Journal Getsempena Health Science Journal
Volume 4, Number 2, 2025 pp. 168-180
P-ISSN: - E-ISSN: 2964-4402
Open Access: https://ejournal.bbg.ac.id/ghsj

FACTORS INFLUENCING INFANT IMMUNIZATION IN FIRDAUS VILLAGE, SEI RAMPAH DISTRICT

Nanin Juliana[1]*, Lindawati[2]
[1,2]*Department of Program Studi Sarjana Keperawatan, Universitas Nagoya Indonesia,Batam*
[2,3]*Sekolah Tinggi Ilmu Kesehatan Columbia Asia, Indonesia*

* Corresponding Author: *naninjulianasiregar85@gmail.com*

ARTICLE INFO

Article history:
Received : Apr 29, 2025
Revised : Jun 01, 2025
Accepted : Jul 10, 2025
Available online : Jul 30, 2025

Kata Kunci:
ASI eksklusif, berat badan bayi, pertumbuhan

Keywords:
baby weight, exclusive breastfeeding, growth.

ABSTRAK

Immunization is a way to actively increase a person's immunity to an antigen, so that later he or she will not be exposed to a similar antigen (Hardinegoro, 2018). The role of parents in promotive health efforts for those aged 0-11 months is very important, especially in fulfilling the completeness of basic immunization, so that the baby can be free from Diseases that Can Be Prevented by Immunization One of the programs that has been proven effective in reducing morbidity and mortality. The purpose of this study was to determine the Factors Affecting Incomplete Immunization of Infants in Firdaus Village, Si Rampah District. The population of this study were mothers who had babies aged 9-12 months who lived in Firdaus Village, Si Rampah District. This study was descriptive analytical to determine "Factors Affecting Incomplete Immunization of Infants in Firdaus Village, Si Rampah District in 2022", with a cross-sectional design (cross-sectional), where independent and dependent variables were collected simultaneously. The relationship between mother's attitude towards Incomplete immunization in infants was obtained in this study. The results of the Chi-Square test (X2) were 9.458 with a CI of 95% and 0.05 where P (0.002) (0.05). 5. The realtionship between family support and Incomplete immunization in infants was obtained in this study. The results of the Chi-Square test (X2) were 5.102 with a CI of 95% and 0.05 where P (0.024) (0.05).

INTRODUCTION

According to WHO, approximately 1.5 million children die each year from diseases that can be prevented through immunization. In 2022, it was reported that more than 20 million children did not receive complete immunization, and some did not receive any immunization at all (Ikramah Pohan et al., 2023).

Immunization is a method to enhance an individual's immunity by actively introducing antigens so that later they are not affected by similar antigens that cause disease (Dewi, 2013). The role of parents in promoting health, especially for children aged 0–11 months, is crucial, particularly in fulfilling the completeness of basic immunizations.

This is because these efforts can prevent the occurrence of diseases that can be prevented through immunization (PD3I). One of the most effective efforts to reduce the morbidity and mortality caused by PD3I is immunization (Kemenkes RI, 2022).

Health development, as part of national development governed under the National Health System, is directed toward achieving an optimal and productive health status as a form of general welfare, as stated in the preamble of the 1945 Constitution and Law No. 36 of 2009 concerning health. To achieve an optimal degree of health for all residents, health services must be comprehensive and integrated, including personal health services, family health services, and community health services (Kemenkes RI, 2022).

The complete basic immunizations provided to infants aged 0–9 months include 3 doses of Hepatitis B, 1 dose of BCG, 4 doses of Polio, 3 doses of DPT, and 1 dose of Measles. Measles immunization is the final immunization given to infants and is used as an indicator of achieving complete basic immunization (Dewi, 2013). However, this program still faces significant challenges, especially rejection from parents. The refusal of parents to allow their children to be immunized is often caused by misinformation, lack of awareness, and the development of community myths related to immunization (Karina & Warsito, 2012).

