

## The Relationship between Knowledge and Motivation of Mothers with Immunization Compliance in Toddlers in Lembang Tondon Working Area of The Tondon Health Center, North Toraja, 2022

### *Hubungan Pengetahuan dan Motivasi Ibu dengan Kepatuhan Imunisasi pada Balita di Lembang Tondon Wilayah Kerja Puskesmas Tondon Kabupaten Toraja Utara Tahun 2022*

Chris Manguma<sup>1</sup>, Etty Manguma<sup>2</sup>

<sup>1</sup>Department of Epidemiology, Faculty of Public Health, Universitas Airlangga, Surabaya, 60115, Indonesia

<sup>2</sup>Puskesmas Tondon, Toraja Utara, 91855, Indonesia

#### Article Info

##### \*Correspondence:

Chris Manguma  
[mangumachris@gmail.com](mailto:mangumachris@gmail.com)

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#### ABSTRACT

**Background:** Immunization plays a crucial role in reducing infant mortality and morbidity from vaccine-preventable diseases and should be administered from birth. Immunization is a crucial preventive measure to protect children from various preventable and dangerous diseases. However, preliminary interviews with five mothers in the Tondon Community Health Center area revealed persistent discrepancies in immunization implementation.

**Objectives:** This study aims to examine the relationship between maternal knowledge and motivation and their compliance with immunization schedules for toddlers in Lembang Tondon, within the working area of the Tondon Health Center, North Toraja Regency, in 2022.

**Methods:** A retrospective, cross-sectional design was employed, where data on both independent and dependent variables were collected simultaneously. The study population included all mothers of toddlers in Lembang Tondon, totaling 129, with a sample size of 97 mothers selected for participation. Data collection occurred from August to November 2022 using questionnaires and child health monitoring books. Data analysis was conducted using the Chi-Square test.

**Results:** The findings revealed that most mothers had good knowledge about immunization (60 respondents or 61.9%), high motivation to immunize their children (71 respondents or 65.9%), and complied with immunization guidelines (63 respondents or 64.9%). The p-value for maternal knowledge was 0.002 (<0.05) and for motivation, it was 0.000 (<0.05), indicating statistical significance.

**Conclusion:** The study concludes that there is a significant relationship between maternal knowledge and compliance with toddler immunization, as well as between maternal motivation and immunization compliance, in Lembang Tondon. Although all toddlers in the study had received immunizations, some had not been immunized according to the recommended schedule, indicating a gap in maternal adherence to timely immunization.

**Keywords:** Immunization, Infant Mortality, Knowledge, Motivation, Toddlers

#### ABSTRAK

**Latar Belakang:** Pemberian imunisasi sejak bayi lahir sangat penting untuk mengurangi angka kematian dan kesakitan akibat penyakit yang sebenarnya bisa dicegah. Imunisasi merupakan salah satu upaya preventif yang penting untuk melindungi anak dari berbagai penyakit berbahaya yang dapat dicegah. Namun, hasil wawancara awal dengan lima ibu di wilayah kerja Puskesmas Tondon menunjukkan bahwa masih terdapat ketidaksesuaian dalam pelaksanaan imunisasi.

**Tujuan:** Penelitian ini bertujuan untuk mengidentifikasi hubungan antara pengetahuan dan motivasi ibu dengan kepatuhan imunisasi pada balita di Lembang Tondon wilayah kerja Puskesmas Tondon Kabupaten Toraja Utara Tahun 2022.

**Metode:** Penelitian ini menggunakan penelitian retrospektif dengan desain cross-sectional. Populasi dalam penelitian ini adalah semua ibu yang mempunyai balita di Lembang Tondon berjumlah 129 balita, dan sampel terdiri dari 97 ibu dengan balita. Penelitian ini dilaksanakan pada bulan Agustus hingga November 2022. Instrumen yang digunakan adalah kuesioner dan buku KMS (Kartu Menuju Sehat) balita. Analisis data dilakukan dengan menggunakan uji Chi-Square.

