

FACTORS OF BASIC IMMUNIZATION COMPLETENESS IN 12-MONTH-OLD INFANTS IN BANDAR SETIA VILLAGE IN 2022

Lamtiar Simamora¹, Imarina Tarigan², Christine Dwi Ochtaviani Panjaitan³

Elestra Natalia Butar Butar⁴, Grace Adelia Putri⁵

^{1,2,3,4,5}Sekolah Tinggi Ilmu Kesehatan Mitra Husada Medan

Email : 2119201906@mitrahusada.ac.id, imarinarigan@mitrahusada.ac.id
2319201009@mitrahusada.ac.id, 2319201016@mitrahusadaaa.ac.id, 2319201024@mitrahusada.ac.id

ABSTRACT

Background: Complete basic immunization in infants is an important indicator in improving child health and preventing diseases that can be prevented through immunization. Immunization plays an important role in reducing morbidity and mortality among infants. However, complete basic immunization coverage has not reached the expected target in several areas. This condition indicates that factors affecting immunization completeness still exist, including maternal knowledge about the importance, benefits, and schedule of immunization. Therefore, it is important to identify factors related to complete basic immunization. **Objective:** This study aims to analyze the relationship between maternal knowledge level and completeness of basic immunization in 12-month-old infants in Bandar Setia Village in 2022. **Methods:** This study used an analytical design with a cross-sectional approach. The population consisted of primipara mothers who had babies aged ≥ 10 –36 months, with a total of 50 respondents. The sampling technique used was total sampling. Data were collected through questionnaires to measure maternal knowledge and immunization cards/KMS to assess infant immunization completeness. Data analysis was performed using univariate and bivariate analysis with the Chi-Square test at a 95% confidence level ($\alpha = 0.05$). **Results:** The results showed that most respondents had sufficient knowledge, with 47 people (52.8%), followed by good knowledge with 33 people (37.1%), and poor knowledge with 9 people (10.1%). A total of 34.8% of infants had complete basic immunization, while 65.2% had incomplete immunization. The Chi-Square test showed a significant relationship between maternal knowledge level and immunization completeness ($p = 0.009$). **Conclusion:** Maternal knowledge is significantly related to complete basic immunization in infants. Improving knowledge through education and counseling can increase immunization coverage. Health workers are expected to provide information through posyandu activities, counseling, and educational media.

Keywords: Infant; Factors; Immunization; Completeness; Knowledge

INTRODUCTION

Immunization is one of the health interventions that has been proven to be effective in preventing various infectious diseases, disabilities, and deaths in infants and children. A complete basic immunization program is organized to provide protection against a number of diseases, such as tuberculosis, hepatitis B, diphtheria, pertussis, tetanus, poliomyelitis, and measles. According to the World Health Organization (WHO), immunization is able to prevent millions of deaths each year caused by diseases that can actually be prevented through vaccination. The success of the immunization program does not only depend on the availability of health facilities and services, but is also influenced by the level of knowledge and attitude of mothers. Adequate knowledge about the benefits, schedules, and importance of immunization can increase mothers' understanding and awareness to complete their children's immunizations according to the provisions. In addition, a positive attitude towards immunization will encourage mothers to be more disciplined and obedient in following the immunization schedule that has been set (Puspitasari dan Darmayanti, 2023).

Based on Lawrence Green's theory, knowledge and attitudes are predisposing factors that can affect a person's health behavior. In the implementation of immunization, these two factors have an important role in shaping the mother's decision regarding the provision of complete basic immunization to her baby. The results of a study conducted by Sarah May Vauli Rambe and Omega DR in 2025 show that there is a meaningful relationship between the level of maternal knowledge about basic immunization and compliance in immunizing infants. Mothers who have a good level of knowledge tend to be more obedient in completing their children's immunizations according to the recommended schedule (Setiawan dan Wijayanto, 2022; Mamahit, Mandagi dan Kolibu, 2025).

Another study conducted by Sundariningsih Cecen and Dhini Wahyuni Novitasari in 2025 also found that maternal attitudes have a significant relationship with basic immunization completeness in toddlers aged 12–24 months. A positive attitude towards immunization contributes to increasing maternal compliance to meet the complete immunization schedule of children (Zai dan Sinaga, 2024; Zaigham *dkk.*, 2026).

