Barriers felt by nurses related to childhood basic immunisation in East Nusa Tenggara: A phenomenological study

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Abstract

Background: Immunisation barriers can increase morbidity and mortality associated with vaccine-preventable diseases. Understanding barriers to childhood vaccination is critical to informing effective interventions to maximise coverage.
Purpose: This study aims to explore the experiences of nurses involved in immunisation related to the obstacles they experience in immunisation activities.
Methods: This research is qualitative research with a phenomenological approach. Nurse participants who manage immunisation activities at the public health centre were recruited using a purposive sampling technique. In-depth interviews were conducted with 15 nurses who work in immunisation activities. Inclusion criteria are nurses who directly provide immunisation services and have managed the immunisation programme for more than one year. Exclusion criterion was nurses who were on leave. The study was conducted from August to September 2022, and face-to-face interviews were conducted. Interview transcripts were analysed using the thematic analysis method.
Results: Three major themes were generated in this study, namely: 1) barriers to immunisation governance systems, 2) barriers to vaccine recipients, and 3) policy barriers.
Conclusion: Interventions to overcome barriers to immunisation need to be carried out comprehensively at various levels, such as promoting the benefits of vaccines for the community, strengthening the capacity of officers' competence, reducing political bias, and funding supporting facilities for immunisation programmes.

Keywords: immunisation; nurse; qualitative; vaccine

Introduction

Efforts to increase immunisation coverage are critical because they can increase group immunity, reduce outbreaks and reduce healthcare costs (Ministry of Health Republic of Indonesia, 2020). Currently, there is a decline in immunisation coverage. Reports show that global immunisation coverage fell from 86% in 2019 to 83% in 2020. The total number of unvaccinated children in the same year increased to 3.4 million (World Health Organization, 2021).

According to the Ministry of Health Republic of Indonesia (2022), in October 2021, Indonesia's Complete Basic Immunisation achievement was only 67.9% of the national target of 93.6%. At the same time, the coverage of complete basic immunisation in East Nusa Tenggara is only 60.9%. Data from the Provincial Health Office show that the achievement of Complete Basic Immunisation in East Nusa Tenggara (December 2021) is still far from the target of 90%, where, in detail, the coverage of HB0 (<24 HOURS) is 72.9%, HB0 (1-7 DAYS) 3,8%, BCG 78.9%, POLIO 1 79.7%, DPT/HB-Hib

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79.2%, POLIO 2 80.2%, DPT/HB-Hib (2) 76.4%, POLIO3 78.1%, DPT/HB -Hib (3) 73.8%), POLIO4 76.8%, IPV 63.8%, Measles+RUBELLA (MR) 81%, DPT/HB/HIB 60.7%. Explicitly, in the East Nusa Tenggara Provincial Health Office report, the district in East Nusa Tenggara province with the lowest complete basic immunisation achievement, namely East Sumba, amounted to 51.9%% (East Nusa Tenggara Provincial Health Office, 2022). Meanwhile, based on Central Bureau of Statistics East Nusa Tenggara (2021) data from the East Nusa Tenggara province in 2020, it was recorded that East Sumba Regency was included in six of the 22 regencies that had the largest population of children under five after 0-4 years in East Nusa Tenggara, namely 33,079 people. Based on the data above, it can be predicted that the generation of children in East Sumba is at risk of experiencing morbidity and even death due to low immunity. Various reasons can cause low immunisation coverage.

A study conducted by Al-Salihi et al. (2019) indicated that the leading causes were missed opportunities for immunisation due to problems with health workers, issues related to parents, logistical issues, and service organisation. Other studies have shown that socio-demographic factors such as lower economic status, educational status, advanced age, religious and cultural beliefs, fear of adverse events, and misinformation about vaccines are some of the determinants that cause concern and refusal to vaccinate so that immunisation coverage is low (Rosen et al., 2021; Yufika et al., 2020). Studies on immunisation barriers and their achievements are still very minimal in East Nusa Tenggara, especially East Sumba Regency which is the Regency with the lowest immunisation achievement.

