

## ANALYSIS OF MOTHER'S KNOWLEDGE ABOUT PENTABIO IMMUNIZATION WITH THE DETERMINATION OF GIVING PENTABIO IMMUNIZATION TO INFANTS IN NAGAN RAYA DISTRICT

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### ABSTRACT

The Pentabio vaccine (DTP-Hb-Hib) is a vaccine that functions to prevent diphtheria, tetanus, pertussis, Hepatitis B, and inflammation of the brain epidermis (meningitis) in children under the age of 5 years (infants). The Pentabio vaccine began to be used in 2013 in 4 provinces and in 2014 targeted 33 provinces in Indonesia. The type of research used in this research is descriptive qualitative. This research was conducted at the Nagan Raya District Health Office. The reason for choosing the location was that there was an increased child mortality rate in 2018. The research was conducted from August to September 2022. The results of this study are (1) Standardization of the provision of pentabio immunization is a success factor the course of immunization, (2) there is still a lack of knowledge of parents about immunization, especially Pentabio, (3) to increase parental awareness, proper knowledge about vaccination is needed, (4) incompetent human resources, (5) incomplete information services. Therefore, doctors, pharmacists, nurses and other health service providers can provide correct information to parents about the risks and benefits of vaccines. Nagan Raya, such as carrying out periodic immunizations, socialization, data collection, and appeals.

Keywords: *Standardization, Knowledge and Barriers*

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### 1. INTRODUCTION

Infant mortality is a problem that still occurs throughout the world. The current infant mortality rate in the world in 2022 is 26,693 deaths per 1000 live births (WHO, 2020). Infant mortality under five years old (toddlers) in Indonesia reached 28,158 people in 2020 (Katadata, 2020). The infant mortality rate in Aceh until the end of 2020 has reached 10/1000 LH. That is, 1000 babies born alive, there are 10 babies who die in a year. The Province of Aceh has recorded a 2019 infant mortality rate of 924 cases and Nagan Raya has the third highest mortality rate from cities/districts in Aceh Province (Aceh Health Office, 2019). Several factors led to the death of these babies, including pneumonia, diarrhea, neurological disorders, malaria, gastrointestinal disorders, and others (Aceh Health Office, 2019). Based on these data, the infant mortality rate in Nagan Raya is still quite alarming. One effort that can be done by the Health Office is immunization.

Immunization has been proven as one of the most important public health efforts. The immunization program is a very effective form of health intervention to reduce infant and toddler mortality (Dwiyana and Dian, 2018). Immunization is one of the most effective public health interventions, giving every child the opportunity to grow healthy and reach their full potential (UNICEF, 2020). Vaccines reduce the risk of disease by working with the body's natural defenses to provide protection. When getting a vaccine, the body's immune system responds. One of the immunizations is Pentabio immunization. This immunization is able to prevent 3.5-5 million deaths each year from diseases such as diphtheria, tetanus, pertussis, influenza and measles (WHO, 2020). Immunization is one of the most cost-effective public health interventions and has substantially reduced childhood mortality and morbidity from vaccine-preventable diseases, including invasive pneumococcal disease, diphtheria-tetanus-pertussis (DTaP), measles, mumps, rubella, polio, and Haemophilus influenzae type b (Hib) (Mahayu, 2014). This shows that Pentabio immunization for children is one way to prevent disease.

The Pentabio vaccine (DTP-Hb-Hib) is a vaccine that functions to prevent diphtheria,

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Eka Rosanti, M Iqbal Fahlevi

tetanus, pertussis, hepatitis B, and inflammation of the lining of the brain (meningitis) in children under 5 years of age (toddlers). Pentabio immunization contains 5 types of vaccines, namely diphtheria, pertussis, tetanus, hepatitis B and Hib (haemophilus influenza type B infection). In accordance with WHO immunization, this vaccine is given 3 times, namely in the 2nd, 3rd and 4th month of the child's age. Generally, the administration of the Pentabio 3 vaccine is accompanied by the administration of the OPV 4 type polio vaccine (oral polio virus) and one administration of IPV (polio virus injection), so that the injectable polio vaccine in children must be administered simultaneously with the third pentabio vaccine (Yeni, 2021).