Based on this description, the researcher is interested in examining the relationship between maternal knowledge and attitudes and the completeness of basic immunization in infants in Bandar Setia Village, Percut Sei Tuan District, Deli Serdang Regency. The results of this study are expected to provide information and input for health workers in an effort to improve education and health promotion regarding the importance of complete basic immunization for infants.

METHODS

This study uses a quantitative method with an analytical design and a cross-sectional approach. This design aims to identify the relationship between independent variables and dependent variables that are measured at the same time. The cross-sectional approach was chosen because the study focused on analyzing the relationship between maternal knowledge level and basic immunization completeness in 12-month-old infants without providing treatment or intervention to respondents (Wang dan Cheng, 2020).

This research was carried out in Bandar Setia Village, Percut Sei Tuan District, Deli Serdang Regency in 2022. The selection of the research location was based on the results of data obtained from local health care facilities which showed that there are still babies who have not received complete basic immunization in accordance with the national immunization program. This condition is the basis for the researcher's consideration to conduct research in the region to examine factors related to the completeness of basic immunization in infants (Getnet *dkk.*, 2025)

The population of this study consists of all mothers who have 12-month-old babies and live in Bandar Setia Village, with a total of 89 people. The sampling method used is total sampling, which is a technique that makes all members of the population as research respondents. The use of this technique is carried out so that the data obtained can more fully and accurately describe the relationship between the mother's level of knowledge and the completeness of basic immunization in infants (Subhaktiyasa, 2024)

The instruments used in this study were questionnaires and observation sheets. The questionnaire was used to measure the mother's level of knowledge about basic immunization in infants. The questions contained in the questionnaire include an understanding of the definition, purpose, benefits, types of basic immunization, immunization schedule, and the impact that can arise if the baby does not receive complete basic immunization. The questionnaire was prepared based on relevant theories and literature related to the basic immunization program in infants. Furthermore, the results of measuring the level of knowledge of mothers were classified into three categories, namely good, sufficient, and poor knowledge according to the scores obtained by the respondents (Surbakti, 2022).

In addition to using questionnaires, this study also uses observation sheets as a tool to assess the completeness of basic immunization in infants. Data on immunization status was obtained through checking the Maternal and Child Health Book (KIA), immunization cards, and other health documents owned by respondents. Infants are declared to have complete basic immunization if they have received all types of basic immunizations in accordance with the provisions of the national immunization program. In contrast, infants who have not received one or more types of basic immunization are categorized as infants with incomplete basic immunization status (Mastiur Julianti B, Tambunan dan Siringo-Ringo, 2025; World Health Organization, 2025).

RESULTS

This study was conducted on 89 mothers who had 12-month-old babies in Bandar Setia Village, Percut Sei Tuan District, Deli Serdang Regency in 2022. Data analysis was carried out through univariate analysis to describe the distribution of the characteristics of each research variable. Furthermore, bivariate analysis using the Chi-Square test was used to identify the relationship between the mother's level of knowledge and the status of basic immunization completeness in the infant.

The level of knowledge of mothers about basic immunization was assessed using questionnaires that covered various aspects, such as the definition of immunization, the purpose and benefits of immunization, types of basic immunizations, the schedule for immunization, and the risks that may arise if the baby does not receive immunization according to the set

schedule. The results of the data analysis showed that the majority of respondents had a level of knowledge that was in the category of sufficient (Noor Baihaqi *dkk.*, 2024)

Tabel 1. Frequency Distribution of Mothers' Knowledge Levels of Basic Immunization in Infants in Bandar Setia Village in 2022

Knowledge Level	Frequency (f)	Presentase (%)
Good	33	37,1
Enough	47	52,8
Less	9	10,1
Total	89	100

Based on Table 1, it is known that the majority of respondents have a level of knowledge in the sufficient category, which is 47 people (52.8%). Meanwhile, respondents with a good level of knowledge amounted to 33 people (37.1%), and respondents with a lack level of knowledge were 9 people (10.1%).