Every year, hundreds of mothers, children, and adults around the world die from diseases that are actually still preventable. This happens mostly because of a lack of information about how important immunization is. Newborn babies, young school-age children, and adults are at high risk of getting serious infectious diseases like Diphtheria, Tetanus, Hepatitis B, Influenza, Typhoid, Meningitis, Pneumonia, and many other deadly diseases that can appear at any time. One of the best and most important ways to protect babies, children, and adults from these diseases is by getting immunized (Widaningsih, 2022).

In North Sumatra Province in 2021, there were 22,436 babies, and the number of babies who received complete immunization changed from month to month. In January, 1,220 babies (5.4%) received complete immunization; in February, 2,770 babies (12.3%); in March, 4,694 babies (20.9%); in April, 6,379 babies (28.4%); in May, 7,934 babies (35.4%); in June, 9,545 babies (42.5%); in July, 10,967 babies (48.9%); in August, 12,659 babies (56.4%); in September, 14,196 babies (63.3%); in October, 15,799 babies (70.4%); in November, 17,526 babies (78.1%); and in December, 19,507 babies (86.9%) (North Sumatra Health Office, 2020). This shows that there are still babies who have not received complete immunization, and some haven't received any immunization at all.

This is different from what happened in district areas. In North Aceh District, which had 6,637 babies, the rate of complete immunization each month was even lower. In January, 341 babies (5.1%) were fully immunized; in February, 779 babies (11.7%); in March, 1,493 babies (22.5%); in April, 2,007 babies (30.2%); in May, 2,408 babies (36.3%); in June, 2,926 babies (44.1%); in July, 3,437 babies (51.8%); in August, 3,922 babies (59.1%); in September, 4,324 babies (65.2%); in October, 4,941 babies (74.4%); in November, 5,393 babies (81.3%); and in December, 5,807 babies (87.5%) (North Aceh Health Office, 2023). Meanwhile, in Firdaus Village, Si Rampah Subdistrict, in 2022 there were 23 babies (49.8%) who received immunization, which means that in places like Padang Sakti Village, Muara Satu Subdistrict, the coverage is still not optimal.

Immunization efforts in Indonesia started in 1956. This is one of the most cost-effective health efforts, because immunization has proven successful for example, smallpox has been eliminated, and Indonesia has been declared free from smallpox since 1974. In 1977, the immunization program was expanded into the Expanded Program on Immunization (PD3I), which aims to prevent diseases that can be avoided with vaccines, such as diphtheria, tuberculosis, tetanus, polio, measles, hepatitis B, and pneumonia (Muksin et al., 2024).

Healthy Indonesia 2025 is one of the targets of various programs listed in the Millennium Development Goals (MDGs). One of these programs is to reduce the under five mortality rate by two-thirds. To support this goal, two key indicators have been set: the under five mortality rate and measles immunization coverage by the age of one. The measles immunization coverage for one-year-old children continues to increase each year in an effort to reach the MDG''s target of 90% by 2025 (Dewi, 2013).

There are many factors that contribute to incomplete immunization in infants. Several studies have found that a mother's beliefs and health behaviors play a major role in the success of basic immunization programs. These health behaviors are a response shown by the mother to stimuli, either from outside or within herself, and can be influenced by several factors. One of the influencing aspects is predisposing factors, which include knowledge, education, attitude, and community beliefs (Notoatmodjo S., 2010).

Another factor that affects the completeness of basic immunization in infants is family support. A study by Dewi (2021) found a significant relationship between husband/family support and BCG immunization, with a p-value of 0.000. The study showed that mothers who did not receive support from their husbands or families were

29.6 times more likely not to immunize their babies with BCG compared to those who received support.

Efforts to improve health through preventive actions and the involvement of healthcare workers are very important in the implementation of immunization. However, the expected coverage will not run smoothly without active participation and support from the community. Providing basic immunization to children not only protects them individually but also has a much wider impact by preventing the spread of disease within the community. Therefore, the roles of parents, family, and the surrounding environment are crucial in the success of immunization.

