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Evaluation of the immunization program for infants and toddlers in Poasia area, Kendari City

Evaluasi program imunisasi pada bayi dan balita di wilayah Poasia, Kota Kendari

Hartati Bahar*1, Lelivianti Lelivianti², Ismaila Ismaila³, Alda Sari⁴, Dian Sasmita⁵

1, 2, 3, 4, 5 Department of Public Health, Halu Oleo University, Kendari, Indonesia

Abstract

Immunization is an important effort to prevent vaccine-preventable diseases and to protect infants and young children from the risks of infection, disability, and mortality. This study aimed to evaluate the implementation of the immunization program for infants and young children in the working area of Poasia Public Health Center and to identify factors influencing immunization completeness and its relationship with stunting prevention. A qualitative approach was employed through in-depth interviews with mothers of young children, health workers, and posyandu cadres. The results showed that the immunization program was implemented relatively well, supported by the availability of health workers and posyandu cadres, easy access to posyandu services, and friendly health services perceived by the community. The immunization process was routinely conducted through posyandu and the public health center, accompanied by coverage monitoring and health education activities. However, several barriers remained, including immunization refusal, which was largely influenced by mothers' knowledge, attitudes, and beliefs regarding immunization, as well as occasional shortages of certain vaccines. The findings highlight that mothers play a central role as the primary decision-makers in the utilization of immunization services for their children. Immunization contributes to stunting prevention by reducing the risk of infectious diseases that can disrupt appetite, nutrient absorption, and child growth. Therefore, the success of immunization programs is strongly influenced by strengthening the role of mothers through enhanced health education, continuous support from health workers and posyandu cadres, and a supportive social environment. Strengthening maternal roles is a key strategy to improve immunization coverage and promote optimal growth among infants and young children.

Abstrak

Imunisasi merupakan upaya penting dalam mencegah penyakit yang dapat dicegah dengan vaksin serta melindungi bayi dan balita dari risiko infeksi, kecacatan, dan kematian. Penelitian ini bertujuan untuk mengevaluasi pelaksanaan program imunisasi bagi bayi dan balita di wilayah kerja Puskesmas Poasia serta mengidentifikasi faktor yang memengaruhi kelengkapan imunisasi dan kaitannya dengan pencegahan stunting. Penelitian menggunakan pendekatan kualitatif dengan wawancara mendalam terhadap ibu balita, petugas kesehatan, dan kader posyandu. Hasil penelitian menunjukkan bahwa program imunisasi berjalan cukup baik, didukung oleh ketersediaan tenaga kesehatan dan kader posyandu, kemudahan akses posyandu, serta pelayanan yang dinilai ramah oleh masyarakat. Proses pelaksanaan imunisasi dilakukan secara rutin melalui posyandu dan puskesmas, disertai kegiatan pemantauan cakupan dan edukasi kesehatan. Namun, masih ditemukan hambatan berupa penolakan imunisasi yang sebagian besar dipengaruhi oleh pengetahuan, sikap, dan keyakinan ibu terhadap imunisasi, serta adanya kekosongan vaksin tertentu pada waktu tertentu. Temuan penelitian menegaskan bahwa ibu memiliki peran sentral sebagai pengambil keputusan utama dalam pemanfaatan layanan imunisasi bagi anak. Imunisasi berkontribusi dalam pencegahan stunting melalui penurunan risiko penyakit infeksi yang dapat mengganggu nafsu makan, penyerapan nutrisi, dan pertumbuhan anak. Oleh karena itu, keberhasilan program imunisasi sangat dipengaruhi oleh penguatan peran ibu melalui peningkatan edukasi, pendampingan oleh tenaga kesehatan dan kader posyandu, serta dukungan lingkungan sosial. Penguatan peran ibu menjadi strategi kunci untuk meningkatkan cakupan imunisasi dan mendukung pertumbuhan optimal bayi dan balita.

Keywords:

immunization; infants; children; stunting; health center

Correspondence:

Kampus Hijau Bumi Tridharma, Anduonohu, Kec. Kambu, Kota Kendari, 93232, Sulawesi Tenggara, Indonesia

INTRODUCTION

Immunization is a public health intervention that plays a critical role in reducing the burden of vaccine-preventable diseases. Globally, these diseases continue to cause approximately two to three million deaths each year (Darmin et al., 2023). In response to the high burden of vaccine-preventable diseases, global immunization efforts have been systematically developed through structured programs. The World Health Organization (WHO), through the Expanded Program on Immunization (EPI), established immunization initiatives to protect children against six major diseases: tuberculosis, diphtheria, pertussis, measles, tetanus, and polio (Sari, 2020).

