

# **GEMBIRA: A Community-Based Intervention to Improve Complete Basic Immunization Coverage in Lamteh Village, Aceh, Indonesia**

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## **Abstract**

Basic immunization coverage in Indonesia still faces significant challenges due to mothers' limited knowledge, concerns about potential side effects, and doubts regarding the halal status of vaccines. To address these barriers, the GEMBIRA program (Gerakan Imunisasi Bersama Ibu Ceria) was implemented as a community-based intervention in Lamteh Village, Peukan Bada District, Aceh Province. This activity aimed to enhance mothers' knowledge and motivation through health education delivered in an interactive and cheerful manner. The program was conducted on July 23, 2025, at the Balai Ikrar Lamteh, involving 15 mothers of children under five. The activities included coordination with village health cadres, presentation of educational materials using posters and videos, group discussions, role-playing sessions, and a simple quiz as an evaluation tool.

**Keywords:** Immunization; Health Education; Community-Based Intervention; Mother; Aceh;

## **Introduction**

Immunization is one of the most powerful methods in public health to prevent infectious diseases in children, particularly vaccine-preventable diseases (VPDs) (Putri, Erviana, & Arriza, 2024). During immunization, children are injected with vaccines containing weakened viruses or antigens to stimulate the immune system in producing antibodies as a defense mechanism against disease (Wulandari & Dwidiyanti, 2017). However, in reality, achieving optimal immunization coverage remains a global challenge, especially in several developing countries, including Indonesia. According to the World Health Organization (WHO, 2023), there were 14.5 million children worldwide who did not receive immunization, with Indonesia ranking sixth highest, recording 1,356,367 children without immunization (Kemenkes RI, 2025). Data from BMC (2025) reported that 28 out of 34 provinces in Indonesia had not yet reached the national standard target of 94% immunization coverage (Alfian et al., 2025). One of the provinces with particularly low coverage is Aceh, where in 2023 the rate of complete immunization was only 20.8%, far below the national standard (WHO, 2024). Within Aceh, several districts showed especially low coverage, including Aceh Besar District. According to the Aceh Besar Health Office Report (2022), complete immunization coverage among infants in 2021 was 30%, with a total of 3,112 infants (Dinkes Aceh Besar, 2022). In 2022, the number slightly increased to 31% (3,207 infants), yet this figure remains very low compared to the national target (Dinkes Aceh Besar, 2023). Furthermore, data from the Peukan Bada Health Center (2024) indicated that complete basic immunization coverage among toddlers under two years old was only 30%. Low immunization coverage was particularly noted in several villages, including Lamteh

Village. In 2024, the number of infants in Lamteh who received immunization was as follows: 8 received Hepatitis B (HB-0), 3 received BCG, 1 received DPT, and 4 received Polio (3 for the first dose and 1 for the second dose).

According to a study by Edayani and Suryawati (2019), several factors contribute to the low immunization coverage in Indonesia, including mothers' limited knowledge about immunization, negative perceptions regarding its halal status, and fear of possible side effects. A similar study by Rambe and Ramadhani (2024) identified three determinants: predisposing factors (such as mothers' education, knowledge, and occupation), belief factors (such as the perception that immunization is not halal), and reinforcing factors (such as family support). These findings are consistent with conditions in Lamteh Village, where low immunization coverage is largely attributed to limited maternal knowledge and understanding of immunization, concerns about side effects, and doubts regarding the halal status of vaccines.

International evidence aligns with these findings. A study by Gebreyesus and Tesfay (2024) in Ethiopia demonstrated that maternal education and health literacy interventions significantly improved mothers' knowledge and subsequently increased immunization coverage among children. This intervention relied heavily on strengthening maternal literacy to ensure mothers were more proactive in following immunization schedules. Similarly, a study conducted in Pakis Subdistrict, Surabaya, revealed that interactive counseling sessions for mothers successfully enhanced their knowledge about basic immunization for toddlers, although long-term evaluation of behavioral change had not yet been conducted (Primihastuti & Intiyaswati, 2020).

Although both studies demonstrated the effectiveness of educational interventions in improving maternal knowledge and child immunization coverage, the approaches used remained formal and relied mainly on literacy enhancement or simple interactive sessions. Consequently, mothers with limited literacy or formal educational backgrounds were often not fully reached, reducing their motivation to actively participate in their children's immunization. Furthermore, these interventions tended to adopt a top-down delivery model, rather than employing a community-based approach that could foster broader community engagement and participation.

