

EDUCATION ON INITIAL HANDLING OF RESPIRATORY SYNCYTIAL VIRUS INFECTION IN MOTHERS OF KRAPYAK VILLAGE, TAHUNAN, JEPARA

Anisah Nurussyifa^{*}, Eko Retnowati, Ulviani Yulia Husna

Program Studi Farmasi, Universitas Muhammadiyah Kudus
Jl. Ganesha I No.1, Purwosari, Kudus, Jawa Tengah, Indonesia
Email: nurussyifa600@gmail.com

Abstract

Respiratory Syncytial Virus (RSV) is one of the main causes of lower respiratory tract infections in children under five years old. Limited public knowledge regarding transmission, prevention, and early management of RSV increases the risk of severe complications, especially in rural areas such as Krapyak Village. This community service activity aimed to improve mothers' knowledge regarding the early management of RSV infection through a health education program. The activity used a pre-experimental one-group pre-test post-test design involving 53 mothers with toddlers at Posyandu Mawar 6, Krapyak Village. The intervention included health education sessions, animated videos, interactive discussions, and leaflet distribution. Data were collected using a validated questionnaire and analyzed using the Wilcoxon signed-ranks test and N-Gain score. The results showed a significant increase in respondents' knowledge after the intervention, with most participants achieving a good level of knowledge and an average N-Gain score in the moderate category. The program was effective in improving mothers' understanding of early RSV management and is expected to support better preventive practices among toddlers in Krapyak Village.

Keywords: Education, Knowledge Level, Respiratory Syncytial Virus

INTRODUCTION

Acute Respiratory Infection (ARI) is one of the major global health problems and remains the leading cause of mortality among children under five worldwide (World Health Organization, 2021). One of the primary causes of ARI is Respiratory Syncytial Virus (RSV), a highly contagious virus that is the main cause of bronchiolitis and pneumonia in infants. Nearly all children are infected with RSV before reaching adulthood (Baraldi et al., 2022; Li et al., 2022). RSV infection creates a substantial health burden, especially in developing countries with limited access to healthcare services. Limited public knowledge, delayed diagnosis, and inadequate healthcare access may worsen the impact of this infection (Garegnani et al., 2021; Li et al., 2022).

In Indonesia, the incidence of ARI among children under five remains high, including in Central Java Province and Jepara Regency. RSV is one of the major causes of severe ARI such

as pneumonia in children aged 2–59 months (Badan Kebijakan Pembangunan Kesehatan, 2023; Lokida et al., 2022). Social factors such as low parental education levels also contribute to delays in disease management. Previous studies have shown that health education is effective in improving knowledge, attitudes, and preventive practices regarding ARI in children (Alanazi et al., 2023; Mir et al., 2022). In addition, RSV is recognized as a leading cause of severe lower respiratory tract infections in children and often requires intensive care treatment, making prevention and early detection essential (Linssen et al., 2021).

The results of a preliminary survey conducted in Krapyak Village showed that most mothers only recognized symptoms as common coughs and colds without understanding the risks of RSV infection or its warning signs that may lead to serious complications in toddlers. This condition indicates that public knowledge regarding RSV prevention and early management is still limited. Therefore, a health education program is needed to improve mothers' knowledge about the prevention and early management of RSV infection in toddlers. This activity is expected to increase parents' preparedness in dealing with respiratory infections in children and reduce the risk of complications and morbidity among toddlers (Lestari et al., 2025; World Health Organization, 2023).

IMPLEMENTATION METHOD

This community service activity used a pre-experimental method with a one-group pre-test and post-test design. A quantitative approach was applied to present the results in numerical form, while the pre-experimental design aimed to identify changes in mothers' knowledge before and after the educational intervention.

The activity was conducted in February 2026 at Posyandu Mawar 6, Krapyak Village, Jepara Regency. The participants were mothers with toddlers who met the inclusion criteria, including willingness to participate as respondents, ability to communicate effectively, and completion of the questionnaire. The sampling technique used was total sampling, involving 53 respondents.

The instrument used in this activity was a structured questionnaire that had been tested for validity ($r_{\text{count}} > r_{\text{table}} 0.361$) and reliability (Cronbach's Alpha = 0.897). The educational intervention was delivered through direct health education sessions, a 2-minute and 48-second animated video presentation, interactive discussions, and leaflet distribution.

The implementation of the community service activity was carried out through several stages, including preliminary survey, preparation of educational media and questionnaires, pre-test administration, health education intervention, post-test administration, and data analysis.

Data were analyzed using univariate analysis to describe respondents' characteristics and knowledge levels. Bivariate analysis was performed using the Wilcoxon Signed Ranks Test to determine differences in knowledge before and after the intervention. In addition, the N-Gain Score was calculated to measure the level of improvement in respondents' knowledge.

RESULTS AND DISCUSSION

Characteristics of Respondents

This activity involved mothers with toddlers at Posyandu Mawar 6, Krapyak Village, Jepara. The respondents' characteristics included age, educational background, occupation, number of children, and children's age, as presented in Table 1.

Table 1. Characteristics of Respondents (n = 53)

Variabel	Category	Frequency (n)	Percentage (%)
Mother's age	21–30 years	17	32,1
	31–40 years	28	52,8
	> 40 years	8	15,1
Educational Background	Elementary School	5	9,4
	Junior High School	21	39,6
	Senior High School	19	35,8
	Bachelor Degree	8	15,1
Mother's Occupation	Housewife	36	67,9
	Civil Servant	1	1,9
	Private Employee	4	7,5
	Entrepreneur/Trader	9	17,0
	Laborer	3	5,7
Number of Children	1 child	14	26,4
	2 children	20	37,7
	≥ 3 children	19	35,8
Child's Age	< 1 years	7	13,2
	1 – 2 years	20	37,7
	3 – 4 years	21	39,6
	5 years	5	9,4

Source: Primary Data, 2026

Most respondents were aged 31–40 years (52.8%) and had a junior high school educational background (39.6%). The majority of respondents were housewives (67.9%). Most respondents had two children (37.7%), and the majority of toddlers were aged 3–4 years (39.6%).