An understanding of immunisation barriers can assist nurses in determining a comprehensive strategy to increase immunisation coverage because of the nurse's role as the leading advocate for immunisation programmes (Bajnok et al., 2018; Wade, 2014) and supporters of efforts to increase the degree of community health (Hirani & Wüst, 2022).

This study explores the experiences of nurses involved in immunisation related to the constraints they experience in immunisation activities. A qualitative study approach is needed to understand the obstacles nurses feel so that a picture of the problem can be found for future improvements. Understanding nurses' perceived barriers will help inform decision-makers and other relevant actors involved in immunisation programmes and guide health interventions to increase immunisation coverage.

Materials and Methods

Design

This type of research is qualitative research with a phenomenological approach that aims to describe the essence of a phenomenon by exploring it from the point of view of those who have experienced it (Neubauer et al., 2019). In this study, the phenomenon experienced by nurses is related to obstacles in giving immunisations.

Participants and Setting

This study's participants were nurses assigned to provide immunisation services at health facilities such as public health centres. A total of 15 participants were recruited using a purposive sampling technique. The recruitment process began with an approach to the district health office to determine the number of immunisation management nurse personnel in each public health centre. Then the head of each public health centre was approached, who received a recommendation from the health office to be facilitated and meet with participants. The participant inclusion criteria are nurses who directly provide immunisation services and have managed the immunisation programme for more than one year. In comparison, the exclusion criterion was nurses managing the programme who were on leave. Before conducting the interview, the researcher explained the purpose of the research and the consent letter was given before the interview.

Data collection

Data collection was carried out in August-September 2022. The interview process was conducted face-to-face by a researcher with previous experience in conducting qualitative studies. An explanation of the research was submitted to the participants for approval. The semi-structured in-depth interview process was carried out in the study for 45-60 minutes using the interview guide that had been provided. Audio recordings and notes were used in the data collection process. Each transcribed datum was returned to the participants for review. Saturation was reached at the 15th participant.

Data analysis

A thematic analysis approach was used in analysing the data. Thematic analysis is an approach that involves searching for patterns of meaning that are explored further and determining how these patterns can be organised into themes (Sundler et al., 2019). The thematic analysis approach is carried out in several steps as follows; 1) two researchers looked at common themes that emerged by transcribing audio into text, 2) determining keywords from each participant's statement, 3) collecting keywords into sub-themes, 4) uniting sub-themes into several relevant themes. Each finding was returned to the participants for review, and triangulation of library sources was carried out to assess the suitability of the data with previous results.

Ethical consideration

Ethical approval (No.079/UCB.LPM/EP.25.08/2022) was obtained from the ethics committee of the Universitas Citra Bangsa Kupang.

Table 1. Demographic Characteristics (n= 15)

Demographic characteristics	F	%
Sex		
Female	9	60
Male	6	40
Age (Years)		
25-35	5	33,3
36-45	8	53,3
46-55	2	13,3
Educational Background		
3 Year Diploma	7	53,3
Bachelor of Nursing	8	46,6
Length of the service immunization program (years)		
1-5	11	73,33
5-10	4	26,6

Table 2. Overview of the Theme

Theme	Sub-Theme
Barriers to the Immunization Governance System	Cold Chain That is Not Yet Optimal
	Late Vaccine Supply
	Lack of Immunization Workers
	Distance
	Cooperation Across Sectors is Not Optimal
	Poor Recording System
Barriers to Vaccine Recipients	Parental Vaccine Refusal
	Lack of Knowledge of Parents
	False information regarding vaccination
	Negative experience from previous immunization
	Contrary to religious belief
Theme 3: Policy Barriers	Changes in the Regional Political Situation
	Lack of Training Support for Officers