Based on the data above, it can be seen that some areas have already reached the 2025 immunization target, while others have not yet met the goal. From preliminary interviews conducted by the researcher with Posyandu cadres, it was found that many mothers no longer brought their children back for further immunization. This was often because their children experienced high fever after previous immunizations even though Posyandu health workers had already explained the possible side effects. Still, this became a source of trauma for the mothers. In addition, the cadres also reported that some mothers lacked knowledge, and others had no understanding at all about immunization. There were also cases where mothers came to Posyandu just to weigh or measure their child's height, without proceeding to immunize them. This was discovered when a mother returned with her third child. Moreover, some children were not immunized due to restrictions from their husbands.

Based on this background, it is clear that several important factors contribute to the low immunization coverage among infants. While some areas are on track to meet the 2025 target, others are still falling behind. Therefore, the researcher is interested in conducting a study titled: "Factors Influencing Incomplete Infant Immunization in Firdaus Village, Si Rampah Subdistrict, in 2022."

RESEARCH METHODS

This study is a Descriptive-Analytic research aimed at identifying the "Factors Influencing Incomplete Infant Immunization In Firdaus Village, Sei Rampah Subdistrict", using a cross-sectional design, in which the independent and dependent variables are collected simultaneously.

The participants were mothers who had infants aged 9–12 months and lived in Firdaus Village, Sei Rampah Subdistrict. In this study, Total Sampling was used as the

sampling technique, where the sample size is equal to the population size (Sugiyono,2014, Statistics for Research, Bandung: Alfabeta). The reason for using total sampling is based on Sugiyono's (2014) explanation, which states that if the population is less than 100, the entire population should be used as the research sample.

The sample in this study consisted of mothers with infants aged 9–12 months who reside in Firdaus Village, Sei Rampah Subdistrict.

RESULTS AND DISCUSSION

Table 1. Frequency Distribution of Incomplete Immunization in Infants in Firdaus Village, Sei Rampah Subdistrict

Immunization status	Frequency	%
Complete	29	46
Incomplete	34	54
Total	63	100

Based on Table 1, it can be seen that out of 63 respondents from Firdaus Village, Sei Rampah Subdistrict, 29 infants (46%) received complete immunization and 34 infants (54%) did not receive complete immunization. %

Table 2. Frequency Distribution of Mothers' Knowledge About Immunization in Firdaus Village, Sei Rampah Subdistrict

Mother Knowledge Level	Frequency	%
Good	18	28,6
Fair	21	33,3
Poor	24	38,1
Total	63	100

Based on Table 2, it is known that out of 63 respondents from Firdaus Village, Sei Rampah Subdistrict, 18 mothers (28.6%) had good knowledge, 21 mothers (33.3%) had fair knowledge, and 24 mothers (38.1%) had poor knowledge regarding incomplete immunization in infants.

Table 3. Frequency Distribution of Mother's Occupation in Firdaus Village, Sei Rampah Subdistrict

Mother's Occupation	Frequency	%
Working	34	54
Not working	29	46
Total	63	100

Table 3 shows that out of 63 respondents in Firdaus, 34 mothers (53.9%) were working, while 29 mothers (46.1%) were not working.

Table 4. Frequency Distribution of Mother's Attitude in Firdaus Village, Sei Rampah Subdistrict

Mother's Attitude	Frequency	%
Positive	27	42,8
Negative	36	57,2
Total	63	100

Table 4 shows that out of 63 respondents in Firdaus Village, 27 mothers (42.8%) had a positive attitude, while 36 mothers (57.2%) had a negative attitude regarding the incompleteness of immunization in infants.

Table 5. Frequency Distribution of Family Support in Firdaus Village, Sei Rampah Subdistrict

Family Support	Frequency	%
Good	24	38
Poor	39	62
Total	63	100

Table 5 shows that out of 63 respondents in Firdaus Village, 24 respondents (38%) received good family support, while 39 respondents (62%) received poor family support in relation to the incompleteness of immunization in infants.

