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## Parental knowledge and support for decision-making regarding measles rubella immunization

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### Abstract

Measles remains a significant health concern in Indonesia. The government continues to promote immunization programs to achieve optimal public health and a prosperous society. According to the Regulation of the Minister of Health No. 12 of 2017, immunization aims to build immunity so that individuals who are later exposed experience only mild symptoms. This study aimed to determine the relationship between parents' knowledge and support in decision-making regarding MR (Measles Rubella) immunization among kindergarten students in Sungai Ambawang Kuala Village. Using a quantitative descriptive-analytic design with a cross-sectional approach, data were collected at one point in time. The results showed a significant relationship between parents' knowledge ( $p < 0.05$ ; OR = 15.6) and parental support ( $p < 0.05$ ; OR = 26) with the decision to administer MR immunization. In conclusion, improving parental knowledge and support is essential to increase MR immunization coverage and program success.

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## INTRODUCTION

Clean and healthy living behavior in the community should be based on individual and collective awareness to maintain health and prevent disease transmission. Preventive practices such as covering the mouth when coughing or sneezing and washing hands afterward are essential to stop the spread of infection. Maintaining immunity also requires consuming nutritious food, ensuring environmental and personal hygiene, and adopting healthy daily habits (Parlaungan et al., 2023). These behaviors form the foundation for disease prevention efforts at both individual and community levels.

Health problems in Indonesia continue to demand serious attention, particularly those related to infectious diseases that threaten immunity, such as measles. The government actively promotes immunization programs to achieve optimal health and a prosperous society. According to the Regulation of the Minister of Health of the Republic of Indonesia No. 12 of 2017 concerning Immunization, immunization is a preventive effort to build immunity so that if a person is exposed to a disease, the symptoms will be mild compared to those who have not been immunized (Afni, Tasya, & Astuti, 2023; Minister of Health of the Republic of Indonesia, 2017). This regulation underscores the government's commitment to strengthening community immunity through routine and campaign-based vaccination programs.

Measles and rubella are highly contagious viral diseases that can cause severe complications. Before the introduction of vaccines in 1963, epidemics occurred every 2–3 years, resulting in 2.6 million deaths annually. In 2018, more than 140,000 people died from measles globally (WHO, 2019). Indonesia reported 381 rubella cases in 2018, representing 68% of total measles cases (WHO, 2019). Despite the availability of vaccines, WHO and UNICEF (2019) reported that global vaccination coverage has stagnated for nearly a decade, with only 86% of children receiving the first MR vaccine dose and less than 70% completing the second. These findings indicate the persistence of gaps in vaccine coverage and awareness.

According to the Centers for Disease Control and Prevention (CDC) Global Measles Outbreaks report (2025), Indonesia ranks fifth among the ten countries with the highest measles cases globally, with 5,103 cases, most of which occurred in children (Centers for Disease Control and Prevention, 2025). In West Kalimantan, Riskesdas (2018) reported 148 measles cases, while the Kubu Raya District Health Office recorded 10 suspected cases in 2020 and 16 cases in 2021, showing a rising trend (Badan Penelitian dan Pengembangan Kesehatan, 2019). MR immunization coverage at MIS Raudatul Jannah Sungai Ambawang Kuala also declined from 65% in 2022 to only 20% in 2023. This decline reflects low parental participation and awareness despite government campaigns. Previous studies (Anggraini, 2019; Prabandari, Syamsulhuda, & Kusumawati, 2018; Rafidah & Yuliasuti, 2020) revealed that parents' knowledge and family support significantly influence immunization participation, as some parents still perceive MR immunization as unnecessary.

Based on the "Technical Guidelines for the Measles Rubella Immunization Campaign", MR vaccination for school-age children is essential because routine measles vaccination alone is insufficient for protection (Minister of Health of the Republic of Indonesia, 2017). However, there remains a research gap in understanding how parental knowledge and support affect decision-making on MR immunization at the early childhood education level, particularly in rural areas like Sungai Ambawang Kuala Village, where coverage has drastically declined. The novelty of this study lies in analyzing the dual influence of both cognitive (knowledge) and affective (support) parental factors in the context of MR immunization decisions among kindergarten students, which has been minimally explored in local studies. Therefore, this study aims to determine the relationship between parents'

knowledge and support in decision-making regarding MR (Measles Rubella) immunization among kindergarten students in Sungai Ambawang Kuala Village.

## METHOD

This study employed a quantitative descriptive-analytical design with a cross-sectional approach to analyze the relationship between parents' knowledge and support in decision-making regarding MR (Measles Rubella) immunization among kindergarten students in Sungai Ambawang Kuala Village. The cross-sectional approach was used to collect data at one point in time, providing an overview of the existing situation during the study period.

The population in this study consisted of all parents of kindergarten students in Sungai Ambawang Kuala Village. The sampling technique used was total sampling, with a total of 35 respondents meeting the inclusion criteria. Data were collected from three kindergartens located in the village.

