

## Case Report: Parental Refusal of Immunization in a 12-Month-Old Infant as a Midwifery Case Report on Knowledge Factors

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### ABSTRACT

**Introduction:** Routine childhood immunization is an essential public-health intervention for preventing vaccine-preventable diseases. Despite high reported immunization coverage in Magetan Regency in 2025, delayed or incomplete vaccination can still occur when parents have limited knowledge, safety concerns, or conflicting family information. **Objective:** To describe midwifery care for a 12-month-old infant whose routine immunization was incomplete because of parental knowledge-related hesitancy. **Methods:** A descriptive case report was conducted at a private midwifery practice in Magetan, East Java, from 2 to 21 February 2026. The case was managed using the SOAP framework. Data were collected through maternal interviews, review of the child's immunization record, physical examination, growth and developmental assessment, observation of parental responses, and four follow-up visits. Counseling used therapeutic communication and a leaflet covering immunization benefits, vaccine-preventable diseases, routine schedules, and common adverse events following immunization (AEFI). **Results:** The 12-month-old male infant had received only a birth dose of hepatitis B vaccine, with no subsequent routine immunizations documented. At the first visit, the mother reported limited knowledge and fear of adverse effects and was influenced by information from neighbors and social media. The infant had mild cough and coryza but was otherwise clinically well, with normal growth and development. Across four visits, maternal understanding improved after structured counseling and leaflet-based education. By the final visit, the mother could explain the benefits of immunization and expressed willingness to vaccinate her child, but implementation had not yet occurred because the decision still required discussion with her husband. **Conclusion:** Individualized counseling, empathetic communication, and accessible written information improved maternal knowledge and vaccine acceptance in this case. Family involvement and continued follow-up are important when parental decision-making is shared.

**Keywords:** Immunization, Vaccine Hesitancy, Parental Refusal, Knowledge, Midwifery, Case Report

### INTRODUCTION

Immunization is one of the most effective public-health interventions for preventing serious infectious diseases in children. Complete immunization reduces the risk of vaccine-preventable diseases, complications, disability, and death, while also contributing to community protection through high vaccination coverage.<sup>(1-3)</sup> Immunization is therefore an important component of child health promotion and disease prevention.<sup>(4,5)</sup> Nevertheless, incomplete and delayed immunization remain important public-health concerns. Children who do not receive immunization according to schedule may have an increased risk of exposure to vaccine-preventable diseases, particularly during periods when they remain vulnerable.<sup>(6,7)</sup> Incomplete immunization may also increase the risk of outbreaks and reduce the development of community protection.<sup>(8)</sup>

In Indonesia, routine immunization is provided according to the child's age and includes vaccines administered during infancy and subsequent doses during early childhood. The Ministry of Health provides guidance regarding routine immunization services and the completion of missed doses through catch-up immunization.<sup>(9-11)</sup> Children who have missed one or more doses require assessment of their immunization history and appropriate planning to complete the recommended schedule.<sup>(12,13)</sup> Determinants of complete basic immunization among children aged 12–23 months include maternal and household factors, indicating the importance of identifying children who remain incompletely immunized.<sup>(6,14)</sup> Therefore, a child who reaches 12 months of age with only a birth dose of hepatitis B vaccine has a substantial gap in routine protection and requires individualized assessment and an appropriate catch-up plan.

Parental vaccine hesitancy exists on a continuum from acceptance to delay and refusal. Parents' knowledge, perceptions, attitudes, and concerns about vaccine safety may influence their decisions regarding childhood immunization.<sup>(15,16)</sup> Low parental vaccine literacy may make it more difficult for parents to distinguish accurate information from misinformation and may increase uncertainty about vaccination. Emotional concerns, including fear of adverse events following immunization, may also contribute to vaccine hesitancy even when parents have previously received information about vaccination.<sup>(17,18)</sup> Family support and the social environment may further influence parental vaccination decisions.<sup>(19,20)</sup> Knowledge is particularly relevant in midwifery and community health practice because inadequate understanding of vaccine benefits, schedules, safety, and possible post-immunization reactions may contribute to uncertainty and delayed vaccination.<sup>(14)</sup> Previous studies have demonstrated that health education can improve maternal knowledge and attitudes regarding complete basic immunization.<sup>(1,21,22)</sup> Educational interventions may use different media, including videos and leaflets, to make information easier for parents to understand and review.<sup>(22,23)</sup> In addition, previous literature indicates that parental perceptions and attitudes toward immunization are important factors in vaccination decisions.<sup>(15,24)</sup> In the present case, the mother did not describe an absolute ideological rejection of vaccination. Rather, her concerns were related to limited knowledge, fear of adverse effects, the infant's mild respiratory symptoms, and disagreement within the household.