Table 6. Frequency Distribution of the Relationship Between Mother's Knowledge and Incomplete Immunization in Firdaus Village, Sei Rampah

Mother's Knowledge	Incomplete Immunization						Total	X^2 (value)
	Complete		Incomplete					
	F	%	F	%	F	%		
Good	11	61.1	7	38,9	18	100	0,03	
Fair	12	57,1	9	42,9	21	100		
Poor	8	33,3	16	66,7	24	100		

Table 6 shows that out of 63 mothers, 18 respondents (28.6%) had good knowledge and their babies received complete immunizations. Among them, 11 people (61.1%) had complete immunization, and 7 people (38.9%) did not. Meanwhile, 21 respondents (33.3%) had fair knowledge, with 12 people (57.1%) having complete immunization and 9 people (42.9%) not completing it. Finally, 24 respondents (38.1%) had poor knowledge, with only 8 babies (33.3%) receiving complete immunization and 16 (66.7%) not completing it.The Chi-Square (χ^2) test shows a significant relationship between the mother's knowledge and incomplete immunization in infants (p-value = 0.03 < α).

Table 7. Frequency Distribution of the Relationship Between Mother's Occupation and Incomplete Immunization in Firdaus Village, Sei Rampah Subdistrict

Mother's Occupation	Incomplete Immunization						Total	X² (value)
	Complete		Incomplete					
	F	%	F	%	F	%		
Working	18	61.1	16	47,2	34	100	0,03	
Not working	11	57,1	8	62,1	19	100		

Table 7 shows that out of 63 respondents, 34 mothers (53.9%) were working. Among them, 18 babies (52.9%) received complete immunization, and 16 (47.1%) did not. Meanwhile, 29 non-working mothers (46.1%) had 11 babies (37.9%) with complete immunization and 18 (62.1%) with incomplete immunization. The Chi-Square (χ^2) test shows a significant relationship between the mother's occupation and incomplete immunization in infants (p-value = 0.002 < α).

Table 8. Frequency Distribution of the Relationship Between Mother's Attitude and Incomplete Immunization in Firdaus Village, Sei Rampah Subdistrict

Mother's Attitude	Incomplete Immunization						Total	X² (value)
	Complete		Incomplete					
	F	%	F	%	F	%		
Positive	18	66,7	9	33,3	27	100	0,02	
Negative	11	30,5	25	69,5	36	100		

Table 8 shows that out of 63 respondents, 27 (42.8%) had a positive attitude toward immunization. Among them, 18 babies (66.7%) received complete immunization, and 9 (33.3%) did not. In contrast, 36 mothers (57.2%) had a negative attitude, with only 11 babies (30.5%) receiving complete immunization and 25 (69.5%) not.The Chi-Square (χ^2) test shows a significant relationship between the mother's attitude and incomplete immunization in infants (p-value = 0.002 < α).

Table 9. Frequency Distribution of the Relationship Between Family Support and Incomplete Immunization in Firdaus Village, Sei Rampah Subdistrict

Family Support	Incomplete Immunization						Total	X² (value)
	Complete		Incomplete					
	F	%	F	%	F	%		
Good	18	75	6	25	24	100	0,02	
Poor	14	35,9	25	64,1	39	100		

Table 9 shows that of 63 respondents, 24 (38%) had good family support for immunization. Among them, 18 babies (75%) received complete immunization, and 6 (25%) did not. Meanwhile, 39 respondents (62%) had poor family support, with 14 babies (35.9%) receiving complete immunization and 25 (64.1%) not completing it. The Chi-

Square (χ^2) test shows a significant relationship between family support and incomplete immunization in infants (p-value = 0.024 < α).

Discuccions

The Relationship Between Maternal Knowledge and Incomplete Immunization in Infants

Out of 63 mothers who participated as respondents, 18 mothers (28.6%) were found to have good knowledge and had completed their babies' immunizations, with 11 of them (61.1%) having fully immunized their babies, while 7 mothers (38.9%) had not fully immunized their babies. Meanwhile, 21 respondents (33.3%) had adequate knowledge and had completed their babies' immunizations, with 12 mothers (57.1%) having fully immunized their babies, while 9 mothers (42.9%) had not. Furthermore, 24 respondents (38.1%) had poor knowledge and had fully immunized their babies, totaling 8 mothers (33.3%), while the remaining 16 mothers (66.7%) had not.

