
The Relationship Between Mothers' Level Of Knowledge And The Completion Of The Full Series Of Basic Immunizations (IDL) Among 12-Month-Old Infants In The Service Area Of The Tempurejo Community Health Center

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Abstract

In Indonesia, there are still many babies who have not received complete immunizations or have never been immunized since birth. According to the Central Statistics Agency, the coverage of Complete Basic Immunization in East Java in 2023 reached 62.67%, in Jember 53.90% while at the Tempurejo Health Center 67.8%. Many factors hinder the immunization program, one of which is the lack of knowledge of mothers. Based on a preliminary study, it was found that most mothers brought their babies to the Posyandu just to be weighed. The purpose of the study was to determine the relationship of Mother's Knowledge Level with Complete Basic Immunization Completeness in 12 Months Old Babies. This research is quantitative with an analytical observational design using a cross-sectional approach. Respondents were 39 people selected using purposive sampling techniques and analysis tests using Chi Square. The level of maternal knowledge was less than 41%, sufficient at 28.2%, and good at 30.8%, while basic immunization was incomplete at 53.8% and complete basic immunization at 46.2%. The results of the Chi Square test obtained a p-value of $0.001 < \alpha (0.05)$, meaning there was a relationship between the level of maternal knowledge and the completeness of Complete Basic Immunization with a contingency coefficient value of 0.52 (moderate). The better a mother's knowledge, the higher the likelihood that her baby will receive complete basic immunizations. Midwives are expected to approach and educate mothers of toddlers about the importance of complete basic immunizations for infants, which are carried out routinely and continuously at every integrated health post.

Keywords: 2 Month Old Babies, Complete Basic Immunization, Mother's Knowledge.

INTRODUCTION

In Indonesia, there are still many children who have not received complete immunizations and have never been immunized since birth. This causes them to be susceptible to dangerous diseases due to the absence of immunity to the disease (Muchtar, 2019), If the above situation continues to be left unchecked, it will have an impact on the emergence of Extraordinary Events (KLB) diseases that can be prevented by immunization (Susanti et al., 2024).

Based on data from the Ministry of Health in 2023, the coverage of Complete Basic Immunization in Indonesia reached 95.4%. According to the Central Statistics Agency of East Java Province, the coverage of Complete Basic Immunization in East Java in 2023 will reach 62.67%. Meanwhile, in Jember Regency, the Complete Basic Immunization Coverage in 2023 is 53.90% and data at the Tempurejo Health Center in 2023 the achievement of Complete Basic Immunization is still low, at 67.8%. The Tempurejo Health Center area has 4 villages (Tempurejo Village, Pondokrejo Village, Sidodadi Village, and Curahtakir Village). According to data at the Tempurejo Health Center, the achievement of Complete Basic Immunization in 2023 in Tempurejo Village is 47.2%, Pondokrejo Village is 67.0%, Sidodadi Village is 66.7%, and Curah takir Village is 97.5%. Of the four villages, the lowest in succession followed the achievement of Complete Basic Immunization, namely Tempurejo Village, Pondokrejo Village, Sidodadi Village, and then Curah Takir Village.

Based on the results of a preliminary study that has been conducted on 10 mothers who have a 12-month-old baby at the Posyandu in Tempurejo village in November 2024 using a questionnaire on the level of knowledge about Complete Basic Immunization, the results of 10 mothers were obtained only 3 mothers whose knowledge results were Good (can answer 80-100%), while 3 mothers with sufficient knowledge (can answer 50-70%), and 4 mothers of less knowledge (can answer <

50%). Most mothers in the region only want to take their babies to the Posyandu for weighing, but do not want to be immunized.

Immunization stimulates the baby's immunity so that it can be protected from several dangerous diseases. The immune system in infants and children who do not receive immunizations will not be as strong as children who have been given complete immunizations because their bodies do not recognize the incoming disease virus so it cannot fight it. However, this immunization program has encountered obstacles and most people do not know the importance of immunization. There are many factors that hinder the immunization program, one of which is due to the lack of knowledge of mothers (Rahmawati and Agustin, 2021).