Trustworthiness

In this qualitative study, we followed Sandelowski's (1986) method following four standards: 1) to maintain credibility, the researcher started with open-ended questions and allowed participants to talk about their experiences freely in their language. The researcher maintains neutrality without involving their own thoughts, experiences, and emotions, and the same questions are asked in different forms to allow for repeated identification during interviews and analysis. 2) Conformity is formed based on in-depth data collection until the participants' statements are saturated. In this study, the researchers extracted significant ideas from participants' descriptions of specific and vivid experiences. 3) In this study, the researcher received feedback from fellow co-authors on the study's results and carefully discussed the analysis and interpretation of the data. 4) For conformity in this study, we quote participants' comments so that readers can verify the interpretation and analysis of the data. For this purpose, we separately record the researcher's preconceptions, assumptions, and ideas about the topic during the entire research process. This is done by consciously comparing and analysing current interview data and the results of previous studies. As such, these findings reflect the experiences and opinions of the study participants as much as possible, minimising the researcher's prejudices. Finally, participants reviewed the summary of the study results to verify whether they captured the essence of their experience.

Results

Overview of participant

The number of participants in this study was 15, consisting of six men and nine women. The highest age was 36-45 as many as eight participants.

Bachelor of Nursing dominates education with as many as eight participants. The longest working time to manage the immunisation programme was 1-5 years, with 11 participants (Table 1).

Theme

This study resulted in three major themes related to the barriers nurses felt: 1) barriers to immunisation governance systems, 2) to vaccine recipients, and 3) policy barriers. The overall description of the theme can be seen in Table 2.

Theme 1: Barriers to the Immunisation Governance System

Immunisation governance is closely related to many systems, such as cold chain management, vaccine participant data reporting, vaccine availability, vaccination officers, and facility availability. This study shows that there are barriers to immunisation governance which will be explained in the following sub-themes

Sub-Theme 1: Cold Chain that is Not Yet Optimal

The cold chain plays an essential role in ensuring that the quality of vaccines received by vaccinated participants remains good quality. Participants explained that the cold chain supply often experiences problems and is not optimal due to electrical issues and a lack of equipment.

"We have problems with electricity and equipment to store vaccines here. Our refrigerator has only one function; we have difficulty storing our vaccines because it does not meet the standards, and our vaccines are often damaged". (P13)

Sub-Theme 2: Late Vaccine Supply

The continuity of vaccination is strongly influenced by the timely delivery of vaccines to the vaccination service. There are still problems with delays in vaccine delivery due to transportation problems between regions.

"Our immunisation activities are sometimes hampered because of the absence of vaccines in districts that are sent from the province; if the ship does not sail, the vaccine delivery will be hampered, sometimes we write letters to provincial pharmaceutical supplies, and the response is also slow so often the vaccine delivery is not the on schedule". (P3)

Sub-Theme 3: Lack of Immunisation Workers

During the COVID-19 pandemic, vaccine officers were focused on handling COVID-19, so the number of immunisation officers was reduced, affecting immunisation activities. One participant explained this statement.

"We are immunisation officers during the COVID-19 pandemic; some people are divided into the activities of the COVID-19 task force so that immunisation service personnel are reduced". (P14)

Sub-Theme 4: Distance

Access to immunisation services is related to the distance between the community's residence and the place of immunisation service. This is reflected in the statement.

"The distance from where our community lives with immunisation activities is too far, people who live in plantation areas find it difficult to get to the village for immunisation activities, and there are no adequate means of transportation". (P2)

Sub-Theme 5: Cooperation Across Sectors is Not Optimal

Cross-sectoral cooperation is an essential element in supporting the continuity of immunisation activities. Participants revealed that cross-sectoral cooperation in making vaccination activities successful has yet to run optimally.

