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The Relationship between Knowledge Level and Teachers' Attitudes Regarding the Handling of Choking Cases in Students at the Madani Islamic Boarding School of UIN Alauddin

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ABSTRACT

Background: Choking is a life-threatening emergency that often occurs in school-age children and requires immediate first aid. Teachers frequently become first responders, yet their knowledge and attitudes toward choking management are still limited, especially in low- and middle-income countries. **Objective:** This study aimed to determine the relationship between teachers' knowledge and attitudes in managing choking incidents among students. **Methods:** A quantitative cross-sectional correlational study was conducted involving 34 teachers at Pesantren Madani UIN Alauddin using total sampling. Data were collected using a self-developed questionnaire consisting of knowledge and attitude items related to choking management. The instrument was reviewed for content validity by experts and tested for reliability prior to data collection. Data were analyzed using the Chi-Square test with a 95% confidence level. **Results:** The majority of teachers had good knowledge (76.5%) and positive attitudes (67.7%). Statistical analysis showed a significant relationship between knowledge and attitude ($p = 0.007$), indicating that better knowledge is associated with more positive responses in emergency situations. **Conclusion:** Teachers' knowledge is significantly related to their attitudes toward choking management. Continuous first-aid education and training are needed to improve school emergency preparedness, with nurses playing an important role in health education and innovation.

INTRODUCTION

School-age children are a group that is vulnerable to experiencing emergencies. An emergency is a life-threatening condition and requires immediate treatment to prevent disability and death (Rosidawati et al., 2025). One of the main causes of emergency conditions is disturbances in the Airway, Breathing, and Circulation (ABC). Disturbances in the airway, especially choking, are one of the most common cases of emergency in children.

Choking is a condition of obstruction of the airway due to foreign objects such as food, toys, or other small objects (Awaluddin et al., 2023). If the choking incident is not treated immediately, this condition can cause hypoxia which leads to organ damage and even death (Marbun et al., 2024). Global data shows that the death rate due to choking has increased. The Office for National Statistics recorded 289 choking deaths in 2016, a 17% increase over the previous year. Globally, choking (foreign body airway obstruction) is a major contributor to injury related mortality. According to the Global Burden of Disease Study 2021, deaths due to foreign body aspiration increased from approximately 99,000 in 1990 to over 103,000 cases in 2021, indicating a persistent and significant global health burden.

In Indonesia, choking incidents have been reported in various settings, although comprehensive national statistical data are still limited. Choking can result in severe complications, including hypoxia, brain injury, and death if not managed promptly. Evidence suggests that immediate and appropriate first aid significantly improves survival outcomes in choking cases. This shows that the accuracy and speed of first aid greatly determine the outcome of the choking incident.

School is one of the environments with a risk of accidents and emergencies in children. Teachers have an important role in providing first aid because they are the closest party and are the first to be at the location when the incident occurs. The knowledge and first aid skills possessed by teachers can provide quick and appropriate assistance so that it can minimize the impact of injuries and save students' lives (Vermonden et al., 2023). First aid is an initial action that is taken quickly to provide basic medical assistance before receiving follow-up treatment (Adilla et al., 2025). The goals of first aid include preventing more serious injuries, reducing pain, preventing infections, lowering the victim's anxiety levels, and minimizing the risk of death.

However, first aid that is carried out inappropriately can actually worsen the victim's condition and increase the risk of disability and death (Ramadhina et al., 2025). Therefore, teachers are not only required to have adequate knowledge, but also the right attitude in dealing with emergency conditions. Attitudes in first aid reflect an individual's response to an emergency situation, both positively and negatively. A positive response is shown through fast, precise, calm, and unhurried actions with the aim of preventing the victim's condition from worsening (Muninggar et al., 2024). A good attitude is closely related to a person's level of knowledge, because adequate knowledge can increase confidence in doing help.

The results of Al-rajhi et al. (2025) study showed that of the 224 kindergarten teachers studied, only 37% had knowledge about handling choking, and 43.3% had faced cases of choking at school. Of these, only 43.2% provided first aid. Although most respondents had a positive attitude towards first aid, there was still a gap between attitudes and practical abilities in handling choking cases.