Misconceptions about the contraindications and side effects of immunization are often used as an excuse to cancel the mother's intention in immunizing the child (Saleha, 2020). The rise of fake news (hoax) and misleading information also causes mothers to get incorrect information, including information about side effects or Post-Immunization Adverse Events (AEFIs) such as paralysis, disability, seizures, and death (Susanti et al., 2024).

The solution to overcome the above problems is to provide health counseling continuously through various media and community service advertisements and coordinate with cross-sectors such as Sub-district Heads, Village Heads and Posyandu Cadres (Asniwiyah Asniwiyah, Henry Wiyono and Takesi Arisandy, 2023). One of the efforts that midwives can make to increase maternal knowledge is by conducting counseling or health education about the immunization program through routine activities of classes for mothers under five that are carried out continuously (Primihastuti and Intiyaswati, 2020). In addition, midwives also need to conduct door to door or sweeping to each house so that immunization coverage reaches the specified target accompanied by conducting interesting counseling to parents, especially about basic immunization (Nur Syifa, Suryati and Solikin, 2024).

Based on the description mentioned above, the researcher is interested in conducting a study on "The Relationship between the Level of Maternal Knowledge and Complete Basic Immunization Completeness (IDL) in Infants Aged 12 Months in the Work Area of the Tempurejo Health Center".

RESEARCH METHODS

This study is quantitative with an analytical observational design using a cross-sectional approach. The research was conducted in February 2025 in the Tempurejo Health Center Working Area with a total of 39 respondents selected using purposive sampling techniques.

The research instrument used to assess the level of knowledge of mothers used questionnaire sheets while to assess the completeness of Complete Basic Immunization used checklists and KIA books.

The data analysis method used was the Chi-Square test, performed using SPSS version 30.0. This study has been approved by the Ethics Committee of the Malang Public Health Polytechnic under the Ministry of Health, with approval number No. DP.04.03/F.XXI.30/00138/2025.

RESULTS AND DISCUSSION

Table 1. Characteristics of Respondents (n=39)

Features	f	%
Mother's Age		
≤20 years old	9	23,1%
21-35 years old	24	61,5%
>35 years old	6	15,4%
Mother's Last Education		
SD	8	20,5%
SMP	13	33,3%
SMA	12	30,8%
PT	6	15,4%
Mother's Work		
Not Working	23	59,4%
Work	16	41,0%
Ethnic Culture		
Jawa	14	35,9%
Mature	25	64,1%
Mother's Party		
First courses	15	38,5%
Multi	18	46,1%
Grabdemulti	6	15,4%
Distance from Home to Posyandu		
≤ 1 km	39	100%
2 km	0	0%
≥ 3 km	0	0%
Total	n	n

Based on Table 1. It can be seen that most of the respondent mothers are aged 21-35 years old (61.5%), have a high school education (33.3%), are not employed (59.4%) and are Madurese (64.1%). In addition, it can also be found that most of the respondents are multipara mothers (46.1%) and all respondents (100%) own houses with a distance of ≤ 1 km to Posayndu.

Table 2. Cross-Tabulation of the Relationship between Maternal Knowledge Level and Complete Basic Immunization Completeness (IDL) in Infants Aged 12 Months

Mother's Level of Knowledge	Complete Basic Immunization Kit (IDL)				Total	
	Incomplete		Complete			
	f	%	f	%	f	%
Less	14	35,9%	2	15,15%	16	41,0%
Enough	5	12,8%	6	3,03%	11	28,2%
Good	2	5,1%	10	0%	12	30,8%
Total	21	53,8%	18	46,2%	39	100%
SPSS Results	p-value = 0.001 Value r = 0.52					

Based on Table 2. It can be seen that most of the respondents are mothers who are less knowledgeable (41%), where their incomplete infant immunization (35.9%) is more than that of infants who are fully immunized (5.1%). Mothers who have a good level of knowledge (30.8%), where babies who are fully immunized (30.8%) are more than babies who are incomplete (5.1%).

