



# The Effect of Immunization Counseling with Discussion Method on Increasing Mothers' Knowledge and Attitudes about Basic Immunization in Infants Aged 0-12 Months

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**Abstract.** Mothers' knowledge and attitudes play a crucial role in the success of the basic immunization program for infants. This study aimed to analyze the effect of counseling using the discussion method on improving mothers' knowledge and attitudes regarding basic immunization for infants aged 0-12 months. The study used a pre-experimental one-group pretest-posttest design with a sample of 30 mothers selected through purposive sampling. The research instrument consisted of a knowledge and attitude questionnaire that had been tested for validity and reliability. The intervention was conducted through a 60-minute focus group discussion, which included an initial presentation, active discussion, scientific clarification, and conclusion drawing. The results showed a significant increase in knowledge, from an average score of 9.13 to 13.47 ( $p = 0.000$ ), and in attitudes, from an average score of 31.50 to 41.30 ( $p = 0.000$ ). The distribution of categories also showed a significant shift towards better knowledge and attitudes after the intervention. This study concluded that the discussion method was effective in improving mothers' understanding and forming positive attitudes towards basic immunization, making it worthy of recommendation as an educational method in health care facilities.

**Keywords:** Attitudes Improvement; Basic Immunization; Counseling Method; Focus Group Discussion; Mothers' Knowledge

## 1. INTRODUCTION

Basic immunization is one of the most effective and efficient disease prevention efforts to reduce morbidity and mortality in infants. Immunization programs have been proven to provide protection against various dangerous diseases such as tuberculosis, diphtheria, pertussis, tetanus, poliomyelitis, hepatitis B, and measles (Afriza et al., 2023). Providing complete immunizations at the age of 0-12 months allows infants to obtain optimal immunity during the period when they are most vulnerable to infection. The Indonesian government, through the Ministry of Health, has designated complete basic immunization as a national priority program with a high coverage target each year. In various regions, immunization coverage is still below the target and shows disparities between regions influenced by various social factors and public knowledge (Majid et al., 2025).

One important factor influencing immunization coverage is the mother's level of knowledge and attitude toward basic immunizations. As the primary decision-maker in children's health, mothers play a crucial role in determining whether or not their babies receive their immunizations on schedule (Arpen & Afnas, 2021). Mothers' knowledge of the benefits of immunization, the immunization schedule, and the risks of not receiving immunizations significantly determines participation in immunization programs. Mothers with low knowledge tend to have misperceptions, such as believing immunizations can cause certain diseases,

fearing side effects, or not understanding the importance of receiving the full dose. These concerns are often exacerbated by misinformation from the community and social media (Adiwiharyanto & Widjanarko, 2022).

In addition to knowledge, a mother's attitude toward immunization is also an equally important factor. Positive attitudes such as belief in the benefits of immunization, willingness to follow the immunization schedule, and willingness to seek information will increase compliance with the basic immunization program. Conversely, negative attitudes such as fear, hesitation, or lack of trust in health workers can be barriers. These attitudes can be influenced by personal experiences, the experiences of others, culture, beliefs, and information received. Therefore, effective educational interventions are essential to increase knowledge and foster positive attitudes regarding immunization. (Amalia et al., 2025).

Health education is a common public education method used to increase knowledge and change attitudes. However, one-way education methods, such as lectures, are often ineffective because participants tend to be passive and not deeply engaged (Yulinda & Fitriyah, 2018). Participants may receive information but lack the opportunity to confirm their understanding, ask questions about concerns, or discuss their experiences. Therefore, more interactive and empowering education methods are needed (Fadhilah & Subkhi, 2024).

The discussion method is a participatory educational approach that positions participants as active subjects in the learning process. Through this method, interaction between the facilitator and participants occurs in a two-way process, so that information is not only provided directly by the instructor but also questioned, considered, and discussed together. Participants are given the opportunity to ask questions, express opinions, and share personal experiences relevant to the topic being discussed (Ruslandi et al., 2025). This dialogic process encourages clarification so that misinformation can be properly corrected. Furthermore, an open and respectful discussion atmosphere can foster self-confidence, increase learning motivation, and foster positive attitudes because participants feel fully involved in the educational process (Wibowo & Salfadilah, 2025).

In the context of basic immunization, the discussion method is considered highly relevant because it provides a space for mothers to express various concerns or questions that may not be addressed in one-way counseling sessions. Many mothers still fear the potential side effects of immunization or have had negative experiences with previous immunization services (Yarmaliza et al., 2025). Through discussions, mothers can obtain information directly from competent health workers and receive support from other mothers with similar experiences. This interaction fosters a deeper and more comprehensive understanding.