To address these limitations, the GEMBIRA program (Gerakan Imunisasi Bersama Ibu Ceria) was implemented as a community-based intervention in Lamteh Village. The program introduced immunization counseling through an interactive, cheerful, and experience-based approach. By emphasizing a joyful atmosphere and social interaction, GEMBIRA not only enhanced maternal knowledge but also strengthened solidarity and motivation among mothers to actively support their children's immunization, while simultaneously reducing concerns about side effects and halal-related issues. What distinguishes GEMBIRA from previous interventions is its integration of health education, positive psychology, and a community-based approach—a combination rarely employed in community engagement programs—which holds strong potential to reach groups of mothers who had previously been underserved by more formal methods.

To strengthen the foundation of this program, it is important to present a theoretical basis that explains why initiatives such as GEMBIRA are essential in improving immunization coverage. One of the most widely applied theories in explaining individual health behavior is the Health Belief Model (HBM). This theory emphasizes that a person's decision, including a mother's decision to immunize her child, is strongly influenced by her beliefs about the severity of potential diseases, the benefits of immunization, and perceived barriers. For instance, parental concerns regarding possible vaccine side effects or doubts about the halal status of vaccines can be understood as forms of perceived barriers within the HBM framework (Hidayana et al., 2022).



In addition, the health promotion approach highlights the importance of empowering communities through interactive and engaging education. The World Health Organization (WHO) underscores that health promotion is not only about delivering information but also about creating an environment that encourages active community participation. Therefore, counseling methods designed in a cheerful and community-based format, such as GEMBIRA, are more likely to be well-received by mothers compared to formal, one-way health education sessions.

Policy context is also highly important. The Government of Indonesia, through the Ministry of Health Regulation No. 12 of 2017, has made immunization a national priority to protect children from vaccine-preventable diseases. However, this policy can only be successful if it is supported by active community participation. Therefore, community service initiatives that emphasize community engagement, such as GEMBIRA, play a vital role in implementing national health policies.

GEMBIRA (Gerakan Imunisasi Bersama Ibu Ceria) serves not only as a platform for health education but also as a space for positive social interaction. By integrating health education, positive psychology, and a sense of togetherness, this program is expected to reduce psychological barriers among mothers while simultaneously fostering trust in immunization programs. This unique integration makes GEMBIRA more effective compared to conventional counseling approaches and positions it as a promising model for future community-based interventions.

## Method

This community service activity employed a community-based intervention approach with an interactive counseling method. The design focused on community-oriented education delivered in a cheerful atmosphere, encouraging active participation from mothers and utilizing interactive media to enhance understanding of complete basic immunization. The program was conducted at the Balai Ikrar of Lamteh Village, Peukan Bada Subdistrict, Aceh Besar, Indonesia, on July 23, 2025. Participants consisted of 15 mothers with children under five years old residing in Lamteh Village. The selection of participants was carried out through coordination with village health cadres, the village midwife, and local authorities, without exclusive criteria, so that all mothers who attended were eligible to participate.

The implementation of the GEMBIRA program consisted of three main stages. The preparation stage included coordination with village officials, the village midwife, and health cadres; development of educational materials; and preparation of counseling media such as posters, attractive PowerPoint slides, educational games, and short videos. The implementation stage began with introductions, followed by interactive counseling on complete basic immunization, group discussions, singing an immunization jingle together, educational games (ice-breaking activities), and experience sharing among mothers. The evaluation stage was conducted through a simple oral quiz at the end of the session to assess mothers' understanding of complete basic immunization. In addition, participants' active involvement was observed through their participation in discussions, educational games, and question-and-answer sessions. The evaluation results were recorded descriptively to provide an overview of the program outcomes.

## Result and Discussion

### Implementation of the GEMBIRA Program

The GEMBIRA program was carried out in three main stages, namely the preparation stage, the implementation



stage, and the evaluation stage.

### **A. Preparation Stage**

The preparation stage of the GEMBIRA (Gerakan Imunisasi Bersama Ibu Ceria) program was crucial to ensure that all activities could run smoothly and effectively. Preparation began with a meeting between the implementing team (PBL Team), village authorities, and posyandu health cadres. This meeting aimed to reach agreement on the objectives of the activity, the schedule of implementation, task distribution, and technical requirements needed. The village head provided support by making the Balai Ikrar available as the venue. This location was selected because it offered a spacious area, fresh air, and easy accessibility for the local residents.