The World Health Organization (WHO, 2020) has recommended the worldwide incorporation of Pentabio Hib vaccination into all routine infant immunization programs after 6 weeks of age, preferably as a diphtheria-tetanus-pertussis (DTP)-based combination that allows rapid integration into vaccination schedules existing DTP. The DTP-HB vaccine was licensed in Indonesia in 2004 and has been routinely given to babies at the age of 2 to 4 months (Ilmanafia, 2019). Phase I and II studies of the DTP-HB-Hib vaccine show that the DTP-HB vaccine is proven to be immunogenic and well tolerated when mixed with the Hib vaccine which is given as a single injection (DTP-HB-Hib) and is routinely used in many countries (Wijayana and Rosyid, 2018).

Immunization activities show that mothers have a major responsibility in the lives of children. Considering that immunization has a significant effect on children's life expectancy. However, the infant mortality rate in Nagan Raya is still relatively high because the people in the Nagan Raya area have minimal knowledge about the importance of immunization, breast milk (ASI), and taboos for newborns (Acehantara News, 2019). This is in accordance with the results of previous research that parents' knowledge of the importance of immunization is still low, especially in the regions (Harahap, 2017).

This immunization activity is important to measure public knowledge and awareness. Because, to reduce infant mortality, knowledge is needed from the child's parents. Mulyani (2018) states that immunization is still foreign to mothers, as a result, there are still many mothers who lack knowledge about the interpretation and efficacy of immunization. This is also in accordance with the statement of Hartaty and Meng (2019), which is to reduce the number of deaths in infants due to diseases that can be protected by immunization, so mothers need to properly understand these immunizations. This is also in accordance with the statement (Ministry of Health of Indonesia in Manungkalit, 2022) which states that the factors that influence the failure to reach immunization coverage for toddlers include antipathy to immunization for various reasons, ignorance of parents regarding the benefits of immunization, confusion for parents to bring toddlers to health facilities. Several studies have shown that a mother's level of learning has a positive impact on her knowledge and how she tackles child health care issues. Pediatric practice has revealed significant gaps related to child health problems in the mother's knowledge (Sari and Nadjib, 2019).

Based on the problems above, the role of immunization in children's health is very important, so it is necessary to ensure that children receive immunizations and can avoid unwanted risks through parental responsibility through knowledge about immunization. This shows that the role of parents is very important in providing health services for children, one of which is immunization. Therefore, this study aims to determine the standardization of the provision of Pentabio immunization, parents' knowledge of Pentabio immunization, and barriers to treatment. This research is useful for mothers' knowledge about the importance of Pentabio immunization in standardizing Pentabio immunization provisions, and for health workers in providing appropriate socialization regarding Pentabio immunization.

## 2. RESEARCH METHOD

The type of research used in this research is descriptive qualitative. This research was conducted at the Nagan Raya District Health Office. The data collection method in this study is by conducting in-depth interviews. The data analysis used was to observe all available information from interviews by reducing information in a summary so that it is easy to read and understand.

The reason for choosing the location was that there was an increased child mortality rate in

2018. This research was conducted from August to September 2022.

In this study the selection of informants was carried out using a purposive sampling method with a total of 7 informants including:

- 1) Main informant 1: Baby's parents
- 2) Main informant 2: Baby's parents
- 3) Main informant 3 : Baby's parents
- 4) Main informant 4 : Baby's parents
- 5) Main informant 5 : Baby's parents
- 6) Key informants : Person in charge of child health immunization at the Nagan Raya Health Office
- 7) Supporting informants: Immunization officers

### 3. RESULTS AND DISCUSSION

The results of this study were determined based on several categories which were summarized from the results of in-depth interviews with 7 informants, so that the several categories were formed into four themes as follows:

#### 1. How is the Standardization of Pentabio Immunization Provisions

Standardization of provisions for administering pentabio immunization is a factor in the success of the course of immunization with standards that are expected to not cause excessive effects or symptoms in children. This can be seen from the statement of the informant below:

**Key informant:** *"...the provision of immunization must of course be in accordance with the provisions of WHO, and the Ministry of Health of the Republic of Indonesia, while the provisions that the service or all puskesmas in Nagan Raya are when the child is 2.3 to 4 months old with intervals of 4-6 week ..."*

**Supporting informant:** *"... We as health workers always carry out immunizations according to regulations, we don't dare to do it if there are no clear standards, because it concerns the health of babies, we do everything according to appropriate standards..."*

#### 2. What is your opinion about Standardization of Immunization Provisions Pentabio

**Main informant 1:** *"... as the mother of a baby I am very afraid that new problems will arise after the child is immunized, the new problem is for example fever or allergies in children that I do not know about. However, I know that the puskesmas people will definitely not give immunizations to babies carelessly, they will provide immunizations on the recommendation of the hospital..."*

**Main informant 2:** *"... in my opinion, immunization officers give immunizations to babies according to the recommendations of doctors and the hospital. Where in giving immunizations they are always in accordance with the specified time, meaning that it depends on how many months old the baby is so they know what immunizations should be given including giving pentabio immunization..."*

**Main informant 3:** *"...according to what I experienced and what I observed during the administration of immunizations to children, the puskesmas always immunizes my child and other children according to the advice of health workers. Pentabio immunization is given when the baby is almost 2 months old or two months old. Immunization officers provide immunizations to prevent disease in infants..."*

**Main informant 4:** *"...according to what I experienced and what I observed during the administration of immunizations to children, the puskesmas always immunizes my child and other children according to the advice of health workers. Pentabio immunization is given when the baby is almost 2 months old or two months old. Immunization officers provide immunizations to prevent disease in infants..."*

**Main informant 5:** *"... in my opinion, the provision for administering pentabio immunization to children is given by the immunization officer according to the advice of the midwife who is responsible for administering the immunization. Because what I have seen so far is that midwives or health center staff who go down to the village always remind me and other mothers not to forget their child's immunizations..."*

## ANALYSIS OF MOTHER'S KNOWLEDGE ABOUT PENTABIO IMMUNIZATION WITH THE DETERMINATION OF GIVING PENTABIO IMMUNIZATION TO INFANTS IN NAGAN RAYA DISTRICT

Eka Rosanti, M Iqbal Fahlevi

Based on the results of interviews with informants 1 and 2, it can be concluded that the decision made by the Nagan Raya Health Office was appropriate by immunizing children aged 2 to 4 months with intervals of 4 to 6 weeks. This is reinforced by health workers who carry out immunizations that they have carried out according to the regulations and immunization standards that have been previously set. Likewise with the results of the information from informants 3, 4 and 5 as the baby's parents also stated that the timing of immunization for infants was carried out according to doctor's recommendations, meaning that it was in accordance with the provisions of the health office.

Immunization is a passive antibody that aims to maintain the body's immunity and help the body develop immunity to infection. Pentabio immunization (DPT-Hib-Hb) is an immunization given to prevent diphtheria, pertussis, tetanus, hepatitis B and Haemophilus influenza Type B. Administration of pentabio immunization is intended to be the main prevention for diseases that cause ARI and some diseases that have direct clinical manifestations ISPA diseases, such as diphtheria, pertussis and suffocation (Lisnawati, 2011).

Immunization status associated with ARI events and several other co-morbidities not only looks at the totality of basic immunizations, but also the accuracy of the immunization schedule according to age (Nuri, 2008). According to the information above, researchers assume that the overall and accuracy of giving pentabio-based immunization to toddlers is influenced by several other factors that can support and improve the overall and accuracy of giving pentabio-based immunization so that the coverage of basic immunization in toddlers becomes large and can reduce mortality and morbidity values. Toddlers are affected by various diseases that can be protected by Pentabio immunization.

