

# Relationship between knowledge level and mother's attitude to basic immunization for infants 9-12 months at north Jayapura health center

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## ABSTRACT

This study aims to explain the relationship between knowledge level and mother's attitude towards basic immunization for infants 9-12 months at the Jayapura Utara Public Health Center. The design of this study used descriptive analytic by using a cross sectional approach. The population in this study were all mothers who had babies aged 9-12 months in the working area of the North Jayapura Health Center from a baby population of 157 people. The sampling technique in this study was carried out using purposive sampling or judgment sampling, the sample required was 75 mothers. The results of this study indicate that 1) The results of the bivariate analysis of the relationship between the mother's level of knowledge on basic immunization obtained a p value of 0.000 or p value < (0.05), which means that there is a relationship between the mother's level of knowledge on basic immunization in infants, and 2) The results of the bivariate analysis of the relationship between mother's attitude towards basic immunization obtained a p value of 0.014 or p value < (0.05), there was a relationship between mother's attitude towards basic immunization in infants.

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## INTRODUCTION

Every year more than 1.4 million children in the world die from various diseases that can actually be prevented by immunization. The target for achieving the target in 2015 is the Infant Mortality Rate (IMR) 23/1000 live births and the Toddler Mortality Rate (AKBA) 32/1000 live births (Kemenkes RI, 2015). The latest data on the target has been achieved based on the results of the Indonesian Demographic and Health Survey (IDHS) in 2017 showing the under-five mortality rate (IMR) of 24/1000 live births and the infant mortality rate (IMR) of 32/1000 live births due to various diseases that can actually be prevented by immunization (Hidayah, Sihotang, & Lestari, 2018).

Babies are one of the age groups that are very vulnerable to an infectious disease, have not been able to be independent in meeting basic needs and decision making and are included in an

inclusive group (Fisnanda, 2022). The level of health in infants needs attention, because babies or children are the next generation of this nation. One of the efforts to make a healthy generation of the nation is to reduce morbidity and mortality in children. In addition, a consistent health effort is needed, one of which is immunization, because immunization can reduce infant mortality due to diseases that can be prevented by immunization (Soetjiningsih, 2012).

Immunization is one of the most effective and efficient public health efforts to reduce disease and death in the community. Immunization will stimulate the body's immunology to form antibodies or immunity in infants. Immunization has saved more lives than any other public health effort. The Indonesian Ministry of Health implements the Immunization Development Program (PPI) in children. Immunization is one way to prevent infectious diseases, especially Diseases that can be Prevented by Immunization (PD3). Immunization is one of the most effective interventions in disease prevention and in terms of financing as well (Anggreni, Susanti, & Hety, 2021).

Immunization is a world-class program driven by WHO (World Health Organization) and implemented by all countries as a national program. The implementation of the immunization program has been implemented in Indonesia since 1956. Immunization is regulated in the Regulation of the Minister of Health of the Republic of Indonesia Number 12 of 2017 concerning the Implementation of Immunization (PMK No 12, 2017). The Ministry of Health implements the Immunization Development Program (PPI) for children in an effort to reduce the incidence of diseases in children that can be prevented by immunization (PD3I), namely tuberculosis, diphtheria, pertussis, measles, polio, tetanus and hepatitis B (Riskseddas, 2010). Each country has a different immunization program, depending on the priority health problems that occur in each country. The study of the type of immunization is based on expert studies and epidemiological analyzes of frequently occurring diseases. In Indonesia, the basic immunization program required for every 0-9 months baby consists of 1 dose of Hepatitis B, 1 dose of BCG, 3 doses of DPT-HB-Hib, 4 doses of polio drops and 1 dose of Measles. Children are said to have received complete immunizations when they have received these 5 types of immunization (Muninggar, 2021).

