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Visual and Participatory Educational Innovation to Promote Immunization Awareness in Nibong Village

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ABSTRACT

Low awareness and coverage of complete basic immunization among under-five children in Nibong Village remains a pressing public health issue. This study evaluated a community-based, visual–participatory education program designed to improve immunization awareness among mothers/caregivers. Over four weeks, 35 caregivers attended interactive counseling supported by co-created visual materials (leaflets, posters, participatory aids) and cadre training. Data were collected using a brief pre–post questionnaire (knowledge, myths/beliefs, intention to attend posyandu) and qualitative observations. Descriptive analysis showed an increase in maternal knowledge from 28.6% to 71.4% and higher engagement with immunization services. Reported completion of basic immunization increased from 14% to 86% (self-reported; verification recommended via child health cards or posyandu records). Qualitative insights indicated that locally adapted visuals, cadre facilitation, and familiar language enhanced comprehension and trust. A visual–participatory, community-based approach is feasible and promising for strengthening immunization awareness and participation. Wider adoption should include objective verification of coverage and longer follow-up.

Keywords: *Community-Based; Immunization; Mothers/Caregivers; Participatory Education; Visual Media*

1. Introduction

Vaccines are one of the most important results of progress in health science and technology. Immunization is a program that gives vaccines to build a person's protection against specific diseases. With good protection, a person who is exposed will not become seriously ill or will only have mild symptoms. Immunization lowers illness, disability, and death from vaccine-preventable diseases (VPD) such as measles, polio, and diphtheria. Global estimates suggest that immunization prevents 2 to 3 million deaths each year (Revinel & Shabira, 2024).

In Indonesia, measles immunization coverage has reached 84 percent, which is a moderate level compared with the global average. However, several problems remain. Many families have limited knowledge, some people still hold wrong beliefs about vaccine safety, and access to reliable information is not always available. Because of this, we need educational strategies that are more engaging and that involve the community. Mothers with young children are a key audience, and messages must be easy to understand and apply in daily life (Liananiar et al., 2024).

Complete basic immunization is essential to prevent VPD in children. It includes protection against tuberculosis, diphtheria, pertussis, tetanus, hepatitis B, and measles (UNICEF, 2023). The COVID-19 pandemic caused a decline in routine immunization in many countries, including Indonesia. When children do not complete their immunization, the risk of outbreaks increases. Illness and death can also increase, and the health system carries a higher burden (WHO, 2023).

High infant and child mortality weakens public health. This situation shows the need for strong government support and close supervision of the immunization program in Indonesia. One continuing challenge is parental refusal. This is often caused by misunderstandings about vaccines, limited health education, and low awareness of benefits and safety (Darmin et al., 2022). Immunization protects each child and provides community protection by raising overall immunity. When coverage is low, outbreaks can lead to higher mortality among infants and toddlers (Williamson & Glaab, 2018; Hasriani, 2024).

Vaccines work by helping the immune system produce antibodies against specific antigens. In programs, these antigens are usually weakened or inactivated. Vaccines are given by injection, for example Bacillus Calmette-Guerin, Hepatitis B, DPT, and Measles, or by mouth, for example polio. Simple and clear explanations of how vaccines work can reduce fear, correct myths, and encourage families to complete the schedule on time (Putri & Maywati, 2022).

Many factors affect basic immunization coverage. Family support and maternal knowledge are important. The role of front-line health workers is also central. When family support is weak, caregivers receive less reliable information. Health workers can give counseling and ongoing mentoring with cadres so that parents understand why timely immunization matters (Olaniran et al., 2019; Erowati, 2025).

Aceh Province has struggled to meet targets for complete basic immunization. Coverage fell from 2018 to 2021. In 2019, achievement was 61 percent of the 92.5 percent target. In 2020, it fell to 49 percent against a 93 percent target. In 2021, it was 40.5 percent of the 92.5 percent target. These data show a clear downward trend (Dinas Kesehatan Aceh, 2021). Ideally, coverage among toddlers should be at least 95 percent to support herd immunity. In Pidie District, several villages, including Nibong Village, are still below this level at about 71 percent. Reasons include limited knowledge, fear of side effects, and a lack of direct and participatory education (Dinas Kesehatan Pidie, 2023).

Evidence supports community-based education to improve immunization awareness. Programs that engage caregivers through local channels can raise knowledge and correct false beliefs (Sari, 2022). Other studies underline the value of the village health post, or posyandu, as an accessible platform for services and health education and show links to better child health outcomes (Herlianty et al., 2023). Based on this evidence, our community service program combines visual education, interpersonal counseling, and the empowerment of local cadres as the main actors of health communication at the village level. The program uses visual materials adapted to local culture, structured participatory sessions, and cadre training to support long-term use. The aim is not only short-term gains in coverage but also the growth of shared awareness as part of a healthy living culture in the community.