The findings suggest that most mothers already have knowledge of basic immunizations, although the level of understanding is still not fully optimal. This can be seen from the number of respondents who are in the category of sufficient knowledge which is more than the category of good knowledge. The category of knowledge is enough to illustrate that the mother has understood the basic concepts related to immunization, but has not thoroughly mastered important aspects such as the immunization schedule, the benefits of each type of vaccine, and the possible impact if immunization is not given completely.

The large proportion of mothers who have a sufficient level of knowledge shows that information about basic immunization has been obtained by the public through various sources, including health workers, posyandu activities, mass media and social media, as well as personal experience. However, this information has not been fully understood in depth, so more intensive, directed, and continuous health education efforts are needed to improve maternal understanding of basic immunization.

In addition, there are still respondents with a low level of knowledge indicating that some mothers still experience limitations in obtaining information or have not fully understood the educational materials provided related to basic immunization. This situation has the potential to affect maternal behavior in meeting the health needs of children, especially in ensuring that basic immunization is carried out completely and appropriately according to the set schedule.

Tabel 2. Distribution of Frequency of Basic Immunization Completeness in Infants in Bandar Setia Village in 2022

Basic immunization completeness	Frequency (f)	Presentase (%)
Complete	31	34,8
Incomplete	58	65,2
Total	89	100

Based on Table 2, it is known that out of a total of 89 babies who were respondents to the study, as many as 31 babies (34.8%) have received complete basic immunization in accordance with the provisions of the national immunization program. On the other hand, as many as 58 babies (65.2%) were recorded as having not received complete basic immunization.

The results of this study show that the number of babies who have not received complete basic immunization is still greater than babies who have received complete basic immunization. The findings indicate that basic immunization coverage in the study area is still not at an optimal level. The large proportion of babies with incomplete basic immunization status can be influenced by various factors that play a role in mother's decision to bring her child to get immunized. These factors include low understanding of the benefits of immunization, lack of knowledge about immunization schedules, parental busyness, barriers in accessing health care facilities, and concerns about possible side effects after vaccination.

In addition, the results of this study also show that there is still a difference between the targets set in the national immunization program and the actual conditions found in the field. If this situation continues, the risk of various diseases that can actually be prevented through immunization will increase and can have an impact on children's health conditions in the future. Therefore, more optimal efforts are needed to improve health promotion, provide education to the public, and strengthen immunization services at first-level health facilities. These steps are important to increase complete basic immunization coverage so that it can achieve the target set by the government.

3. The Relationship between Mother's Level of Knowledge and Completeness of Basic Immunization in Infants in Bandar Setia Village in 2022

Knowledge Level	Imunnisasi Lengkap n (%)	Incomplete Immunization n (%)	Total	p-value
Good	20(60,6)	13(39,4)	33	
Enough	10(21,3)	37(78,7)	47	
Less	1(11,1)	8(88,9)	9	
Total	31	58	89	0,009

Based on Table 3, it is known that of the 33 respondents who had a good level of knowledge, as many as 20 respondents (60.6%) had babies with complete basic immunization status, while 13 respondents (39.4%) had babies with incomplete basic immunization status. Among respondents with sufficient level of knowledge, as many as 10 respondents (21.3%) had babies with complete basic immunization, while 37 respondents (78.7%) had babies with incomplete basic immunization. As for the lack of knowledge group, only 1 respondent (11.1%) had a baby with complete basic immunization and 8 respondents (88.9%) had a baby with incomplete basic immunization.

These results show a tendency that the higher the mother's level of knowledge, the greater the chance of the baby getting complete basic immunization. Conversely, the lower the mother's level of knowledge, the higher the proportion of babies with incomplete basic immunization status.

This difference is evident in each category of knowledge. Most mothers who have good knowledge have completed their baby's basic immunization, while in the group of sufficient and insufficient knowledge, the majority of babies have not received complete basic

immunization. This indicates that the mother's knowledge plays a role in the completeness of basic immunization in the baby.

The results of the Chi-Square test showed a p-value of 0.009, which is smaller than the significance level of 0.05 ($p < 0.05$). Thus, it can be concluded that there is a significant relationship between level of knowledge of mothers with the completeness of basic immunization in 12-month-old babies in Bandar Setia Village in 2022.

