

Original Research

The Effect of Heimlich Maneuver Education Using Audiovisual Media on Improving Mothers' Knowledge of Choking Management in Children at RA-Al Hikmah Parongpong in 2026

Lisbet Octovia Manalu*, Dela Savira and Arieni Ramadhan

Faculty of Nursing, Institute Kesehatan Rajawali, Bandung, Indonesia

Article history

Received: 12 February 2026

Revised: 4 April 2026

Accepted: 13 April 2026

Published Online: 30 April 2026

***Correspondence:**

Lisbet Octovia Manalu

Address: Faculty of Nursing, Institute Kesehatan Rajawali, Bandung, Indonesia.

Email: lisbetpediatrik@gmail.com

How to cite this article: Manalu LO, Savira D, Ramadhan A. The Effect of Heimlich Maneuver Education Using Audiovisual Media on Improving Mothers' Knowledge of Choking Management in Children at RA-Al Hikmah Parongpong in 2026. *Health Dynamics*, 2026, 3(4), 169-173. <https://doi.org/10.33846/hd30406>



Copyrights: © 2026 by the authors. This is an open access article under the terms and conditions of the Creative Commons Attribution – NoDerivatives 4.0 International (CC BY-ND 4.0) license (<https://creativecommons.org/licenses/by-nd/4.0/>).

ABSTRACT

Background: Choking is a common condition in children and can be fatal if not treated quickly and appropriately. Mothers' lack of knowledge about choking management increases the risk of complications and death, so education, especially about the Heimlich maneuver, is needed to increase knowledge and prevent child mortality. **Objective:** To determine the effect of audiovisual education on the Heimlich maneuver on mothers' knowledge of choking management in children at RA Al-Hikmah. **Methods:** This was a quantitative study with a pre-experimental one-group pre-test-post-test design. The sample consisted of 45 respondents, using a total sampling approach. A knowledge questionnaire was administered before and after the health education, and the changes were analyzed using the Wilcoxon test. **Results:** Mothers' knowledge increased significantly after health education. Before the intervention, most mothers had low knowledge levels, but after education, knowledge levels increased significantly. The Wilcoxon test showed a p-value of 0.000 ($p < 0.05$), indicating that health education significantly increased mothers' knowledge. **Conclusion:** Audiovisual-based health education on the Heimlich maneuver is effective in improving mothers' knowledge of choking management in children. This approach can be recommended as an alternative strategy in community-based health education programs to enhance early first aid preparedness.

Keywords: Health education; children; mothers; Knowledge; choking; Heimlich maneuver

1. INTRODUCTION

Choking is an emergency condition caused by a blockage in the airway due to the aspiration of a foreign object, resulting in respiratory distress and, in certain circumstances, can be life-threatening. World Health Organization (WHO) reports that choking is one of the leading causes of death from unintentional injuries globally, with approximately 4.4 million deaths each year from various types of injuries, including choking and violence, most commonly occurring in the toddler age group.⁽¹⁾ It is estimated that more than 160,000 child deaths occur each year due to airway obstruction, which is generally related to limited family knowledge and delayed initial treatment at home.

In Indonesia, choking incidents among children are still common, especially in the home environment. Data from the Indonesian Ministry of Health shows that more than 60% of choking cases in toddlers occur while eating or playing with small objects.⁽²⁾ The lack of knowledge and skills among parents, especially mothers as primary caregivers, in providing first aid causes delays in intervention, which can lead to serious complications and even death. Public awareness of the importance of education in choking prevention and management remains relatively low, especially in

areas with limited access to health information. Research by Ananda and Rustandi (2025) shows that 59.5% of choking incidents are caused by food, 31.4% by foreign objects, and 9.1% by unknown causes.⁽³⁾

In West Java Province, based on the West Java Provincial Health Profile, household injuries, including choking incidents, are a common health problem among young children, especially in educational settings such as kindergartens. Parents play a strategic role in preventing and managing choking incidents, given that most occur at home while children are under family supervision. The American Heart Association emphasises that mastering life-saving first aid techniques, such as the Heimlich maneuver, can reduce the risk of death by up to 50% if performed quickly and correctly.⁽⁴⁾

Although several previous studies have provided a strong foundation, some gaps remain. The majority of studies focus on improving cognitive knowledge, while the practical aspects have not been measured extensively. Audiovisual media in the context of treating choking in children is still limited, with previous researchers only using conventional media such as PowerPoint and leaflets. Therefore, this study was designed to fill this gap and determine the effectiveness of health education through audiovisual media, not only by measuring knowledge but also by assessing practical skills that were intervened with Heimlich maneuver education using audiovisual media.

