



## THE RELATIONSHIP OF PARENTAL KNOWLEDGE TO BOOSTER IMMUNIZATION IN INFANTS AGED 2 YEARS

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### ABSTRACT

Follow-up immunization in infants under two years old (Baduta) aged 18 months given immunization (DPT-HB-Hib and Measles / MR), Immunization is currently estimated to prevent 2 to 3 million deaths each year. The main obstacle to the success of the immunization program in infants is the low awareness of mothers who have babies to bring their children to be immunized. The purpose of this study was to determine the relationship between parents' knowledge of booster immunization in baduta at UPTD Puskesmas (community health center) Banjar Agung Serang City, Banten for the October-December 2023 period. This study used correlation analytical method with cross sectional approach. The population used in this study was mothers who had toddlers as many as 224 people. The samples used amounted to 114 mothers using accidental sampling techniques that meet the criteria of inclusion and exclusion. Parental knowledge independent variable, booster immunization dependent variable, the data were collected using questionnaires, data processing with chi square. The results showed that there is a significant relationship between parents' knowledge of participation in Booster immunization at Baduta at the Banjar Agung Health Center, Serang City, Banten Province in 2023 with a P-value of 0.000 and an OR value of 10.082, which means that BADUTA mothers who have poor knowledge have a 10 times greater risk of not giving Booster immunization in cubs compared with mothers who have good knowledge.

Keywords: booster; immunization; knowledge

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### INTRODUCTION

According to the World Health Organization, immunization or vaccination is a simple, safe, and effective way to protect a person from a dangerous disease, before coming into contact with the causative agent of the disease. Meanwhile, according to the Regulation of the Minister of Health Number 12 of 2017 concerning the Implementation of Immunization, immunization is an effort to generate / increase a person's immunity actively against a disease so that if one day exposed to the disease will not get sick or only experience mild illness. Vaccines contain viruses or bacteria that are killed or attenuated, and do not cause disease or put a person at risk for complications. Most vaccines are given by injection, but some are given orally (by mouth) or sprayed into the nose. (Mustika, 2020)(WHO, 2019)

In the Americas, coverage is estimated at 91%, while it is only 28% in the Western Pacific Region. Southeast Asia increased coverage from 80% in 2016 to 86% in 2017. In 2017, the coverage of complete basic immunization in Indonesia decreased by 85.41%. In 2018 the coverage of complete basic immunization also decreased from 2017, namely: 57.95%.

Immunization is adjusted to the age of the child. For complete basic immunization, infants less than 24 hours old are given Hepatitis B immunization (HB-0), 1 month old is given (BCG and Polio 1), 2 months old is given (DPT-HB-Hib 1 and Polio 2), 3 months old is given (DPT-HB-Hib 2 and Polio 3), 4 months old is given (DPT-HB-Hib 3, Polio 4 and IPV or injectable Polio), and 9 months old is given (Measles or MR). (Kemenkes, 2018)(Hidayah, 2018)

For further immunization, infants aged 18 months are given immunization (DPT-HB-Hib and Measles / MR), grade 1 elementary school / madrasah / equivalent is given (DT and Measles / MR), grade 2 and 5 elementary school / madrasah / equivalent is given (Td). Hepatitis B (HB) vaccine is given to prevent Hepatitis B disease which can cause hardening of the liver which leads to liver failure and liver cancer. BCG immunization is given to prevent tuberculosis. Polio immunization drops are given 4 times at the age of 1 month, 2 months, 3 months and 4 months to prevent paralysis withers. Injectable polio immunization was given 1 time at the age of 4 months so that the immunity formed was more perfect. (Rahman, 2020) (Sembiring, 2018)(Jafri, 2018)(Nandi, 2020)

Immunization is the most effective and efficient public health effort in preventing diseases and reducing mortality rates such as smallpox, polio, tuberculosis, hepatitis B, diphtheria, measles, rubella and congenital disability syndrome due to rubella (congenital rubella syndrome (CRS), tetanus, pneumonia (pneumonia) as well as meningitis (inflammation of the lining of the brain) . (Bhatti, 2018)The results showed that more than half of the respondents had complete incomplete immunization as many as 49 people (65.3%) and complete immunization as many as 26 people (34.7%). This means that in the midst of the current Covid-19 pandemic, the coverage of basic immunization for children under five will be even smaller.(Pademme, 2020)(Irawati, 2020)

