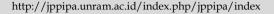


# **Jurnal Penelitian Pendidikan IPA**

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# The Relationship between Mother's Knowledge and Work and Completeness of Immunization for Toddlers in the UPTD Working Area of Krui Health Center, Pesisir Barat Regency in 2023

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Abstract: Immunization is very important for a person's body to be immune from disease. The benefit of immunization is to provide immunity to babies in order to prevent disease and infant death. The immunization achievement based on data from the West Pesisir District Health Service is 2203 (75.7%) in 2022. Meanwhile, based on data from the Krui Health Center, West Pesisir Regency, the immunization achievement of Complete Immunization in 2022 is 266 (75.1%). There are still mothers who do not bring their toddlers for immunization due to several factors including knowledge and work. The aim of this research is to determine the relationship between maternal knowledge and work and the completeness of immunizations for toddlers in the UPTD Work Area of the Krui Health Center, Pesisir Barat Regency in 2023. The research method used by researchers in this study is a correlation study using a cross sectional approach. The number of samples in this study was 175 respondents. The sampling technique used was total sampling. The instrument used was a questionnaire sheet. The statistical test used is the chi-square test. The results of the analysis using the Chi-square test showed a pvalue = 0.001 (<0.05) for knowledge and 0.112 for work. The conclusion is that there is a relationship between knowledge and completeness of immunization in the Krui Health Center Work Area in 2023 and there is no relationship between employment and completeness of immunization in the Krui Health Center Work Area in 2023.

Keywords: Employment; Immunization status; Knowledge

# Introduction

Immunization is very important for a person's body to be immune from disease. Immunization is a way to actively increase a person's immunity against a disease. If you are later exposed to the disease, you will not suffer from the disease because the body's immune system has a memory memory system. When the vaccine enters the body, antibodies are formed to fight the vaccine and the memory system will store it as experience (Butarbutar, 2018). Diseases that can be prevented by immunization (PD3I) are tuberculosis, diphtheria, pertussis, tetanus, hepatitis B, pneumonia, meningitis, polio and measles (Hadinegoro, 2019).

The aim of immunization is to provide immunity to babies in order to prevent disease and death of babies and children caused by diseases that frequently spread (Kusumawati & Satria, 2017). The general aim of the basic immunization program is to reduce morbidity, disability and infant mortality due to VPD, while the specific aim of the basic immunization program is to achieve complete basic immunization coverage (Sarri, 2018), improve health, create a strong and intelligent nation to continue the development of the country, as well as improving the image of the Indonesian nation throughout the world (Zega, 2022). While immunization helps prevent future transmission of disease, low levels of immunization today can spread disease to future

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generations, causing epidemics and pandemics. On the other hand, if vaccination results are high and evenly distributed, the disease can be eradicated. This was proven by the eradication of smallpox. Another benefit of immunization is reduced health care costs due to low morbidity (Rivani et al., 2019).

According to WHO (World Health Organization) data, around 194 developed and developing countries continue to carry out routine immunization for their babies and toddlers. Developed countries with good levels of nutrition and environment continue to carry out routine immunization for all their babies, because it has been proven to be beneficial for immunized babies and prevents spread to surrounding children. Every year around 85-95% of babies in developed countries receive routine immunization, while the rest are not yet immunized because they suffer from certain diseases, difficulty in accessing immunization services, distance, geographic, security, socio-economic barriers and so on (Hartati, 2019). A total of 65 countries from 194 WHO members have immunization coverage for Diphtheria, Pertussis, Tetanus, Hepatitis B, Pneumonia and Meningitis (DPT-HBHIB) below the global target of 90% (Ministry of Health of the Republic of Indonesia, 2018).

Basic Health in 2018 showed that national level DPT-HB-HIB 3 immunization coverage was 61.3%. In Lampung Province, infant immunization coverage in 2017-2019 exceeded 100%, this happened because the number of those provided with services exceeded the target baby data, all babies who came to be served included those from outside the region, babies from outside the region should have been separated into separate records. Immunization coverage is greatly influenced by accuracy in recording and reporting as well as determining the target size. Goals are calculated from target estimates. However, it experienced a decline of 15% in 2020 due to the Covid-19 pandemic (Dinas Kesehatan Provinsi Lampung, 2019).

