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**Review Articles**

**EMERGENCY MANAGEMENT OF CHOKING IN CHILDREN: LITERATURE REVIEW**

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**ABSTRACT**

**Background:** Choking is an emergency that often occurs in society, especially in children. This is because children's characteristics and behavior vary at that age and need to be understood and supervised by parents, especially mothers. Knowledge about handling choking will influence community behavior in handling choking and avoiding the threat of death in children. Choking can block the human airway, especially in children. One effort to increase community knowledge is through training.

**Objective:** The aim is to evaluate existing research on the effectiveness of training interventions in improving parental and caregiver knowledge and skills in managing choking emergencies in children.

**Design:** This study employs a literature review approach to evaluate the effectiveness of training interventions in improving parents' and caregivers' knowledge and skills in managing choking emergencies in children.

**Data Sources:** The data sources for this study consist of national and international journals relevant to the emergency management of choking in children. The articles were obtained from electronic databases such as Google Scholar, PubMed, ScienceDirect, and Scopus, covering publications from 2019 to 2024.

**Review Methods:** The literature search was conducted using the keywords "choking," "children," and "emergency management." The retrieved articles were screened based on inclusion criteria, including relevance to the topic, publication within the last five years, and appropriate study designs (correlational studies, experimental, quasi-experimental, or qualitative studies). The selected articles were then analyzed through critical appraisal to assess their validity before being incorporated into the study.

**Results:** The result of the article search found 5 articles appropriate to the topic. Through review, it was found that there is knowledge in emergency management of children's choking.

**Conclusion:** Of the 10 journals examined by researchers, all journals discuss knowledge in handling emergency choking in children.

**Keywords:** Handling, Emergency, Choking, Children.

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**INTRODUCTION**

Choking is a common occurrence in society. Most people do not pay much attention to this incident. A person experiences bloating due to a disturbance or blockage in the respiratory

tract caused by food, toys, or other objects (Nurhayati et al., 2017:32). The occurrence of this disorder is an incident that must be treated immediately, and if there is a blockage or obstruction in the airway it can cause shortness of breath (hypoventilation), lack of oxygen (hypoxemia), increased work of breathing and impaired gas exchange in the lungs. The blockage or obstruction can be partial or partial and total, depending on the cause. Total or complete airway obstruction will quickly cause the body to lack oxygen or hypoxia and heart attack, while partial or partial obstruction is more likely to occur (Singh, 2015). Children are susceptible to choking because they do not care much about what they eat and put foreign objects in their mouths without realizing it. The latest data collected by the Central Statistics Agency revealed that in 2018 there were 289 deaths caused by choking. This figure increased by 17 percent from the previous year (Pramudiarja, 2019). Nearly two-thirds (65%) of deaths due to foreign body aspiration occurred in children aged 3 years and over. Choking on food causes the death of about 1 child every 5 days in the United States. Hot dogs account for 17% of food-related foreign body aspiration. More than three-quarters (77.1%) occurred in children aged 3 years and under. Boys and girls are treated for choking at the same rate of 32.1 and 27.3 per 100,000 population. An estimated 10.5% of children who receive emergency medical care are hospitalized (Jackson & CL, 2019). Choking cases in children are influenced by several factors, such as the emergence or growth of molars, imperfect swallowing mechanisms, narrow airways, the habit of putting objects in the mouth, and the child's active physical activity. Lack of parental supervision can increase the risk of choking (Khayudin, B. A. 2022). Choking cases cannot be separated from airway management, which aims to restore normal air exchange. There are many causes of airway obstruction, therefore airway management must begin when there is a blockage in the airway (Foresto et al, 2015). This choking case can be handled by anyone, especially families with toddlers. First aid skills for choking children are steps that must be taken by parents or caregivers. Because the quick skills of parents or caregivers greatly affect the safety of children. First aid for choking children is with the Chest Thrust or Heimlich Maneuver (Khayudin, B., & HS, A. A. H., 2021). Chest Thrust or Heimlich Maneuver is by giving a jolt to the chest or stomach and then asking the child to cough as hard as possible so that the foreign object comes out, if the child cannot speak, ask him to cough again either by coughing himself or with the help of others (Iskandar J, 2012). If the behavior of handling choking in children is correct, the child will avoid the threat of death, and vice versa. So that families are not only aware, know, and understand but also want and can provide first aid to choking children (Khayudin, BA, & Alfaqih, MR., 2022). Parents must have the ability to help choking children in their daily lives. Based on the description above, researchers are interested in researching "Handling choking emergencies in children". This study aims to evaluate existing research on the effectiveness of training interventions in improving the knowledge and skills of parents and caregivers in handling choking emergencies in children.