Knowledge is the result of knowing and occurs after people make senses (sight, hearing, touch, taste and smell) of a particular object. Knowledge or cognitive is a very important domain in shaping a person's behavior (Notoatmodjo, 2020) Based on an initial data survey conducted in the working area of the Banjar Health Center Agung Kota Serang still has not met the immunization coverage target that has been set at 100% by 2023. With coverage of each type of immunization in the year 2022 is as follows: DPTHB1 (88.8%), polio4 (88.8%), and measles (92.5%). Based on these data, immunization coverage in general has not met the target of 100% Universal Immunization Coverage. (Igianny, 2020). This study aimed to analyze the relationship between parents' knowledge of booster immunization in children under two years old (baduta) at UPTD Puskesmas Banjar Agung Serang City, Banten for the October-December 2023 period”

## **METHOD**

The method used is correlation analytics with a cross sectional approach. This research was carried out in the working area of the Banjar Agung Health Center in Serang City in October-December 2023. The population in this study was mothers who had toddlers as many as 224 people. Samples using the Slovin formula totaled 114 mothers who had infants younger than two years, using accidental sampling techniques that met the criteria of inclusion and exclusion. knowledge independent variable, booster immunization dependent variable. The data were collected using questionnaire In this study, the instrument used is a questionnaire given to respondents containing questions or statements using questionnaires that have been structured and in accordance with the variables under study so that they can be understood and answered by respondents who will fill in data processing with chi square test.

## RESULTS

Table 1.  
Frequency distribution of Booster Immunization (n=144)

Immunization	f	%
Not complete immunization	71	49,3
Complete immunization	73	50,7

Table 1, it is known that of the 144 respondents who did not get complete basic immunization as many as 71 people (49.3%) and respondents who received complete basic immunization as many as 73 people (50.7%).

Table 2.  
Frequency distribution of parental knowledge

Knowledge	f	%
Not Good	78	54,2
Good	66	45,8

Table 2, it is known that of the 144 respondents who had poor knowledge as many as 78 people (54.2%) and respondents who had good knowledge as many as 66 people (45.8%).

Table 3.  
The relationship of parental knowledge with booster immunization (n=144)

Knowledge	Booster Immunization				Sum		P- value	OR
	No Immunizations		Immunization		f	%		
	f	%	f	%				
Not Good	57	73,1	21	26,9	78	100	0,000	10,082
Good	14	21,2	52	78,8	66	100		
Total	71	49,3	73	50,7	144	100		

Table 3, it is known that of the 144 respondents, mothers who had poor knowledge did not give booster immunization to their children as many as 57 people (73.1%) and those who immunized their children as many as 21 people (26.9%). While mothers who have good knowledge do not immunize their children as many as 14 people (21.2%) and those who immunize their children as many as 52 people (78.8%). From the statistical test, the *p-value* ( $0.000 < \alpha (0.05)$ ) was obtained, so it can be said that there is a relationship between parents' knowledge of the implementation of Booster immunization at Baduta at the Banjar Agung Health Center, Serang City, Banten Province in 2023. From the results of the analysis, it was obtained OR=10,082 with a confidence level of 95%, so BADUTA mothers who have poor knowledge have a 10 times greater risk of not giving Booster immunization to their children compared to mothers who have good knowledge.

## DISCUSSION

### Distribution of frequency of participation in Booster immunization

Based on the results of the study, respondents who did not get complete basic immunization were 71 people (49.3%) and BADUTA who received complete basic immunization as many as 73 people (50.7%). Based on the results of observations made by researchers in the field by looking at the Card Towards Health (KMS) in each toddler, information was obtained that most toddlers did not get both types of immunization, both DPT-HB-Hib immunization and advanced measles. Based on the results of interviews with respondents, further immunization is not given to toddlers either DPT-HB-Hib immunization or advanced measles because most mothers do not know that further immunization is not given to toddlers either DPT-HB-Hib immunization or advanced measles because most mothers do not know that advanced immunization is a mandatory immunization that must be given to toddlers before the toddler is 2 years old. Some mothers refuse to immunize their toddlers because at the time of

immunization their toddlers are sick, while some mothers reason that they do not give further measles immunization to their toddlers because they forget or do not know the schedule. The long time interval between the last basic immunization, namely measles immunization and follow-up immunization type DPT-HB-Hib, resulted in the mother forgetting the schedule for further immunization. In addition, according to most mothers, giving basic immunization is enough to maintain the immunity of toddlers from disease, so they think there is no need for repetition because the type of immunization given, both basic and advanced, is the same.