Every year more than 1.4 million children in the world die from various diseases that can be prevented by immunization (Hartati, 2019). In the 2015-2019 period, Indonesia was in the second place with the largest incidence of diphtheria in the world, namely 3,203 cases after India (18,350 cases). Based on the Lampung Province Health Profile (2021), the number of cases of neonatal, infant and toddler deaths in Lampung Province in 2021 was 404, 79 and 27 cases. If you look at the graph, the neonatal mortality rate in Lampung Province has decreased over the last 3 years, namely from 3.35 to 2.7, in contrast to the infant mortality rate which continues to increase. Meanwhile, the under-five mortality rate fluctuates from 2018 to 2021.

The immunization achievement based on data from the West Pesisir District Health Service is 2203 (75.7%) in

2022. Meanwhile, based on data from the Krui Health Center, West Pesisir Regency, the immunization achievement of Complete Immunization in 2022 is 266 (75.1%).

Based on data, the big role of immunization in saving the world community from pain, disability and even death due to diseases such as Smallpox, Polio, Tuberculosis, Hepatitis B which can result in liver cancer, Diphtheria, Measles, Rubella and Congenital Deformity Syndrome Due to Rubella (Congenital Rubella Syndrome/CRS), Tetanus in pregnant women and newborn babies, Pneumonia (lung inflammation), Meningitis (inflammation of the lining of the brain), and Cervical Cancer caused by Human Papilloma Virus infection (Juknis for Immunization Services, 2020).

The high rate of disability and child mortality is greatly influenced by mothers' knowledge of the importance of immunization, including follow-up immunization. This lack of maternal knowledge is caused by the lack of available information and sociocultural conditions (Suci Rohani, 2021). Several important things related to providing immunizations to children are the child's health status at the time of immunization, past experience with immunization, parents' understanding of immunization, contraindications and the impact of not being immunized.

Human behavior is the result of all kinds of experiences and human interactions with the environment which are manifested in the form of knowledge, attitudes and actions. In other words, behavior is an individual's response or reaction to stimuli originating from outside or from within him (Notoatmodjo, 2018b). According to Lawrence Green's theory, behavioral factors are determined by three groups of factors, namely predisposing factors which include individual knowledge, attitudes, beliefs, traditions, social norms and other elements found in individuals and society. Supporting factors (enabling factors) are the availability of health services and ease of achieving them, while reinforcing factors are the attitudes and behavior of health workers. Green stated that health education plays an important role in changing and strengthening these three groups of factors so that they are in line with the objectives of the activity so as to generate behavior in the form of positive actions from the community towards the program and towards health in general (Prawirohardjo, 2007).

Knowledge influences a person's awareness of getting their baby immunized. Mothers who are not willing to immunize their babies may be because they do not understand properly and deeply about immunization. Apart from that, they don't pay enough attention to getting their children immunized according

to schedule. Insufficient circumstances will influence mothers in obtaining information regarding immunization. After realizing the importance of the benefits of immunization, mothers can bring their children to be immunized according to the schedule (Notoatmodjo, 2018b). In fact, there are many children whose immunizations have not been completed for reasons such as low knowledge of mothers, low awareness of parents about taking their children to Posyandu, and fear that children will get sick after being immunized (Jalpi et al., 2020).

According to Agustin et al. (2021), the better a person's knowledge about immunization, the greater the possibility that the person will allow their child to be given booster immunization. This is respondents who have good knowledge already know the importance and benefits of booster immunization, while respondents who have less knowledge cannot understand the importance of booster immunization so less confidence in providing they have immunization. Mothers' knowledge about immunization results in confidence and awareness of the importance of routine complete immunization for their children. The effects of immunization, which are commonly known as post-immunization side events, are common things experienced by children after antigens are introduced into their bodies. Many bad rumors from irresponsible parties make mothers hesitate to take their children for immunization for fear of the child becoming sick (Lestari, 2020).