Considering these challenges and local gaps in coverage, this study evaluates a community-based visual and participatory education program in Nibong Village. The study measures short-term changes in maternal knowledge, beliefs about common vaccine myths, and intention to attend the posyandu using a pre-post design. The intervention includes co-created visual materials, interactive counseling, and cadre empowerment through the

posyandu platform to ensure cultural fit and make future scale-up possible (Sari, 2022; Herlianty et al., 2023). The study also records lessons on feasibility, acceptability, and the role of cadres. The contribution is twofold. First, it offers practical guidance for village-level health promotion. Second, it provides evidence on the near-term effects of a visual-participatory approach in a setting with persistent coverage gaps. While the main outcomes are awareness and intention, the study also describes next steps to verify behavioral coverage using child health cards and routine records.

2. Method

This activity used a community-based pre-post evaluation with qualitative components. The goal was to describe and assess how education and mentoring can increase community awareness of complete basic immunization. The program focused on the active participation of mothers with infants or toddlers, posyandu (integrated health post) cadres as key partners, and community leaders who play strategic roles in health advocacy (Ciselia et al., 2024).

Cadres were involved to improve understanding and memory of key messages. The team used training sessions, small-group discussions, and role-play simulations with prepared learning materials. Results from each small group were presented in a plenary and clarified by a midwife. After that, the team delivered visual and participatory education to mothers of under-five children (Rahmawati & Ratu Ayu Dewi Sartika, 2020).

There were 35 participants. Most were 26–30 years old, had two children on average, and had lived in Nibong Village for about 15.2 years. Education levels were elementary 11.4%, junior high 22.9%, senior high 42.9%, and higher education 22.9%. Main occupations were housewives 71.4%, self-employed 17.1%, and civil servants 11.4%. Socio-economically, most were lower-middle income. For children's immunization status, 71.4% had complete basic immunization, while 28.6% had incomplete records.

Participants were selected using purposive sampling based on involvement in posyandu activities and in sharing health information in the village. Inclusion criteria: (1) permanent resident of Nibong Village, (2) having an infant/toddler or being actively involved in posyandu, (3) willingness to attend all sessions, and (4) ability to communicate in the local language. Exclusion criteria: absence from ≥50% of sessions or severe health problems during the program.

The program conducted for 30 days in February 2025 and had four main stages:

a. Initial coordination with the village government, health workers, and posyandu cadres to gain official support and encourage participation.

b. Needs assessment using participatory observation, short interviews, and simple questionnaires to map understanding of schedules, vaccine types, benefits, and perceived risks.

c. Educational implementation through face-to-face counseling, focus group discussions (FGDs), role-play, and mentoring at posyandu. Media included posters, leaflets, and simple infographics. Sessions were in small groups or during home visits, using the local language to improve comprehension.

d. Evaluation with pre-post tests to measure knowledge change and participatory observation to assess behavior and engagement with immunization services.

Assessment tools were adapted from official guidelines of the Ministry of Health of Indonesia and WHO. Content validity was checked by two public health specialists and one

immunization practitioner to ensure alignment with program objectives. Reliability was explored in a pilot with five mothers who were not part of the main sample: Cronbach's alpha = 0.82, indicating good internal consistency for the brief scale.

Quantitative data from the pre-post questionnaire included knowledge, myths/beliefs, and intention to attend posyandu. Qualitative data came from observations, short interviews, and activity documentation. Quantitative results were summarized descriptively. Qualitative analysis followed a six-step thematic framework: (1) familiarization with data, (2) generating initial codes, (3) searching for potential themes, (4) reviewing and validating themes, (5) defining and naming themes, and (6) producing the narrative report. To improve trustworthiness, we used source triangulation (interviews, observation, documentation), member checking (participants verified interpretations), and an audit trail (detailed records of data collection and analysis) to ensure transparency and traceability. With this methodological design, the program was expected not only to increase participants' understanding of complete basic immunization but also to strengthen their active roles in sustaining immunization efforts in the community (Abdullah et al., 2022).

3. Results

This section describes the participants and the changes observed after the education and mentoring program. We first report the demographic profile, then present pre- and post-test findings on knowledge, rejection of myths, and intention to attend the posyandu.