The study by Islam et al. (2022) showed a relationship between the level of knowledge, information, and behavior, and the implementation of basic immunizations in infants. To increase immunization coverage in infants, it is recommended that training be provided for health workers on how to motivate mothers to be willing to immunize their babies, as well as increasing health education for mothers and families about basic immunizations.

The chi-square (X^2) test for proportion difference conducted by Islam et al. (2022) also demonstrated a relationship between knowledge and the implementation of basic immunization in infants, with a P-value = 0.130 > α.

In line with this, the statement by Dillyana & Nurmala (2019) explains that the low implementation of basic immunization is due to the lack of knowledge among mothers, especially regarding the benefits of immunization and concerns about its side effects. Increasing the knowledge of mothers can encourage them to immunize their babies and actively seek information from Puskesmas (Community Health Centers) or health workers regarding the benefits and importance of basic immunizations.

The results of the chi-square (X^2) test by Dillyana & Nurmala (2019) also showed a significant relationship between maternal knowledge and the implementation of basic immunization in infants (P-value = 0.04 < α).

The researchers assume that maternal knowledge significantly influences their decision to provide basic immunization for their infants. This is evidenced by several

respondents with good knowledge having successfully completed their babies' immunizations.

The Relationship Between Maternal Occupation and Incomplete Immunization in Infants

This study shows that out of 63 respondents, 34 respondents (53.9%) were employed and had infants with complete immunization, while 18 (52.9%) had complete immunization and 16 (47.1%) had incomplete immunization. Meanwhile, 29 respondents (46.1%) were unemployed, of whom 11 (37.9%) had infants with complete immunization and 18 (62.1%) had infants with incomplete immunization. The results of the chi-square (X^2) proportion difference test showed a significant relationship between maternal employment and incomplete immunization in infants (P-value = 0.002 < α).

A study by Anto (2017) stated that several working mothers in Karangrejo Village actually complied with immunization schedules for their infants. This is because working mothers are more frequently exposed to information about the importance of immunization through both conventional and social media. The chi-square (X^2) proportion difference test by Anto (2017) also showed a significant relationship between maternal employment and immunization practices (P-value = 0.003 < α).

Furthermore, research conducted by Kasmiati (2019) on factors influencing the administration of basic immunization in infants showed that basic immunization is influenced by maternal knowledge, occupation, and sociocultural factors. The proportion difference test using chi-square (X^2) by Rasmaliah (2015) revealed a significant relationship between maternal attitudes and the implementation of basic immunization in infants (P-value = 0.04 < α).

The Relationship Between Maternal Attitudes and Incomplete Immunization in Infants

This study shows that out of 63 respondents, 27 respondents (42.8%) had a positive attitude toward infant immunization. Among them, 18 (66.7%) infants received complete immunizations, while 9 (33.3%) did not. On the other hand, 36 respondents (57.2%) had a negative attitude toward infant immunization, with only 11 (30.5%) infants receiving complete immunizations and 25 (69.5%) not receiving complete immunizations.

The difference in proportions tested using the Chi-Square (X^2) test indicated a significant relationship between maternal attitudes and incomplete immunization in infants (P-value = 0.002 < α).

The study conducted by Dewi (2013) stated that several mothers in Godog Village had specific perceptions regarding basic immunization for children, including its definition, purpose, benefits, types, and the origin of vaccine ingredients. The study found that the mothers lacked understanding of the purpose and benefits of immunization. According to them, diseases did not necessarily need to be prevented through immunization. Some mothers rejected immunization due to concerns about the halal status of the vaccine ingredients, as they refused to accept what they believed to be non-halal substances. Based on these findings, it can be concluded that the mothers viewed immunization negatively, perceiving it as an unsafe health program for their children due to the questionable halal status of the vaccines. The difference in proportions tested using the Chi-Square (X^2) test (Dewi, 2013) also showed a significant relationship between maternal attitudes and immunization practices in infants (P-value = 0.003 < α).