Therefore, this study aims to determine the effect of audiovisual-based health education on the Heimlich maneuver on mothers' knowledge of choking management in children. The findings of this study are expected to contribute to the development of effective health education strategies and improve mothers' preparedness in handling choking incidents. This research is also important as an effort to reduce morbidity and mortality in children through early and appropriate intervention.

2. METHODS

2.1 Research Design

This study is quantitative, with a pre-experimental approach, using a one-group pretest-posttest design. This study uses a cross-sectional research design.

2.2 Selection and Sampling

The sample used in this study consisted of 55 respondents. Ten respondents were used in a preliminary

study; 45 were used in this study. This study was conducted at RA Al-Hikmah. This study used a non-probability sampling technique with total sampling.⁽⁵⁾

2.3 Research Instrument

The research instrument was a questionnaire on knowledge of choking management in children using the Heimlich maneuver. The questionnaire consisted of 21 multiple-choice questions adapted from Pondette's thesis (2021) and had undergone validity and reliability testing.⁽⁶⁾ The validity test results showed that all items were valid ($p < 0.05$), while the reliability test using Cronbach's Alpha obtained a value of 0.956, indicating that the instrument was highly reliable.

2.4 Data Collection Procedure

This study used a one-group pre-test-post-test design. After obtaining permission from the school, respondents were recruited according to inclusion and exclusion criteria and signed informed consent forms. Respondents first completed a pre-test using a knowledge questionnaire. Next, they received a health education intervention on the Heimlich maneuver via audiovisual media, accompanied by a brief explanation. After the intervention, respondents completed a post-test using the same questionnaire. The collected data were then processed and analyzed to assess changes in knowledge levels before and after the intervention.

2.5 Data Analysis

The data were analyzed using Statistical Package for the Social Sciences (SPSS) version 22. Descriptive analysis was used to describe respondents' characteristics and their level of knowledge, using frequency distributions and percentages. A normality test was conducted to determine the distribution of data. Because the data were not normally distributed, a nonparametric analysis, namely the Wilcoxon Signed-Rank Test, was used to compare knowledge scores before and after the intervention. A p -value < 0.05 was set as the statistical significance.

3. RESULTS

Based on Table 1, the majority of respondents (42, 93.3%) had insufficient knowledge before the intervention, while 3 (6.7%) had sufficient knowledge. The lack of knowledge among respondents was due to several factors, including educational level. The majority of mothers with insufficient knowledge had an

elementary school education, while those with sufficient knowledge had a bachelor's degree.

Table 1. Mothers' knowledge before the audiovisual intervention at RA Al-Hikmah

Pre-test knowledge	n	%
Insufficient knowledge	42	93.3
Adequate knowledge	3	6.7
Total	45	100.0

Based on Table 4.2 above, after the intervention, 43 respondents (95.6%) had good knowledge, and 2 respondents (4.4%) had sufficient knowledge.

Table 2. Mothers' knowledge after the audiovisual intervention at RA Al-Hikmah

Post-test knowledge	n	%
Sufficient knowledge	2	4.4
Good knowledge	43	95.6
Total	45	100.0

Table 3 shows that, before receiving education through audiovisual media, 42 respondents (93.3%) were

in the low-knowledge category. In addition, 3 respondents (6.7%) were in the sufficient knowledge category before education, and none were in the good knowledge category. After receiving education using audiovisual media, there was a significant increase in knowledge levels. A total of 43 respondents (95.6%) were in the good knowledge category, while 2 respondents (4.4%) were in the sufficient knowledge category. There were no respondents in the poor knowledge category after the education. Of the 42 respondents who previously had insufficient knowledge, 43 (95.6%) improved to the good knowledge category, and 2 (4.4%) improved to the adequate knowledge category. All respondents who were previously in the adequate knowledge category (3 respondents or 6.7%) also improved to the good knowledge category after receiving education.

The results of the respondent's knowledge measurement showed a difference in mothers' knowledge before and after the education was provided, with a Wilcoxon test p-value of 0.000, indicating a difference in mothers' knowledge about handling choking in children.