Apart from knowledge, there are several things that influence the immunization coverage target not being achieved, including false rumors about immunization, the public's opinion that immunization causes their children to become sick, disabled or even die, the public's understanding, especially parents, is still lacking regarding immunization and the mother's age and occupation. Symptoms of fever after vaccination indicate that the child's body is making antibodies in response to antigens that are entered into the body. There is a need for an approach in providing explanations to parents so that they understand this better, and they must communicate about coming to a health facility if the child shows serious symptoms after immunization (Hiyana et al., 2019). This statement is supported by research conducted by Yuda et al. (2018) in 2018 that there is a relationship between maternal characteristics, knowledge, attitudes and actions of the mother with immunization compliance and according to Vivi Triana's research conducted in Kuraji District, Padang City in 2015 that Knowledge and attitudes are factors that influence the completeness of basic immunization for babies (Triana, 2017).

The immunization achievement based on data from the West Pesisir District Health Service is 2203 (75.7%) in 2022. Meanwhile, based on data from the Krui Health Center, West Pesisir Regency, the immunization achievement for Complete Immunization in 2022 is 266 (75.1%), the Ngambur Community Health Center is 76.2%, Bengkunat Health Center at 76.4% and Karya Penggawa Health Center at 75.8%. Based on the results of a survey conducted by researchers from 02 November 2022 to 03 November 2022, the results showed that out of 10 mothers, the majority (80%) of the mothers still felt afraid and were reluctant to take their children for immunization because they did not know about immunization, especially about the immunization schedule. Misunderstandings regarding contraindications and concerns about side effects have resulted in many children not being immunized and mothers being busy at work. This is what makes researchers interested in conducting research on "the relationship between maternal knowledge and work and the completeness of immunization for toddlers in the UPTD Working Area of the Krui Health Center, Pesisir Barat Regency in 2023" with the aim of finding out between maternal knowledge and maternal occupation on the completeness of immunization in the UPTD working area. Krui Health Center, Pesisir Barat Regency in 2023.

#### Method

This research is a correlation study using a cross sectional approach. Elements of independent and dependent variables are used in this investigation. The independent variables of this research include maternal knowledge and maternal employment. The dependent variable includes completeness of immunization. This research was conducted in the UPTD Work Area of the Krui Health Center in 2023. The population in this study were mothers with toddlers. The sample in this study was 175 mother respondents who had children under five in the entire working area of the Krui Health Center UPTD which was spread across 6 villages and 2 sub-districts in Pesisir Tengah sub-district. Sampling used total sampling technique. The instruments used in this research included a knowledge questionnaire and a KIA book.

When collecting data, the researcher invited respondents to come to the Posyandu according to the schedule given, but several respondents were unable to attend so the researcher, accompanied by the village midwife, came to the respondent's house. The data collection process includes filling out a questionnaire by respondents to assess knowledge, observing the KIA book to determine the completeness of children's

immunizations, and interviews to find out more details regarding several things, such as name, age, educational level, knowledge and behavior towards immunization. This research aims to determine the relationship between the independent and dependent variables using the chi square test, using a confidence level of 95%. If the p value <0.05 then the statistical calculation results are significant (Arikunto, 2019).

#### Result and Discussion

Based on the research results, it was found that of the 175 respondents, the majority of respondents had good + sufficient knowledge, namely 152 respondents (86.9%) of which 147 respondents (84.0%) had complete immunization and 5 respondents (2.9%) of them incomplete. The results of statistical analysis using the chi-square test show that the p-value = 0.001, which means p < 0.05 (Ho is rejected), so it can be concluded that there is a relationship between knowledge and completeness of immunization in the Krui Health Center Work Area in 2023. And the odd value ratio (OR=45.733). and the results obtained were that of the 175 respondents, the majority of respondents were not

working, namely 150 respondents (85.7%) of which 136 respondents (77.7%) had complete immunization and 14 respondents (8.0%) of them were incomplete. The results of statistical analysis using the chi-square test show that the p-value = 0.112, which means p > 0.05 (Ho is accepted), so it can be concluded that there is no relationship between work and the completeness of immunization in the Krui Health Center Work Area in 2023.