Discussions also serve as a means to strengthen positive perceptions through a process of mutual support among participants, thus fostering a positive attitude toward immunization (Anggraeni et al., 2022).

Findings from various studies indicate that discussion methods significantly improve participants' knowledge and attitudes compared to lectures or conventional counseling methods. Discussions stimulate critical thinking, enrich understanding, and enable participants to connect the material to their daily experiences. Although this method has proven effective, its implementation in immunization counseling in health facilities remains suboptimal. In practice, counseling for mothers with infants aged 0-12 months is often brief and tends to be one-way due to limited time, energy, and the long-standing habit of using the lecture method (Syukri & Appi, 2021).

Field conditions show that many mothers still don't understand the basic immunization schedule accurately, don't understand the urgency of complete immunizations, and still believe myths or information that isn't scientifically based. Many mothers also experience attitudinal barriers, such as anxiety, mental unpreparedness, or excessive worry about immunization side effects. These factors hinder optimal basic immunization coverage. Therefore, an outreach strategy is needed that can meet mothers' information needs while simultaneously building a more positive understanding and attitude toward immunization.

Given the importance of maternal knowledge and attitudes in determining the success of the basic immunization program, the use of discussion methods in health education is considered a viable alternative that needs to be strengthened. Research on the impact of discussion-based immunization education is urgently needed to determine its effectiveness in significantly improving maternal knowledge and attitudes compared to current education methods. The research findings are expected to serve as a basis for health workers in developing more innovative, participatory, and target-oriented educational approaches.

Based on these considerations, this study was conducted to analyze the effect of immunization education using a discussion method on improving mothers' knowledge and attitudes about basic immunization for infants aged 0–12 months. This research is expected to contribute to the development of more effective educational methods in health care facilities, thereby ensuring that efforts to increase basic immunization coverage can be achieved more optimally and equitably in the community.

## **2. RESEARCH METHOD**

This study used a *pre-experimental one group pretest - posttest design* to assess the effect of immunization counseling using group discussion methods on mothers' knowledge and attitudes regarding basic immunization. The study was conducted at Muara Teweh Regional Hospital in November 2025. The sample consisted of 30 mothers with infants aged 0-12 months, selected using a purposive sampling technique with the following criteria: able to communicate well, fully present during the discussion session, and willing to be respondents. Mothers who did not participate in the pretest or posttest stage were excluded from the study.

The instruments used included a knowledge questionnaire (15 multiple-choice questions, scored 0-15) and an attitude questionnaire (12 Likert scale items, scored 12-48). The questionnaires were tested for content validity and reliability with Cronbach's Alpha of 0.82 (knowledge) and 0.86 (attitude). The main intervention was counseling using a discussion method. Discussions were conducted in groups of 8-10 mothers per session for approximately 60 minutes. The facilitator acted as moderator. The discussion procedures included: (1) a brief presentation of the material (5 minutes), (2) an open discussion in which participants asked each other questions, expressed opinions, shared immunization experiences, and expressed concerns (30 minutes), (3) scientific clarification of questions, misconceptions, and immunization myths (15 minutes), and (4) drawing conclusions together (10 minutes). The form of discussion used was a guided group discussion, which is a discussion directed to ensure that all participants actively participate. The success of the discussion was measured by indicators of participant verbal engagement, the number of issues/questions raised, and the quality of clarification at the end of the session. After the discussion concluded, respondents were given a posttest using the same instrument.

Data analysis was performed univariately to describe the characteristics of respondents and the average scores of knowledge and attitudes before and after the intervention. Normality testing used *the Shapiro Wilk test*. If the data were normally distributed, the Paired Sample t-test was used, while if not normally distributed, the Wilcoxon Signed-Rank Test was used to assess changes in pretest-posttest scores. The significance level was set at  $p < 0.05$ .