## METHODS

### *Design*

This research used a literature study or literature review.

### *Search Methods*

The literature search in this study followed a systematic approach to ensure the selection of relevant and high-quality sources. The inclusion criteria required that selected journals be

related to the emergency management of choking in children, published within the last five years (2019–2024), and utilized appropriate study designs, including correlational, experimental, quasi-experimental, and qualitative studies. The search was conducted through reputable electronic databases such as Google Scholar, PubMed, ScienceDirect, and Scopus, using the keywords "choking" AND "children" AND "emergency management" to retrieve relevant articles. After obtaining the initial results, a screening process was applied based on inclusion and exclusion criteria, followed by the selection of only fully accessible full-text journals for a thorough review.

### ***Search Outcome***

The literature search yielded a total of 406 articles from electronic databases, including Google Scholar, PubMed, ScienceDirect, and Scopus. After applying the inclusion criteria—which required relevance to choking emergency management in children, publication within the last five years (2019–2024), and appropriate study designs—the number of eligible articles was reduced. Further screening was conducted to exclude duplicates, inaccessible full texts, and studies that did not meet the research focus, resulting in 74 full-text articles. Following a critical appraisal process to assess the validity, reliability, and relevance of the studies, only five articles were deemed appropriate for inclusion in the final review. These selected studies provided valuable insights into the effectiveness of training interventions in improving parents' and caregivers' knowledge and skills in handling choking emergencies in children.

### ***Quality Appraisal***

To ensure data validity and reliability, a critical appraisal process was conducted, involving skimming and scanning techniques to extract essential points from each study. This structured search method ensured that only the most relevant and high-quality research articles were included, contributing to a comprehensive review of choking emergency management in children.

### ***Data Abstraction***

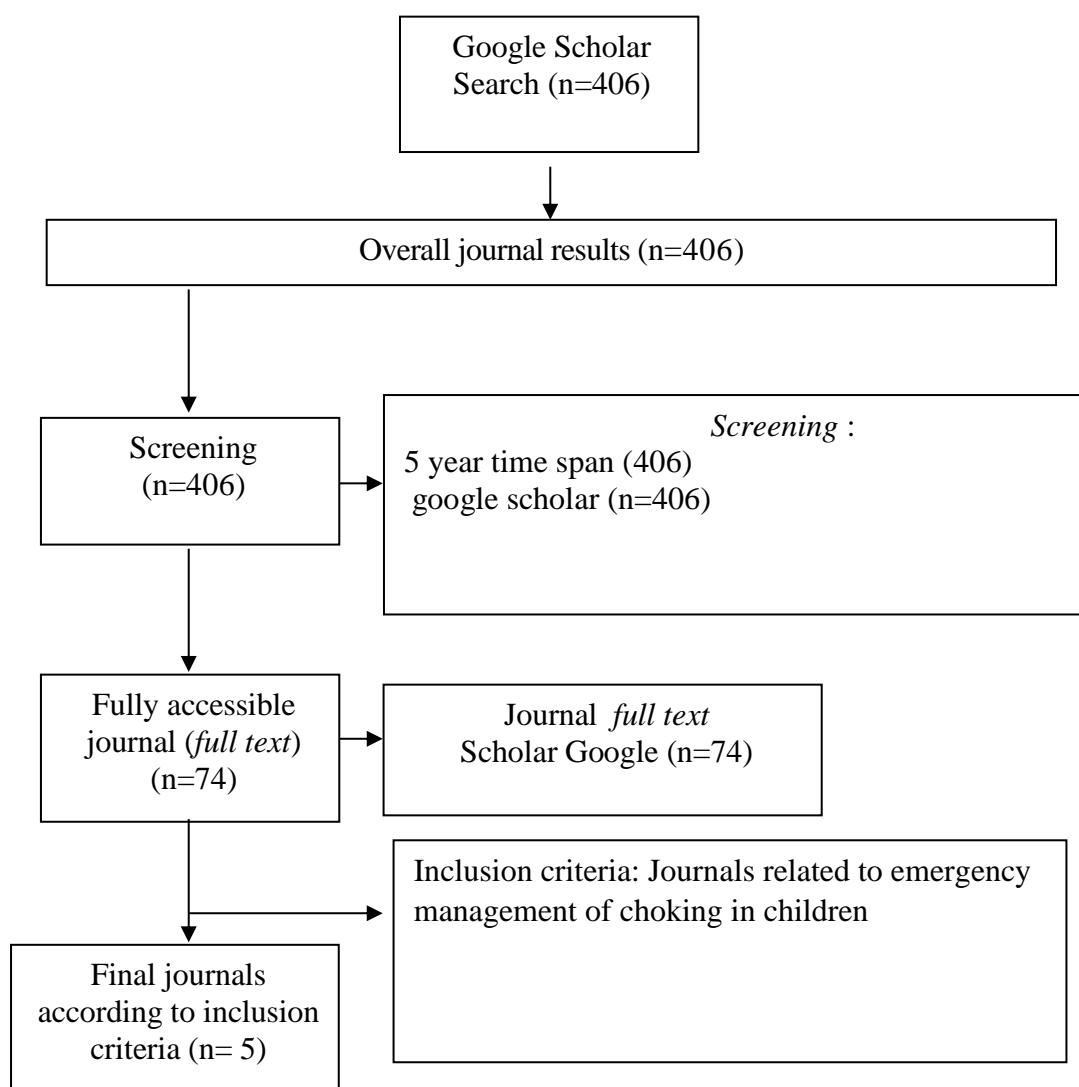
In this study, data abstraction was conducted systematically to extract essential information from the selected articles. After finalizing the five relevant articles, key data points were identified and summarized, including the study title, author(s), year of publication, study design, population/sample, intervention methods, and key findings. This process ensured that only the most relevant and high-quality data were included in the review. The extracted data were then categorized based on themes related to the effectiveness of training interventions, knowledge improvement, and skills development in handling choking emergencies in children. Any discrepancies or inconsistencies in the data were resolved through thorough re-evaluation and cross-checking of the literature. This structured approach to data abstraction allowed for a comprehensive analysis of the impact of training programs on enhancing parental and caregiver preparedness in managing choking incidents.