Next, the PBL team held a discussion with the village midwife to gather information on the number of families with toddlers in Lamteh Village. After the information was obtained, the PBL team's publication and documentation division created a digital invitation, which was then distributed by health cadres to families with toddlers. In addition to delivering the invitations, the cadres also assisted the PBL team in explaining the GEMBIRA program in simple terms. Through this warm and family-oriented approach, 15 mothers agreed to attend the activity along with their children. This direct engagement was crucial in building trust and reducing mothers' doubts about the program. The PBL team also prepared various educational media to support the activity. These included colorful posters illustrating the schedule of basic immunizations, short leaflets explaining the benefits of immunization and how to handle mild side effects, as well as a short video containing testimonials from mothers who had successfully completed their children's immunization. In addition, a simple quiz and an immunization jingle were prepared to be sung together with the mothers, creating a cheerful and interactive atmosphere.

From a logistical perspective, health cadres ensured the availability of a projector, fans, and a sound system to facilitate the event. A banner was placed in front of the Balai Ikrar to attract community attention, while simple refreshments such as biscuits and mineral water were also prepared to make participants feel more comfortable. All of these preparations were intended to create a friendly, warm, and enjoyable environment for the program.

One of the health cadres, Mrs. Dedek, stated: "When the atmosphere is made comfortable, mothers are willing to stay longer. They become more receptive to the material, less easily bored, and more open in expressing their opinions." This statement highlights that preparation is not only about technical arrangements but also about creating a positive atmosphere in which participants feel valued.

### **B. Implementation Stage**

The GEMBIRA program was held on July 23, 2025, at 4:30 p.m. at the Balai Ikrar of Lamteh Village. A total of 15 mothers attended along with their children. The event began with welcoming remarks from the village head and the village midwife, who emphasized that immunization is an expression of parental love and responsibility for their children's health. These remarks set a positive tone for the activity, fostering a sense of unity and support from the village leadership.

Before moving to the main session, the PBL team invited participants to sing together the immunization jingle from the Ministry of Health. This activity created a relaxed atmosphere, as the mothers joined in singing and the children appeared happy and engaged. With this warm beginning, the participants were more prepared to follow the counseling session. The health education session was then delivered using an interactive approach.



The counseling session covered the following topics:

1. The definition and purpose of immunization.
2. The benefits of complete basic immunization.
3. The immunization schedule for toddlers according to the Ministry of Health standards.
4. Possible side effects or adverse events following immunization (AEFI) and how to manage them.
5. An explanation of the halal status of vaccines.
6. Vaccine-preventable diseases (VPDs).

The PBL team did not use a long lecture method but instead asked short questions that encouraged participants to share their experiences. For example, when the team asked, “Who has experienced their child having a fever after immunization, and how did you handle it?” several mothers raised their hands and shared their experiences. Such interactions made participants feel heard and reinforced shared understanding.

After the counseling session, participants were given time for group discussions. They were asked to share their experiences, challenges, and reasons that influenced their decision to bring their children for immunization. The discussion revealed that the main barriers were concerns about side effects, difficulties with transportation, and persistent doubts about the halal status of vaccines. This dialogue provided a safe space for open conversation, encouraged peer support, and reduced participants’ hesitation in sharing personal challenges.

To strengthen understanding, a simple role play was conducted. Three members of the PBL team acted as a midwife, a mother, and a child. The scene depicted a child crying during immunization and the mother comforting the child while listening to the midwife’s explanation. The participants laughed at the performance but also understood the key message: immunization is a natural and safe process. The activity concluded with a brief oral quiz to refresh participants’ memory of the material presented. The mothers’ responses showed that the interactive and cheerful counseling method was easier to accept and more effective compared to conventional lecture-based approaches. The documentation of the GEMBIRA activities can be seen in Figures 1, 2, 3, and 4 below.





**Figure 1** Documentation of the PBL Team and participants after the GEMBIRA activity

### C. Evaluation Stage

Evaluation is an essential component of every community service program as it serves as a reference for assessing how well the activity was carried out and as a foundation for improving similar programs in the future. The evaluation of the GEMBIRA (Gerakan Imunisasi Bersama Ibu Ceria) program was conducted comprehensively, covering the planning, implementation, participant engagement, and the impact observed after the activity. This evaluation not only assessed the extent to which objectives were achieved but also identified the challenges encountered and provided suggestions for improvement.