### 3. RESULTS AND DISCUSSION

#### Results

**Table 1.** Respondent Characteristics (n = 30)

Characteristics	n	%
Age (years)		
20–25	8	26.7
26–30	10	33.3
31–35	12	40.0
Education		
Elementary School/Equivalent	4	13.3
Junior High School/Equivalent	8	26.7
High School/Equivalent	18	60.0
Work		
Housewife	19	63.3
Informal sector workers	11	36.7
Number of children		
1	14	46.7
2	12	40.0
≥3	4	13.3

Based on Table 1, the characteristics of respondents show that the majority of mothers are in the 31–35 years age range (40.0%), followed by 26–30 years (33.3%) and 20–25 years (26.7%), which illustrates that most respondents are in the productive age and active in childcare. The education level is dominated by mothers with a high school education or equivalent (60.0 % ), while junior high school education is 26.7% and elementary school education is 13.3%. In terms of employment, most mothers are housewives (63.3 % ), while 36.7% work in the informal sector. The number of children also varies, with 46.7% of respondents having one child, 40.0% having two children, and 13.3% having three or more children. This distribution indicates that the majority of respondents are in the early stages of parenting, so information related to basic immunization is highly relevant to them.

**Table 2.** Distribution of Mothers' Knowledge Before and After Counseling

Knowledge Category	Pretest n (%)	Posttest n (%)
Good (≥76%)	6 (20%)	24 (80%)
Sufficient (56 - 75%)	14 (46.7 % )	5 (16.7 % )
Less (≤55%)	10 (33.3 % )	1 ( 3.3 % )

Table 2 shows a clear increase in mothers' knowledge after the discussion-based counseling. Before the intervention, the majority of mothers (46.7%) were in the adequate knowledge category, while 33.3% were in the inadequate knowledge category, and only 20% had good knowledge. After the intervention, there was a significant change, with 80% of

respondents in the adequate knowledge category falling to 16.7% and only 3.3% remaining in the inadequate category. This change in distribution indicates that counseling using the discussion method significantly improved mothers' understanding of basic immunization.

**Table 3.** Distribution of Mothers' Attitudes Before and After Counseling

Attitude Category	Pretest n (%)	Posttest n (%)
Positive ( $\geq 76\%$ )	7 (23.3 %)	25 (83.3 %)
Sufficient (56 - 75%)	18 (60%)	5 (16.7 %)
Negative ( $\leq 55\%$ )	5 (16.7 %)	0 (0%)

Based on Table 3, mothers' attitudes toward basic immunization showed a significant improvement after being provided with counseling using the discussion method. Before the intervention, the majority of mothers were in the sufficient attitude category (60%), while 23.3% had a positive attitude and 16.7% still showed a negative attitude. After the discussion, a very significant change occurred, where 83.3% of respondents were in the positive attitude category, while the sufficient category decreased to 16.7% and no respondents anymore showed a negative attitude. This change in distribution indicates that the discussion method is effective in forming a more positive attitude toward basic immunization in mothers with infants aged 0-12 months.

**Table 4.** Effectiveness of Discussion Method Counseling on Mothers' Knowledge and Attitudes

Variables	Pretest		Posttest		Change ( $\Delta$ )	P-value
	Mean	Elementary School	Mean	Elementary School		
Knowledge	9.13	2.21	13.47	1.18	+4.34	0,000
Attitude	31.50	4.62	41.30	3.18	+9.80	0,000

Based on Table 4, counseling using the discussion method proved effective in improving mothers' knowledge and attitudes regarding basic immunization. The average knowledge score increased from 9.13 (SD 2.21) in the pretest to 13.47 (SD 1.18) in the posttest, with a difference of + 4.34 points. Similarly, the average attitude score showed a significant increase from 31.50 (SD 4.62) before the intervention to 41.30 (SD 3.18) after the intervention, with a change of + 9.80 points. Statistical tests showed a p value = 0.000 for both variables, which means there was a significant difference between before and after counseling. These results confirm that the discussion method is an effective educational approach in improving understanding and forming positive attitudes among mothers towards basic immunization.

## Discussion

The results of the study showed that counseling using the discussion method significantly improved mothers' knowledge, as evidenced by the change in knowledge categories from pretest to posttest. Prior to the intervention, most mothers had sufficient and insufficient knowledge, reflecting a limited understanding of basic immunizations. This finding aligns with previous findings that maternal knowledge is a key determinant of successful immunization in infants (Arpen & Afnas, 2021). Many mothers did not understand the immunization schedule, the benefits of immunization, or the risks that arise if babies are not fully immunized. This was exacerbated by exposure to misinformation from the community and social media. After receiving counseling through discussion, the majority of mothers achieved good knowledge, indicating that the discussion method was effective in bridging the information gap (Adiwiharyanto & Widjanarko, 2022).