Table 1. Demographic characteristics of the participants (n=35)

No	Characteristics	Frequency (n)	Percentage (%)
Age (years)			
1	20–25	8	22.9
2	26–30	12	34.3
3	31–35	9	25.7
4	>35	6	17.1
Education level			
1	Elementary (SD)	4	11.4
2	Junior high (SMP)	8	22.9
3	Senior high (SMA)	15	42.9
4	College	8	22.9
Occupation			
1	Housewives	25	71.4
2	Self-employed	6	17.1
3	Civil servants	4	11.4

Source: primary data, baseline 2025.

Most participants were 26–30 years old (12/35; 34.3%). The largest education group was senior high school (15/35; 42.9%). The majority were housewives (25/35; 71.4%). These characteristics suggest that messages should be practical, visual, and easy to apply in daily routines.

After the baseline assessment, participants joined face-to-face counselling, small-group discussions, role-play, and home-visit mentoring supported by visual materials. We then compared pre- and post-test results for four indicators: understanding of basic immunization types, knowledge of the recommended schedule, correct rejection of common immunization myths, and intention to attend the posyandu regularly.

Figure 1. Small-group visual-participatory education session on immunization, Nibong Village, Feb 2025.

Between group sessions, facilitators and cadres reviewed key messages, checked mothers' questions, and adapted the visual aids to local examples. This process helped align the content with everyday concerns, such as managing mild post-vaccination reactions and remembering the correct schedule.

Figure 2. Home visit: cadre-led visual counseling with a caregiver of an under-five child, Nibong Village, Feb 2025.

After these field activities, we conducted the post-test to capture short-term changes. The next table presents the distribution of correct responses and reported intentions before and after the program.

Table 2. Pre- and post-test results of visual-participatory education (n = 35)

No	Assessment aspect	Pre, n (%)	Post, n (%)	Δ percentage points
1	Understanding of basic immunization types (BCG, DPT–HB–Hib, Polio, Measles–Rubella)	10 (28.6%)	25 (71.4%)	+42.9
2	Knowledge of immunization schedule	8 (22.9%)	27 (77.1%)	+54.3
3	Correctly reject immunization myths	12 (34.3%)	23 (65.7%)	+31.4
4	Intention to attend posyandu regularly	5 (14.3%)	30 (85.7%)	+71.4

*Notes: values are counts with percentages. Item 3 is scored as "correctly reject myths." Item 4 measures **intention**, not verified attendance. Source: pre- and post-test data, 2025.*

All indicators showed clear improvement after the program. Mothers who understood basic immunization types increased from 10 to 25. Those who knew the recommended schedule rose from 8 to 27. The proportion who correctly rejected common myths increased from 12 to 23. The largest change was in intention to attend the posyandu regularly, which rose from 5 to 30. These findings are descriptive and based on self-report within one month; we did not perform inferential tests, and verification with child health cards was not conducted. As a program output, a village immunization cadre group with five active cadres was formed to continue periodic education and support follow-up activities, which aligns with evidence that structured cadre training supports sustained community education (Setyaningsih, 2023).

4. Discussion

The pre- and post-test results show short-term improvements in mothers' knowledge of basic immunization, understanding of the recommended schedule, rejection of common myths, and intention to attend the posyandu. These patterns are in line with reports that direct guidance and cadre support can increase knowledge among caregivers of under-five children (Novitasari & Sutarno, 2023). The findings also support evidence that timely and complete immunization reduces illness and death from vaccine-preventable diseases, which underlines the public health value of education that helps families complete the schedule (Herlianty et al., 2023).

Several elements of the program may explain these improvements. First, simple visual media (leaflets, posters, infographics) likely helped participants understand and remember key messages. Second, participatory sessions and role-play opened space for questions and correction of misunderstandings, which is especially useful for mothers with lower schooling levels. Third, the use of the local language made messages clearer and easier to apply in daily life. These mechanisms are consistent with earlier work that shows locally adapted education improves comprehension and acceptance of immunization (Novitasari & Sutarno, 2023).

The role of active cadres appears central. Cadres acted as a bridge between health workers and the community, provided reminders, and modeled positive behavior. This supports findings that emphasize cadres' strategic role in detecting needs, advocating for services, and mobilizing families to access basic health care (Sari, 2022). The formation of a small group of active cadres through this program is therefore a practical output that can sustain education after the study period.

Despite these gains, hesitancy remains in some families due to beliefs, personal experiences, or social influence. This suggests that one-time activities are not enough. Education should be continuous and supported by practical measures, such as reminder systems, flexible service hours, and involvement of village leaders to reinforce messages (Arianggara et al., 2023).