The World Health Organization (WHO) shows that in 2015 there were 19.4 million children who did not get immunizations and statistics show that almost 85% of babies in the world received complete vaccinations. Relevance data among countries in the world, the highest complete basic immunization in 2014 and 2015 in the world was in the first position Brazil 93% and 96%, the third Ethiopia 77% and 86%. Indonesia occupies the fourth position with a percentage of 81% after Ethiopia. Meanwhile, the lowest immunization rates in 2014 and 2015 were in the Equatorial Countries, namely 20% and 16% (Karyadi, 2017).

Indonesia is one of the priority countries identified by the WHO United Nations Emergency Children's Fund (UNICEF) and Universal Child Immunization (UCI) Villages/Kelurahan, to carry out acceleration in achieving the 100% target. The National Immunization Acceleration Movement (Gain) Universal Child Immunization (UCI), 2010 is one of the conditions for achieving complete basic immunization for all infants under the age of 1 year (0-9 months) and based on the National Medium-Term Program Plan (RPJMN) where the government committed to achieving the 100% target in villages and sub-districts to achieve Universal Child Immunization (UCI) in 2014, but this has not been achieved in several UCIs in various provinces in Indonesia (Nugrawati, 2019)

Complete basic immunization coverage in Indonesia in 2018 reached 81.99% of which BCG was 85.47%, HB <7 days 84.58%, DPT-HB-HIB (1) 87.04%, DPT-HB-HIB (3) 85.49%, polio 4 85.06%, measles 85.7%, IPV 59.67% (Kemenkes RI, 2019). This percentage decreased when compared to basic immunization coverage in 2017 which reached 90.8% where BCG 89.1%, HB <7 days 86.6%, DPT-HB-HIB (1) 90.7%, DPT-HB-HIB (3) 88.3%, polio 4 86.8%, measles 89.8%, IPV 41.5% (Yeni Arpah, 2021).

The coverage of basic immunization for infants in Papua province in 2018 reached 30.36% where BCG 56.90%, HB < 7 days 37.28%, DPT-HB-HIB (1) 61.69%, DPT-HB-HIB (3) 53.76%, polio 4 53.28%, measles 58.9%, IPV 23.13% (Kemenkes RI 2019). This percentage decreased when compared

to immunization coverage in 2017 of 46.0% where BCG 62.5%, HB < 7 days 43.5%, DPT-HB-HIB (1) 67.5%, DPT-HB-HIB (3) 59.8%, polio 4 61.0%, measles 65.9%, IPV 16.3% (Kemenkes RI, 2018). The coverage of basic immunization in Jayapura City in 2017 reached 80%, where BCG 86.87%, DPT 83.52%, polio 85.53%, measles 63.01%, Hepatitis B 82.88% (Central Bureau of Statistics Papua Province year 2019).

Based on the initial study or initial data collection that I did at the North Jayapura Health Center, there were 21 posyandu in 5 Kelurahan. Where in Bhayangkara Village there are 8 posyandu, Gurabesi Village 6 posyandu, Trikora Village 4 posyandu, Mandala Village 2 posyandu, Village 1 posyandu. Data from the North Jayapura Health Center in 2019 from February to December the number of basic immunization targets was 971 children. The number of infants aged 0-12 months was 547 who received basic immunization, while infants aged 9-12 months amounted to around 157 infants.

The coverage of basic immunization at the North Jayapura Health Center from 5 Kelurahan in 2020 from February-December was 72.81% where in February 37.6%, March 68.8%, April 75.9%, May 81.1%, June 66.8%, July 76.5%, August 89.4%, September 90.4%, October 81.4%, November 81.4%, December 51.8%. Basic immunization coverage for H<7 days was 59.42%, BCG 78.78%, Polio (1) 78.7%, DPT-HIB-HB (1) 81.4%, Polio (2) 81.4%, DPT-HIB-HB (2) 77.1%, Polio (3) 77.8%, DPT-HIB-HB (3) 78.9%, Polio (4) 80%, IPV 44.5%, Measles 61.8%. From interviews conducted with the person in charge of immunization, the lowest immunization coverage was in Angkasapura Village at 36.97% because there was only 1 posyandu and mothers there were lazy to bring their children immunized. From the initial study that the researchers conducted at the Jayapura Utara Public Health Center, from 10 mothers, it turned out that 5 mothers did not care about basic infant immunization and the knowledge and attitudes of mothers were still lacking, so that infant immunization was not given completely.