These findings show that maternal knowledge is one of the factors that affect the success of basic immunization. Mothers who have good knowledge tend to better understand the benefits of immunization, know the schedule for administering vaccines, and realize the importance of completing immunizations according to the child's age. In contrast, mothers with low knowledge tend to have less understanding of the benefits of immunization and the risk of diseases that can be prevented through immunization, resulting in lower adherence to immunization schedules.

Overall, the results of this study confirm that increasing maternal knowledge about basic immunization is very important in efforts to increase complete basic immunization coverage in infants. With better knowledge, it is hoped that mothers' compliance with the immunization schedule will also increase so that the goals of the immunization program can be achieved optimally.

DISCUSSIONS

The results of the study showed a meaningful relationship between the level of maternal knowledge and the completeness of basic immunization in 12-month-old infants in Bandar Setia Village in 2022, with a p-value of 0.009 ($p < 0.05$). These findings indicate that the level of maternal knowledge is one of the factors that play a role in the completeness of basic immunization in babies. Mothers who have good knowledge generally better understand the benefits of immunization, the schedule of vaccine administration, and the risk of diseases that can be prevented through immunization. This understanding encourages mothers to be more obedient in bringing their children to health service facilities to get immunizations according to a predetermined schedule.

In this study, it was found that as many as 60.6% of mothers who had a good level of knowledge had given complete basic immunizations to their babies. In contrast, in the group of mothers with a low level of knowledge, the majority of infants (88.9%) had incomplete basic immunization status. These results show a tendency that the higher the mother's level of knowledge, the more likely the baby is to obtain complete basic immunizations. Good knowledge helps mothers understand that immunization is one of the effective preventive measures to protect babies from various infectious diseases that can be prevented through immunization. With this understanding, mothers will be more motivated to ensure that children receive basic immunizations completely and according to the schedule that has been set.

The results of this study are in line with the research conducted by Carla Wongkar and Rosyidah Alfitri in 2025 which found a significant relationship between maternal knowledge about basic immunization and the completeness of basic immunization in infants in the working area of the Tenga Health Center. The study showed that mothers who had a good level of knowledge tended to have more children with complete basic immunization status than mothers with low levels of knowledge (Purba *dkk.*, 2023)

This research is also supported by research conducted by Frischa Frischa, Ratna Dewi Silalahi, and Angga Putri which shows a significant relationship between maternal knowledge and basic immunization completeness with a value of $p = 0.030$. The results of the study concluded that low maternal knowledge about the importance of immunization is one of the main factors contributing to incomplete immunization in infants and toddlers (Dewi *dkk.*, 2024)

The results of this study are also in line with the research conducted by Royani Chairiyah and Widanarti Setyaningsih who found that maternal knowledge is significantly related to the completeness of basic immunization in children ($p = 0.044$). The study explained that mothers who have a good level of knowledge tend to better understand the benefits of immunization and have a positive perception of the immunization program, so they are more obedient in ensuring that their children receive complete basic (Williams, Akande dan Abbas, 2024)

According to the theory put forward by Lawrence Green, knowledge is one of the predisposing factors that plays a role in influencing the formation of a person's health behavior. A good level of knowledge can increase an individual's awareness and belief in the importance of taking a health measure. In the context of immunization, mothers who have an understanding of the benefits of vaccines, immunization schedules, and the risk of diseases that can be prevented through immunization tend to be more motivated to make optimal use of immunization services. On the other hand, lack of knowledge can cause mothers to ignore immunization schedules or not immunize their children due to a misunderstanding of vaccine safety and benefits (Saleh dan Chedid, 2025)

In addition, research conducted by Lelin Julita Putri, Greiny Arisani, and Nurul Fauziah shows that maternal knowledge is one of the main factors that affect the completeness of basic immunization in infants. The study explained that increasing maternal knowledge through health education activities can make a positive contribution to increasing complete basic immunization coverage, because mothers have become more aware of the importance of immunization in protecting children from various diseases that can be prevented by vaccination (Oyo-Ita *dkk.*, 2023)

The findings of this study are also in line with the results of research conducted by Nina Herlina and her colleagues which show that maternal knowledge and attitudes have an influence on basic immunization coverage. The study explained that mothers with a good level of knowledge tend to have a more positive attitude towards immunization, so they are more obedient and consistent in following the immunization schedule that has been set for their children (Rista *dkk.*, 2025)