The data collection process utilized a structured questionnaire developed using the Guttman scale to measure parents' knowledge and support related to MR immunization. Researchers directly distributed the questionnaires to respondents and verified the completeness of the returned data to ensure accuracy and reliability.

The data obtained were analyzed quantitatively using univariate and bivariate analyses. Univariate analysis was conducted to describe the distribution of respondents based on each research variable, while bivariate analysis was used to identify the relationship between parents' knowledge and support and their decision to provide MR immunization to their children. The results were presented in the form of frequency distributions and statistical test outcomes.

This study received ethical approval from the Health Research Ethics Committee of the Pontianak Ministry of Health Polytechnic with approval number 253/KEPK-PK.PKP/V/2024.

## RESULTS AND DISCUSSION

**Table 1.** Frequency Distribution of Respondents.

Characteristics	n	%
Age		
<45 years old	35	100
45 years old	0	0
Education		
High School	11	31.4
Below high school	24	68.6
Employment		
Private	3	8.6
Non-Private	32	91.4
Knowledge		
Good	31	88.6
Not Good	4	11.4
Support		
Supportive	31	88.6
Does not support	4	11.4
Decision		
Yes	27	77.1
No	8	22.9

Based on Table 1, it can be seen that all respondents (100%) were under 45 years old. The majority of respondents (68.6%) had a high school education, and most were

employed in non-private sectors (91.4%). In terms of knowledge, 31 respondents (88.6%) demonstrated good knowledge about MR immunization. Similarly, 31 respondents (88.6%) showed supportive attitudes toward MR immunization. Furthermore, 27 respondents (77.1%) decided to provide MR immunization to their children.

**Table 2.** Relationship between knowledge level and decision-making regarding MR immunization.

Knowledge	Decision				Total	%	OR	p-value
	Yes	%	No	%				
Good	26	83.9	5	16.1	31	88.6	15.6	0.030
Poor	1	25.0	3	75.0	4	11.4		
Total	27	77.1%	8	22.9	35	100		

Table 2 shows that among 31 respondents with good knowledge, 26 respondents (83.9%) decided to have their children receive MR immunization, while 5 respondents (16.1%) chose not to. In contrast, among 4 respondents with poor knowledge, only 1 respondent (25.0%) decided to provide MR immunization, while 3 respondents (75.0%) did not.

Based on the statistical analysis using the Chi-square test, the obtained p-value was 0.030, which is smaller than the significance level ( $\alpha = 0.05$ ). This indicates a significant relationship between the level of parental knowledge and their decision to administer MR immunization. The Odds Ratio (OR) value of 15.6 shows that respondents with poor knowledge are 15.6 times more likely not to decide on MR immunization compared to those with good knowledge.

**Table 3.** Relationship between support and MR immunization decision-making.

Support	Decision				Total	%	OR	p-value
	Yes	%	No	%				
Support	26	86.7	4	13.3	30	85.7	26	0.006
Not Supported	1	20.0	4	80.0	5	14.3		
Total	27	77.1%	8	22.9	35	100		

Table 3 shows that among 30 respondents who provided support for MR immunization, 26 respondents (86.7%) decided to have their children receive the MR immunization, while 4 respondents (13.3%) chose not to. In contrast, among 5 respondents who did not provide support, only 1 respondent (20.0%) decided to have their child immunized, while 4 respondents (80.0%) did not.

Based on the statistical analysis using the Chi-square test, the obtained p-value was 0.006, which is smaller than the significance level ( $\alpha = 0.05$ ). This indicates a significant relationship between parental support and decision-making regarding MR immunization. The Odds Ratio (OR) value of 26 suggests that parents who do not provide support are 26 times more likely not to decide on MR immunization compared to parents who provide support.

## DISCUSSION

### Parental knowledge and support for decision-making regarding MR (*Measles Rubella*) immunization in kindergartens in the village of Sungai Ambawang Kuala.

Based on the research results, the respondents' knowledge level showed that out of 35 respondents analyzed, 31 respondents (88.6%) had a good level of knowledge, while 4 respondents (11.4%) had a poor level of knowledge. Knowledge is the result of an individual's understanding, which arises after perceiving an object through the senses—mainly sight and hearing. Knowledge contributes to shaping perception, forming attitudes,

and influencing belief systems. A behavior is more likely to be practiced when a person understands its meaning and benefits (Swarjana and Skm, 2022).

Parental knowledge plays a crucial role in determining mothers' compliance with MR immunization for their children. The higher the parents' level of knowledge, the better their children's immunization status will be, and vice versa. Mothers who comply with MR immunization generally understand its benefits in preventing infectious diseases such as measles and rubella. Immunization helps the body build immunity against specific diseases, and one of the key factors influencing this decision is knowledge.