The role of a mother is very important in the immunization program as well as the completeness of basic immunization, because it is the mother who has the responsibility to take care of her child, especially in the health of the child. A mother's behavior is greatly influenced by the mother's knowledge and attitude. Lack of knowledge and attitudes of mothers will cause mothers to be lazy to take their children to posyandu or health centers for immunization, so that children do not get complete immunizations.

Based on the data and description above, the authors are interested in taking research on "The Relationship between Knowledge Levels and Mothers' Attitudes towards Basic Immunizations for Infants 9-12 Months at the North Jayapura Public Health Center".

## RESEARCH METHOD

The design of this study used descriptive analytic by using a cross sectional approach to determine the relationship between the level of knowledge and mother's attitude towards basic immunization for infants at the North Jayapura Public Health Center. Cross sectional research is a type of research conducted at one time to determine the relationship between the independent variable and the dependent variable and there is no follow-up. This research design was carried out only for a certain period and the sampling was carried out only once, there was no repetition in data collection and respondents only had one opportunity to become research respondents.

The population is the total number consisting of objects or subjects that have the characteristics and qualities set by the researcher to be studied and then drawn conclusions (V. Wiratna, 2014).

The population in this study were all mothers who had babies aged 9-12 months in the working area of the North Jayapura Health Center from a baby population of 157 people. The sampling technique in this study was carried out using purposive sampling or judgment sampling, the sample required was 75 mothers. Sampling used inclusion and exclusion criteria.

### Inclusion criteria

Inclusion criteria are general characteristics of research subjects from a target and affordable population to be studied (V. Wiratna, 2014). The inclusion criteria in this study are as follows:

1. Mothers who have babies aged 9-12 months who come to the posyandu in the working area of the North Jayapura Health Center.
2. Willing to be a research respondent.
3. Have a KIA (Maternal and Child Health) or KMS (Card Towards Health) book.

### Exclusion criteria

Exclusion criteria are removing subjects who meet the inclusion criteria for various reasons, such as other conditions or diseases that interfere with measurement, there is a condition that interferes with implementation, ethical barriers and the subject refuses to participate (Hasmi, 2012). The exclusion criteria in this study are as follows:

1. The child has a history of immune deficiency disease, so immunization cannot be given because of contraindications.
2. Mothers who filled out incomplete questionnaires.

**Mothers who are not willing to be respondents**

## RESULTS AND DISCUSSIONS

### Result

#### The Relationship Between Mother's Knowledge of Basic Immunization Completeness

**Table 1.** Distribution of mother's knowledge level relationship to basic immunization in the work area of north Jayapura health center

Knowledge level	Basic Immunization Equipment				Total		p Value
	Complete		Incomplete				
	N	%	N	%	N	%	
Well	39	100.0	0	0.0	39	100.0	0.000
Enough	21	87.5	3	12.5	24	100.0	
Not enough	1	8.3%	11	91.7%	12	100.0	
Total	61		14		75 100%		

Source: Primary Data, 2020

Based on Table 1 shows that the percentage of the relationship between the level of knowledge and basic immunization in respondents who have good knowledge with complete basic immunization is 39 people (100%) while with incomplete basic immunization there is no or 0 people (0.0%). The respondents with sufficient knowledge with complete basic immunization were 21 people (87.5%) while those with incomplete basic immunization were 3 people (12.5%). The respondents with less knowledge with complete basic immunization were 1 person (8.3%) while the respondents with incomplete immunization were 11 people (91.7%).

From the results of the statistical test analysis in table 4.8, it was obtained that p value = 0.000 was smaller than = 0.05. This shows that H0 is rejected and H1 is accepted, which means that there is a relationship between the level of knowledge on basic immunization for infants 9-12 months old at the North Jayapura Public Health Center ( $p < 0.05$ ).