**Hasil penelitian:** Pengetahuan ibu tentang imunisasi mayoritas berada pada kategori baik, yaitu sebanyak 60 responden (61,9%), Motivasi ibu dalam pemberian imunisasi juga mayoritas berada pada kategori tinggi sebanyak 71 responden (65,9%). Sedangkan kepatuhan ibu dalam pemberian imunisasi pada balita mayoritas berada pada kategori patuh sebanyak 63 (64,9%). Variabel pengetahuan dengan nilai p-value 0,002 ( $<0,05$ ) dan pada variabel motivasi nilai p-value 0,000 ( $<0,05$ ).

**Kesimpulan:** Terdapat hubungan antara pengetahuan ibu dengan kepatuhan imunisasi pada balita di Lembang Tondon serta hubungan antara motivasi ibu dengan kepatuhan imunisasi pada balita di wilayah kerja Puskesmas Tondon Kabupaten Toraja Utara Tahun 2022. Meskipun seluruh balita telah diimunisasi, masih ada yang tidak menerima imunisasi sesuai jadwal, yang menunjukkan bahwa kepatuhan ibu dalam memberikan imunisasi masih kurang. Oleh karenanya, disarankan adanya pendidikan kesehatan yang lebih intensif, khususnya di kalangan keluarga, mengingat keluarga memegang peran penting sebagai pengambil keputusan dalam menjaga kesehatan anggotanya, termasuk dalam hal pemberian imunisasi dasar yang lengkap dan tepat waktu kepada anak.

**Kata Kunci:** Balita, Imunisasi, Kematian Bayi, Motivasi, Pengetahuan

## INRODUCTION

Infant and toddler mortality rates are crucial indicators for evaluating public health levels. Therefore, the government must implement synergistic and integrated efforts to reduce infant and toddler mortality in Indonesia. This is being pursued through the Sustainable Development Goals (SDGs) program, with a target of 25 deaths per 1,000 live births by 2030 (Kementerian Kesehatan RI, 2018c). The 2020 Indonesian Demographic and Health Survey (SDKI), the Infant Mortality Rate (IMR) in Indonesia was 21.12% in 2019. This represents a decline from the previous year 2018, when the IMR was 21.86% and from 2017, which saw an IMR of 22.62% (Kementerian Kesehatan RI, 2020).

According to UNICEF, a portion of the 2,400 children who die daily in Indonesia lose their lives to infectious diseases that could have been avoided through immunization. As a form of primary prevention, immunization plays a crucial role in protecting against such diseases. It is estimated that 1.7 million child deaths, or about 5% of Indonesian toddlers, are caused by illnesses that are preventable through vaccines. Immunization aims to build immunity in infants and children against specific diseases by introducing vaccines—substances containing weakened pathogens or their toxins, known as antigens, into the body (Kementerian Kesehatan RI, 2018c).

Complete basic immunization coverage in Indonesia has reached 85%, but this figure still does not meet the target set in the Ministry of Health's Strategic Plan. In 2015, the coverage of complete basic immunization reached 86.54%, in 2016 it reached 91.58%, and in 2017 it reached 91.12% with a strategic plan target of 92% (Kementerian Kesehatan RI, 2018a). In South Sulawesi from 2015 to 2019, the achievement of program indicators has fluctuated. The percentage of children aged 0 to 11 months who received complete basic immunization reached 95.5%, exceeding the target set. However, this achievement has decreased compared to 2018, when it reached 98%. In North Toraja Regency, there are 27.47% of toddlers who have not received complete basic immunization (Dinas Kesehatan Provinsi Sulawesi Selatan, 2020).

The incomplete immunization of infants is primarily attributed to factors related to information, motivation, and situational circumstances. Informational factors include mothers' limited understanding of the necessity, schedule, and completeness of immunizations, as well as fears surrounding immunization and the spread of misinformation within communities. The most significant reasons are the child being ill, the mother's lack of awareness regarding the importance and appropriate timing of immunization, and concerns about potential side effects (Kementerian Kesehatan RI, 2018b).