The discussion method has been proven to provide an interactive space that can increase the effectiveness of information transfer. Unlike one-way lecture counseling, discussions allow participants to actively participate, ask questions, clarify confusion, and listen to others' experiences. This is in line with the opinion of Yulinda & Fitriyah (2018), who stated that the lecture method often makes participants passive and less able to understand the material because they do not have the opportunity for in-depth interaction. The discussion method used in this study gave mothers the opportunity to express concerns, such as fear of the side effects of immunization or doubts about vaccine safety. Clarifications provided during the discussion helped dispel myths and inaccurate information, as also emphasized by Fadhilah & Subkhi (2024) regarding the importance of participatory education in addressing health misconceptions.

This increase in maternal knowledge also aligns with the findings of Ruslandi et al. (2025), who stated that group discussions can improve information absorption because participants are directly involved in the learning process. In this study, the directed discussions enabled productive dialogue between mothers and facilitators. The scientific clarification process provided during the discussions helped mothers re-understand key points related to basic immunizations, such as vaccine types, administration schedules, protective benefits, and risks when immunizations are not given. This strengthened mothers' understanding, so they not only remembered the information but also understood the health logic behind the decision to immunize their babies. Thus, the significant increase in knowledge can be attributed to the characteristics of the discussion method that emphasizes interaction and in-depth clarification.

In addition to increased knowledge, this study also showed significant changes in mothers' attitudes toward basic immunization. Before the intervention, most mothers were in the fair attitude category, while a small number were in the negative category. Negative attitudes generally arose from concerns about the side effects of immunization, unpleasant personal experiences, or the influence of stories from others. This is in line with the findings of Yarmaliza et al. (2025), who stated that negative attitudes toward immunization often arise from a lack of information and inaccurate experiences. After the discussion, positive attitudes increased significantly, and no respondents anymore held negative attitudes. This change indicates that discussions play a significant role in building confidence, a sense of security, and a rational understanding in mothers regarding the importance of immunization.

According to Wibowo & Salfadilah (2025), an open and respectful discussion atmosphere is a key factor in developing positive attitudes. During the discussion, mothers listened to each other's experiences, received emotional support from other participants, and received direct scientific explanations from the facilitator. This sharing process strengthens positive perceptions through peer reinforcement mechanisms. This is also in line with Anggraeni et al. (2022) who stated that group discussions can shape positive attitudes because they allow participants to reevaluate their views based on new information and the experiences of others. In this study, this mechanism was seen in the mothers' increased courage to ask questions, express concerns, and receive scientific clarification, resulting in a stronger positive attitude towards immunization after the intervention.

The findings of this study support the view that discussion methods are an appropriate approach to improving understanding and attitudes towards immunization, especially in areas with low immunization coverage. As stated by Syukri & Appi (2021), low immunization coverage rates in several regions of Indonesia are caused by knowledge gaps, information gaps, and socio-cultural differences. Therefore, educational methods are needed to overcome these obstacles, and this study shows that group discussions are an effective solution. Furthermore, brief and one-way counseling sessions have been less effective in increasing mothers' readiness to immunize their children. With evidence that discussion methods can improve both knowledge and attitudes, this approach can be recommended as a more effective alternative counseling method in health facilities. The findings of this study are consistent with the views of Afriza et al. (2023) and Amalia et al. (2025) that effective education is a crucial pillar in efforts to increase basic immunization coverage as a national strategy to reduce infant morbidity and mortality.

#### 4. CONCLUSION

This study shows that immunization counseling using a discussion method is proven effective in improving mothers' knowledge and attitudes regarding basic immunizations for infants aged 0-12 months. Significant improvements were seen in both changes in knowledge categories and average pretest and posttest scores, with the majority of mothers who previously had sufficient and poor knowledge categories shifting to good knowledge after the intervention. This indicates that the discussion method is able to bridge the information gap that has been a barrier to mothers' understanding of basic immunizations.

Mothers' attitudes toward immunization also improved significantly. Before the counseling, some mothers still held moderate or even negative attitudes toward immunization, largely influenced by anxiety and misinformation. After the intervention, the majority of respondents expressed positive attitudes, and no mothers remained negative. This finding confirms that the discussion method not only increases knowledge but also fosters more confident, rational, and supportive attitudes toward the importance of basic immunization.

Overall, the discussion method is an effective participatory educational approach, providing a space for mothers to ask questions, clarify misconceptions, share experiences, and gain deeper understanding. This method is recommended for wider implementation in outreach programs at health care facilities to optimally and equitably increase basic immunization coverage.

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