### ***Data Analysis/ Synthesis***

The data analysis and synthesis process in this study involved systematically reviewing and interpreting findings from the selected five relevant articles. Each study was critically examined to identify patterns, similarities, and differences in the effectiveness of training interventions on parents' and caregivers' knowledge and skills in managing choking emergencies in children. The extracted data were categorized based on key themes such as training methods, knowledge improvement, skill enhancement, and the role of educational

media. A comparative analysis was conducted to highlight the strengths and limitations of different intervention approaches, including the use of booklets, demonstrations, lectures, and hands-on practice. The synthesis process aimed to integrate findings from multiple studies to provide a comprehensive understanding of the impact of training on choking management. Any inconsistencies or variations in results were analyzed to determine possible influencing factors, such as sample size, study design, or differences in training delivery. This approach ensured a well-rounded interpretation of the literature, contributing to evidence-based recommendations for improving parental and caregiver preparedness in handling choking emergencies in children.

## RESULTS



**Figure 1.** Flow Chart of Emergency Management of Choking in Children.

**Table 1.** Analysis of Article Review.

Researcher, Year	Title	Study design	Population/Sample	Results/Conclusions
Mira Utami Ningsih, Baiq Kirana Kitna Yusarti (2020)	Improving Mother's Skills In Handling Choking in Infants and Children	Cross-Sectional	5 trained people and 25 mothers who have babies and/or toddlers.	<p>Increasing respondent's knowledge in dealing with choking in infants and toddlers.</p> <p>Knowledge can be influenced by the information obtained and the respondent's ability to capture the information provided</p>
Sulistiyani, A. R. M. L., & Ramdani, M. L. (2020).	The Effect of Health Education with Booklet Media on Treatment Choking in Children on the Level of Knowledge of Posyandu Cadres in Karangsari Village	pre-experimental design with a one-group pre-test-post-test design approach.	The sample size was 30 cadres who met the inclusion and exclusion criteria.	Health education using booklets on handling choking in children influences the level of knowledge of posyandu cadres in Karangsari Village.
Awaluddin , Anita Syarifah, M.Irwan & Riamah (2022)	First Aid for Choking in Pre-School Children in RA Anak Bangsa	Cross-Sectional	The sample 26 Kindergarten teacher.	<p>With lectures and questions and answers directly during counseling and distributing leaflets and practice directly create teacher teachers</p> <p>understand and understand the better meaning of First aid for</p>

