

## Photovoice: Addressing Children's Vaccination Anxiety and its Impact on COVID-19 Coverage

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ARTICLE INFO	ABSTRACT
<p><b>Manuscript Received:</b> 12 Oct, 2024  <b>Revised:</b> 01 Jan, 2025  <b>Accepted:</b> 15 Jan, 2025  <b>Date of Publication:</b> 04 Feb, 2025  <b>Volume:</b> 8  <b>Issue:</b> 2  <b>DOI:</b> <a href="https://doi.org/10.56338/mppki.v8i2.6606">10.56338/mppki.v8i2.6606</a></p>	<p><b>Background:</b> The importance of vaccines lies in their ability to enhance the immune system. However, for elementary school children, vaccination programs often evoke fear, particularly due to the use of needles and the need for the program to be conducted twice. Teachers, as parental figures at school, are expected to play a critical role in communication to strengthen children's mental resilience, enabling them to participate in the vaccination program. This study aims to examine the use of photovoice communication to address elementary school children's anxiety about vaccination in Rote and its impact on COVID-19 vaccination coverage.</p> <p><b>Methods:</b> This qualitative study employed the photovoice technique as the primary method for data collection.</p> <p><b>Results:</b> The findings reveal that collaboration between teachers, healthcare workers, and parents in communicating about the vaccination program can foster supportive communication among students, strengthening their mental resilience. Synergistic communication between teachers, parents, and healthcare workers, along with providing incentives for vaccinated students, effectively reduces fear and contributes to the success of the vaccination program for children. Photovoice helps voice what elementary school students feel when they are going to take part in the vaccine. This finding is very important because often children do not have the courage and ability to express what they feel.</p> <p><b>Conclusion:</b> The study concludes that synergistic communication between teachers, parents, and healthcare workers is a key strategy in reducing children's fear and ensuring the success of vaccination. These findings can be used as consideration to make policies by related agencies such as vaccine officers not coming to school using ambulances and uniforms of health workers.</p>
KEYWORDS	
<p>Child Development;            COVID-19 Pandemic;            Indonesia;            Photovoice;            Preschool Teachers</p>	

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### INTRODUCTION

Initial vaccination coverage remains lower than the target set by the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF). Several studies indicate that, in the context of immunization, many mothers still experience fear when it comes to vaccinating their children (1,2). Previous studies in China and the United Kingdom have shown high parental acceptance of COVID-19 vaccination for their children (3–5). Specifically, parental knowledge and attitudes have been recognized as key factors influencing decisions about child vaccination. Higher knowledge levels are associated with positive attitudes and practices. A prior study highlighted a strong correlation between parents' lack of knowledge about vaccines and the unsuccessful implementation of immunization programs. Moreover, parents often show significant interest in health-related issues and proactively seek information. Since the implementation of immunization programs tends to be complex and multidimensional,

studies on child immunization in Indonesia, particularly during the COVID-19 pandemic, are necessary (6–13). The recent authorization of vaccines against the novel coronavirus, SARS-CoV-2, raises critical questions about prioritizing vaccination for those most likely to benefit from its protection. Unlike influenza vaccines, it is currently unknown whether any SARS-CoV-2 vaccine can interrupt further transmission to others. Therefore, vaccination decisions must be based on the direct protection offered by the vaccine to those receiving it (5,14).

The highest burden of severe disease, hospitalizations, and deaths is among older adults, prompting questions about whether children and adolescents should be vaccinated during the early phases of national immunization programs (14). COVID-19 has affected millions of people since SARS-CoV-2 was first identified in December 2019. Children account for 1% to 3% of diagnosed COVID-19 cases and generally experience milder disease with better prognoses than adults, with deaths being extremely rare and primarily affecting adolescents and those with significant comorbidities (15,16).

Early epidemiological studies suggest that children do not significantly contribute to the spread of SARS-CoV-2 and that younger children may be less likely to become infected or transmit the virus compared to older children or adults (1,17–21).

In December 2021, the Indonesian Ministry of Communication and Information announced that COVID-19 vaccination for children aged 6 to 11 years began on December 14, 2021 (22). The vaccine was administered intramuscularly, or by injection into the upper arm muscle, with a dose of 0.5 ml. Each child received two doses, with a minimum interval of 28 days between doses. Prior to administration, a screening using a standardized format was conducted by vaccination officers (23–26).