Communication and family involvement are therefore important components of immunization counseling. Respectful communication can help health workers identify the specific concerns underlying vaccine hesitancy and provide information according to the needs of parents.<sup>(5,19)</sup> Therapeutic communication and health education may strengthen parental understanding, while family involvement can support decision-making regarding childhood vaccination.<sup>(7)</sup> The use of educational materials such as leaflets may also help parents review information repeatedly and reduce anxiety related to immunization and KIPi.<sup>(23)</sup> Although immunization coverage in Magetan Regency was reported to be above 95% in 2025, a high aggregate coverage rate can coexist with individual children who remain incompletely immunized. This situation demonstrates the importance of identifying individual children who have missed immunization doses rather than relying only on aggregate coverage. Previous studies have emphasized that individual and household determinants continue to influence complete immunization status.<sup>(6,14)</sup> This case is therefore relevant because it illustrates how a child can remain incompletely protected despite living in a setting with generally high immunization coverage. The purpose of this case report was to describe the assessment, midwifery management, and short-term changes in maternal knowledge and acceptance following therapeutic communication, counseling, and leaflet-based education for a 12-month-old infant with incomplete immunization.

## METHODS

This study used a descriptive midwifery case-report design. The report focused on one 12-month-old infant with incomplete routine immunization and parental hesitancy associated primarily with limited knowledge. The case was managed longitudinally using the SOAP framework (subjective data, objective data, assessment, and plan/management). The report describes clinical assessment and counseling rather than testing an intervention effect statistically. The case was identified and followed at a private midwifery practice in Magetan, East Java, with home-based follow-up.

Data collection and follow-up occurred from 2 to 21 February 2026. The infant was selected because the immunization record showed a major gap in routine vaccination and the parent expressed concerns that required midwifery counseling. Data were obtained from maternal interviews, review of the maternal and child health record/immunization history, physical examination, anthropometric measurements, developmental screening, observation of maternal responses during counseling, and follow-up documentation. Four visits were conducted on 2, 5, 8, and 21 February 2026. The counseling process explored the mother's understanding of immunization, perceived benefits and risks, sources of information, concerns about AEFI, the effect of the infant's mild illness on her decision, and the role of the husband in household decision-making. The main case domains were immunization status, parental knowledge and concerns, family decision-making, infant health status, and response to counseling. Knowledge was assessed qualitatively through the mother's ability to explain the purpose and benefits of immunization, vaccine-preventable diseases, routine scheduling, and common post-immunization reactions before and after education.

Data were analyzed descriptively by comparing findings across the four visits. Changes in maternal understanding, expressed concerns, willingness to vaccinate, and infant clinical status were summarized narratively and in a case timeline. No inferential statistical analysis was performed because this was a single-case report. Written informed consent was obtained from the infant's parent after an explanation of the purpose, procedures, benefits, potential discomforts, confidentiality, and voluntary nature of participation. The report uses

the child's pseudonymized family designation rather than a full personal identity. The family retained the right to decline any recommended action, and counseling was delivered without coercion.

## RESULTS

The infant was a 12-month-old boy, born on 2 February 2025 by normal vaginal delivery with a birth weight of 3,000 g, birth length of 50 cm, and head circumference of 33 cm. At the first assessment, weight was 9.1 kg, length 74 cm, chest circumference 46 cm, and head circumference 45 cm. Growth indicators were documented as normal, with weight-for-age within the normal range, length-for-age without stunting, weight-for-length in the normal range, and a normal BMI-for-age. KPSP screening at 12 months yielded a score of 10 'yes' responses, indicating age-appropriate development. The infant was active, able to sit independently, crawl, move between positions, and stand while holding furniture.

Review of the immunization record showed that the infant had received only hepatitis B birth-dose vaccination (HB0). No subsequent routine immunizations were documented. The mother stated that she had limited knowledge about the purpose and safety of immunization and was worried that vaccination could cause harmful side effects. She also reported that the infant was experiencing cough and coryza at the initial visit, which increased her concern about vaccination. Although the mother expressed an intention to protect her child, she reported that the husband did not agree with vaccination. The family also referred to the experience of older children who had not been vaccinated but remained apparently healthy. Information from neighbors and social media had reinforced doubts about vaccine safety.