Based on the results of this study and supported by various previous studies, it can be concluded that maternal knowledge is one of the important factors that play a role in the successful

implementation of the basic immunization program. The higher the mother's level of knowledge about basic immunizations, the greater the baby's chances of obtaining complete basic immunizations. Therefore, efforts to increase maternal knowledge need to continue to be carried out through various educational activities, such as health counseling, individual counseling, classes for mothers under five, posyandu activities, and the use of various health information media. These efforts are carried out continuously and are expected to increase Mother's understanding and awareness of the importance of complete basic immunization, so that immunization coverage can continue to increase and the risk of diseases that can be prevented through immunization can be reduced.

CONCLUSIONS

Based on the results of a study conducted on 89 mothers who had a 12-month-old baby in Bandar Setia Village, Percut Sei Tuan District, Deli Serdang Regency in 2022, it can be concluded that most of the respondents have a level of knowledge about basic immunization in the sufficient category, which is as many as 47 people (52.8%). Furthermore, as many as 33 respondents (37.1%) had a good level of knowledge, while 9 respondents (10.1%) were included in the category of lack of knowledge.

The study also showed that the majority of infants have not received complete basic immunizations. Of the 89 infants studied, 58 infants (65.2%) had incomplete basic immunization status, while 31 infants (34.8%) had received complete basic immunization in accordance with the provisions of the National Immunization Program.

The results of bivariate analysis using the Chi-Square test obtained a p-value of 0.009 ($p < 0.05$), which shows a significant relationship between the level of maternal knowledge and the completeness of basic immunization in 12-month-old infants in Bandar Setia Village in 2022. Mothers who have a good level of knowledge tend to have more babies with complete basic immunization status than mothers who have a sufficient or insufficient level of knowledge.

The findings of this study indicate that maternal knowledge is one of the important factors that affect the success of the implementation of basic immunization in infants. The better the mother's understanding of the benefits, goals, schedule, and importance of basic immunization, the greater the chance for the baby to obtain complete basic immunization according to the recommended schedule. Conversely, low maternal knowledge levels can be one of the obstacles in achieving complete basic immunization coverage (Nurhayati *dkk.*, 2021)

Thus, the research hypothesis that states that there is a relationship between the level of maternal knowledge and the completeness of basic immunization in infants is acceptable. The results of this study further strengthen the evidence that increasing maternal knowledge is an effective strategy in increasing the coverage of complete basic immunization and supporting efforts to prevent various diseases that can be prevented through immunization.

SUGGESTIONS

1. For Health Workers

Health workers, especially midwives, nurses, immunization officers, and posyandu cadres, are expected to be able to further optimize health promotion activities related to basic immunization through counseling, counseling, group education, and the use of various health information media that are easy to understand by the public. The educational materials provided

should include the benefits of immunization, immunization schedule, normal post-immunization reactions, and risks that can occur if children do not receive complete basic immunizations.

2. For Health Centers and Health Institutions

Puskesmas and related health agencies are expected to increase immunization coverage through monitoring and tracing of infants who have not received complete immunization, conducting home *visits*, and strengthening collaboration with health cadres and community leaders. In addition, periodic evaluation of the achievements of the immunization program needs to be carried out to ensure that all babies receive optimal immunization services.

3. For Mother and Family

Mothers and families are expected to be more active in seeking accurate information about basic immunizations through health workers and trusted sources of information. In addition, parents need to pay more attention to their child's immunization schedule and take advantage of available health service facilities so that babies get complete basic immunizations according to the recommended age and schedule.

4. For Educational Institutions

Health education institutions are expected to use the results of this research as a reference in the development of science, especially in the fields of maternal and child health, public health, and health promotion. The results of this research can also be used as learning material for students to understand various factors that affect the success of the immunization program.

5. For the Next Researcher

Further research is recommended to involve a larger sample count and a wider research area so that the results obtained have a better degree of generalization. In addition, future research can explore other factors related to the completeness of basic immunization, such as maternal attitudes, education levels, employment, family support, socioeconomic conditions, access to health services, quality of health worker services, and the influence of health information media on immunization compliance.