"We are rarely invited to meetings to decide on immunisation service activities at school, even though it is good, so we can adjust the time for the children and discuss it with the school principals; we only get a notification letter if there is an immunisation activity". (P13)

Sub-Theme 6: Poor Recording System

Recording and reporting systems are an essential part of vaccine governance. The reporting and recording system allows data on the number of immunisation participants and coverage to be available.

"Our records are problematic, data from cadres, health centres, schools, and private practice for children who have been immunised or data on immunisation participants are often out of sync, so reporting is often based on invalid data". (P4)

Theme 2: Barriers to Vaccine Recipients

The direct beneficiaries of this vaccine are children; however, parents play a central role in including their children in vaccination programmes. Many complex problems can affect parental involvement in immunisation, such as lack of knowledge, negative experience with previous vaccines, trust issues, and the inability to access immunisation services due to geographic distance. Barriers to vaccine recipients, such as parents, are described in the following sub-themes:

Sub-Theme 1: Parental Vaccine Refusal

The fear of vaccines arises because of AEFI (Adverse Events Following Immunisation) developing in the community. Hence, parents are reluctant to take their children to take immunisations.

"We were chased away with sharp weapons when giving vaccines. Previously, the family objected to cases of AEFI such as fever and swelling in the former immunisation area, and they considered the vaccine dangerous for their child's health". (P7)

Sub-Theme 2: Lack of Knowledge of Parents

Lack of knowledge contributes to parents' desire to involve their children in immunisation activities.

"When we arrived at the vaccination site with the team, none of the participants were present. After we checked, they asked what the immunisation was for. When we were little, we were not immunised and are still healthy until now; immunisation is only for you city people". (P11)

Sub-Theme 3: False Information Regarding Vaccination

Fake news on the internet sabotages immunisation coverage because parents are reluctant to take their children to immunisation services.

"We identified parents in the city who were reluctant to take their children to take immunisations because there was information that vaccines were a tool to control a person's body and weaken the ability to think, and this developed in the family's WhatsApp group making it difficult to identify and control". (P9)

Sub-Theme 4: Negative Experience from Previous Immunisation

Negative experiences of previous vaccines in their children make it difficult for parents to let officers immunise their children.

"Once, their first child in 2015 was vaccinated and had seizures and fever for a few days; after we checked, it turned out to be malaria too, but after that, they did not allow the second and third children to get the vaccine". (P15)

Sub-Theme 5: Contrary to Religious Belief

The problem of belief that affects immunisation actions is the most severe challenge in Indonesia, even in rural areas such as in East Sumba.

"We are here, sir, there are still families from certain belief groups that do not believe in vaccines, and there was the issue of pork serum in the vaccine yesterday; it is getting more difficult; most of them are in the city of this group, we have also made an approach with religious leaders who exist, and there has been an appeal letter issued". (P10)

Theme 3: Policy Barriers

Immunisation policies set by the government have an essential role in determining immunisation coverage, especially facility support and the provision of competent vaccine staff resources. The analysis in this study shows that there are still policy-related barriers reflected in the existing sub-themes.

Sub-Theme 1: Changes in the Regional Political Situation

Regional political changes, such as the change of regional heads, will affect the vaccine management structure at various levels.

"Here, every time there is a change of regent, there must be a change of officers due to political opponents; there are two health centres whose officers have just been replaced and transferred to other parts that are not their fields and replaced by new officers who do not understand vaccine management or are poorly trained". (P10)

Sub-Theme 2: Lack of Training Support for Officers

The training allows the competence of officers to be better and optimal so that they can manage the immunisation program better, but participants reveal the lack of training obtained.