Contextual factors may also shape outcomes. In our data, descriptive patterns suggest possible links between maternal knowledge, distance to service points, and community support with completion of basic immunization; however, because the analysis is descriptive and no inferential tests were performed, we cannot determine which factor is most influential. Socio-economic conditions, including employment and family income, can affect access to information and priorities for health services, which in turn may influence knowledge and decisions about immunization (Smith et al., 2017). These relationships should be examined in future studies designed to test associations.

This study has several limitations that affect interpretation. The sample was small and drawn from a single village, the follow-up period was short, and outcomes relied on self-report without verification using child health cards; in addition, we did not conduct inferential statistical tests. For these reasons, the findings should be regarded as indicative rather than conclusive.

Program implications are practical. With continued support from village authorities and the health center, the cadre group formed through this program can maintain periodic education, issue reminders, and assist families in completing the immunization schedule. Simple monitoring indicators—such as the number of counseling sessions delivered, the reach of reminders, and monthly posyandu attendance—can guide ongoing improvement.

Future directions should include objective verification of behavior using child health cards and routine records, longer follow-up to assess durability of change, and, when data allow, paired statistical tests for pre–post comparisons. Where feasible, a comparison group or staggered rollout would strengthen inference. Continued collaboration among students, health workers, cadres, and government officials can help embed health education within village routines and policies (Arianggara et al., 2023; Jaafar et al., 2022; Niar & Hasriani, 2024).

5. Conclusion

The community service program in Nibong Village produced clear short-term gains. Among 35 mothers, correct understanding of basic immunization types increased from 10 to 25 participants (28.6% to 71.4%). Knowledge of the recommended schedule rose from 8 to 27 (22.9% to 77.1%). Correct rejection of common myths increased from 12 to 23 (34.3% to 65.7%). Intention to attend the posyandu regularly rose from 5 to 30 (14.3% to 85.7%). These changes followed direct education using visual and participatory methods, interpersonal counseling, and home visits in the local language. The program also created five active posyandu cadres who are ready to continue routine education, and outreach through door-to-door visits, social media, and personal approaches reached mothers who were previously passive.

The findings fit the Health Belief Model because they show movement in perceived benefits and cues to action. They also align with community empowerment theory, where active involvement of cadres and residents helps turn messages into practice. In practical terms, a contextual, cadre-supported, visual-participatory approach can strengthen awareness and near-term engagement with immunization services in village settings with similar barriers.

These results are descriptive, the follow-up period was short, and several indicators relied on self-report rather than checks with child health cards. They should therefore be read as indicative, not definitive. Continued follow-up every three months is needed to see whether gains in knowledge and intention lead to verified attendance and completion. The approach should be maintained through regular sessions with clear visual materials and practical examples, periodic training and mentoring for cadres, and updated educational tools. Door-to-door outreach, social media, and personal communication can keep reaching hesitant mothers, while stronger collaboration among village government, health workers, cadres, and community leaders can support logistics and routine monitoring. With these steps, the model can be adapted and replicated in other areas with similar conditions to help accelerate progress toward national immunization targets.

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References

Abdullah, M., Ahmad, T., Kazmi, T., Sultan, F., Afzal, S., Safdar, R. M., & Khan, A. A. (2022). Community engagement to increase vaccine uptake: Quasi-experimental evidence from Islamabad and Rawalpindi, Pakistan. *PLOS ONE, 17*(12), 1–16. https://doi.org/10.1371/journal.pone.0274718

Arianggara, A. W., Pratiwi, F. H., & Tarigan, R. A. (2023). Providing complete basic immunization to infants [Provision of complete basic immunization to babies]. *Journal Health Holistic, 7*(1), 18–27. https://doi.org/10.33377/jkh.v7i1.148

Ciselia, D., Utama Saputra, A., & Afrika, E. (2024). Health education on the importance of complete basic immunization in infants at the Srikaton Health Center 2023. *Cendikia Service Journal, 2*(9), 13–20. https://doi.org/10.5281/zenodo.10497013

Darmin, Rumaf, F., Ningsih, S. R., Mongilong, R., Goma, M. A. D., & Anggaria, A. D. (2023). Pentingnya imunisasi dasar lengkap pada bayi dan balita. *Jurnal Pengabdian Kepada Masyarakat MAPALUS, 1*(2), 15–21. https://e-journal.stikesgunungmaria.ac.id/index.php/jpmm/article/view/37

Dinas Kesehatan Aceh. (2021). *Profil Kesehatan Aceh 2021*. https://dinkes.acehprov.go.id/l-content/uploads/profile_dinkes_2021_Rev.pdf

Dinas Kesehatan Kabupaten Pidie. (2023). *Laporan akuntabilitas kinerja instansi pemerintah (LAKIP)*. https://dinkes.pidiekab.go.id/media/2024.08/lakip_20241.pdf