6. Research Implications

The results of this study show that improving maternal knowledge needs to be one of the main focuses in efforts to increase complete basic immunization coverage. The implementation of a sustainable and community-based education program can be an effective strategy to increase parents' understanding and awareness of the importance of basic immunization. With this increased knowledge and awareness, it is hoped that the coverage of complete basic immunization can continue to increase so that the number of illnesses, disabilities, and deaths due to diseases that can be prevented through immunization can be further suppressed.

ACKNOWLEDGEMENT

The author expresses his gratitude to all parties who have provided assistance, support, and contributions in the implementation of this research. The greatest appreciation was given to Mrs. Imarina, S.ST., M.Kes as a supervisor who had provided direction, advice, and guidance during the research process until the preparation of this article.

Gratitude was also addressed to Bandar Setia Village, Percut Sei Tuan District, Deli Serdang Regency, health workers, health cadres, and all respondents who have participated and supported the implementation of this research. In addition, the author expressed his appreciation to STIKes Mitra Husada Medan for the academic support provided during the research process.

Hopefully all forms of assistance, support, and contributions that have been given will be given in a proper reply. The author hopes that the results of this research can provide benefits for pengembangan ilmu pengetahuan serta berkontribusi dalam upaya peningkatan kualitas pelayanan kesehatan masyarakat.

REFERENCES

- Dewi, A.R. *dkk.* (2024) "Hubungan Pengetahuan Ibu, Karakteristik Ibu, Dukungan Keluarga, dan Persepsi Ibu terhadap Kelengkapan Imunisasi Dasar," *Antigen: Jurnal Kesehatan Masyarakat dan Ilmu Gizi*, 2(2), hlm. 110–123. Tersedia pada: <https://doi.org/10.57213/antigen.v2i2.262>.
- Getnet, M. *dkk.* (2025) "Incomplete basic vaccination and associated factors among children aged 12-23 months in resource-limited countries: a spatial and multilevel regression analysis of recent DHS data from 48 countries," *Frontiers in Public Health*, 13, hlm. 1463303. Tersedia pada: <https://doi.org/10.3389/fpubh.2025.1463303>.
- Mamahit, F.S., Mandagi, C.K.F. dan Kolibu, F.K. (2025) "Hubungan Pengetahuan Ibu tentang Imunisasi Dasar dengan Kelengkapan Imunisasi Dasar Balita di Wilayah Kerja Puskesmas Modinding," *Jurnal Kesehatan Tambusai*, 6(2), hlm. 4629–4636. Tersedia pada: <https://doi.org/10.31004/jkt.v6i2.43870>.
- Mastiur Julianti B, Tambunan, I.Y. dan Siringo-Ringo, E. (2025) "Faktor-Faktor yang Mempengaruhi Kelengkapan Imunisasi Dasar pada Bayi di Desa Ujung Labuhan Kecamatan Namorambe Kabupaten Deli Serdang Tahun 2025," *Jurnal Pengabdian Masyarakat dan Riset Pendidikan*, 4(1), hlm. 2840–2850. Tersedia pada: <https://doi.org/10.31004/jerkin.v4i1.1700>.
- Noor Baihaqi, R.A. *dkk.* (2024) "Hubungan Pengetahuan Ibu tentang Imunisasi Dasar terhadap Kelengkapan Imunisasi Dasar Anak," *Jurnal Farmasi Komunitas*, 11(2), hlm. 163–169. Tersedia pada: <https://doi.org/10.20473/jfk.v11i2.52741>.
- Nurhayati, T. *dkk.* (2021) "Hubungan Pengetahuan dan Sikap Ibu dengan Pemberian MP-ASI pada Bayi di Puskesmas Melati Kecamatan Perbaungan Kabupaten Serdang Bedagai Tahun 2021," *Excellent Midwifery Journal*, 4(2), hlm. 118–127.
- Oyo-Ita, A. *dkk.* (2023) "Interventions for improving coverage of childhood immunisation in low- and middle-income countries," *Cochrane Database of Systematic Reviews*, 2023(12), hlm. CD008145. Tersedia pada: <https://doi.org/10.1002/14651858.CD008145.pub4>.
- Purba, E.M. *dkk.* (2023) "Hubungan Pengetahuan Ibu Post Partum dengan Pemberian Kolostrum pada Bayi Baru Lahir di Wilayah Kerja Puskesmas Sambirejo Kabupaten Langkat Tahun 2022," *Excellent Midwifery Journal*, 6(1), hlm. 1–9.
- Puspitasari, B. dan Darmayanti, R. (2023) "Hubungan Pengetahuan dengan Sikap Ibu dalam Pemberian Imunisasi Dasar pada Bayi Usia 0-12 Bulan di Posyandu Tirtomulyo Desa Joho Kecamatan Wates Kabupaten Kediri," *Jurnal Penelitian Kebidanan & Kespro*, 6(1), hlm. 126–132. Tersedia pada: <https://doi.org/10.36656/jpk2r.v6i1.1567>.