First, in terms of planning, the GEMBIRA program was considered well-prepared as it was carefully arranged through coordination between the implementing team, the health center, and village authorities. Socialization efforts before the activity were also carried out effectively, allowing the community to be informed about the time and venue of the event. Nevertheless, a small number of mothers did not attend due to busy schedules or lack of permission from their husbands. This indicates that strategies for socialization and personal approaches need to be strengthened in order to achieve broader community participation.

Second, in terms of implementation, the activity ran smoothly and according to schedule. The number of participants was satisfactory and met the initial target. The method of delivering material through enjoyable approaches such as games, discussions, and question-and-answer sessions created a lively atmosphere and helped participants more easily absorb the information. The main challenge encountered was the limited time available, as the large number of questions prevented certain topics from being explored in greater depth. However, this also indicated high enthusiasm and curiosity among the participants, which can be considered a positive outcome of the program.

Third, in terms of participant engagement, the GEMBIRA program successfully created a more engaging atmosphere that encouraged active involvement. The mothers were not merely passive listeners but also expressed their opinions, asked questions, and even shared their personal experiences related to child immunization. This active participation brought significant benefits, including fostering a sense of ownership toward the program and strengthening shared understanding of the importance of complete basic immunization.

### Impact of the Program

The impact of the GEMBIRA program was observed in two main aspects: increased knowledge and behavioral changes. In terms of knowledge, the quiz results showed that most mothers gained a better understanding of the benefits of immunization, the recommended schedule, and how to manage possible side effects. This was evident from the

increased number of mothers who were able to answer the questions correctly after participating in the program.

From a behavioral perspective, records from the posyandu in July indicated an increase in the number of children who received immunization. In June, only 8 children had completed basic immunization, whereas in July the number increased to 10. Although the increase was only two children, this change was considered significant given the short interval between the activity and the reporting period. This finding demonstrates that community-based educational activities can have a tangible impact on community health behavior.

Beyond the increase in immunization uptake, psychological impacts were also noted. Many mothers expressed greater confidence and readiness to bring their children for immunization. One mother stated, “At first, I was afraid because I heard stories that children could develop a high fever after immunization. But after joining this activity, I learned that it is normal and there are ways to manage it. Now I feel calmer.” The posyandu health cadres also acknowledged the benefits of the program. They gained new experience in using creative teaching methods such as group discussions and role play. As a result, the cadres are now better equipped to continue organizing similar activities independently in the future.

Social impacts also began to emerge. The mothers who attended felt more connected to one another. After the event, many of them continued sitting together, talking, and sharing experiences about their children’s health. This indicated an improvement in social relationships at the community level. Overall, the GEMBIRA program succeeded in creating a joyful learning atmosphere, enhancing mothers’ knowledge, reducing their fears, improving immunization practices, and strengthening the role of both health cadres and the community. These impacts suggest that a community-based approach can serve as an effective strategy to improve immunization coverage in rural areas.

## Conclusion

The GEMBIRA (Gerakan Imunisasi Bersama Ibu Ceria) program was successfully implemented as a community-based intervention aimed at improving mothers’ knowledge and awareness of the importance of complete basic immunization. The activity created a friendly, enjoyable, and interactive learning environment, enabling mothers to more easily understand the material, feel more confident, and become more motivated to bring their children for immunization. Positive outcomes were also reflected in the increase in the number of children completing basic immunization in the following month, although the rise remained modest.

Despite these encouraging results, some limitations were noted. The number of participants was relatively small, and no long-term assessment was conducted to determine whether the observed changes were sustained over time. The evaluation relied only on a simple quiz and observation, which limited the ability to fully measure behavioral change within the community in the long run.

Based on these findings, it is recommended that future programs such as GEMBIRA involve a larger number of participants, including fathers and community leaders, to broaden support for immunization. Long-term monitoring is also needed to assess whether changes in community practices related to immunization are maintained. GEMBIRA demonstrates strong potential as a community-based intervention model that can be replicated in other areas with similar conditions, while also strengthening government efforts to increase complete basic immunization coverage in Indonesia.

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