The results of the *Chi-Square* test obtained a $p\text{-value} = 0.001 < \alpha (0.05)$ which means that there is a relationship between the mother's level of knowledge and the completeness of Complete Basic Immunization (IDL) in 12-month-old infants in the work area of the Tempurejo Health Center in 2025. In addition, the value of the contingency coefficient obtained of 0.52 indicates the strength of the relationship, which is moderate.

Discussion

The research conducted in the Tempurejo Health Center Working Area with 39 respondents found that most of the mother's level of knowledge is lacking (41%). A person's knowledge can be influenced by experiential factors related to the individual's age. A person's increasing age can affect the increase in knowledge he or she acquires (Annisa *et al.*, 2024). In the age range of 21-35 years, a person has emotional maturity so that it can affect the ability to think and make decisions (Rahmawati and Agustin, 2021). This is not in line with this study, which was found by most mothers aged 21–35 years (61.5%) but the level of knowledge is lacking. According to the researchers' assumption, this can happen because even though the mother's age is in the productive period, but she is not equipped with the right experience, motivation, willpower, and information about basic immunization, the mother will not know about the purpose, benefits, and importance of complete basic immunization for her baby.

In addition, a person's knowledge can also be influenced by the level of education. In this study, most of the mother's last education was junior high school (33.3%). According to research conducted by (Izhar, Maestro and Marlina, 2023), it was found that there is a difference between parents who have higher education and those who are poorly educated in understanding health information, including about immunization. Mothers who have higher education also tend to be more active in seeking various information about how to improve the health of their babies, including immunization. According to researchers, mothers with high education will have a developed ability and mindset so that they can influence the knowledge they gain and vice versa.

In this study, it was found that most mothers are not working (59%). Working mothers have many relationships so that mothers can get a lot of information, including about immunization. The more information about the importance of immunization received by mothers, the wider the knowledge they have, and this affects mothers' attitudes and behaviors towards immunization (Nurhidayati, 2020). However, according to research conducted (Izhar, Maestro and Marlina, 2023), it was found that mothers who do not work are more diligent in coming to participate in posyandu activities because they have more free time so that they can increase their knowledge related to their children's immunization through routine activities at posyandu. According to the researcher's assumption, both working mothers and non-working mothers can have the same opportunity to improve their knowledge in obtaining information related to immunization, where working mothers

will interact more often with others so that it is easy to get experience and information from others so that they can increase their knowledge about basic immunizations while non-working mothers can increase information from various social media and Participating in counseling from cadres and health workers everywhere.

In addition to the above, a person's knowledge can also be influenced by the culture in the environment where they live. In this study, it was found that most of the respondent tribes were Madurese (64.1%). According to research conducted by (Beny, 2020), the Madurese tribe has a strong belief system, with significant Islamic influence. Some Madurese people think that immunization is bad because leaders in the village prohibit immunization. This is in line with research conducted by (Wardaya et al., 2024) It is found that some people still believe that the immunization content is doubtful. According to researchers, one of the factors of immunization is incomplete because there are still many myths circulating about immunization that can affect a person's belief in immunization. This causes mothers not to actively participate in immunization activities so that their level of knowledge is less and more trusting in the customs / culture in the living environment.

Based on the results of the study, it was found that most of the completeness of Complete Basic Immunization (IDL) in 12-month-old babies in the Tempurejo Health Center Working Area in 2025 is incomplete (53.8%). The reasons are not knowing the benefits of immunization, fear of side effects from immunization, fear of sick children, sometimes forgetting the immunization schedule and not getting support/permission from the family. There are many factors that can affect a mother's decision to immunize her child, one of which is maternal education. A person's education will also affect a person in decision-making, in highly educated mothers it is easier to accept a new idea than in low-educated mothers so that information can be easily accepted and implemented (Susanti et al., 2024). This is in line with this study that most mothers have a junior high school education (33.3%) and the status of their babies is incomplete. According to the researchers' assumption, mothers with low levels of education will have difficulty accepting the information available so they have little knowledge about basic immunization so they do not know the importance of complete basic immunization.