Post-vaccination reactions in children were reported to be mild to moderate, including pain, swelling, and itching at the injection site. Systemic symptoms such as fever, cough, headache, nausea, vomiting, muscle pain, and fatigue were also reported (27–29). These reactions raised concerns among schools, particularly teachers and principals, about the potential impact on students' learning motivation. Fear of decreased enthusiasm for learning was attributed to the physical discomfort experienced by students following vaccination.

The Indonesian government has promoted COVID-19 vaccination for children aged 6 to 11 years since mid-December 2021. However, initial vaccination coverage remained lower than the targets set by the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF). Research findings indicate that many mothers still express fear about vaccinating their children. The emergence of COVID-19, which began spreading in early 2019, introduced new global challenges. One of the key solutions to prevent the spread of the virus has been COVID-19 vaccination. However, this has generated specific concerns among mothers regarding the safety and efficacy of vaccines being administered to their children, which are still undergoing efficacy trials.

According to data from the East Nusa Tenggara Provincial Health Office in 2023, the coverage rates for COVID-19 vaccinations from the first to the fourth dose remain very low. The data can be seen in the table below:

**Table 1.** Distribution of Vaccine Recipients Based on Targets and Percentages in February 2023

Target	%	Dose 1	%	Dose 2	%	Dose 3	%	Dose	%
Health workers	792	904	114.14	895	113.01	804	101.52	249	31.44
Elderly	12.430	8.480	68.22	5.699	45.85	1.081	8.70	4	5.86
Public	13.110	8.499	64.83	7.881	60.11	3.469	26.46	-	0.00
Public	58.419	54.480	93.26	40.228	68.86	11.123	19.04	-	0.00
Teenager	15.400	16.955	110.10	12.045	78.21	515	3.34	-	0.00
Child	17.891	11.967	66.89	6.880	38.46	1	0.01	-	0.00
Total	118.042	101.285	85.80	73.628	62.37	16.993	20.05	253	1.91

Source: KPCPEN Dashboard, Rote Ndao Health Office

The uniqueness of the research lies in the fact that no one has used the photovoice approach. The research that has been conducted is to examine the relationship, comparison and causality on the variables that cause the achievement of Covid-19 vaccination.

## **METHOD**

This study employs a qualitative research approach, utilizing the photovoice technique as the primary method for data collection. Photovoice is considered an appropriate method during the COVID-19 pandemic (29,30). The pandemic has prompted many researchers to produce rapid studies to address emerging challenges, including numerous surveys and cross-sectional studies, particularly in communication research. Photovoice provides an opportunity for vulnerable communities to communicate their concerns and ensure their voices are heard by policymakers and stakeholders.

The primary data for this study comes from narratives gathered through interviews. Five participants agreed to participate in the study. The main criteria for participants were: (a) active elementary school students, (b) eligible for vaccination but unvaccinated, and (c) able to operate a mobile phone camera. Details of the participating students are provided in Table 1. Twenty individuals declined to participate due to various reasons, including fear, lack of access to mobile phones, inability to articulate their experiences, or refusal without explanation. The sample size in this study is small because all the photos have shown the same thing, so the researcher concluded that the data was saturated. The use of mobile phones also adjusts to the conditions that exist in the Rote archipelago.

The study was conducted in Kupang, on Rote Island, which borders Australia in East Nusa Tenggara Province, Indonesia. As of 2023, the vaccination coverage for children in this region was extremely low, with only 0.01% receiving the third dose and 0.00% receiving the fourth dose. These figures are significantly lower compared to other districts and cities in East Nusa Tenggara. Thus, efforts must be made to improve COVID-19 vaccination coverage among children on Rote Island.

### **Research Process**

The study began in March 2021 and was completed in October 2021. Initially, research assistants contacted potential participants via phone to explain the study's objectives and procedures. Participants who agreed to participate signed consent forms. The recruitment process began with three initial participants, followed by a snowball sampling approach to ensure data saturation.

Next, research assistants trained participants to take photos representing their perceptions and experiences related to their anxiety and fears about vaccination during the COVID-19 pandemic. The focus was on capturing stories and their underlying meanings.

Participants were instructed to "take as many photos as you like that represent your perspective on your fear of vaccination." On average, each participant took four photos over a period of seven days. Participants were also briefed on how to take clear photos that align with their expressed fears about vaccination.

Afterward, research assistants scheduled interview sessions with the participants to discuss the stories behind their photos. The interviews were conducted in person, with research assistants acting as interviewers. The primary question asked was, "What does this photo mean to you?" Follow-up probing questions focused on the issues and potential solutions related to their anxiety and fears about vaccination. Examples of probing questions included: "Why are you afraid of the ambulance parked in front of the school?" "Why do you feel anxious and scared?" "What kind of vehicle do you think health workers should use?" and "Why are you afraid of women in white uniforms? Would it be better if health workers did not wear official uniforms?"