Based on the research conducted by Rasmaliah (2018) on the factors influencing the provision of basic immunization in infants, the study showed that basic immunization was influenced by maternal knowledge, maternal attitude, and sociocultural factors. The difference in proportions tested using the Chi-Square (X^2) test (Rasmaliah, 2018) indicated a significant relationship between maternal attitude and the implementation of basic immunization in infants (P-value = 0.03 < α).

From these findings, it can be concluded that there is a tendency for maternal attitudes to be associated with incomplete immunization in infants. This is evident from the percentage of 18 respondents (66.7%), which indicates that the more positive the mother's attitude toward immunization, the higher the completeness of immunization in infants. Conversely, the more negative the attitude, the more likely the infant's immunization will be incomplete.

The Relationship between Family Support and Incomplete Immunization in Infants

This study involved 63 respondents. Among them, 24 respondents (38%) were assessed as having good family support regarding infant immunization, with 18 infants (75%) receiving complete immunization and 6 infants (25%) receiving incomplete immunization. On the other hand, 39 respondents (62%) were assessed as having poor family support, with 14 infants (35.9%) receiving complete immunization and 25 infants

(64.1%) receiving incomplete immunization. The results of the chi-square (X^2) test for proportion difference showed a significant relationship between family support and incomplete immunization in infants (P-value = 0.024 < α).

This finding is in line with the study conducted by Effendi (2018), which demonstrated a relationship between family support and maternal compliance with infant immunization in the working area of Dalam Pagar Public Health Center. The study indicated that higher compliance in immunization was more commonly found in mothers who received strong family support. Conversely, when there was no family support, mothers tended to be non-compliant in carrying out immunization, suggesting that family support plays a crucial role in influencing maternal behavior. The study concluded that family support is a key factor in fostering compliance in mothers, as support can generate, guide, and maintain positive behaviors regarding infant immunization. The results of the chi-square (X^2) test conducted by Effendi (2018) showed a significant relationship between family support and maternal compliance in immunization practices (P-value = 0.022 < α).

Another study by Hayati and Marianthi (2010) identified several factors related to the coverage of basic immunization in infants in Kaju Village, Baitussalam Subdistrict, Aceh Besar. Among 52 mothers with children aged 1 year, bivariate analysis showed a relationship between immunization coverage and both maternal motivation and family support. The results of the chi-square (X^2) test by Hayati and Marianthi (2010) also indicated a significant relationship between immunization coverage and maternal motivation and family support (P-value = 0.025 < α).

Based on the aforementioned findings, it can be assumed that there is a tendency for family support to be associated with immunization completeness in infants. The greater the level of family support, the higher the rate of complete immunization; conversely, the lower the support, the lower the rate of immunization completeness.

The researcher's assumption regarding the implementation of the Toxoid immunization in Padang Sakti Village, Muara Satu Subdistrict, revealed that although some mothers received family support, there were still 6 infants (25%) who did not receive complete immunization. This was due to the mothers' lack of proactiveness in seeking health services for their infants, particularly in ensuring the completion of basic immunizations.

CONCLUSION AND SUGGESTIONS

This study was conducted on respondents in Firdaus Village, Sei Rampah Subdistrict, where 29 infants (46%) had received immunizations. The results showed a relationship between maternal knowledge and incomplete immunization in infants. The Chi-square test (X^2) = 11.735 with a 95% Confidence Interval (CI) and α = 0.05, where P (0.03) < α (0.05), indicated a significant relationship.

There was also a relationship between the mother's employment status and incomplete immunization in infants. The Chi-square test (X^2) revealed a significant relationship between working mothers and incomplete immunization in infants (P-value = 0.002 < α). Furthermore, a relationship was found between the mother's attitude and incomplete immunization in infants. The Chi-square test (X^2) = 9.458 with CI = 95% and α = 0.05, where P (0.002) < α (0.05), showed a significant association.