The results of interviews with five mothers in the Tondon Health Center work area showed that four children did not receive immunization according to the predetermined schedule, while one child received immunization on time. The results of further interviews showed that only 1 out of 5 mothers knew the benefits of immunization. Meanwhile, the reasons other mothers did not provide immunization on time were because of the busyness of the work done by the mother, and the mother thought that immunization was not important and immunization would only cause the child to become sick after immunization. In addition, of the 5 mothers interviewed, 2 of them had low motivation because the distance between their homes and the location of the integrated health post was so far that the schedule for giving their children immunization was delayed, and 3 mothers had high motivation so that the urge from within the mother's heart to give her child immunization was so high, in addition, the distance factor and good transportation made it easier for mothers to take their children to the integrated health post for immunization. Based on the background description, it is deemed necessary to conduct research on "The Relationship between Mother's Knowledge and Motivation and Immunization Compliance in Toddlers in Lembang Tondon, Tondon Health Center Working Area, North Toraja Regency in 2022".

## METHODS

This study is a descriptive analytical study with a retrospective approach, namely, data collection is based on past events or results. The purpose of this study was to determine the relationship between maternal knowledge and motivation with toddler immunization compliance in Lembang Tondon, the Tondon Health Center working area, North Toraja Regency, in 2022. The study sample used purposive sampling, with inclusion criteria: mothers who are willing to be

respondents, mothers who live permanently with their toddlers, mothers who are cooperative and can communicate well verbally, mothers who can read and write, and mothers who have toddlers aged 2-5 years. Exclusion criteria: mothers who are not registered as participants of the integrated health post (posyandu) in Lembang Tondon, mothers whose children do not have a GMC, mothers who were not present at the time of the study, mothers whose children were sick during the immunization schedule, mothers whose children live with their grandparents, mothers whose children live with their uncles/aunts, mothers who do not live permanently, mothers whose children have only been registered 3 billion at the integrated health post. The sample of this study was mothers who have toddlers in Lembang Tondon, the working area of the Tondon Community Health Center, North Toraja Regency, totaling 97 respondents. Data were collected through a questionnaire containing questions related to the research variables and through the toddler GMC (Growth Monitoring Card) book. Bivariate analysis was carried out using the Chi-square statistical test.

## RESULTS AND DISCUSSION

### Knowledge

Based on Table 1, it was found that the majority of mothers with toddlers in Lembang Tondon had good knowledge, with 60 respondents (61.9%), while the smallest group, 37 respondents (38.1%), had poor knowledge. Knowledge refers to an individual's overall ability to think in a focused and effective way. Those with higher levels of knowledge are more capable of absorbing information, suggestions, and advice. In the cognitive domain, knowledge plays a crucial role in shaping a person's actions (overt behavior). This is because behavior that is grounded in knowledge tends to be more enduring than behavior that is not (Notoatmodjo, 2017b).

**Table 1.** Distribution of Respondent Frequency Based on the Level of Knowledge of Mothers in Lembang Tondon, Tondon Health Center Working Area, North Toraja Regency in 2022

Knowlegde of Mother	Frequency (n)	Percentage (%)
Good	60	61.9
Poor	37	38.1
<b>Total</b>	<b>97</b>	<b>100.0</b>

### Motivation of Mother

Based on Table 2 above, it can be seen that the majority of the motivation of mothers who have toddlers in Lembang Tondon is high, as many as 71 respondents (73.2%), and the least is low, as many as 26 respondents (26.8%). Motivation is a number of processes, which are internal or external to an individual. A mother will be willing to come to the

health center to bring her child to be immunized because she has high motivation based on various factors, such as belief. Mothers who have high motivation feel happy with the provision of immunization because they know that the action taken will be able to protect against dangerous diseases that are often experienced by babies (Notoatmodjo, 2015).

**Table 2.** Distribution of Respondent Frequency Based on the Level of Motivation of Mothers in Lembang Tondon, Tondon Health Center Working Area, North Toraja Regency in 2022

Motivation of Mother	Frequency (n)	Percentage (%)
High	71	73.2
Low	26	26.8
<b>Total</b>	<b>97</b>	<b>100.0</b>

**Immunization Compliance**

Based on Table 3 above, it was found that the majority of immunization compliance in toddlers in Lembang Tondon was compliant, with 63 respondents (64.9%), and the fewest were non-

compliant with 34 respondents (35.1%). Parental compliance with immunization is greatly influenced by various factors, including education and knowledge and beliefs about immunization.