### 3. What is the knowledge of parents about pentabio immunization

There is still a lack of parental knowledge about immunization, especially pentabio. Some of the informant's statements that support the lack of understanding of parents about pentabio immunization are as follows:

**Key informant:** *"... so many parents in various villages still neglect immunization, especially pentabio, even though immunization is very important to support children's health, we have found many cases like that in various villages, but we continue to try to carry out immunizations so that we can reduce infant mortality due to non-immunization .."*

**Supporting informant:** *"In the village where I work, I found that in terms of giving immunizations, many mothers in these villages are aware of the health of their children, in which these mothers do not know more about pentabio immunization, but they still bring their children to be immunized..."*

### 4. What do you think about giving pentabio immunization

**Main informant 1:** *"...I'm honest about pentabio immunization, I only know at a glance, I don't know what pentabio is, but I've heard of it, but when asked about immunization, I also bring children for immunization, but if it's pentabio, maybe I only know at a glance, bro. ...."*

**Main informant 2:** *"...I am a young mother, so regarding immunizations I only know about it at a glance, especially pentabio immunization, but every time the midwives recommend immunization when I bring my child to the posyandu, I always heed that recommendation. Because I know immunization is very important to protect my child from disease..."*

**Main informant 3:** *"...I only know briefly about pentabio immunization because my older cousin is a midwife, I know briefly that pentabio immunization works to prevent children from getting tetanus and diphtheria. That's why I always take my child to the puskesmas when the immunization schedule arrives..."*

**Main informant 4:** *"...I don't really understand immunization, but before being given the immunization, the puskesmas or the immunization officer first tells me what the immunization will be given is for. So I know that pentabio immunization is given to prevent diphtheria, tetanus, hepatitis B*

*and others because I was told at the Posyandu..."*

**Main informant 5:** *"...I know a little about child immunization, because when it comes to children I really care. Besides that, my husband is also very supportive of our child being immunized. So I already know at a glance before giving pentabio immunization, because I first find out from my friends who work in the health department and I also often search for information on Google..."*

Based on the results of interviews with several informants 1, it was found that a statement from the Nagan Raya Health Office stated that there were still many parents who were not aware of the importance of immunization. These problems are often found in the villages of Nagan Raya. As a parent, you must know about immunization because this problem involves the health of the child.

Based on the results of interviews with several informants 2, namely immunization officers, they stated that mothers in these villages in Nagan Raya did not know for sure about pentabio immunization, but these mothers still brought their children to the puskesmas for immunization. This is because these mothers care about the health of their children.

Based on the next three informants, namely the child's parents who stated that they only knew about pentabio immunization at a glance. They only knew about immunization without knowing what immunizations were given to their children, but there were also informants who did not know about pentabio immunization. Even so, as mothers, these informants still brought their children for immunization, because they know that immunization is good for children's health.

Immunization rates are one of the best indicators of public health outcomes and services in the last 100 years. Parents' decisions regarding immunization are very important to increase the rate of immunization. The purpose of this study was to evaluate the correlation between parental knowledge (KP) practices and child immunization completeness.

Parents' knowledge and practice regarding immunization is the main factor contributing to their vaccination decision. This vaccination decision will increase the level of immunization and compliance so as to reduce the possibility of immunization errors. To increase parental awareness, good knowledge about vaccination is needed. Therefore, doctors, pharmacists, nurses and other health care providers must provide correct information to parents about the risks and benefits of vaccines. Many studies show that parents' knowledge about child immunization varies. Curious parents about the side effects, benefits and other information about vaccines, doctors include the risks of vaccines in their discussions with parents without comparing them to the risks involved in infectious diseases. Appropriate parental practices regarding immunization will be able to reduce the incidence of infectious diseases. This is of course driven by the right source of information, the number of sources, and the way parents receive vaccine information. Sources of information provided by maternity clinics, the media, literature, and the internet include the benefits of vaccination and the risks of vaccine-preventable diseases (Hidayat, 2009).

A factor influencing parental practices is communication between parents and information sources or immunization providers. Improving communication will increase parents' perceptions of the benefits and risks of vaccines. Parents will be more likely to continue immunizing their child, even if at the same time they are still unsure about vaccination. In addition, parents are vulnerable to sources of information from anti-immunization activists.