"It has been five years I have been the immunisation manager at this community health centre; I have never received any immunisation training, especially about the cold chain; we only got a guidebook, so I often had trouble interpreting the contents in the book, other friends complained about the same thing" .(P14)

Discussion

Immunisation Governance System Barriers

In this study, participants revealed several obstacles related to the low immunisation coverage influenced by problems in immunisation governance, such as the non-optimal cold chain system to ensure the quality of vaccine delivery from producers to users. This is in line with the study Bangura et al. (2020) conducted on 76 articles related to immunisation barriers in sub-Saharan Africa, where one of the causes of low immunisation coverage is caused by a broken cold chain. The broken cold chain decreases vaccine stocks and impacts low immunisation coverage (Gooding et al., 2019). Policy-making groups need to consider ensuring the quality of the cold chain from vaccine producers, especially cold chain equipment to users, to support immunisation coverage.

Another obstacle that arises is the delay in the supply of vaccines. A logistic regression study in 33 Sub-Saharan African countries conducted by Janusz et al. (2021) on children aged 12-35 showed that delayed vaccine scheduling because of delivery delays could reduce the coverage of immunisation programmes. It was scheduled effectively, so that vaccine delivery was not disrupted.

The shortage of immunisation personnel is a serious challenge faced during the COVID-19 pandemic due to the diversion of resources. The lack of vaccinators seriously threatens efforts to meet vaccination coverage. Studies in Pakistan show that a lack of vaccinators in rural areas contributes to low immunisation coverage (Sahito et al., 2020) and an increase in polio cases (Hussain et al., 2016).

The problem of access to health services due to distance is an obstacle related to governance found in this research. A mixed study of 311 childcare couples in Uganda explained that the distance for parents to reach several immunisation centres was quite far. This also means that health workers providing immunisation services must travel longer distances, which can be a challenge

when transportation facilitation is inadequate and geographical terrain is difficult to reach. This can lead to suboptimal immunisation services (Malande et al., 2019). The lack of cross-sectoral partnerships could be another challenge that hinders immunisation efforts. The report by Zhu et al. (2019) explains that cross-sectoral partnerships, cross-sectoral interactions, and cross-sector exploration are essential to overcoming public health problems. Stakeholders can come from the health sector, social services, community leaders, education, and religious leaders.

Poor record-keeping is a perceived challenge in assessing immunisation coverage levels. A study in Bali, Indonesia, conducted in six districts, showed that an ineffective recording and reporting system based on reporting at the community health centre could reduce the quality of data on immunisation programme achievements (Sawitri et al., 2021). Comprehensive information systems are needed to track immunisation uptake at the individual and population levels (Atkinson et al., 2020).

Nurses managing immunisation programmes need to be involved in advocating for work related to immunisation. Critical and supportive evaluation of institutional policies related to immunisation is a concrete step that nurses must take in overcoming obstacles to immunisation governance (Navin et al., 2020). The study conducted by Ogboghodo et al. (2018) explains that it is important for nurses to increase their knowledge and skills related to cold chain management in supporting immunisation efforts so that they become quality and effective. Another important thing that needs to be considered is nurses' commitment to making immunisation reports. Computer- and internet-based approaches to reporting can facilitate nurses' work and improve the quality of reports (Silva et al., 2020).

Vaccine Recipient Barriers

The biggest obstacle for vaccine recipients is closely related to fear of vaccines. In this study, the fear associated with AEFI developed in the community. Hence, parents were reluctant to take their children to take immunisations. A cross-sectional study of 440 parents/caregivers in Pakistan showed that fear of AEFI has hindered children's immunisation activities (Epaulard et al., 2022). Health workers need to educate parents/caregivers about AEFI; thus, health education will expand immunisation compliance and acceptance among those who refuse due to AEFI issues. This study also found that negative experiences due to previous immunisations affected parents' desire to immunise their children. This is in line with a study of 2,722 parents/caregivers in Ethiopia which showed that a bad experience related to a child's last routine vaccination was a predictor for parents not to take their child for immunisation (Porth et al., 2019). Everyone who comes to be immunised has their history, psychological strengths and vulnerabilities, and perceptions of the procedure and its social context. Nurses must take a holistic approach to educate and convince families to return to trust and engage in immunisation activities. In this study, the obstacle that arises from the side of the immunisation recipient is the complexity of immunisation scheduling, which confuses parents. Reports from Australia indicate that barriers to compliance with national immunisation programs include difficulty remembering whether children have been vaccinated, timing and location of care, and lack of awareness of vaccination schedules (Atkinson & Atkinson, 2021). A study of 5534 households with children undergoing immunisation in Australia explained that an approach to facilitate children's immunisation due to complex scheduling could be made through improving communication by sending letters and pamphlets directly from immunisation managers to parents regarding the child's immunisation schedule (Borg et al., 2018).