**Table 3.** Distribution of Respondent Frequency Based on the Level of Compliance with Immunization in the Lembang Tondon Health Center Work Area, North Toraja Regency in 2022

Immunization Compliance	Frequency (n)	Percentage (%)
Compliant	63	64.9
Non-compliant	34	35.1
<b>Total</b>	<b>97</b>	<b>100.0</b>

**Relationship between knowledge of the mother and immunization compliance in toddlers**

Based on table 4 above regarding the relationship between knowledge of mother and immunization compliance in toddlers in Lembang Tondon, the working area of Tondon Health Center, North Toraja Regency in 2022, it can be explained as follows where 60 respondents (61.9%) have good knowledge of mother, consisting of 46 respondents (47.4%) with compliant immunization compliance in toddlers and 14 respondents (14.4%) with non-compliant immunization compliance in toddlers, and 37 respondents (38.1%) with poor knowledge, consisting of 17 respondents (17.5%) with

compliant immunization compliance in toddlers and 20 respondents (20.6%) with non-compliant immunization compliance in toddlers. The results above, testing using the Chi-square test, shows that the Pearson Chi-Square value produces a p-value of 0.002 ( $p < 0.05$ ). In other words, there is a significant relationship between maternal knowledge and compliance in toddler immunization in Lembang Tondon, the Tondon Health Center work area, North Toraja Regency in 2022. The Odds Ratio value of 3.866 indicates that mothers with good knowledge are 3.8 times more likely to comply with immunization for their toddlers compared to mothers with less knowledge.

**Table 4.** Relationship between knowledge of mother and immunization compliance in toddlers in Lembang Tondon, Tondon Health Center Working Area, North Toraja Regency, 2022

Immunization Compliance								
Knowledge of Mother	Compliant		Non-compliant		Total	p-value	OR	
	N	%	N	%				
Good	46	47.4	14	14.4	60	61.9	0.002	3.866
Poor	17	17.5	20	20.6	37	38.1		

Immunization is a process that aims to form the body's immunity against attacks by microorganisms, such as bacteria or viruses, which can cause infections, before the microorganisms have the chance to infect the body (Sari, Basuki and Triastuti, 2017). Based on table 4 above regarding the relationship between knowledge of the mother and immunization compliance in toddlers in Lembang Tondon, the Tondon Health Center working area, North Toraja Regency in 2022, it can be explained as follows, where good knowledge of mother was 60 respondents (61.9%), consisting of 46 respondents (47.4%) with immunization compliance in toddlers obedient. This is because the 100 levels of good knowledge are due to the fact that most respondents have been able to know about the benefits of immunization in toddlers, so their level

of knowledge is categorized as good.

Good knowledge of mothers plays an important role in immunization compliance in their children, because with knowledge, it can encourage the mother's willingness to comply with giving immunizations to her child according to the schedule determined by health workers (Effendi, 2019). Immunization knowledge encompasses an understanding of its definition, the diseases it can prevent, its benefits, where and when immunizations are provided, as well as the types and number of immunizations required. Adequate knowledge in these areas is expected to positively influence a mother's decision to ensure her child receives complete immunization (Andalia *et al.*, 2018).

The findings of this study align with the theory proposed by (Notoatmodjo, 2017a), which

suggests that individuals with a high level of knowledge are more likely to exhibit positive health-related behaviors, such as ensuring their children receive immunizations. However, the study also identified that 14 respondents (14.4%) who demonstrated good knowledge still did not comply with toddler immunization schedules. This non-compliance appears to be influenced by the mothers' employment status, with many of them working as civil servants, contract workers, or private-sector employees. Although these mothers are aware of the importance of childhood immunization, their professional commitments may affect their ability to follow through, but because of their busy lives, they forget to bring their children to be immunized. Meanwhile, mothers with less knowledge are 37 respondents (38.1%), consisting of 17 respondents (17.5%) with compliant immunization compliance in toddlers. This can happen because it is influenced by the experiences of others. Mothers who are compliant give their children immunizations because they see their neighbors' children who rarely get sick due to being immunized (Azmi, 2018).