The interviews were recorded and documented. Research assistants used both Indonesian and Kupang-Malay Creole to create a comfortable and informal yet meaningful discussion environment. Throughout the research process, the authors maintained an audit trail and diary to enhance the study's trustworthiness.

### **Data Analysis**

Thematic analysis was used to develop themes based on the interview data. First, research assistants completed the interview transcripts in Indonesian. Then, the transcripts were reviewed by reading the text and taking key notes. Data coding was conducted by the first and last authors and cross-checked by the second and third authors. Themes were derived from the codes, and feedback on the themes was provided by the participants to ensure the quality of the analysis. The study adhered to the Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist as a guideline for reporting the findings (31).

## RESULTS

The COVID-19 pandemic has brought fear and anxiety to the entire population, particularly to parents of elementary school children (32,33). This heightened anxiety has led parents to hope that all their children receive COVID-19 vaccinations (34,35). The government has responded to these concerns by organizing COVID-19 vaccination programs for elementary school students across Indonesia. However, many challenges remain, including vaccine distribution, availability, and resistance from both parents and students. The resistance from students is often rooted in fear and anxiety, which are influenced by the information they receive.

*"Mama told us to get vaccinated to stay healthy, and we want to be vaccinated. But we're still scared when we see the ambulance at school. They say the ambulance is there in case we feel unwell after the vaccination, and if we're sick, they'll take us straight to the health center and we'll have to stay there. That's why we don't want to do it." (Informant Na).*

The presence of ambulances, while causing anxiety, is actually a standard protocol during vaccination activities. Ambulances serve multiple purposes, such as transporting health workers, carrying vaccines and other essential medical equipment, and being on standby for emergencies to quickly mobilize patients to the nearest health facilities like community health centers.

*"We just follow along. We often see on TV or hear on the radio that the teachers and even our parents say the ambulance is nothing to worry about because it just carries supplies for vaccination. We're used to seeing ambulances pass in front of our house with their sirens on. But we're still scared that if they make a mistake with the vaccine and we get sick, they'll take us to the hospital, and our parents won't be able to stay with us. That's what makes us scared."*

This highlights the need for effective communication and education to address children's fears and ensure the success of vaccination programs.



**Figure 1.** Ambulance carrying vaccination staff and equipment

The regulations set by community health centers and the proper protocol for using ambulances during vaccination activities have significantly influenced the behaviour of elementary school students when receiving vaccinations at school. A small number of children expressed worry, fear, and mild protests over the presence of ambulances at their schools. Misinformation they encountered through online media and mass media contributed to their fear and anxiety about getting vaccinated. This has hindered the government's efforts to achieve vaccination targets for elementary school children, highlighting the need for parental and teacher support, as well as accurate information literacy, to encourage vaccination acceptance.

Referring to the results of the study, the role of health communication is very necessary in an effort to increase vaccination achievements in Rote. Therefore, policymakers need to strengthen the communication competence of health workers so that the goals of the vaccination program are achieved. These findings show the importance of

communication competence for health workers to be able to approach persuasively and children do not feel afraid when they are about to be vaccinated.

### Student Narrative

*"We just went along with it. Before we got vaccinated, our teachers explained the importance of vaccines and gave us a consent form for our parents to sign. My parents didn't have a problem with it, but I heard that ambulances are there to take us if something goes wrong, and that made me scared."*

### Another student shared

*"Yesterday, when we were cleaning the room for today's vaccination activity, someone told me that their relative fainted during vaccination and the ambulance took them to the hospital. Although they recovered, it took a long time. After hearing this story, I was scared. Even though my parents explained that vaccination is safe and the ambulance is there just in case, I still didn't want to go to school on vaccination day."*

### Parental Perspective

#### As one parent noted

*"We, as parents, are aware that changing the mindset of children who have been exposed to misinformation from various sources is challenging. However, we will continue to provide explanations to encourage them to get vaccinated."*

### Recommendations for Overcoming Challenges

Despite the current controlled and managed pandemic situation in Indonesia, with declining COVID-19 transmission rates and ongoing vaccination programs for children aged 6–12 years, many elementary school students still fear vaccination. Addressing this requires:

**Information Literacy and Health Promotion:** Efforts must be made to provide accurate and accessible information about vaccinations to both children and their parents.

**Comprehensive Education:** Equitable educational initiatives for elementary school students must be implemented to ensure all children receive the same accurate information, minimizing doubts and anxiety.