History of Treatment and Therapy

Table 2. History of Treatment and Therapy

Variabel	Category	Frequency (n)	Percentage (%)
History of Respiratory Disorders	Yes	53	100,0
Treatment Location	Healthcare Facility	45	84,9
	Home Care	8	15,1
Type of Therapy	Medication Use	49	84,9
	Rest and Increased Fluid Intake	4	15,1
Medication Category	Single Antipyretic	24	45,3
	Cough and Cold Medicine	7	13,2
	Antibiotics	1	1,9
	Herbal or Traditional Medicine	2	3,8
	Unspecified	19	35,8

Source: Primary Data, 2026

All respondents stated that their children had experienced respiratory disorders. Most respondents chose healthcare facilities as the primary treatment location (84.9%). Medication was the most commonly used therapy (84.9%), with antipyretics being the most frequently administered drugs (45.3%).

Pre-Test and Post-Test Knowledge Results

Table 3. Comparison of Knowledge Scores

Measurement	N	Minimum	Maximum	Mean	Std. Deviation
<i>Pre-Test</i>	53	11	17	14,09	1.757
<i>Post-Test</i>	53	11	18	14,70	2.062

Source: Primary Data, 2026

Based on Table 3, there was an increase in respondents' knowledge scores after the educational intervention. The mean score increased from 14.09 during the pre-test to 14.70 during the post-test.



Figure 1. Health Education Activities about RSV for Mothers with Toddlers

Source: Documentation of Community Service Activities, 2026 Source

Health education was delivered through direct counseling sessions using presentation media and interactive discussions to improve respondents' understanding of RSV.

Knowledge Categories

Table 4. Knowledge Categories

Knowledge Category	Pre-test (n)	Pre-test (%)	Post-test (n)	Post-test (%)
Good	10	18,9	4	84.9
Moderate	28	52,8	8	15.1
Poor	15	28,3	0	0.0

Source: Primary Data, 2026

The distribution of respondents' knowledge levels showed improvement after the educational intervention. Most respondents were categorized as having moderate knowledge during the pre-test (52.8%), while the majority shifted to the good knowledge category after the

intervention (84.9%).



Figure 2. Pre-test and Post-test Implementation

Source: Documentation of Community Service Activities, 2026

Respondents completed questionnaires before and after the educational activities to measure their knowledge regarding RSV.

The results of the Wilcoxon Signed Ranks Test showed a p-value < 0.05 , indicating a significant difference between pre-test and post-test results.

N-Gain Score Results

Table 5. N-Gain Score

N-Gain Score Category	Frequency (n)	Percentage (%)
High ($g > 0,7$)	12	22,6
Medium ($0,3 \leq g \leq 0,7$)	35	66,0
Low ($g < 0,3$)	6	11,3
Total	53	100,0

Source: Primary Data, 2026

Most respondents experienced knowledge improvement within the moderate category (66.0%), with an average N-Gain Score of 0.56.



Figure 3. Distribution of Educational Leaflets

Source: Documentation of Community Service Activities, 2026

Educational leaflets were distributed to respondents as additional information media so that the material could be reviewed independently at home.

DISCUSSION

The results of this community service activity demonstrated that health education regarding Respiratory Syncytial Virus (RSV) was effective in improving mothers' knowledge. Knowledge improvement was indicated by the increase in post-test mean scores, changes in knowledge category distribution, and statistical test results showing significant differences after the intervention.

Most respondents were within the productive age range and had a moderate educational background. These conditions supported respondents' ability to receive and understand the health information provided during the educational activities. In addition, most respondents were housewives, allowing them greater opportunities to participate actively in the program.

The use of educational media such as animated videos, leaflets, and interactive discussions helped improve respondents' understanding of early RSV management. Audiovisual media are considered easier to understand because they present information in an attractive and simple manner. The educational intervention also helped mothers understand the importance of supportive therapy and rational medication use in viral respiratory infections.

The N-Gain Score results indicated that the improvement in knowledge was categorized as moderate. This finding suggests that the health education program was sufficiently effective, although knowledge improvement did not occur evenly among all respondents. Differences in respondent characteristics, such as age, educational level, and previous experience in managing childhood illnesses, may influence the level of information acceptance.

This community service activity has important implications for improving mothers' readiness to recognize early symptoms of respiratory disorders in toddlers and provide appropriate initial management. Increased knowledge is expected to help prevent delays in

treatment and reduce the risk of complications in children.

The limitation of this activity was that the respondents were limited to one posyandu area; therefore, the results cannot be generalized to a broader population. In addition, the evaluation was conducted only in the short term, so long-term behavioral changes among respondents could not yet be assessed.

CONCLUSION

Based on the results of this community service activity, the knowledge level of mothers with toddlers regarding Respiratory Syncytial Virus (RSV) before the educational intervention was still categorized as moderate to low. After the educational intervention using animated videos and leaflets, there was a significant improvement in respondents' knowledge, as indicated by the increased percentage of respondents in the good knowledge category.

The statistical analysis showed a significant difference between pre-test and post-test scores ($p < 0.05$), indicating that the health education provided was effective in improving respondents' understanding of RSV prevention and early management in toddlers. In addition, the N-Gain Score analysis demonstrated that most respondents experienced a moderate level of knowledge improvement.

Therefore, health education regarding RSV can serve as a promotive and preventive effort to improve mothers' knowledge and is expected to support the prevention and early management of respiratory tract infections in children.

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