Based on the results obtained, the Chi-square test with Pearson Chi-Square produced a p-value of 0.002 ( $p < 0.05$ ), which indicates that the alternative hypothesis ( $H_a$ ) is accepted. This means that there is a significant relationship between the level of maternal knowledge and compliance in providing immunization to toddlers in Lembang Tondon, the Tondon Health Center work area, North Toraja Regency, in 2022. The Odds Ratio value of 3.866 indicates that mothers with good knowledge are 3.8 times more likely to comply with providing immunization to their children. This finding is in line with the results of a study by (Sari, Basuki and Triastuti, 2017) which examined the relationship between maternal knowledge about basic immunization and compliance with toddler immunization in the Tawanga Health Center area, Konawe Regency. The study, which involved 37 respondents, also found a significant relationship with a p-value of 0.016 ( $p < 0.05$ ) (Sari, Basuki and Triastuti, 2017).

Low levels of maternal knowledge can increase the likelihood of non-compliance in

providing complete basic immunization to their babies. Conversely, mothers with good knowledge tend to be more compliant in carrying out immunization. This compliance can be influenced by the experiences of others, for example, mothers become compliant because they see their neighbor's children rarely get sick after receiving immunization (Lestari, Muharyani and Hikayati, 2020). According to the researcher's assumption, the better the mother's knowledge about immunization, the greater the level of mother's compliance in providing immunization to her child. Adequate knowledge is expected to shape the mother's mindset so that she is able to take appropriate action by providing immunization according to the established schedule (Hasanah, 2020).

#### Relationship between the motivation of mothers and immunization compliance in toddlers

Based on table 5 above regarding the relationship between motivation of mother and immunization compliance in toddlers in Lembang Tondon, the working area of Tondon Health Center, North Toraja Regency in 2022, it can be explained as follows where 71 respondents (73.2%) have high maternal motivation, consisting of 55 respondents (56.7%) with compliant immunization compliance in toddlers and 16 respondents (16.5%) with non-compliant immunization compliance in toddlers, and 26 respondents (26.8%) with low motivation, consisting of 8 respondents (8.2%) with compliant immunization compliance in toddlers and 18 respondents (26.8%) with non-compliant immunization compliance in toddlers. The results above, the Chi-square test was conducted, and the findings showed a Pearson Chi-Square p-value of 0.000 ( $p < 0.05$ ). This means there is a significant relationship between maternal motivation and immunization compliance among toddlers in Lembang Tondon, within the service area of the Tondon Health Center, North Toraja Regency, in 2022. The Odds Ratio (OR) obtained was 7.734, suggesting that mothers with high motivation are 7.7 times more likely to ensure their toddlers comply with immunization schedules in that region.

**Table 5.** Relationship between the motivation of mothers and immunization compliance in toddlers in Lembang Tondon, Tondon Health Center Working Area, North Toraja Regency, 2022

London, London Health Center Working Area, North Toraja Regency, 2022								
Motivation of Mother	Immunization Compliance				Total		p-value	OR
	Compliant		Non-compliant					
	n	%	N	%	N	%		
High	55	56.7	16	16.5	71	73.2	0.000	7.734
Low	8	8.2	18	18.6	26	26.8		

Based on table 5 above regarding the relationship between motivation of mother and immunization compliance in toddlers in Lembang Tondon, the Tondon Health Center working area, North Toraja Regency in 2022, it can be explained

as follows where the high motivation of mothers was 71 respondents (73.2%) consisting of 55 respondents (56.7%) with immunization compliance in toddlers obedient. A mother will be willing to come to the posyandu to bring her child to be immunized

because she has high motivation based on various factors, such as belief. Mothers who have high motivation feel happy with the provision of immunization because they know that the actions given will be able to protect against dangerous diseases that are often experienced by babies (Mardianti and Farida, 2020). The feeling of happiness and security when the child has been immunized encourages the mother to complete the basic immunizations that must be received by the baby. With high motivation, it will automatically affect the mother's compliance in providing immunizations to her child. In addition, there were 16 respondents (16.5%) with non-compliant immunization compliance in toddlers, but had high motivation.