## **5. What are the Barriers to Doing Treatment**

Obstacles or obstacles to parents and the Nagan Raya health office in increasing immunization among the community:

**Key informant:** *"...We as policy makers, obstacles related to the implementation of immunization, namely, lack of awareness of the community itself, and also related to human resources or health workers who are less competent, that is the next step that we must deal with as soon as possible ..."*

**Supporting informant:** *"...We, as immunization officers, have a problem, that sometimes there are parents who do not bring complete personal data of the child, such as a family card or a child's health card that we will use to record data, when asked why the answer is they forgot..."*

## **6. What are the obstacles that you experience when doing treatment**

**Main informant 1:** *"...we were tired first we had to stand in line and then told to go there, told to*

## ANALYSIS OF MOTHER'S KNOWLEDGE ABOUT PENTABIO IMMUNIZATION WITH THE DETERMINATION OF GIVING PENTABIO IMMUNIZATION TO INFANTS IN NAGAN RAYA DISTRICT

Eka Rosanti, M Iqbal Fahlevi

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*come here many times the process took a long time there. Because the process is long it doesn't make immunizations, sometimes it's also because of work, because there is work that can't be left so can't taking part in child immunization, information services sometimes don't reach... ”*

**Main informant 2:** *“...the process was quite complicated, first we had to queue, then waited, then were directed to the next place, and had to wait again. Sometimes children are fussy because they are in a strange place...”*

**Main informant 3:** *“...it's also difficult because my husband is working, maybe he can take a break for a while. But when there are other people who want immunization, they have to queue and wait a long time, so the husband's work can be neglected. Sometimes the homework also piles up, when the child is finished being immunized I have to stay with the child because my child often has a fever after being immunized...”*

**Main informant 4:** *“...the obstacle is that it is far from home, sometimes there is no one to deliver, because the husband is working and he cannot live with his job. Apart from that, when it arrives there are a lot of processes, you have to queue, you are directed to another place, there are lots of things to do...”*

**Main informant 5:** *“...the obstacle I often face is that when I want to immunize my child, I have a fever, so I have to postpone the immunization. Every time it's time to be immunized, I'm always not feeling well, so if it's postponed I have to find a suitable time again, I have to find my free time...”*

The results of the interview above according to the health office, the immunization officer and the results of the information from the three parents of the baby can be said that the obstacles in increasing parental awareness of the importance of immunization are parental awareness and incompetent human resources. Other factors are lazy waiting in line, busy parents, and incomplete information services.

Parents' knowledge and practice regarding immunization are the main factors contributing to vaccination decisions. In this case, parental knowledge is an obstacle to the Nagan Raya Health Office and incompetent human resources are also a problem faced by the Nagan Raya Health Office. The overall goal of human resources is to ensure that the organization is able to achieve success through people. HRM aims to improve the effectiveness and ability of an organization to achieve its goals by making the best use of available resources.

Many reasons were found for not vaccinating children or for not completing the vaccination schedule; First, the lack of vaccination information among parents or healthcare providers. Inadequate information about vaccination status can lead to untimely or missed immunizations which result in decreased protection against disease, increased side effects, secondly, the busy working hours of parents.

## 7. CONCLUSION

From the results of the study it can be concluded that the standardization of the provision of pentabio immunization is a factor in the success or failure of immunization, namely the lack of knowledge of parents about immunization, especially Pentabio, increasing parental awareness, good knowledge about vaccination is needed. Therefore, doctors, pharmacists, nurses and other health care providers must provide correct information to parents about the risks and benefits of vaccines. To ensure the implementation of each planning activity, strategic steps are needed by the government, especially the Nagan Raya Health Office by conducting socialization to increase the knowledge of parents of children to carry out periodic immunizations, data collection, and warnings.

Obstacles or obstacles to parents and the Nagan Raya Health Office in increasing immunization among the community, namely, the factor of lack of parental awareness, the factor of incompetent human resources, the busy factor of parents, and incomplete information services.

## 8. ADVICE

Based on the research results, suggestions that can be given are that the Nagan Raya Health

Office needs to carry out additional coaching/training activities in order to increase knowledge about pentabio immunization to homes that are far from the Puskesmas by conducting socialization and must pay attention to clear information services so that they can understood by the people of Nagan Raya.

## REFERENCES