The Madani Islamic Boarding School of UIN Alauddin is an educational institution that includes several levels of education, namely RA, MI, MTS, and MA. However, this study specifically focuses on teachers at the Madrasah Tsanawiyah (MTS) level, as students at this level are considered to have a higher risk of experiencing emergency events, including choking incidents. Preliminary findings from informal interviews with teachers indicated that choking incidents had occurred among students, and in some cases,

the response involved directly referring the student to a hospital without providing immediate first aid at the scene. In addition, several teachers reported limited knowledge and confidence in managing emergency situations, particularly choking, and had not received prior training or education related to first aid.

However, studies examining the relationship between teachers' knowledge and attitudes toward choking management in Islamic boarding school settings, particularly in Indonesia, remain limited. Therefore, this study aims to fill this gap by investigating the association between knowledge levels and attitudes among teachers in a pesantren based educational environment.

METHODS

Study Design

This study used a quantitative cross sectional correlational design to investigate the relationship between teachers' knowledge and attitudes toward choking management. The study aimed to determine whether variations in knowledge levels were associated with differences in attitudes among teachers.

Participants and Setting

The population in this study is all teachers at the Madani Islamic Boarding School UIN Alauddin at the Madrasah Tsanawiyah Level as many as 34 people. The sample in this study amounted to 34 people who were all teachers at the Madrasah Tsanawiyah level at the Madani Alauddin Islamic Boarding School. The sampling technique uses non probability sampling with the total sampling method, in which all eligible members of the population were included as respondents. (Adhiwijaya, 2021).

The inclusion criteria were teachers who taught at the Madrasah Tsanawiyah (MTS) level, had at least 6 months of teaching experience, and were willing to participate in the study. The exclusion criteria included teachers who were on leave during the data collection period or were not present at the time of the study.

This research has been conducted at Madrasah Tsanawiyah Islamic Boarding School Madani UIN Alauddin Jalan Bontotangnga Number 36 Paccinongan Village, Somba Opu District, Gowa Regency, South Sulawesi Province

Instruments

Data were collected using a structured questionnaire developed by the researchers based on relevant literature on choking management and first aid. The instrument consisted of two sections: knowledge and attitudes. The knowledge questionnaire comprised 26 items measured using a Guttman scale (correct/incorrect), while the attitude questionnaire consisted of 7 statements measured using a Likert scale. Prior to data collection, the instrument was tested for validity and reliability on 30 respondents. The results of the validity test showed that all 26 knowledge items were valid ($r = 0.41$). Reliability testing using Cronbach's alpha yielded a value of 0.66 for the knowledge section and 0.802 for the attitude section, indicating acceptable to good internal consistency. Knowledge scores were categorized as "good" if the total score was ≥ 18 and "poor" if < 18 . Attitude scores were categorized as "positive" if the total score was ≥ 20 and "negative" if < 20 .

Data Collection Procedure

The data collection procedure is carried out through several stages, namely the preparation, implementation, and final stages. In the preparation stage, the researcher takes care of research licensing and prepares questionnaire instruments. The implementation stage was carried out by providing an explanation of the purpose of the research to the respondents, distributing *informed consent* sheets, then distributing questionnaires for respondents to fill out. In the final stage, the researcher checks the completeness of the data and proceeds to the data processing stage.

Data Analysis

Data processing is carried out using Microsoft Excel and SPSS version 27 applications through editing, coding, entry, cleaning, and tabulating stages. The data analysis used consisted of univariate analysis and bivariate analysis. Univariate analysis was used to describe the frequency and percentage distribution of respondents' characteristics, knowledge levels, and attitudes. Bivariate analysis used the Chi-Square test with a significance level of $p \leq 0.05$ and a confidence level of 95% to determine the relationship between independent variables and dependent variables.

Ethical Consideration

This research has obtained ethical approval from the Health Research Ethics Committee of the Faculty of Medicine and Health Sciences UIN Alauddin Makassar with ethics number C.177/KEPK/FKIK/XII/2025. In its implementation, this research applies the principles of research ethics which include the principles of beneficence, respect for human dignity, and justice. The principle of fairness is applied by treating all respondents fairly and maintaining the confidentiality of the respondents' identities by using the initials of the name.