Completeness of follow-up immunization is a repeat of basic immunization to maintain immunity levels and to extend the protection period of toddlers who have received complete basic immunization, consisting of Diphtheria Pertussis Tetanus-Hepatitis B (DPT-HB) or Diphtheria Pertussis Tetanus-Hepatitis B-Haemophilus Influenza type B (DPT-HB-Hib) given at the age of 18 months and measles at the age of 24 months.(Indrawati, 2023) In line with Maharani's research, almost half (40.0%) or 14 maternal respondents had poor knowledge about additional immunization against Measles Rubella. The things that affect well-informed mothers are that they understand and understand about MR prevention and the benefits of MR vaccines. Meanwhile, the things that cause mothers to have bad knowledge are that they do not know about AEFI (Post-Immunization Adverse Events) and the schedule for giving MR vaccines.(Itsa, 2019) Based on the researchers' assumption that there are still many toddlers who do not get complete follow-up immunization due to lack of maternal knowledge about the implementation of advanced immunization, mothers' busy work so that they do not pay attention to the completeness of their toddler's advanced immunization, lack of family support in reminding the immunization schedule and giving approval to immunize toddlers, coupled with a lack of information about the importance of immunization continued in the community caused by lack of education from health workers.

### **Frequency distribution of parents' knowledge about Booster immunization**

Based on the results of the study, respondents of mothers who have poor knowledge as many as 78 people (54.2%) and mothers who have good knowledge as many as 66 people (45.8%). Knowledge is the result of human perception, or the result of a person knowing about an object with his five senses. The five human senses are used to perceive objects such as sight, hearing, smell, taste and touch. The time of perception on the production of knowledge is influenced by the intensity of attention and perception of objects. Humans mostly acquire knowledge through hearing and sight (A, 2023) The results of this study are in line with previous research which found that there was a relationship between maternal knowledge and the provision of pentavalent follow-up immunization to children aged 18 months in Tanjung Selamat Village with a p value of 0.000. Similarly, research conducted by Itsa et al., which showed that there was a relationship between knowledge and the completeness of pentavalent follow-up immunization in the working area of the Labuhan Ratu Health Center in Bandar Lampung City with a p value of 0.029.(Senewe, 2017)(Mardianti, 2020)

The results stated that there was a relationship between knowledge, work and the role of health workers with the provision of advanced immunization against measles rubella in the Working Area of the Tebing Tinggi Health Center, Four Lawang Regency, with a medium relationship category with a p-value result of <0.05.(Absari, 2023) From the results of the study above, researchers concluded that the better the mother's knowledge about advanced immunization, the greater the awareness to immunize her child. It is seen that children who get complete follow-up immunization come from those who have good knowledge.

### **The relationship of parental knowledge to participation in Booster immunization**

Based on the results of the study, from statistical tests obtained  $p\text{-value}$  ( $0.000$ )  $< \alpha$  ( $0.05$ ), it can be said that there is a relationship between parents' knowledge of participation in Booster immunization at Baduta at the Banjar Agung Health Center, Serang City, Banten Province in 2023. From the results of the analysis obtained  $OR=10,082$  with a confidence level of 95%, mothers who have poor knowledge have a 10 times greater risk of not giving Booster immunization to their children compared to mothers who have good knowledge. The results of this study can already prove that good knowledge has the opportunity to give booster immunization to toddlers compared to poor knowledge. Although there were respondents who were well informed but did not give booster immunization to their toddlers, namely 14 people (21.2%) and there were also respondents with poor knowledge but still gave booster immunizations to their toddlers, namely 21 people (26.9%).

This can be caused by environmental factors around the house, meaning that if mothers who have toddlers in the environment around the house do not provide booster immunizations, of course, this can affect the mothers of these toddlers not to give booster immunizations to their toddlers even though their knowledge is good, otherwise if the majority of mothers around the house give booster immunizations to their children, of course, this can influence mothers to also give booster immunization to his toddler even though his knowledge of booster immunization is not good. But this assumption must certainly be done further research to be proven true (Absari N. E., 2023) The results of this study are in line with research that after using bivariate and multivariate analysis, it was found that the variables of family support with ( $p = 0.056$ )  $OR=4.486$ , community empowerment of ( $p = 0.426$ )  $OR=0.338$ , the role of health workers ( $p = 0.002$ )  $OR=116.31$  and the value of recording and reporting of ( $p = 0.016$ )  $OR=0.127$  with a significant level of  $\alpha < 0.05$  which means that these four factors affect the coverage of baduta immunization, With good family support but the scope of immunization is still lacking, this can be caused by the family acting as a feedback guide, guiding and mediating problems, as a source and validator of family member identity including providing support, appreciation, attention. The lack of immunization information obtained by mothers under five results in low confidence in immunization, so that positive aspects about immunization are reduced, affecting also the mother's attitude towards immunization (Addiarto, 2022)(Mulyani, 2018)

### **CONCLUSION**

Based on the results of the study, it was illustrated that baduta who did not get complete basic immunization as many as 71 people (49.3%) and mothers who had poor knowledge as many as 78 people (54.2%). There is a significant relationship between parents' knowledge of participating in Booster immunization with a  $P\text{-value}$  of 0.000 and an  $OR$  value of 10.082, which means that mothers who have poor knowledge have a 10 times greater risk of not giving Booster immunization to their children compared to mothers who have good knowledge

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