The completeness of immunization can also be influenced by the mother's work. In this study, it was found that most of the respondents were mothers who did not work (59%). If mothers go to work every day, there will be less time and attention to bring their babies to immunization service sites. However, working mothers can still immunize their children according to schedule by entrusting their babies to other family members or their grandmothers given immunizations according to schedule (Dharmawan, 2022). On the other hand, mothers who are not working have free time to take their babies to health care facilities to be immunized. However, mothers who do not work even though they have a lot of time, not all mothers want to bother if their children have a fever due to being immunized and not all mothers also remember and know the schedule of the IDL routine (Susanti *et al.*, 2024). According to the researchers' assumptions, both working and non-working mothers have the same opportunity to be able to optimize the health of their babies, especially to get complete basic immunizations. A housewife without being equipped with good knowledge about the importance of basic immunization completeness does not rule out the possibility that she prioritizes and is busy doing homework rather than having to come to the posyandu to bring her child immunization.

In addition to the above, maternal parity can also affect the completeness of her child's immunization. In this study, it was found that most of the respondents were multipara mothers with (46.1%). Families with many children cause the mother's attention to be divided. But it does not mean that families with one child can meet the complete immunization needs of their children, many families with one child are also negligent because of their ignorance of immunization, especially for those who have just had their first child (Normalisa, 2019). Research conducted by (Izhar, Maestro and Marlina, 2023) shows that parity affects the completeness of basic immunization in infants, the fewer children, the more complete the immunization the child gets, and vice versa. According to the researchers' assumptions, multipara and grandmultipara mothers in this study tend to have incomplete immunization coverage due to several things such as time and energy limitations. Mothers with many

children have a lot of time and energy pressure to take care of children so they lack focus on immunization.

The completeness of immunization can also be affected by distance and access to health facilities. Based on the results of the study, it was found that all respondents had houses with a distance of ≤ 1 km to the posyandu (100%). Distance is one of the factors that affect the mother's desire to go to health services. The further away health services are, the more reluctant they are to go to health services (Normalisa, 2019). This research is not in line with the theory above. According to the researchers' assumptions, the proximity of their residence to health facilities also does not rule out the possibility that they will get complete immunization because it depends on their parents' intentions, willingness, knowledge, and perceptions of immunization.

From the results of this study, it can be seen that the level of maternal knowledge can affect the completeness of Complete Basic Immunization in infants. This is in line with research conducted by (Dewi *et al.*, 2023) stated that there is a relationship between maternal knowledge of basic immunization and the completeness of infant basic immunization in Midwives Sri Wulandari in 2023 with a p-value = $0.028 < 0.05$.

Based on the results of the research I conducted in the work area of the Tempurejo Health Center, there were 16 mothers who lacked knowledge, of the mothers who lacked knowledge, most of them were 14 mothers who did not provide complete immunization to their children. This is due to the mother's lack of knowledge regarding the benefits and importance of basic immunizations and the fear of side effects from immunization. Meanwhile, 2 mothers who are less knowledgeable, but the basic immunization in their children is complete, this is because the mother gets positive information regarding the benefits of immunization and gets experience and support from the family. Meanwhile, of the 12 mothers who have a good level of knowledge, there are still 2 mothers who do not provide complete basic immunizations to their babies. Of the 2 people, one of the respondents said that they still did not get approval from their families and the customs that were carried out from generation to generation, which affected compliance with immunization. Other respondents said that every immunization schedule their baby always gets sick so they do not routinely take their babies to the posyandu for immunization. In this case, the researcher did not conduct more in-depth research on other factors that can also affect a person's compliance in administering Complete Basic Immunization (IDL).

CONCLUSION

The completeness of basic immunization in toddlers can be influenced by the level of knowledge. Mother's knowledge is one of the factors that makes it easier to change behavior, for example in immunizing her child.

Therefore, midwives or other health workers are expected to approach and educate mothers under five on the importance of complete basic immunization for babies which is carried out regularly and continuously in each posyandu. With this, it is hoped that it can increase mothers' knowledge about the importance of immunization so that babies are protected from diseases that can be prevented by immunization.

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