**Parental and Teacher Support:** Close collaboration between parents, teachers, and healthcare workers is crucial to alleviate fears and promote vaccination acceptance.

By addressing these issues through targeted literacy and education campaigns, resistance to vaccination among elementary school children can be effectively reduced.



**Figure 2.** Healthcare Worker Providing Education

Many factors contribute to the fear and anxiety elementary school children feel about vaccination. The information they receive is a significant factor, alongside the presence of ambulances and healthcare workers in uniforms, which can heighten their anxiety. The presence of teachers and parents is highly recommended to help stabilize the children emotionally and encourage them to receive the vaccine.

### Student Narratives

*"Johana: We get a lot of information about vaccines from our parents, teachers, and also from watching TV, but we want more information from healthcare workers."*

*"Hartini: There's a lot of information we get at school, at home, while playing, and from watching TV. What we like the most is the advice from our parents because they always give us good guidance."*

*"Anna: If possible, the doctors and midwives should come to school to give health education so we can understand. We don't want to get vaccinated because we're scared of the stories we hear, like getting a fever or being taken to the hospital after vaccination. It would be better if the doctors and midwives came to explain directly to us so we could ask questions. Until now, no one has come, and I think it's important to hear directly from them."*

Providing accurate information literacy is crucial for elementary school children to achieve the government's vaccination coverage goals.

**Parental Support:** Parents need to accompany their children at home, especially when learning or watching TV, to provide proper explanations. **Teacher Guidance:** Teachers should offer clear and supportive information in schools. **Health Worker Involvement:** Healthcare workers should conduct health education sessions directly with children to address their questions and concerns effectively.

### Additional Input

*"Sometimes when we want to ask our parents about vaccines, they struggle to answer and tell us to ask the teacher instead. But we're scared the teacher might get mad, so we end up just watching TV. But the news on TV doesn't explain much—just mentions vaccinations at schools without details about what happens afterward. In the end, we lose interest in finding out more."*

By ensuring consistent and clear communication from parents, teachers, and healthcare workers, children's fears and misconceptions about vaccines can be reduced, helping achieve vaccination goals.

### Limitations and Cautions

This study has several limitations. First, the small sample size may not fully represent the diverse experiences of elementary school children in Rote, limiting the generalizability of the findings. Second, reliance on the photovoice method requires participants to have basic photography skills, potentially excluding children without access to suitable devices or the ability to operate them. Third, the study's cross-sectional nature captures a specific point in time and may not reflect changes in attitudes or behaviours over time.

Caution is advised when interpreting the findings, as the children's narratives may be influenced by external factors, such as parental or peer perspectives, rather than their own experiences. Future studies could address these limitations by expanding the sample size, incorporating longitudinal designs, and integrating additional methods such as focus groups or parent interviews to triangulate the data.

### Recommendations for Future Research

Future research should explore larger and more diverse populations to enhance the generalizability of findings on children's anxiety toward vaccination. Longitudinal studies could provide insights into how perceptions and behaviours evolve over time, particularly as vaccination programs progress. Additionally, integrating perspectives from parents, teachers, and healthcare workers through mixed methods could offer a more comprehensive understanding of the factors influencing vaccination acceptance. Lastly, future studies should investigate the effectiveness of targeted health education interventions, focusing on reducing misinformation and fostering trust in vaccination programs among children and their families.

## **CONCLUSION**

This study concludes that collaboration between teachers, healthcare workers, and parents in communicating about the vaccination program can foster supportive communication among students, encouraging mutual reinforcement. Synergistic communication between teachers, parents, and healthcare workers, along with providing incentives for those who participate in vaccination, is an effective strategy to reduce fear and ensure the success of the vaccination program for children.

Policymakers need to conduct training on the importance of communication to improve the communication competence of health workers. Likewise, educators should be able to communicate persuasively so that students are not afraid when they are about to be vaccinated.

## **AUTHOR'S CONTRIBUTION STATEMENT**

The author conceptualized the study, designed the methodology, and conducted the data collection using the photovoice technique. The author also analysed the data, interpreted the findings, and drafted the manuscript. All stages of the research were overseen to ensure rigor and adherence to ethical standards. The author takes full responsibility for the content of this article and acknowledges the contributions of research assistants and participants in providing valuable insights.

## **CONFLICTS OF INTEREST**

The author declares no conflicts of interest regarding the publication of this study. The research was conducted independently, with no influence from external funding sources or organizations that could have biased the findings or interpretations.

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