At the first visit, the infant was in generally good condition and conscious, with a pulse of 112 beats/minute, temperature 36.5°C, and respiratory rate 30 breaths/minute. Mild cough, clear nasal discharge, and slightly reduced appetite were reported, but there was no respiratory distress or other finding suggesting acute deterioration. Physical examination was otherwise unremarkable. The infant's skin was well perfused with good turgor, the chest was symmetrical without intercostal retractions, and neurologic and motor responses were appropriate for age. At subsequent visits, respiratory symptoms progressively improved. By 21 February 2026, the infant was active, afebrile, eating well, and no longer had cough or coryza. No acute clinical problem was identified that required emergency management. At visit 1 (2 February 2026), the midwifery approach prioritized rapport building and non-judgmental exploration of the mother's concerns. The mother became more willing to describe her limited knowledge, fear of adverse effects, and disagreement with her husband. Because the infant had mild respiratory symptoms, the mother was advised to seek clinical assessment; a follow-up visit was agreed.

Table 1. Summary of the four follow-up visits

| Visit/date      | Infant condition                         | Key concern                                      | Intervention                                                                            | Response                                                       |
|-----------------|------------------------------------------|--------------------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------------|
| 1 / 02 Feb 2026 | Mild cough/coryza; otherwise well        | Limited knowledge; fear of AEFI; husband opposed | Rapport, open-ended assessment, basic information, referral for illness assessment      | Mother became more open; agreed to follow-up                   |
| 2 / 05 Feb 2026 | Mild symptoms persisted; no distress     | Uncertainty about benefits, schedule and safety  | Focused counseling; explained common mild reactions; encouraged discussion with husband | Mother calmer; could repeat some information                   |
| 3 / 08 Feb 2026 | Symptoms improving; active               | Still hesitant but seeking information           | Leaflet education on benefits, schedule, PD3I and AEFI                                  | Mother asked questions and demonstrated improved understanding |
| 4 / 21 Feb 2026 | Healthy, active, no respiratory symptoms | Decision still shared with husband               | Evaluation, reinforcement, motivation and referral to immunization service              | Mother willing to vaccinate; vaccination not yet documented    |

At visit 2 (5 February 2026), the infant remained mildly symptomatic, and the mother continued to hesitate. The midwife explored specific knowledge gaps concerning vaccine benefits, the routine schedule, vaccine-preventable diseases, and expected post-immunization reactions. The mother was able to repeat part of the information after counseling and became calmer when common mild reactions were explained. She agreed to discuss the information with her husband.

At visit 3 (8 February 2026), the infant's respiratory symptoms had improved and appetite and activity had increased. The mother accepted a leaflet containing information about immunization benefits, the routine schedule, vaccine-preventable diseases, and AEFI. She actively asked questions about safety and delayed doses

and was able to explain several key benefits of immunization. She agreed to review the leaflet with her husband. At visit 4 (21 February 2026), the infant was clinically well. The mother reported that she had read the leaflet and discussed immunization with her husband. She could explain the benefits of immunization, the diseases prevented, and the importance of completing the child's immunization schedule. She expressed willingness to vaccinate the child. However, vaccination had not yet been administered because the couple had not finalized the timing and still needed to make a joint decision.

