and holy MR vaccine has not been found yet"

Based on the fatwa, it is true that the issue of MR immunization contains pork and is haram, but the law on MR immunization is permissible. Therefore, the researcher assumed that the participants refused the vaccine because of their belief in the prohibition of their religion but did not see or find out the related arguments regarding the law of halal and haram. In Islam we are also encouraged to try to protect and maintain the physical from disease and explain how important it is to maintain physical health. As stated in the Qur'an Yunus verse 57

Although the perception in this study was not good, there were still not a few mothers who refused MR immunization because they felt that immunization actually had a bad impact on children such as dangerous side effects, entering the virus in children, and not being recommended by their religion.

### **Attitude**

The results of the research on the mother's attitude towards MR immunization were mostly sufficient with a presentation of 63.8%. Based on statistical analysis of the attitude variable, a p-value of 0.016 (p-value <0.05) was obtained, meaning that there was a significant relationship between parental attitudes and the implementation of MR immunization for children in Gorontalo Regency in 2019. Parents who have negative attitudes about immunization are at greater risk of not giving MR immunization to children than mothers who have a positive attitude. These stimuli stimulate the community to respond in the form of positive attitudes and negative attitudes which will ultimately be realized in the form of real actions (Azwar, 2013).

Based on the results of this study, it can be seen that the attitude of the mother has a significant relationship with the implementation of MR immunization. This means that mothers with negative attitudes have a greater chance of having negative behavior in



giving MR immunization to children and positive attitudes have a greater chance of having positive behavior in giving MR immunization to children. Negative attitudes from the public about immunization need to be corrected so that future generations can avoid certain infectious diseases, actions that can be taken are by providing repeated information regarding the importance of immunization, side effects of immunization and the content of immunization vaccines given to children. This is done with the hope that there will be no longer the notion that MR immunization is not important and that immunization is haram/prohibited.

### **Anxiety**

The results of the research on parental anxiety were mostly on average severe anxiety with a presentation of 76.6%. Based on statistical analysis of the anxiety variable, a p-value of 0.044 (p-value <0.05) was obtained, meaning that there was a significant relationship between parental anxiety and the implementation of MR immunization for children in Gorontalo Regency in 2019.

Anxiety is a reaction that anyone can experience. However, excessive anxiety, especially if it has become a disorder, will hinder a person's function in his life. From the results of the study, there were the majority of mothers who were very anxious, which was related to the tension experienced daily, the halalness of the vaccine and the side effects of MR immunization.

The side effects of vaccination are known as Adverse Events Following Immunization (AEFI) which are medical events related to immunization, either in the form of vaccine effects or side effects, toxicity, sensitivity reactions, pharmacological effects, or program errors, co-incidence, injection reactions, or causal relationships that cannot be determined (Hermayanti et al., 2016).

Mothers who do not have knowledge about MR immunization, mothers do not want to immunize their children so that the mother's behavior must be changed and the mother's knowledge will be better and mothers know the benefits of immunization and the effects of immunization so mothers do not need to worry about immunizing their children. According to (Stuart, 2007) anxiety is closely related to feelings of uncertainty and helplessness, this emotional state does not have a specific object. This condition is experienced subjectively and communicated in interpersonal relationships.

### **Multivariate Analysis**

The results of the multivariate analysis carried out on each variable that became a multivariate candidate to obtain the final model. In the final modeling, it was found that the most related to the implementation of MR immunization is the communication variable. Mothers who received counseling were better than mothers who did not receive counseling. At the time of counseling the mother received correct information about rubella immunization.

As research conducted by Palupi (2011), providing counseling for mothers to vaccinate is very important to increase mother's knowledge and belief about the importance of vaccination. The results of research conducted by Agnes Widayani Palupi found that all mothers vaccinated because previously they had been given counseling by local health workers.

## CONCLUSION

Based on the results and discussion of the research, it can be concluded that the implementation of the Measles Rubella (MR) immunization program for preschool children aged 3-6 years in Gorontalo Regency has been carried out well. Communication, resources, and monitoring and evaluation of the performance of the MR immunization activities carried out are in accordance with the established standards. Poor perceptions, sufficient attitudes and severe anxiety are felt by parents of children for the implementation of MR immunization so that they get a response to children's non-participation in MR immunization. A good communication factor has a great opportunity for the success of the implementation of the MR immunization program in Gorontalo District.

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