Table 1. Mother's knowledge before and after audiovisual intervention at RA Al-Hikmah

Knowledge variable	Category	Pre-intervention		Post-intervention		p-value
		N	%	N	%	
Level of knowledge	Low	42	93.3	0	0	<0.000
	Fair	3	6.7	2	4.4%	
	Good	0	0	43	95.6%	
Total		45	100.0%	45	100.0%	

4. DISCUSSION

The results of measuring knowledge of choking management in children at RA Al-hikmah showed a difference between pre- and post-test scores after audiovisual media education was provided. In the pre-test stage, 21 questionnaire items addressed the definition and management of choking in children. Some respondents still had limited knowledge about choking. For example, question 5 asked, "Choking is not fatal." After the audiovisual education was provided, the post-test results showed that 43 respondents answered correctly, indicating an increase in their knowledge, which suggests that the education improved mothers' understanding of choking management in children.

According to health promotion theory, the learning process will be more effective if individuals have the opportunity to review the material they have received, enabling the information to be better understood and remembered.⁽⁷⁾ This is evident from the increase in correct answers on the post-test compared to the pre-test. Based on the analysis of the questions, the difference between the pre-test and post-test was most evident in the question about handling choking in children, with 45 respondents answering correctly in the post-test compared to the pre-test. This shows that audiovisual education is effective in improving knowledge in the cognitive aspect.

However, several questions were still answered incorrectly on the post-test, especially question 7, "Holding the stomach is a choking response," with 18

respondents still answering it incorrectly and 27 answering correctly. Question number 16 about “If a child chokes and then coughs, do not let the child do so” was still answered incorrectly by 14 respondents and correctly by 31 respondents.

The questions were formulated as negative statements, which tend to be more difficult for respondents to understand. According Notoatmojo (2018),⁽⁸⁾ negative statements in knowledge questionnaires often lead to misconceptions, especially among respondents with low levels of education.

The results of this study are in line with the research Ananda and Rustandi (2025),⁽³⁾ which shows that before receiving education, 81.3% of respondents had a low level of knowledge. After receiving education, there was a significant increase in the level of knowledge of mothers (87.5%) of respondents reaching a good level of knowledge (p -value < 0.001). This is because health education outreach can enhance mothers’ knowledge, making it easier to recognize choking in children, explore the factors and causes, and explain how to handle them. Therefore, mothers who understand will develop awareness and a willingness, motivating them to pay attention to their children to minimize choking.

The findings of this study are consistent with previous studies. Sarabi and Nosratabadi (2022) reported that video-based education significantly improved mothers’ knowledge of first aid in choking cases.⁽⁹⁾ Similarly, Ranjous et al. (2024) found that audiovisual media is more effective than traditional educational methods in increasing awareness and understanding of choking management.⁽¹⁰⁾ This indicates that audiovisual media enhances learning by combining visual and auditory stimuli, which improves comprehension and retention.

In this study, the improvement in mothers’ knowledge can be explained by the way audiovisual media delivers information in a more engaging and practical manner. Compared to conventional methods such as lectures or printed materials, audiovisual content allows respondents to directly observe the correct steps of the Heimlich maneuver, making the information easier to understand and remember.⁽¹¹⁾ This is particularly important for emergency situations like choking, where quick recognition and appropriate response are crucial.

Moreover, audiovisual media helps bridge differences in educational background among respondents. Mothers with lower educational levels may find it difficult to understand written or verbal

explanations alone, but visual demonstrations can simplify complex information into more understandable forms. This may explain why the majority of respondents in this study showed a significant increase in knowledge after the intervention.

In addition, repeated exposure to audiovisual materials can reinforce learning and improve long-term memory. Respondents not only receive information but also visualize real-life situations, which can increase their confidence in applying the knowledge when needed. Therefore, audiovisual-based education does not only improve cognitive understanding but also has the potential to support readiness in real-life choking situations.

The use of media in disseminating health education also greatly influences individuals’ and groups’ knowledge levels, as in this study, which used audiovisual media. This context aligns with the theory mentioned in Notoatmojo (2018),⁽⁸⁾ that using media for health education can be practical for understanding, increasing appeal, and facilitating recall among the audience. Audiovisual videos are also very flexible and can be tailored to various age groups and audiences, including adults and children. This aims to ensure that the information conveyed is well received.

The researchers concluded that health education is essential, especially for mothers, given the increase in mothers’ knowledge of how to handle choking. In today’s modern era, health education can be delivered through various interesting media, as everyone, including mothers, can easily access the internet. Therefore, it is hoped that health workers, especially nurses, can innovate in disseminating health education to the community so that people can adopt healthy living habits and increase their knowledge about their own health, which can then be applied to themselves and those around them.

Based on supporting theories and existing research, Heimlich maneuver education using audiovisual media significantly improves mothers’ knowledge and understanding of choking in children.⁽¹²⁾ This increase in knowledge is expected to encourage positive changes to prevent mortality in children caused by choking and increase mothers’ awareness to supervise their toddlers to avoid choking.