**Table 1**. Frequency Distribution of Respondents Based on Mother's Knowledge at Krui Health Center in 2023

Knowledge	Frequency	%		
Good+Enough	152	86.90		
Not enough	23	13.10		

**Table 2.** Frequency Distribution of Respondents Based on Completeness of Immunization at the Krui Health Center in 2023

Knowledge	Frequency	%
Complete	156	89.10
Incomplete	19	10.90

Table 3. Relationship between Knowledge and Completeness of Immunization At the Krui Health Center in 2023

Knowledge Immunization Equi							n Equipment	
-	Complete	Incomplete						
	N	%	N	%	N	%	Total	P-Value
Good+enough	147	84.00	5	2.90	152	86.90	0.001	45.73
Not enough	9	5.10	14	8.00	23	13.10		

**Table 4.** Relationship between employment and completeness of immunization At the Krui Health Center in 2023

Work						I	Immunization Equipment		
	Complete	Incomplete						_	
	N	%	N	%	N	%	Total	P-Value	
Doesn't work	147	84	5	2.90	152	86.90	0.001	45.73	
Work	9	5.10	14	8.00	23	13.10			

Relationship between Knowledge and Completeness of Immunization in the Krui Health Center working area in 2023. The results of the analysis concluded that there is a relationship between knowledge and immunization completeness in the Krui Health Center Working Area in 2023 (p-value = 0.001). This is in accordance with research conducted by Sarri (2018) that there is a relationship between knowledge and completeness of immunization in the Bendo Community Health Center Working Area, Magetan Regency with the result p<0.05) so that there is a significant relationship between maternal knowledge and completeness of basic immunization for babies.

This is also in accordance with research conducted by Nurhidayati (2016) that there is a relationship between the level of knowledge and the completeness of basic immunization for babies. The statistical test results were obtained (p value = 0.042) with a confidence level of 95%, so it can be concluded that there is a relationship between knowledge and completeness of basic immunization in children.

The results of this research are also supported by behavioral theory (Green in Nototatmodjo, 2018) which states that behavior that is based on knowledge will last longer than behavior that is not based on knowledge. The formation of a new behavior, starting in the cognitive domain, in the sense that the subject knows in advance about the stimulus in the form of material or objects, thus giving rise to new knowledge in the subject and then giving rise to an inner response in the form of the subject's attitude towards the object which is fully known and realized, which will give rise to A further

response is in the form of action in relation to a known stimulus. This is related to behavior regarding basic immunization. Completeness will arise with appropriate reactions to certain stimuli, namely knowledge about basic immunization.

Mother's knowledge is one of the factors that facilitates (predisposing factors) towards changes in behavior, especially immunizing children. This is in accordance with Green's opinion in Notoatmodjo (2018) which states that one of the determining factors for behavior change is the presence of predisposing factors which include the level of knowledge. Knowledge comes from knowing what individuals do with certain objects through dominant perception (Hidayah, 2019). Knowledge is an understanding of information and experience that individual receive both through formal and informal learning (Dillyana, 2019).

Knowledge is information that has been combined with a person's understanding and potential about something. Knowledge can be obtained through formal, non-formal education and mass media. Knowledge or cognitive is a very important domain for the formation of a person's actions (overt behavior). Knowledge itself can be obtained through the experiences of oneself and others (Notoatmodjo, 2018). The mother's role is the most dominant in providing immunizations to her children. This is the most basic because one of the reasons for low or high immunization coverage is closely related to maternal knowledge (Rizki et al., 2022).

In line with the facts and theories regarding the relationship between knowledge and completeness of immunizations, researchers concluded that there is a relationship between knowledge and completeness of immunizations in the Krui Community Health Center Work Area in 2023. There are still mothers with insufficient knowledge due to a lack of following counseling and a lack of concern about providing immunizations to their children. This may also be due to the mother's job, most of whom are housewives. Housewives are usually more vulnerable to not receiving information about the importance of immunization, which results in poor maternal knowledge. Lack of knowledge causes mothers not to know the benefits contained in immunization for babies.

Knowledge is not always obtained from a high level of education, because knowledge can also be obtained from mass media, personal experience or the experiences of other people. There is a need to increase public knowledge about immunization, both by continuing existing programs such as outreach to the public, distributing leaflets in the form of leaflets, flipcharts and electronic information which is currently trending to cadres and the public. This can be done by creating a WhatsApp group during immunization to

remind you of the immunization schedule. This is a breakthrough to increase public knowledge.