In this study, participants also explained the influence of parental beliefs that hinder children's immunisation activities. This is in line with the report written by Grandahl et al. (2018), where parents are the ones who decide whether to vaccinate their children based on attitudes, beliefs, knowledge, subjective norms, socio-demographics, as well as cultural and religious aspects. To shape parents' beliefs, the involvement of religious leaders and community leaders in setting social norms plays a crucial role in many parents' decisions to vaccinate their children. Religious leaders must be equipped with adequate information and involved in various stages of launching immunisation programmes to promote the positive benefits of immunisation for parents (Padmawati et al., 2019).

Nurses need to take a more significant role in educating religious leaders about the positive impact of vaccines, communicating effectively about the vaccine program, actively involving them in immunisation activities, building trust and accountability, and providing constructive feedback (Singh et al., 2019). This effort must be carried out on an ongoing basis and extend to the most minor elements of religious groups.

Policy Barriers

Changes influence problems related to policies in the regional political situation, such as the change of regional heads, which affect the immunisation management structure at various levels; this is because each official will replace the existing immunisation officer who will be moved to a different work location. Studies conducted in five middle-income Latin American countries, Argentina, Brazil, Honduras, Mexico, and Peru, show that political will at both the national and local levels greatly influences vaccine management, especially in terms of supporting policies for the provision and training of immunisation service personnel (Ropero Alvarez et al., 2021).

Participants also felt a challenge from a policy perspective related to the lack of training received for vaccine workers. Studies show that health workers

need additional training in vaccine governance to effectively manage immunisation activities, from injection techniques and reporting to vaccine storage (Feyisa et al., 2022; Nicol et al., 2019). Sustained policies to vaccinate children must continue in the changing healthcare environment. High vaccination coverage cannot be maintained with one-time or short-term efforts. A greater understanding of strategies to increase and maintain vaccination coverage is needed to create an effective and durable immunisation system.

Obstacles related to policies in immunisation programmes require strong efforts from nurses in advocating for existing stakeholders. The approach needs to be taken by nurses to regional heads to disentangle political influence into immunisation governance. Officer placement should be based on individual competency and experience. In addition, nurses need to design forms of training related to immunisation, such as cold chain management, web-based reporting, and vaccine administration skills.

Conclusion

Interventions addressing barriers to receiving vaccines should focus on educating and persuading parents to immunise their children using community leaders as additional facilitators. On an ongoing and scheduled basis, nurses must make health promotion efforts to the community regarding the positive benefits of vaccines and the side effects of vaccines. Nurses also need to design a form of vaccine schedule that is easily understood by the wider community.

From a policy perspective, it is necessary to provide customised training for service providers on an ongoing basis, eliminate local political bias, and encourage people to continue striving for complete immunisation despite obstacles. Physical and structural constraints as obstacles to governance, namely abandoned infrastructure and inadequate health supplies, must be addressed by providing tools and funds for maintaining the facilities. The role of nurse advocacy needs to be expanded not only to vaccine recipients but also to policymakers, especially to attract support for funding and policy alignments that can support immunisation activities.

Declaration of interest

We want to ensure that there is no known conflict of interest associated with this publication and that there is no significant financial support for this work that could affect its results.

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Data Availability

The datasets generated during and analysed during the current study are available from the corresponding author upon reasonable request.

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