Despite continuous development of immunization programs, an estimated 14.3 million children worldwide have not yet received basic immunization. In Indonesia, coverage of complete basic immunization among infants aged 0–11 months reached approximately 84% during the 2020–2021 period and increased to 94.6% through the catch-up immunization program in 2022; however, coverage disparities persist across several regions. Infants are categorized as having received complete basic immunization when they obtain all mandatory vaccines according to the recommended schedule before the age of one year, as a preventive measure against Vaccine-Preventable Diseases (VPDs) (Akbar et al., 2025).

Children who receive immunization develop specific immunity against diseases corresponding to the type of vaccine administered. The completeness of basic immunization among infants and young children is influenced by various factors, particularly maternal knowledge and attitudes, family support, the role of healthcare workers, access to health services, and the sociocultural context of the community. These factors play a significant role in maternal decision-making regarding the completion of a child's basic immunization schedule. Mothers with a good understanding of immunization tend to ensure that their children receive complete immunization, whereas limited understanding can become a barrier to immunization completion. Therefore, these factors constitute key variables that must be examined to improve basic immunization coverage among infants and toddlers (Ulsafitri & Yani, 2023).

Numerous studies indicate that incomplete immunization among infants results from interactions between individual, psychosocial, and healthcare service-related factors. Informational factors, particularly maternal knowledge regarding vaccine types, immunization

schedules, benefits, and potential side effects, serve as determinants in decision-making. information and the presence of misconceptions within the community can reduce trust in immunization and negatively influence maternal attitudes. In addition, motivational factors-such as tendencies to delay immunization, low confidence in vaccine benefits, and exposure to negative information—further exacerbate barriers to immunization completion. Environmental and situational factors, including access to immunization services, schedule compatibility, availability of healthcare personnel and vaccines, and family socioeconomic conditions, also contribute to immunization coverage. In this context, child illness and parental time constraints are often cited as practical reasons for delaying or discontinuing immunization. Overall, the literature highlights maternal knowledge as a central factor influencing responses to motivational and situational barriers. Mothers with higher levels of knowledge tend to demonstrate positive attitudes, are better able to critically evaluate information, and are more adaptive in overcoming service-related constraints, thereby increasing the likelihood of completing their children's basic immunization. Accordingly, considering the various identified barriers, this study aims to explore the implementation of the basic vaccination program in the working area of Poasia Primary Health Center, Kendari City.

METHODS

This study used a descriptive qualitative approach to describe the implementation of vaccination programs for pregnant women, infants, and toddlers in the working area of the Poasia Community Health Center, Kendari City. Informants were selected purposively based on their involvement and knowledge of the implementation of vaccination programs, consisting of mothers of infants or toddlers, Community Health Center immunization officers, and Posyandu cadres. Data collection was conducted through in-depth interviews, observations. documentation studies. Data analysis was performed qualitatively through the stages of data reduction, data presentation, and conclusion drawing. This study has obtained ethical approval from the authorized health research ethics committee. All informants were given an explanation of the objectives, procedures, and potential risks of the study and were asked to give their informed consent to participate voluntarily before data collection. The confidentiality of the informants' identities was maintained by using codes or initials, and all data were used only for research purposes. Data validity was ensured through

triangulation of sources, methods, and time by comparing information from various informants, data collection techniques, and data collection times.

RESULTS

Input

In-depth interviews regarding the actors involved in vaccination initiatives for infants and toddlers in the working area of Poasia Primary Health Center revealed that healthcare workers, posyandu (integrated health post) cadres, and parents of infants and young children play highly significant roles in program implementation. Healthcare workers serve as the main implementers of vaccination services, both at the primary health center and at posyandu. Health personnel stated that immunization services can be delivered in both settings; however, implementation more commonly takes place at posyandu due to greater accessibility for the community. This was confirmed by an informant:

"So immunization services for pregnant women and toddlers can be conducted at the health center or at posyandu, but most services are usually provided at posyandu." (YT, 42 years, Immunization Officer)

Healthcare workers also emphasized their responsibilities in reporting and evaluating immunization coverage:

"We only implement services in the field, then report our coverage and evaluate whether it meets the target, and afterward report it to the health office." (YT, 42 years, Immunization Officer)

"Currently, we are still using data from the central data system, so it does not fully reflect field conditions. The data are provided by the health office." (YT, 42 years, Immunization Officer)

From an infrastructure and logistics perspective, vaccine availability was generally considered adequate, although shortages of certain vaccines, such as rotavirus, had occurred at specific times. One informant stated:

"At present, we have sufficient vaccine supplies, praise be to God, but two months ago we experienced a shortage of rotavirus vaccine for two consecutive months. Compared to previous years, DPT stock was also very limited." (YT, 42 years, Immunization Officer)

In addition to healthcare workers, posyandu cadres play a crucial role in the success of the immunization program. Cadres actively provide information to mothers of

toddlers regarding the importance of immunization and encourage attendance at posyandu. One cadre explained:

"Based on our experience supporting immunization at posyandu, our method is quite effective by informing mothers that immunization is very important for children. The challenge depends on mothers' understanding; some understand, some do not. Their attendance at posyandu is not something we can force." (H, 44 years, Posyandu Cadre)

However, immunization refusal was still encountered, particularly related to beliefs about halal and haram issues:

"The situation is generally good, but there are still some people who refuse the program, especially those influenced by views about halal and haram. Even when we offer home visits, they still do not want their children to be vaccinated." (YT, 42 years, Immunization Officer)

Overall, input analysis indicates that healthcare workers are responsible for providing and implementing immunization services at both the primary health center and posyandu, with most services delivered at posyandu due to better accessibility. Healthcare workers also conduct recording and reporting as part of program monitoring. Vaccine availability is generally sufficient, although occasional shortages occur. In addition to service provision, healthcare workers deliver education and counseling to pregnant women and mothers of young children. Nevertheless, immunization refusal persists, largely influenced by specific beliefs or undisclosed personal reasons.

Process

In-depth interviews on immunization implementation revealed that immunization activities in the Poasia Primary Health Center area are conducted through both posyandu and the health center, with posyandu serving as the primary service point due to its proximity to the community. This was affirmed by a healthcare worker:

"Immunization services can be provided at the health center or posyandu, but they are more often conducted at posyandu." (YT, 42 years, Immunization Officer)

During implementation, healthcare workers not only administer vaccines but also monitor and evaluate coverage to determine whether targets have been achieved and prepare reports for submission to the health office:

"We report coverage results and evaluate whether they meet the predetermined targets." (YT, 42 years, Immunization Officer)

Healthcare workers also face challenges related to parental refusal, particularly in school-based immunization programs where coverage remains low:

"Immunization coverage for schoolchildren does not reach 50% because parents refuse. Even when we invite them for socialization, they do not attend." (YT, 42 years, Immunization Officer)

On the other hand, posyandu cadres play an active role in mobilizing mothers to attend posyandu and in providing immunization-related information. Cadres also collaborate with healthcare workers to monitor the condition of pregnant women and toddlers:

"If there is a pregnant woman with chronic energy deficiency or a toddler with malnutrition, we report it to health workers, and they will follow up directly." (H, 44 years, Posyandu Cadre)

Monitoring child growth is also an integral part of posyandu services and is perceived as essential by mothers:

"It is very important so that we know our child's development, height, and weight." (A, 33 years, Mother of a Toddler)

"It is not far because it is close to our house; the posyandu is nearby." (A, 33 years, Mother of a Toddler)

Healthcare workers and cadres also conduct education on immunization and stunting prevention, and collaborate with private healthcare facilities such as hospitals and midwife practices to improve immunization coverage:

"Our current strategy is to improve immunization services by collaborating with private hospitals, midwife practices, and conducting immunization outreach." (YT, 42 years, Immunization Officer)

Process analysis indicates that immunization implementation is conducted regularly and systematically, with strong support from healthcare workers and posyandu cadres. However, community refusal remains a major barrier to achieving optimal immunization coverage.