Relationship between employment and completeness of immunizations in the Krui Health Center work area in 2023. The results of the analysis concluded that there was no relationship between work and immunization completeness in the Krui Health Center work area in 2023 (p-value = 0.112).

This is different from research conducted by Nazara (2018) where the results of the Chi-Square test obtained p value = 0.000 (p value> 0.05), which means that there is a relationship between work and basic immunization for babies in the Plus Lahewa Nursing Health Center UPT Working Area. Lahewa District, North Nias Regency in 2018.

Another research conducted by Sanewe (2017) stated that there was a relationship between mother's employment and completeness of immunization for babies with p value = 0.000. According to researchers, working mothers have less free time compared to nonworking mothers, so working mothers usually receive fewer complete basic immunizations than non-working mothers. According to research Libunelo et al. (2018) conducted in Gorontalo, there is a relationship between employment and completeness of immunization.

According to Lawrence Green's theory (1980), a person's or society's behavior regarding health is influenced by three factors which include predisposing factors (facilitating factors), enabling factors (enabling factors), and reinforcing factors (strengthening factors). The application of Lawrence Green's theory of predisposing factors includes the baby's mother's education level, the baby's mother's level of knowledge about basic immunization, mother's occupation, family income, number of children in the family, and family support. The enabling element is manifested in the physical environment, namely the availability of facilities or means for immunization and the affordability of immunization service locations. Reinforcing factor elements include the attitudes and behavior of immunization officers (Notoatmodjo, 2018).

Work is an activity or activities of a person to earn income to meet their daily living needs. Work is a factor that influences knowledge. Judging from the type of work that frequently interacts with other people, they have more knowledge compared to people without any interaction with other people. The relationship between a mother's job and the completeness of a baby's basic immunization is that if the mother works to earn a living, there will be less opportunity for time and attention to take her baby to an immunization service, which will result in her baby not receiving immunization services (Nazara, 2018).

Work is related to the opportunity to immunize their children. A mother who does not work will have more opportunities to immunize her child than a mother who works. Mothers who work outside the home often do not have the opportunity to come to immunization services because perhaps when the immunization service is carried out the mother is still working at her workplace. A mother who does not work will have more opportunities to immunize her child than a mother who works. A working mother may have little time to take her child for immunizations, so a working mother may have difficulty taking her child to the Posyandu according to the child's immunization schedule and may even make her forget the child's immunization schedule. (Loddo et al., 2019).

According to researchers' assumptions, it can be seen that many mothers do not work, namely as housewives. However, there are mothers who still cannot take their children to get complete immunizations because the mothers are too busy with housework so they forget about their babies' immunization schedules. This shows that a mother's job cannot guarantee that her baby will receive complete immunization, so there are almost similarities between respondents who have babies with complete or incomplete immunization status, some of whom do not work or are only housewives. This problem can be overcome by providing consultation and solutions to the baby's mother to ask for help from other family members such as grandmother, sister or older sister of the baby's mother to take the baby to immunization so that the target of achieving a healthy and complete immunization of the baby is achieve.

# Conclusion

From the results of data analysis, it can be concluded that there is a relationship between knowledge and completeness of immunizations in the Krui Health Center Work Area in 2023 and there is no relationship between work and immunization completeness in the Krui Health Center Work Area in 2023. Suggestions for Community Health Centers, the results of this research can be used as a source of insight, especially for the nursing sector regarding maternal behavior regarding immunization, timeliness of immunization and completeness of immunization for toddlers. As well as making efforts to increase public knowledge, it is hoped that mothers of toddlers can pay more attention to the toddler immunization schedule so that even if they cannot attend, they can represent other family members to deliver toddler immunizations, for future researchers. It is hoped that the results of this research can be used as information and input as a

reference and initial data in conducting further better research by adding more variables.

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#### **Author Contributions**

Conceptualization, R. A., S., C. A. F., A. A. P.; methodology, R. A.; validation, S and.; formal analysis, S. Z. N.; investigation, Y. A., and C. A. F.; resources, A. A. P and. R. A.; data curation, S.: writing—original draft preparation, C. A. F and A. A. P.; writing—review and editing, R. A.: visualization, S and C. A. F. All authors have read and agreed to the published version of the manuscript.

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#### **Conflicts of Interest**

The authors declare no conflict of interest.

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