RESULTS

1. Respondent Characteristics

The results of the research at the Madani Islamic Boarding School of UIN Alauddin showed the characteristics of the respondents as follows:

Table 1. Characteristics of Respondents at the Madani Islamic Boarding School UIN Alauddin

Respondent Characteristics	n	Percentage(%)
Age		
17-25 Years	8	23,5
26-35 Years	15	44,1
36-45 Years	7	20,6
46-55 Years	4	11,8
Gender		
Male	12	35,3
Women	22	64,7
Education		
S1	29	85,3
S2	5	14,7
Length of Work at Madani Islamic Boarding School UIN Alauddin		
7	7	20,6
<1 Year	11	32,4
1-5 Years	9	26,4
6-10 Years	7	20,6
>10 Years		
Ever got info Choking		
Yes	24	70,6
No	10	29,4
Quantity	34	100,0

A total of 34 teachers participated in this study. The majority of respondents were aged 26–35 years old (44.1%), female (64.7%), and had a S1 education (85.3%). The most length of work was in the range of 1–5 years (32.4%). Most of the respondents had received information about choking cases (70.6%).

2. Univariate Analysis

- a. The level of knowledge of teachers about the handling of choking cases in students at the Madani Islamic Boarding School UIN Alauddin

Table 2 Frequency Distribution Based on the teacher's level of knowledge about handling choking cases in students at the Madani Islamic Boarding School UIN Alauddin

Knowledge	n	Percentage(%)
Good	26	76,5
less	8	23,5
Quantity	34	100,0

Based on table 2, it is known that the variable frequency of the teacher's level of knowledge about handling choking cases in students at the Madani Islamic Boarding School UIN Alauddin most of the respondents have good knowledge as many as 26 people (76.5%), poor knowledge as many as 8 people (23.5%).

b. Teachers' attitudes about handling choking cases in students at the Madani Islamic Boarding School UIN Alauddin

Table 3 Frequency Distribution Based on the teacher's attitude regarding the handling of choking cases in students at the Madani Islamic Boarding School UIN Alauddin

Attitude	n	Percentage (%)
Positive	23	67,7
Negatives	11	32,3
Quantity	34	100,0

Based on table 3, it is known that the variable frequency of teachers' attitudes regarding the handling of choking cases in students at the Madani Islamic Boarding School of UIN Alauddin most respondents have a positive attitude as many as 23 people (67.7%), while negative attitudes are 11 people (32.3%).

3. Bivariate Analysis

The relationship between knowledge and teachers' attitudes about handling choking cases in students at the Madani Islamic Boarding School UIN Alauddin

Table 4 The relationship between knowledge and teachers' attitudes about handling choking cases in students at the Madani Islamic Boarding School UIN Alauddin

Knowledge	Attitude				Total		Sig	α
	Positive		Negatives		n	%		
	n	%	n	%				
Good	21	61,8	5	14,7	26	76,5	0,007	0,05
Less	2	5,9	6	17,6	8	23,5		
Quantity	23	67,7	11	32,3	34	100,0		

Based on table 4, it is known that of the 26 respondents (76.5%) who have good knowledge, there are 21 respondents (61.8%) who have a positive attitude, while the other 5 respondents (14.7%) have a negative attitude. As for the 8 respondents (23.5%) who had poor knowledge, 2 respondents (5.9%) had a positive attitude while the other 6 respondents (17.6%) had a negative attitude.

Based on statistical tests, the *chi square test* was used at a confidence level of 95% with a *p value* = 0.007. It can be said that the *p value* is smaller than alpha (0.05), so it can be concluded that there is a relationship between knowledge and teachers' attitudes about handling choking cases in students at the Madani Islamic Boarding School UIN Alauddin.

DISCUSSION

This study found that the majority of teachers had a good level of knowledge (76.5%) and a positive attitude (67.7%) toward choking management. Interestingly, although most teachers reported never receiving formal first aid training, their level of knowledge was relatively high. This finding may be explained by several factors, including educational background, access to information through digital media, and prior informal experiences. As shown in this study, most respondents had a bachelor's degree (S1), which may contribute to better cognitive abilities in understanding health-related information. Previous studies have also highlighted that education level, exposure to information, and experience significantly influence an individual's knowledge acquisition (Endiyono & Lutfiasari, 2016; Jufrizal & Annisa, 2023). In addition, the widespread availability of health information through social media and online platforms may have enabled teachers to acquire basic first aid knowledge independently, even in the absence of formal training.