					choking in children
Nabilah Siregar, Yohana Adelina Pasaribu, (2022)	Mother's Training in Handling Choking in Children in Simalungun Regency	Pre-experimental design with a one-group pre-test-post-test design approach.	15 mothers who have family aged under five years old	The results of the service data analysis showed that mothers' knowledge about handling choking children increased from 14 people (93.2%) with poor knowledge and 1 person (6.7%) with sufficient knowledge to 15 people (100%) with good knowledge and that training had an effect on community knowledge about handling choking children. Furthermore, ongoing evaluation is needed regarding the first treatment of airway emergency cases	
Sulistiana Dian Roza Adila, Sekani Niriyah, (2020)	The Mother's Experience in Handling Choking in Babies	Qualitative design	The participants in this study were 7 mothers who had children who choked when they were babies	This research obtained 5 themes related to mothers' experiences in handling choking in babies, namely	

causes of choking, signs and symptoms of choking in babies, psychological responses and handling of choking, time to handle choking, as well as seeking help and efforts to prevent choking. It is hoped that the results of this research can increase insight and knowledge for the community, especially mothers, in handling choking babies, so that mothers can carry out good first treatment when a baby is choking. This research obtained 5 themes related to mothers' experiences in handling choking in babies, namely causes of choking, signs and symptoms of choking in

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## **DISCUSSION**

From the results of the study of the five journals studied, findings can be obtained from articles on increasing knowledge with various methods of providing information. Choking is an emergency condition that must be treated immediately, if not treated quickly, the child will experience problems with lack of oxygen which can lead to death in children (Knapp, 2017). The factors that most influence children's choking are food (nuts), bubble drinks, toys, or metal objects (Greenberg, 2017). Nuts are the most widely consumed food by toddlers, and this triggers children to choke easily, if not handled properly, can trigger a lack of oxygen and even respiratory arrest, and can lead to death if not handled quickly and correctly. The second factor that causes children to choke easily is bubble drinks (Khayudin, B..., 2019). Bubble drinks are drinks that are often consumed by toddlers who find it difficult to chew bubbles because of their large and chewy size, and some also avoid using straws so that children can choke and aspiration of the lungs occurs when consuming bubbles (Siahaan, E. R., 2019). Efforts that can be made to prevent children from choking are by providing education by teaching the Heimlich maneuver skills to mothers. Mothers are the closest people to their children so mothers can

prevent children from experiencing emergency problems, such as choking. If not treated, it can be dangerous, namely choking, respiratory arrest, and even death (Abdul Kadir, 2018). The results of this study analysis indicate that there is a relationship between maternal knowledge of the Heimlich maneuver and handling skills for toddlers who are choking. Based on its relationship with handling technique skills, the Heimlich maneuver can be performed by mothers when problems occur at home or in the community if there is a case of a child choking. First aid for children who are choking is a step that must be taken by the mother, namely the Heimlich maneuver (Khayudin, BA, & Maslichah, M., 2016). The Heimlich maneuver provides a jolt to the chest or stomach and then asks the child to cough as hard as possible so that foreign objects or food can come out (Iskandar, 2018). The role of pediatric nurses in the community must be proactive by providing education routinely and continuously so that Heimlich maneuver skills can be socialized by the community, especially in Tanjung Raya sub-district. Based on the type of training supplied using demonstration media with phantom dolls and booklet media. There is also the use of videos first to show initial motivation in conducting training. In addition, this action is effective for mothers of younger ages and mothers of first children. The limitation is that follow-up studies with easier methods for mothers regarding first aid for choking in children are still ineffective.

## **CONCLUSION**

The main conclusion of this study is the need to improve parental knowledge about first aid for choking in children. In addition, educational strategies or efforts to improve so that children do not choke are given by teaching the Heimlich maneuver skills to mothers. Mothers are the closest people to their children, so mothers can prevent children from experiencing emergency problems in their children's lives. Suggestions that further researchers can continue with families with various cultural backgrounds and include this training program in the curriculum or side training for parents with children in elementary school or kindergarten.

## **LIMITATION**

There are no limitations in carrying out this research.

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