Output

In-depth interviews regarding outcomes following vaccination in the Poasia Primary Health Center area indicated that most mothers of young children respond positively and regularly bring their children to health posts. This positive response was described by a cadre:

"So far, mothers with young children and pregnant women are very happy." (H, 44 years, Posyandu Cadre)

Mothers also reported that immunization services at posyandu were of good quality and user-friendly:

"The service is good, and the staff are friendly." (A, 33 years, Mother of a Toddler)

Vaccination outcomes were also perceived to contribute to better child health and growth. Healthcare workers explained that vaccinated children tend to be less frequently ill, which supports optimal weight gain:

"If children do not get vaccinated, frequent illness will definitely affect their weight. Usually, children who regularly attend the health post are healthier and have ideal body weight." (YT, 42 years, Immunization Officer)

Nevertheless, challenges remain, as some individuals continue to refuse vaccination due to belief-related reasons:

"Some people still refuse this program, especially those with strict beliefs about what is permissible. We cannot force them because it concerns their beliefs." (YT, 42 years, Immunization Officer)

Efforts to strengthen the vaccination program are ongoing through collaboration with community leaders, intensified information dissemination, and active case finding:

"We really need to collaborate with various groups, especially local community leaders, to encourage people to get vaccinated." (YT, 42 years, Immunization Officer)

Overall, output analysis shows positive responses from pregnant women and mothers of toddlers toward immunization services, which are perceived as friendly and of good quality. Immunization contributes to improved health among infants and young children, reflected in reduced illness frequency and better weight gain, and plays a role in stunting prevention by lowering infection risk. Community awareness of the importance of immunization has increased, leading to expanded coverage, although refusal based on specific beliefs remains a barrier. Strengthening immunization programs is supported by cross-sector collaboration, engagement of community leaders, and increased utilization of posyandu services due to their accessibility.

DISCUSSION

Based on the study findings, the input component

of the immunization program implementation in the working area of Poasia Primary Health Center includes the availability of human resources, facilities and infrastructure, vaccine logistics, and community support. Healthcare workers and posyandu health cadres are the main actors directly involved in providing immunization services, both at the primary health center and at posyandu. This finding is consistent with the function of posyandu as a collaborative platform between healthcare providers and the community in efforts to reduce morbidity and mortality among infants and toddlers. The role of health cadres highlights the substantial level of community involvement in posyandu implementation. Health cadres are selected by the community, work with a focus on five main programs, and receive support from healthcare workers for tasks that cannot be performed independently (Saepudin et al., 2017).

In terms of facilities and logistics, vaccines, cold-chain equipment, and immunization supplies are generally well available in the Poasia Primary Health Center area. However, the study identified shortages of specific vaccines, such as rotavirus, which was unavailable for two consecutive months. According to Astuti et al. (2023), maintaining optimal vaccine conditions remains a major challenge in vaccination programs. Proper vaccine handling through effective cold-chain management can prevent wastage, improve service quality, support the achievement of immunization targets, reduce the incidence of vaccine-preventable diseases (VPDs), and minimize adverse events following immunization (AEFI).

Beyond infrastructure-related aspects, low immunization coverage is also influenced by non-technical factors. Low vaccination uptake represents a complex problem, not only related to costs and vaccine availability, but also to the dedication of healthcare workers in delivering information and immunization services to infants and young children (Paramitha et al., 2025). The present study indicates that parental refusal remains a major challenge in implementing the immunization program at Poasia Primary Health Center. Various misconceptions about immunization persist in the community, including concerns about vaccine risks. This condition suggests that limited parental understanding may constitute a significant barrier when the information provided is insufficient.

At the process stage, the findings demonstrate that immunization implementation in the Poasia Primary Health Center area is conducted routinely through both the health center and posyandu, with posyandu serving as the primary service location due to its greater accessibility.

Healthcare workers are responsible not only for vaccine administration but also for monitoring coverage, evaluating target achievement, and reporting to the district health office, indicating that monitoring and evaluation mechanisms are functioning systematically. Posyandu cadres play a crucial role in supporting immunization processes by mobilizing mothers of toddlers and pregnant women, providing immunization education, and reporting cases of undernutrition and other health problems to healthcare workers. This role aligns with Lubis et al. (2025), who emphasized that community health cadres are key contributors to the success of primary healthcare services. In immunization activities, cadres record immunization targets, provide education, encourage service utilization, report obstacles, document outcomes, and conduct home visits for absent targets. Collectively, these roles contribute to increasing acceptance and participation among mothers primary decision-makers regarding as the immunization.