The findings also showed that most teachers demonstrated a positive attitude toward choking management. However, a considerable proportion still exhibited negative attitudes (32.3%), which may be associated with factors such as lack of hands-on training, fear of making mistakes, and low confidence in performing first aid procedures. Attitude is not solely determined by knowledge, but is also influenced by emotional readiness and perceived self-efficacy. According to behavioral theory, knowledge contributes to shaping beliefs and perceptions, which in turn influence attitudes and readiness to act (Anisah & Parmilah, 2020). In emergency situations such as choking, confidence and prior experience play a critical role in determining whether an individual is willing to intervene.

The bivariate analysis demonstrated a significant relationship between knowledge and attitudes ($p = 0.007$), indicating that higher knowledge is associated with more positive attitudes. This finding is consistent with previous studies that reported a significant association between knowledge and attitudes in first aid management among teachers (Sulistiyani & Ramdani (2020); (Muninggar et al., 2024). Theoretically, this relationship can be explained through the cognitive-affective framework, where knowledge (cognitive component) influences attitudes (affective component), which subsequently affect behavioral intentions. In the context of choking management, adequate knowledge enhances teachers' ability to recognize symptoms, assess the severity of the situation, and take appropriate action, thereby increasing their confidence and fostering positive attitudes.

From a practical perspective, these findings highlight the importance of strengthening not only knowledge but also practical skills and confidence among teachers. Although knowledge levels were relatively high, the absence of formal training may limit teachers' ability to translate knowledge into effective action during real emergencies. Previous studies have shown that structured training programs, including simulation-based learning, significantly improve both knowledge and practical skills in first aid management (Adib-Hajbaghery & Kamrava, 2019; Qawala et al., 2021). Therefore, integrating regular first aid training into school health programs is essential to ensure that teachers are not only knowledgeable but also competent and confident in handling choking incidents.

This study has several limitations that should be considered when interpreting the findings. First, the sample size was relatively small ($n = 34$), which may limit the generalizability of the results. Second, this study was conducted in a single educational setting, which may not represent teachers in other schools or regions. Third, the data were collected using self-reported questionnaires, which may be subject to response bias and social desirability bias. Finally, the cross-sectional design of this study does not allow for establishing causal relationships between knowledge and attitudes, but only identifies associations between variables.

IMPLICATIONS FOR NURSING PRACTICE AND INNOVATION

The findings of this study show that the level of knowledge is significantly related to teachers' attitudes in handling choking cases in students, thus having important implications for nursing practice and innovation, particularly in community nursing and school nursing. Nurses have a strategic role as educators, facilitators, and health advocates in improving the preparedness of the school community for emergency conditions. The results of this research can be translated into practice through the development of a school-based choking first aid education program that is carried out in a structured and sustainable manner

CONCLUSION

This study shows that most teachers at the Madani Islamic Boarding School of UIN Alauddin have a good level of knowledge and a positive attitude in handling choking cases among students. The results also indicate a significant relationship between knowledge and attitudes, suggesting that higher levels of knowledge are associated with more positive responses in emergency situations.

These findings highlight the importance of strengthening first aid education and training for teachers as a preventive effort to reduce the risk of complications and mortality due to choking incidents. This study also contributes to the development of community and school nursing by emphasizing the role of nurses as educators and facilitators in improving emergency preparedness in school settings.

It is recommended that nurses collaborate with schools to develop and implement regular choking first aid training programs, including simulation-based education, to enhance teachers' knowledge, skills, and confidence in managing emergency situations effectively.

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AUTHOR CONTRIBUTIONS

Ardian Adhiwijaya: Supervision, Validation, Methodology, Writing, Review & Editing. Khaerunnisaa: Conceptualization, Investigation, Data Curation, Writing, Original Draft. Ilhamsyah: Project Administration, Writing, Review & Editing. Andi Budiyanto Adi Putra: Supervision and Review.

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CONFLICT OF INTEREST

The authors declare that they have no competing interests.

ETHICAL APPROVAL

This research has been approved by the Research Ethics Committee of UIN Alauddin Makassar No.C 177/KEPK/FKIK/XII/2025, dated 11/12/2025.

INFORMED CONSENT

Informed consent is obtained from all participants before the data collection process is carried out.

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