- Rista, H. dkk. (2025) "Peran Petugas Kesehatan dalam Pemberian Imunisasi Measles Rubella pada Anak di Wilayah Kerja Puskesmas Kebayakan Kabupaten Aceh Tengah Provinsi Aceh Tahun 2023," *Excellent Midwifery Journal*, 8(1), hlm. 413–420.
- Saleh, S. dan Chedid, P. (2025) "Knowledge, attitude and practice toward childhood immunization among mothers in Lebanon," *PLOS One*, 20(5), hlm. e0322205. Tersedia pada: <https://doi.org/10.1371/journal.pone.0322205>.
- Setiawan, M.S. dan Wijayanto, A.W. (2022) "Determinants of immunization status of children under two years old in Sumatera, Indonesia: A multilevel analysis of the 2020 Indonesia National Socio-Economic Survey," *Vaccine*, 40(12), hlm. 1821–1828. Tersedia pada: <https://doi.org/10.1016/j.vaccine.2022.02.010>.
- Subhaktiyasa, P.G. (2024) "Menentukan Populasi dan Sampel: Pendekatan Metodologi Penelitian Kuantitatif dan Kualitatif," *Jurnal Ilmiah Profesi Pendidikan*, 9(4), hlm. 2721–2731. Tersedia pada: <https://doi.org/10.29303/jipp.v9i4.2657>.
- Surbakti, I. (2022) "Faktor-Faktor yang Mempengaruhi Kelengkapan Imunisasi Lanjutan pada Anak Bawah Tiga Tahun di Posyandu Mawar Kecamatan Medang Deras Kabupaten Batubara Tahun 2021," *Excellent Midwifery Journal*, 5(1), hlm. 65–76.
- Wang, X. dan Cheng, Z. (2020) "Cross-Sectional Studies: Strengths, Weaknesses, and Recommendations," *Chest*, 158(1), hlm. S65–S71. Tersedia pada: <https://doi.org/10.1016/j.chest.2020.03.012>.
- Williams, S.V., Akande, T. dan Abbas, K. (2024) "Systematic review of social determinants of childhood immunisation in low- and middle-income countries and equity impact analysis of childhood vaccination coverage in Nigeria," *PLOS ONE*, 19(3), hlm. e0297326. Tersedia pada: <https://doi.org/10.1371/journal.pone.0297326>.
- World Health Organization (2025) *Consolidated guidelines for the prevention, diagnosis and treatment of postpartum haemorrhage*. Geneva: World Health Organization. Tersedia pada: <https://www.who.int/publications/i/item/9789240115637>.
- Zai, K. dan Sinaga, E. (2024) "Hubungan Pengetahuan dan Sikap Ibu dengan Kelengkapan Imunisasi Dasar di Desa Suka Raya Kecamatan Pancur Batu Tahun 2024," *OBAT: Jurnal Riset Ilmu Farmasi dan Kesehatan*, 2(6), hlm. 233–243. Tersedia pada: <https://doi.org/10.61132/obat.v2i6.844>.
- Zaigham, M. dkk. (2026) "Active labour management and multiprofessional teamwork are cornerstones in preventing postpartum haemorrhage: EBCOG commentary on 'The new World Health Organization's (WHO) postpartum haemorrhage (PPH) guideline 2025,'" *European Journal of Obstetrics & Gynecology and Reproductive Biology*, 316, hlm. 114798. Tersedia pada: <https://doi.org/10.1016/j.ejogrb.2025.114798>.