Maternal roles are particularly critical in vaccination programs, as the utilization of child health services is closely linked to maternal attitudes and beliefs regarding immunization. Mothers are the individuals closest to infants and young children, making their perceptions central to immunization decisions. Although individuals have the right to make personal choices, parents bear responsibility for safeguarding their children's health and safety. Vaccination is not a new health intervention in Indonesia; however, parental hesitation remains common (Yunilia et al., 2021). Attitudes and beliefs are internal factors influencing maternal behavior. Attitudes develop as responses to stimuli and may translate into actions, although positive attitudes do not always result in appropriate behavior. Beliefs relate to what individuals perceive as true, including beliefs about vaccine safety and benefits. Persistent vaccine hesitancy in various regions of Indonesia reflects incomplete trust in immunization. According to the Directorate General of Disease Prevention and Control, low immunization coverage is influenced by refusal driven by concerns about side effects and misinformation, exacerbated by limited educational outreach (Novianda & Qomaruddin, 2020). Vaccines play a vital role not only in preventing infectious diseases but also in supporting child growth and development through routine monitoring of weight and height.

The output of the immunization program implementation in the Poasia Primary Health Center area demonstrates generally positive outcomes. Most mothers of

toddlers and pregnant women responded positively to immunization services, expressed satisfaction with friendly service delivery, and routinely brought their children to posyandu. The proximity of posyandu to residential areas supports sustained service utilization. The study also indicates that program success is not determined solely by service readiness but is highly dependent on the role of mothers as primary decision-makers in child immunization. Therefore, strengthening maternal roles is key to improving immunization coverage. This can be achieved through continuous health education, culturally appropriate communication approaches, and sustained support from healthcare workers and posyandu cadres. Cross-sector collaboration and the involvement of community leaders are also necessary to support informed maternal decisionmaking, ultimately promoting optimal health and growth among infants and toddlers.

From a child health perspective, the findings indicate that immunized children tend to experience fewer illnesses and exhibit better growth with more optimal body weight. This finding is consistent with Setyarini et al. (2025). The relationship between vaccination and stunting is closely linked to infectious disease incidence. Children who do not receive complete basic immunization are at a threefold higher risk of stunting compared to those immunized according to the recommended schedule (Wanda et al., 2021). Nevertheless, immunization coverage has not yet reached optimal levels due to persistent refusal among certain community groups. Consequently, strengthening immunization programs through cross-sector collaboration, community leader engagement, and continuous educational approaches remains essential. In line with Mildawati et al. (2024), multi-stakeholder collaboration is a key strategy for improving immunization coverage.

CONCLUSION

The implementation of the immunization program in the working area of Poasia Primary Health Center involves healthcare workers, posyandu cadres, and mothers of infants and toddlers, with immunization services predominantly delivered through posyandu due to ease of access. Vaccine availability is generally adequate, although periodic shortages of specific vaccines have occurred. Immunization processes are conducted routinely, accompanied by systematic recording, coverage monitoring, and reporting, and are supported by the role of cadres in target mobilization and health education. Maternal responses to immunization services are predominantly

positive, as reflected in regular attendance at *posyandu*. Immunization contributes to improved child health outcomes, characterized by reduced illness frequency and more optimal growth. However, immunization refusal among certain segments of the community remains a barrier to achieving optimal coverage.

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AUTHORS' CONTRIBUTIONS

Hartati Bahar conceptualized the study, developed the research methodology, and led the drafting and revision of the manuscript. As the corresponding author, she coordinated the research process and finalized the submission. Lelivianti Lelivianti contributed to data collection and literature review. Ismaila Ismaila assisted with data analysis and interpretation. Alda Sari supported data management and contributed to manuscript editing. Dian Sasmita reviewed the manuscript and provided critical input to improve its intellectual content. All authors read and approved the final version of the manuscript.

AUTHORS' INFORMATION

Hartati Bahar is a Researcher in the Department of Public Health, Halu Oleo University, Kendari, Indonesia. Lelivianti Lelivianti is a Researcher in the Department of Public Health, Halu Oleo University, Kendari, Indonesia. Ismaila Ismaila is a Researcher in the Department of Public Health, Halu Oleo University, Kendari, Indonesia. Alda Sari is a Researcher in the Department of Public Health, Halu Oleo University, Kendari, Indonesia. Dian Sasmita is a Researcher in the Department of Public Health, Halu Oleo University, Kendari, Indonesia.

COMPETING INTERESTS

The authors affirm that there are no conflicts of interest related to the research, writing, or publication of this article.

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