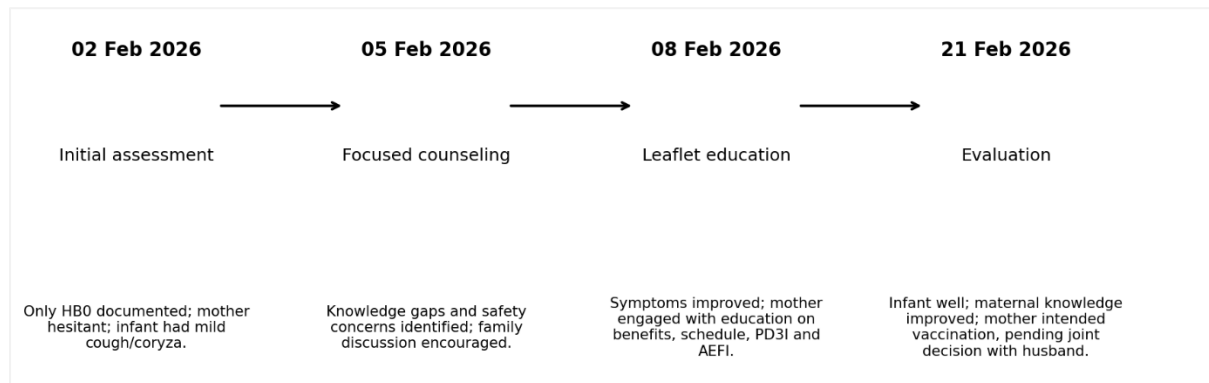


Figure 1. Timeline of assessment, counseling, and change in maternal acceptance

## DISCUSSION

The central finding in this case was that incomplete immunization was closely associated with limited maternal knowledge and concerns about vaccine safety. The mother did not describe a fixed ideological rejection of vaccination; instead, her decision was characterized by uncertainty, fear of adverse effects, illness-related concerns, and the influence of family information. This finding is consistent with previous studies showing that parental knowledge, perceptions, and attitudes influence decisions regarding childhood immunization.<sup>(15,16)</sup> Low vaccine literacy may also increase parental uncertainty because parents may have difficulty assessing the accuracy of information regarding vaccine safety and effectiveness. The case also illustrates how concerns regarding KIPI can contribute to delayed vaccination. The mother interpreted the infant's cough and coryza as a reason to postpone vaccination and was concerned that vaccination might worsen the illness. Similar concerns regarding adverse events and emotional anxiety have been associated with vaccine hesitancy and incomplete immunization.<sup>(17,18)</sup> Previous research also indicates that illness-related perceptions may influence parental decisions to delay immunization. Therefore, counseling in this case focused on addressing misconceptions and helping the mother distinguish temporary clinical concerns from the broader importance of completing routine immunization.

Improvement in maternal understanding occurred gradually rather than after a single counseling session. This finding is consistent with evidence that health education can improve maternal knowledge and attitudes regarding complete basic immunization.<sup>(1,21,22)</sup> In this case, the first two visits emphasized listening and clarification, while the third visit used a leaflet to reinforce information that could be reviewed again at home. The leaflet served as a practical educational resource because the mother could read the information repeatedly and discuss it with her husband. Educational media can facilitate the delivery of immunization information and support changes in maternal knowledge and attitudes.<sup>(22,23)</sup> By the final visit, the mother could explain the benefits of immunization and expressed willingness to vaccinate. This finding is in line with previous evidence that educational interventions can support improvements in maternal understanding and attitudes toward complete immunization.<sup>(3,8)</sup> However, because this was a single case, the observed improvement cannot be attributed to the leaflet alone.

The mother's improved knowledge did not immediately translate into vaccination because the final decision was shared with her husband. This finding is clinically important because health decisions concerning children may involve negotiation within the family. Family support can influence parental vaccination behavior, while differences in perceptions between family members may contribute to delays in immunization.<sup>(19,20)</sup> When doses have been missed, the family should receive information about completing routine immunization and, when appropriate, catch-up immunization.<sup>(11)</sup> The importance of completing immunization is supported by evidence

showing that incomplete immunization increases vulnerability to vaccine-preventable diseases.<sup>(6)</sup> Educational interventions and active follow-up may further support the completion of immunization.<sup>(1,8)</sup>

### CONCLUSION

This case report demonstrates that parental refusal of immunization in a 12-month-old infant in Bogoarum, Plaosan, was primarily influenced by limited knowledge regarding the benefits, mechanisms, and safety of vaccines. Following four structured midwifery care visits that incorporated counseling and the distribution of educational leaflets, the mother's knowledge significantly improved, including her understanding of vaccine-preventable diseases, age-appropriate immunization schedules, and the recognition that mild Adverse Events Following Immunization (AEFI) are normal and generally harmless. Although the mother accepted the importance of immunization, the final decision remained contingent upon family discussions, highlighting the role of sociocultural dynamics in health decision-making. This case reinforces the evidence that midwifery-based educational interventions are effective in enhancing vaccine literacy and reducing parental hesitancy, yet family involvement is essential to ensure timely immunization. Ultimately, immunization serves not only as individual protection but also as a cornerstone of public health, contributing to herd immunity and supporting national development.

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