The analysis results regarding parental support in decision-making for MR (Measles Rubella) immunization among kindergarten students in Sungai Ambawang Kuala Village showed that out of 35 respondents, 30 respondents (85.7%) were supportive, while 5 respondents (14.3%) were not supportive. Parental support is an essential external factor that encourages mothers to make positive health decisions. Support from family members, especially spouses, can strengthen motivation, reduce hesitation, and increase mothers' confidence in participating in immunization programs.

### **The relationship between parental knowledge and decision-making regarding MR (*Measles Rubella*) immunization at the Sungai Ambawang Kuala village kindergarten.**

Based on the results of the statistical analysis of the relationship between parents' knowledge and decision-making regarding MR (Measles Rubella) immunization among kindergarten students in Sungai Ambawang Kuala Village using the chi-square test, a p-value of 0.030 was obtained. This value is smaller than the significance level set by the researcher ( $\alpha = 0.05$ ; p-value < 0.05), indicating a significant relationship between parents' level of knowledge and their decision to allow MR immunization. The Odds Ratio (OR) value of 15.6 suggests that respondents with lower knowledge levels are 15.6 times more likely not to have their children immunized compared to those with good knowledge.

This finding aligns with research by Pendit, Astika, and Supriyatna (2019), which showed a significant relationship between knowledge and parental decision-making in participating in MR immunization. One of the contributing factors to the low MR immunization coverage is inadequate parental knowledge, which directly affects the completeness of children's immunization status. Parents who possess good knowledge tend to make informed and consistent health decisions, as behavior based on understanding and awareness is generally more sustainable than behavior not grounded in knowledge.

The results of this study are also consistent with the findings of Rakhmanindra and Puspitasari (2019), who reported that mothers with good knowledge about basic immunizations were 2.6 times more likely to have children with complete immunization status compared to those with poor knowledge. This indicates that knowledge plays a critical role in shaping positive health behaviors and promoting adherence to immunization programs.

Furthermore, refusal of MR immunization is often associated with a lack of maternal knowledge about MR and rubella. Since the MR immunization program is relatively new and rubella remains unfamiliar to many parents, misinformation and negative media coverage have contributed to misconceptions and hesitancy toward vaccination. In fact, measles and rubella are contagious diseases transmitted through the respiratory tract, caused by the measles and rubella viruses (Maranti, 2023). Strengthening health education and accurate information dissemination about MR immunization is therefore essential to increase community trust and participation.

### **The relationship between parental support and decision-making regarding MR (*Measles Rubella*) immunization in the Sungai Ambawang Kuala village kindergarten.**

Based on the results of the statistical analysis of the relationship between parental support and MR (Measles Rubella) immunization decision-making among kindergarten students in Sungai Ambawang Kuala Village using the chi-square test, a p-value of 0.006 was obtained. This value is smaller than the significance level set by the researcher ( $\alpha = 0.05$ ; p-value < 0.05), indicating a significant relationship between parental support and decision-making regarding MR immunization. The Odds Ratio (OR) value of 26 means that respondents who did not provide support were 26 times more likely not to have their children immunized compared to those who showed support.

These findings are consistent with the study by Aprilia, Satya, and Minarti (2019), which demonstrated a significant relationship between family support and the completeness of basic immunizations (p-value = 0.000 < 0.05). Similarly, research by Janatri et al. (2022) found that family support was significantly associated with the provision of complete basic immunization in infants. The study is also in line with Cahyani, Jalaluddin, and Asriani (2021), who reported a relationship between family support and maternal compliance in administering basic immunization.

The positive attitudes and responses of families toward immunization activities are largely influenced by their level of knowledge about the importance of immunization, which is often obtained through information dissemination or counseling by health workers. Health workers play an essential role in encouraging family participation, as family support strongly influences mothers' willingness to have their children immunized. Therefore, health education programs should not only target mothers but also involve fathers, caregivers, and the broader community to strengthen collective support for immunization (Afriza, Handayani, & Djannah, 2023).

The family, as the smallest unit of society, consists of individuals bound by kinship or marriage and functions as a system in which health problems affecting one member can influence the well-being of others. Consequently, the family serves as a crucial decision-making center for health care (Iswanti & Tansah, 2019). Family support—especially from parents—can greatly determine whether a child receives immunization, as encouragement and agreement from the family environment can facilitate behavioral changes toward better health practices.

Based on the researchers' assumptions, strong parental support is a determining factor in the success of immunization programs at schools. However, this study has several limitations. The research only involved a small number of respondents from one village, which may limit the generalizability of the findings. Additionally, the study relied on self-reported data, which could be influenced by respondent bias. Future studies are expected to include a larger sample and explore other influencing factors such as cultural beliefs, access to health services, and the role of health communication strategies in promoting immunization.

### **CONCLUSION**

In conclusion, improving parental knowledge and support is essential to increase MR immunization coverage and program success. This study suggests that health centers should further improve health promotion regarding MR immunization and that parental support is expected to support the MR immunization program.

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