Erowati, D. (2025). Pendampingan kader posyandu untuk meningkatkan kemampuan konseling gizi dalam pencegahan stunting. *Room of Civil Society Development*. https://rcsdevelopment.org/index.php/rcsd/article/view/655

Hasriani, S. (2024). Upaya peningkatan pengetahuan kesehatan bayi dan balita tentang pentingnya imunisasi. *Jurnal Pengabdian Kepada Masyarakat Pusat Unggulan Iptek Penanggulangan Stunting Berbasis Kesehatan Ibu dan Anak, 3*(1), 17–23. https://doi.org/10.33088/jpustingkia.v3i1.555

Herlianty, H., Sridahrianti, E., & Rasdin, R. (2023). Optimizing children's health: The

importance of immunization at posyandu. *Abdimas Polsaka, 2*(2), 135–140. https://doi.org/10.35816/abdimaspolsaka.v2i2.54

Jaafar, I., Atallah, D., Mirza, F., Abu Musa, A., El-Kak, F., & Seoud, M. (2022). Determinants of human papillomavirus vaccine recommendation among Middle Eastern and Lebanese healthcare providers. *Clinical Epidemiology and Global Health, 17*(5), 101092. https://doi.org/10.1016/j.cegh.2022.101092

Liananiar, Y., Yuswita, N., Ernida, Y., Malia, A., & Rahmah, S. (2024). Assessment of complete immunization coverage in infants aged 0–12 months. *International Journal of Health and Medicine, 1*(3), 140–147. https://doi.org/10.62951/ijhm.v1i3.45

Niar, N., & Hasriani, H. (2024). Pendampingan dan penyuluhan imunisasi dasar lengkap. *Kolaborasi: Jurnal Pengabdian Masyarakat, 4*(3), 152–157. https://doi.org/10.56359/kolaborasi.v4i3.367

Novitasari, E., & Sutarno, M. (2023). The relationship between the role of posyandu cadres and basic immunization completeness in toddlers. *Proceedings of the International Conference on Nursing and Health Sciences, 4*(2), 475–480. https://doi.org/10.37287/picnhs.v4i2.2008

Olaniran, A., Madaj, B., Bar-Zev, S., & Van Den Broek, N. (2019). The Roles of Community Health Workers Who Provide Maternal and Newborn Health Services: Case Studies From Africa and Asia. *BMJ Global Health, 4(4)*. https://doi.org/10.1136/bmjgh-2019-001388

Putri, L. T. D., Faturrahman, Y., & Maywati, S. (2022). Analisis perilaku ibu yang tidak memberikan imunisasi dasar pada bayi. *Jurnal Kesehatan Komunitas Indonesia, 18*(1). https://doi.org/10.37058/jkki.v18i1.4724

Rahmawati, N. D., & Sartika, R. A. D. (2020). Factors related to the work motivation of health workers at the Banggae II Health Center, Majene Regency, West Sulawesi Province in 2013. *ASEAN Journal of Community Engagement, 4*(2), 485–499. https://doi.org/10.7454/ajce.v4i2.1055

Revinel, & Shabira, A. (2024). Analisis pemberian imunisasi dasar bayi 0–12 bulan masa pandemi COVID-19. *Jurnal Ilmiah Kesehatan, 13*(1). https://doi.org/10.52657/jik.v13i1.2274

Sari, L. I. (2022). *Buku ajar imunisasi bayi*. CV Media Sains Indonesia.

Setyaningsih, D., Novika, A. G., Nurtyas, M., RRD, M. G., & Kusuma, D. A. M. (2023). Peningkatan kemampuan kader posyandu melalui pelatihan tentang pendampingan ibu hamil. *Room of Civil Society Development, 2*(4), 136–143. https://doi.org/10.59110/rcsd.199

Smith, L. E., Amlôt, R., Weinman, J., Yiend, J., & Rubin, G. J. (2017). A systematic review of factors affecting vaccine uptake in young children. *Vaccine, 35*(45), 6059–6069. https://doi.org/10.1016/j.vaccine.2017.09.046

UNICEF. (2023). *Pencanangan nasional perluasan imunisasi rotavirus (RV)*. https://www.who.int/indonesia/id/news/detail/15-08-2023-national-launch-of-rotavirus-(rv)-immunization-expansion

World Health Organization. (2023). *Immunization coverage*. https://www.who.int/news-room/fact-sheets/detail/immunization-coverage

Williamson, L., & Glaab, H. (2018). Addressing vaccine hesitancy requires an ethically consistent health strategy. *BMC Medical Ethics, 19*(1), 1–8. https://doi.org/10.1186/s12910-018-0322-1