Interview results with respondents revealed that mothers' non-compliance in immunizing their children was influenced by the limited number of personnel available among immunization service providers, so it took a long time, which could make mothers wait too long to get their turn. The limited service time at the integrated health post, in addition to having many visitors, the health center also provided immunization services together with other maternal and child health services, so that health workers were required to be able to implement the child immunization card program simultaneously and not focus on just one program. Health worker services can affect complete basic immunization in infants. Health workers who provide good health services can make mothers feel satisfied, so that they can influence mothers to come to health service places in terms of immunizing their children completely (Mardianti and Farida, 2020).

In this study, there were also mothers with less motivation, as many as 26 respondents (26.8%), consisting of 8 respondents (8.2%) with compliant immunization compliance in toddlers. This is influenced by family support, immunization compliance, because family support can encourage mothers to be more compliant in providing immunizations to their children. Statistically, it is known that the number of mothers who receive family support in providing basic immunizations is still relatively low. Family support can be the first effort in increasing maternal compliance in providing basic immunizations because if the family supports the provision of immunizations, it can increase the coverage rate of basic immunizations in infants. This is due to the family's fundamental responsibility in safeguarding the health of each of its members, so if the decision maker in the family does not allow the baby to be immunized, other family members will obey the orders of the decision maker in the family (Ariani, P, A, 2017).

The findings of this study are reinforced by the statement put forward by (Winardi, 2017), who stated that the closest person to the mother is the family, so if the family does not care about the

provision of immunization, it is possible that the mother may not proceed with immunizing her baby due to a lack of support from the family. It is also known that there are still 18 respondents (26.8%) with non-compliant immunization compliance in toddlers. This happens because in a small number of mothers there is still less knowledge, and motivation towards immunization is also lacking, so mothers who have low motivation tend not to immunize their children (Noveriani, 2019). According to the findings of this study, the underlying reason mothers are not motivated to take their children to immunization service locations is because of rumors heard by mothers about immunization such as immunization is not important, and mothers are worried about the side effects of immunization such as fever after immunization, this is what leads to a lack of motivation among mothers to continue bringing their children for immunization (Triana V, 2015).

Based on the results above, a Chi-square test was conducted, and the Pearson Chi-Square value yielded a p-value of 0.000 ( $p < 0.05$ ), indicating that the alternative hypothesis ( $H_a$ ) is accepted. This signifies a significant relationship between maternal motivation and immunization compliance among toddlers in Lembang Tondon, within the Tondon Health Center's service area, North Toraja Regency, in 2022. The Odds Ratio obtained was 7.734, indicating that mothers with high motivation are 7.7 times more likely to ensure their toddlers receive immunizations in that area and time period. The findings of this study are consistent with research by (Lestari, Muharyani and Hikayati, 2020) which examined the determinants of maternal compliance in administering basic immunizations to infants in Kelurahan 14 Ulu Palembang, involving 66 mothers. The study revealed a significant correlation between maternal motivation and compliance with basic immunization, with a p-value of 0.038.

## CONCLUSION

Based on the findings and analysis, it can be concluded that the majority of mothers possess a good level of knowledge regarding immunization, with 60 respondents (61.9%) falling into this category. In terms of motivation, most mothers demonstrated a high level of motivation to immunize their children, totaling 71 individuals (73.2%). Additionally, 63 mothers (64.9%) were categorized as compliant in administering immunizations to their children. Furthermore, the study revealed a significant association between mothers' knowledge and immunization compliance for toddlers in Lembang Tondon, under the jurisdiction of the Tondon Health Center, North Toraja Regency, in 2022, as indicated by a p-value of 0.002 ( $p < 0.05$ ). A similarly significant link was found between maternal motivation and compliance, with a p-value of 0.000 ( $p < 0.05$ ).

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## Conflict of Interest and Funding Disclosure

There isn't any.

## Author Contributions

CM: conceptualization, investigation, methodology, formal analysis, resources, writing-original draft; EM: investigation, supervision, resources, validation.

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