### The Relationship Between Mother's Attitude Towards Completeness of Basic Immunizations

**Table 2 .** Distribution of the relationship of mothers' attitudes to basic immunizations in the work area of the north Jayapura health center

Attitude	Basic Immunization Equipment				Total		p Value
	Complete		Incomplete				
	N	%	N	%	N	%	
Well	59	84.3	11	15.7	70	100.0	0.014
Not enough	2	40.0	3	60.0	5	100.0	
Total	61		14		75	100.0	

Source: Primary Data, 2020

Table 2 shows that the percentage of the relationship between attitudes towards basic immunization in respondents who have a good attitude with complete basic immunization is 59 people (84.3%) while respondents with incomplete basic immunization are 11 people (15.7%). There were 2 respondents (40.0%) with incomplete basic immunization, while respondents with incomplete basic immunization were 3 (60%).

From the results of the statistical test in table 4.9, it is found that p value = 0.014 is smaller than = 0.05. This shows that H0 is rejected and H1 is accepted, which means that there is a relationship between attitudes towards basic immunization for infants 9-12 months old at the North Jayapura Health Center ( $p < 0.05$ ).

### Discussion

#### Relationship of Mother's Knowledge Level to Basic Immunization

Based on the results of the analysis of the relationship between the level of knowledge and basic immunization of 75 respondents, it shows that the percentage of the relationship between the level of knowledge and basic immunization in respondents who have good knowledge with complete basic immunization is 39 people (100%) while with incomplete basic immunization there is no or 0 people. (0.0%). The respondents with sufficient knowledge with complete basic immunization were 21 people (87.5%) while those with incomplete basic immunization were 3 people (12.5%). The respondents with less knowledge with complete basic immunization were 1 person (8.3%) while the respondents with incomplete immunization were 11 people (91.7%).

From the results of bivariate analysis using SPSS, p value = 0.000 is smaller than = 0.05. This shows that H0 is rejected and H1 is accepted, which means that there is a relationship between the level of knowledge on basic immunization for infants 9-12 months old at the North Jayapura Health Center ( $p < 0.05$ ).

Knowledge or *cognitive* is a very important domain in shaping one's actions (Notoatmodjo, 2014). Knowledge is a very important domain in shaping one's behavior. In this study, the respondent's knowledge about immunization is related to the mother's actions in providing complete basic immunization to her child.

The results of this study are in accordance with the research conducted by Bella Rena Safira at the Merdeka Palembang Health Center in 2013 with the chi square test (p value = 0.000) , the research conducted by Nurhidayati at the Pisangan Health Center in Tenggara Selatan City in 2016 with the Chi square test (p value = 0.042) and research conducted by Siti Umaroh at Kartasura Health Center, Sukoharjo Regency in 2014 with the chi square test (p value = 0.039). This study is different from the research conducted by Selina Heraris in 2015 at Pembina Plaju Palembang Health Center with the chi square test (p value = 0.081) and the research conducted by Chahyani Erlita, Elise Putri in 2016 in Pontianak with the chi square test (p value = 2,5064) where there is no relationship between knowledge and completeness of basic immunization.

In this study, it was shown that the better the mother's knowledge about basic immunization, the greater the mother's awareness to provide complete basic immunization to her

child. Knowledge is not always obtained from high education, because knowledge can also be obtained from the mass media, personal experience and the experience of others as well as information from health workers.

Mothers with less knowledge and who do not provide complete basic immunization are caused by factors of low maternal education level, where on average mothers who do not provide complete basic immunization have elementary and junior high school education. The factor of the Covid-19 (Corona) pandemic outbreak in Papua is increasing, so mothers are afraid of their children being immunized for fear of contracting the corona. The distance from the health center to the house is too far, because during the covid-19 pandemic, immunization was carried out at the puskesmas. And the lack of mothers in seeking information about basic immunization.