Lastly, a significant relationship was also found between family support and incomplete immunization in infants. The Chi-square test (X^2) = 5.102 with CI = 95% and α = 0.05, where P (0.024) < α (0.05), confirmed this association.

DAFTAR PUSTAKA

Ali, M.2008. *Psikologi Remaja.* Jakarta: Bumi Aksara.

Ayubi, D. (2020). Kontribusi Pengetahuan Ibu Terhadap Status Imunisasi Anak Di Tujuh Provinsi Di Indonesia. *Publikasi Penelitian Terapan Dan Kebijakan*, *3*(1). https://doi.org/https://doi.org/10.46774/pptk.v3i1.162

Depkes RI. (2017). Profil *Kesehatan Indonesia 2020*. Jakarta.

Dewi, A. P., Darwin, E., & Edison, E. (2014). Hubungan Tingkat Pengetahuan Ibu dengan Pemberian Imunisasi Dasar Lengkap pada Bayi di Kelurahan Parupuk Tabing Wilayah Kerja Puskesmas Lubuk Buaya Kota Padang Tahun 2013. *Jurnal Kesehatan Andalas*, *3*(2). https://doi.org/10.25077/jka.v3i2.43

Dony Setiawan Hendyca Putra, d. (2019). *Keperawatan Anak & Tumbuh Kembang*. Yogyakarta: Nuha Medika.

Dony, S., & Hendyca, P. (2019). *Keperawatan Anak & Tumbuih Kembang*. Yogyakarta: Nuha Medika.

Dwiastuti, P., & Prayitno, N. (2013). Faktor-Faktor Yang Berhubungan Dengan Pemberian Imunisasi BCG Di Wilayah Puskesmas UPT Cimanggis Kota Depok Tahun 2012. *Jurnal Ilmiah Kesehatan*, *5*(1), 36-46.

Fida, & Maya. (2018). *Pengantar Ilmu Kesehatan Anak*. Yogyakarta: Medika.

Fitriyanti, I. (2018). *Analisis Faktor-Faktor yang BerHubungan dengan Imunisasi Dasar Lengkap pada Balita di Desa Botubarani KecamatanKabila Bone Kabupaten Bone Bolango.* Dalam Skripsi (hal. 10-11). Gorontalo: FIKK UNG.

Harmasdiyani, R. (2015). The Influence of Mother's Characteristics Toward Basic Complete Immunization Non-Compliance for Children Under-Two-Years. *Jurnal Berkala Epidemiologi*, *3*(3), 304–314. https://doi.org/10.20473/jbe.V3I32015.304-314

Hassan, DR.Rusepono. 2015. *Ilmu* Kesehatan Anak. Jakarta: Medika

Hastono. 2017. Analisa Data Kesehatan. Jakarta: FKM UI.

Heaton, P. M. (2020). The Covid-19 vaccine-development multiverse. *New England Journal of Medicine*, *383*(20), 1986-1988. DOI: 10.1056/NEJMe2025111

Khomariah, I. N., Suryoputro, A., & Arso, S. P. (2018). Analisis Pelaksanaan Program Imunisasi Dasar Lengkap (IDL) Pada Bayi Di Puskesmas Kota Semarang (Studi Kasus pada Puskesmas Kedungmundu dan Puskesmas Candilama). *Jurnal Kesehatan Masyarakat, 6*(5), 86 - 94. https://doi.org/10.14710/jkm.v6i5.21981

Nurhasanah, I. (2021). Pelayanan Imunisasi Di Masa Pandemi Covid-19: Literatur Review. *Jurnal Ilmu Keperawatan dan Kebidanan*, *12*(1), 104-108. https://doi.org/10.26751/jikk.v12i1.899

Rahmawati, A. I., & Wahjuni, C. U. (2014). Factors Affecting Completeness Basic Immunization Village District of North Krembangan. *Jurnal Berkala Epidemiologi*, *2*(1), 59–70. https://doi.org/10.20473/jbe.V2I12014.59-70