The difference between the pre-test and post-test results shows that audiovisual media education is effective in increasing knowledge of choking management using the Heimlich maneuver at Ra Al-

Hikmah. However, the characteristics of the respondents and the types of questions indicate that the increase in knowledge is not yet uniform. Therefore, a sustainable education strategy is needed so that the knowledge gained can be optimally applied in everyday life

However, this study has several limitations. The use of a single-group pretest-posttest design without a control group limits the ability to establish cause-and-effect relationships. Future research is recommended to include a control group and assess both knowledge and practical skills for a more comprehensive evaluation.

5. CONCLUSION

This study shows that audiovisual-based health education on the Heimlich maneuver significantly improves mothers' knowledge of how to handle choking incidents in children ($p\text{-value} < 0.000$). The results of this study confirm that structured, audiovisual-based educational interventions are effective in improving understanding of the signs of choking and the appropriate first aid response. These findings underscore the importance of strengthening health education to improve first aid preparedness at the family level. Integrating audiovisual-based emergency education into public health programs has the potential to be a sustainable strategy in reducing the risk of morbidity and mortality in children due to choking incidents, which can actually be prevented through effective and systematic educational interventions.

Ethical Approval

The study received ethical approval from Research Ethics Committee of STIKes Budi Luhur Cimahi with the approval no. 004867/STIKes Budi Luhur Cimahi/2026.

Acknowledgement

The researcher would like to thank all parties who contributed to and supported the completion of this research. In particular, we thank all parents who participated in this study.

Competing Interests

All the authors declare that there are no conflicts of interest.

Funding Information

No funds were received for this study.

Underlying Data

Derived data supporting the findings of this study are available from the corresponding author on request.

REFERENCES

1. World Health Organization. Injuries and violence. Geneva: World Health Organization; 2024. Available from: <https://www.who.int/news-room/fact-sheets/detail/injuries-and-violence> (Accessed on 28 Jan 2026)
2. Ministry of Health of the Republic of Indonesia. Profil Kesehatan Indonesia 2022. Jakarta: Ministry of Health of the Republic of Indonesia; 2022.
3. Ananda IP, Rustandi B. Pengaruh Pemberian Edukasi Penanganan Gawat Darurat Tersedak Pada Anak Menggunakan Teknik Heimlich Maneuver Terhadap Pengetahuan Ibu di Taam Asyima Nusantara Tahun 2025. *SINERGI: Jurnal Riset Ilmiah*. 2025;2(4):2067–2077. <https://doi.org/10.62335/sinergi.v2i4.1172>
4. American Redcross. Adult/Child Choking. Washington: American Redcross; 2023. Available from: <https://www.redcross.org/take-a-class/resources/learn-first-aid/adult-child-choking> (Accessed on 28 Jan 2026)
5. Sugiyono. Metode Penelitian Kuantitatif, Kualitatif, dan R&D (2nd ed.). Bandung: Alfabeta; 2020.
6. Pondete MA. Pengaruh Video Edukasi Terhadap Pengetahuan Dan Efikasi Diri Ibu Dalam Penanganan Choking Pada Balita. Malang: Universitas Brawijaya; 2021.
7. Notoadmodjo S. Promosi Kesehatan dan Perilaku Kesehatan. Bandung: Rineka Cipta; 2018.
8. Notoatmodjo S. Metodologi Penelitian Kesehatan. Bandung: Rineka Cipta; 2018.
9. Sarabi N, Nosratabadi M. Effectiveness of Video Education on Mothers' Knowledge of Hazard Factors and First Aid Administration in Choking Incidents. *Journal of Comprehensive Pediatrics*. 2022;13(2):e121420. <https://doi.org/10.5812/compreped-121420>
10. Ranjous Y, Al Balkhi A, Alnader I, Rkab M., Ataya J, Abouharb R. Knowledge and misconceptions of choking and first-aid procedures among Syrian adults: A cross-sectional study. *SAGE Open Medicine*. 2024;12:1-10. <https://doi.org/10.1177/20503121241249399>
11. Ministry of Health of the Republic of Indonesia. Buku Saku Penanganan Kegawat Daruratan Kesehatan. Jakarta: Pusat Krisis Kesehatan Kemenkes, Ministry of Health of the Republic of Indonesia; 2024.
12. Wong LD, Eaton MH, Wilson D, Winkelstein ML, Schwartz P. Buku Ajar Keperawatan Pediatrik Wong: Edisi Indonesia. Jakarta: ECG; 2009.