### **Relationship of Mother's Attitude to Basic Immunization**

Based on the research results of 75 respondents, the percentage of the relationship between attitudes towards basic immunization in respondents who have a good attitude with complete basic immunization is 59 people (84.3%) while respondents with incomplete basic immunization are 11 people (15.7%). There were 2 respondents (40.0%) with incomplete basic immunization, while respondents with incomplete basic immunization were 3 (60%). From the results of bivariate analysis using SPSS,  $p$  value = 0.014 is smaller than  $\alpha = 0.05$ . This shows that  $H_0$  is rejected and  $H_1$  is accepted, which means that there is a relationship between attitudes towards basic immunization for infants 9-12 months old at the North Jayapura Health Center ( $p < 0.05$ ).

Attitudes *are* evaluative statements whether they are pleasant or unpleasant about objects, people or events experienced by someone. In determining this attitude, knowledge, individual ways of thinking, individual beliefs, and one's emotions play an important role in determining attitudes. In this study, mothers who know about basic immunization, have confidence that immunization is good for preventing disease in children, and a good way of thinking will make mothers have a good or positive attitude, so that mothers will always give basic immunizations to their children according to a predetermined schedule. .

The results of this study are in accordance with research conducted by Bella Rena Safira at the Merdeka Health Center in Palembang in 2013 with the chi square test ( $p$  value = 0.011), research conducted by Siti Umaroh at the Kartasura Health Center, Sukoharjo Regency in 2014 with the chi square test ( $p$  value = 0.001). This study is not the same as Eka Fitriani at the Tanjung Seloka Health Center, Kota Baru Regency in 2017 with the chi square test ( $p$  value = 1,000) and the research conducted by Chahyani Erlita, Elise Putri in 2016 in Pontianak with the chi square test ( $p$  value = 5,991) where there is no relationship between attitudes towards the completeness of basic immunization.

This study shows that the better the mother's attitude about basic immunization, the greater the mother's awareness in providing complete basic immunization to her child. Mothers who have a good attitude but provide incomplete basic immunizations are 11 people due to the mother's lack of knowledge about basic immunization, mothers also do not bring their babies with basic immunizations due to the Covid-19 (Corona) pandemic, so mothers are afraid to bring their babies for basic immunizations. Wawan & Dewi, 2010).

## **CONCLUSION**

Based on the results of the research and discussion that have been discussed previously, the conclusions that can be drawn are as follows: 1) The results of the bivariate analysis of the relationship between the mother's level of knowledge on basic immunization obtained a  $p$  value of 0.000 or  $p$  value  $< (0.05)$ , which means there is a relationship between the mother's level of knowledge on basic immunization in infants, and 2) The results of the bivariate analysis of the relationship between mother's attitudes towards basic immunization obtained a  $p$  value of 0.014 or

p value < (0.05), there is a relationship between mother's attitudes towards basic immunization in infants.

Based on the conclusions above, the writer's suggestions are 1) **For Puskesmas**, the puskesmas needs to carry out counseling or coaching activities for mothers who do not provide complete basic immunization for their children, in order to increase mother's knowledge about the importance of complete basic immunization for children, 2) **For the community**, it is hoped that mothers who have babies can increase their attention and can take the time to go immunize their children, because immunization is very important for babies to prevent diseases that can be prevented by giving basic immunizations, 3) **For PSIK Uncen Academics**, research is expected this can be used as a reference source for PSIK Uncen students in conducting further in-depth research in the future about basic immunization in infants, 4) **For researchers**, researchers are expected to be able to know and gain experience in conducting research in the field of nursing, and could apply the knowledge gained during the study period as well as to complete undergraduate education (S1) and obtain a Bachelor of Nursing (S.Kep) at Cenderawasih University. Researchers can be responsible for this research in the future, and 5) **For further researchers**, further researchers are expected to be able to conduct further and more in-depth research on the relationship between mother's knowledge and attitudes towards basic immunization in infants, and researchers can also examine other factors related to completeness of basic immunization with different designs and more research samples.

## References

- Anggreni, D., Susanti, I. Y., & Hety, D. S. (2021). Upaya Peningkatan Status Kesehatan Pada Bayi Di Masa Pandemi Covid-19 Melalui Imunisasi. *Jurnal Pengabdian Masyarakat Kesehatan (ABDIMAKES)*, 1(1), 32-38.
- Chahyani Erlita, Elise Putri. 2016. *Hubungan Pengetahuan dengan Sikap Dalam Pemberiaan Imunisasi Dasar Lengkap Pada Ibu Yang Memiliki Bayi 0-9 Bulan*. Jurnal, Vol 6. No 2. Hal 125-133.
- Fisnanda, F. (2022). Faktor-Faktor Yang Mempengaruhi Minat Ibu Terhadap Kelengkapan Imunisasi Pada Bayi Usia 9-12 Bulan Di Daerah Rawa Bokor Kota Tangerang. *Nusantara Hasana Journal*, 2(2), 155-170.
- Hidayah, N., Sihotang, H. M., & Lestari, W. (2018). Faktor yang berhubungan dengan pemberian imunisasi dasar lengkap pada bayi tahun 2017. *Jurnal Endurance: Kajian Ilmiah Problema Kesehatan*, 3(1), 153-161.
- Karyadi, T. H. (2017). Keberhasilan Pengobatan Terapi Antiretroviral. *Jurnal Penyakit Dalam Indonesia*, 4(1), 1-3.
- Muninggar, I. R. (2021). Hubungan Dukungan Keluarga, Ekonomi Dan Ketersediaan Vaksin Terhadap Kelengkapan Imunisasi Dasar Bayi Usia 9 Bulan Pada Masa Pandemi Covid 19 Di Peraktek Mandiri Bidan Ghislin Depok.
- Notoatmodjo, S. 2014. *Ilmu Perilaku Kesehatan*. Jakarta: Rineka Cipta.
- Nugrawati, N. (2019). Hubungan Pengetahuan Dan Sikap Ibu Terhadap Imunisasi Lengkap Pada Balita. *JKP Jurnal Ilmiah Kesehatan PENCERAH*, 8(01), 59-66.
- Nurhidayati. 2016. "Hubungan Pengetahuan Ibu Tentang Imunisasi Dasar Terhadap Kelengkapan Imunisasi Dasar di Wilayah Kerja Puskesmas Pisangan Kota Tangerang Selatan tahun 2016". Skripsi. Fakultas Kedokteran dan Ilmu Kesehatan, Ilmu Keperawatan, Universitas Islam Negeri Syarif Hidayatullah Jakarta.
- Safira, B. R. (2013). Hubungan Pengetahuan Dan Sikap Ibu Terhadap Kelengkapan Imunisasi Dasar Di Wilayah Puskesmas Merdeka Palembang. *Skripsi Fakultas Kedokteran Universitas Muhammadiyah Palembang*.
- Sari, E. P. (2015). Komparasi Kelengkapan Imunisasi Dasar pada Bayi dengan Ibu yang Bekerja dan Tidak Bekerja. *Adi Husada Nursing Journal*, 1(2), 23-25.
- Statistik, B. P. (2019). Data dan Informasi kemiskinan kabupaten/kota tahun 2018. *Jakarta: Badan Pusat Statistik*.
- Soetjiningsih. 2012. *Perkembangan Anak dan Permasalahan dalam Buku Ajar I Ilmu Perkembangan Anak dan Remaja*. Jakarta: Sagungseto.
- Yeni Arpah, Y. A. (2021). *Hubungan Pengetahuan Dan Sikap Ibu Dengan Kelengkapan Imunisasi Dasar Di UPTD Puskesmas Sukaraya Kecamatan Baturaja Timur Tahun 2021* (Doctoral dissertation, STIK Bina Husada Palembang).
- Wawan, A., & Dewi, M. (2010). Teori dan pengukuran pengetahuan, sikap dan perilaku manusia. *Yogyakarta: Nuha Medika*, 12.