



# Description of The Knowledge Level's About The Heimlich Maneuver Among Students at Islamic Senior High School



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## Abstract

**Background:** Choking is a leading cause of mortality worldwide, thus it's crucial to know how to prevent injuries and save lives in cases when choking occurs. A first aid procedure used to relieve airway congestion caused to choking is the Heimlich maneuver, which is also called belly thrusts. This research set out to assess the heimlich maneuver's familiarity with Madrasah Aliyah Negeri 2 Banyumas's student body.

**Methods:** This study used a cross-sectional strategy based on descriptive quantitative methods. Eleventh graders from Madrasah Aliyah Negeri 2 Banyumas (230 in total) made up the study's sample. Purposive sampling with data analysis, specifically univariate analysis, was the sampling strategy employed in this investigation.

**Results:** The results showed that the level of knowledge of students about the heimlich maneuver was in the sufficient category as many as 114 (49.6%).

**Conclusions:** The conclusion of this study is that students at Madrasah Aliyah Negeri 2 Banyumas mostly have sufficient knowledge about the heimlich maneuver

**Keywords:** Heimlich Maneuver, Choking, Knowledge

## Introduction

Particularly among toddlers less than three years old, choking causes a great deal of illness and death (1). Dyspnea may be the outcome of choking. When blood oxygen levels are low and carbon dioxide levels are high, a condition known as asphyxia develops (2). Because people don't know what to do in the event of choking, people may die. In the event of a choking emergency, prompt medical attention is required. The organism may die from hypoxia,

or an absence of oxygen, if this is allowed to continue for an extended period of time (3). Choking poses a serious risk of death and injury unless the family knows how to manage the situation properly (4). The majority of the 17,537 reported instances of choking in 2011 were in children aged 12–36 months, according to the WHO. Choking was caused by food in 59.5% of these cases, foreign objects in 31.4%, and an unknown cause in 9.1% (5).

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In a nationwide study of non-fatal choking incidents in children aged 14 and under admitted to the emergency room, 59.9% were attributed to food, 12.7% to coins, and 18.7% to non-food products, according to the Centers for Disease Control and Prevention (CDC, 2006). There were 5,325 fatalities in the US in 2021 from aspiration of foreign bodies in the respiratory tract (7), according to Statista statistics (2023). Information gathered from Dr. Harjono Ponorogo General Hospital in Semarang City, Indonesia, indicates that 157 individuals died as a result of choking in 2009. Based on data collected from Dr. Harjono Ponorogo Hospital, the number of instances of choking continued to decline in 2010, reaching 112 cases (8).

As a kind of emergency first aid, Basic Life Support tries to keep the heart rate, breathing rate, and airway open and stable (9). When foreign objects impede the airway, basic life care actions include cardiopulmonary resuscitation (CPR), the Heimlich technique, chest trust, and back blows (10). When it comes to treating choking in both adults and kids, there are a few tried-and-true methods. These include the heimlich maneuver, abdominal trust, and chest trust (11). To remove a foreign object, the Heimlich procedure involves hitting the kid on the chest or belly and then asking them to cough vigorously (6).

In addition to being required to have the knowledge to handle emergency circumstances, high school students are exposed to numerous scientific subjects throughout this vital educational era (12). This study's findings (Hidayati et al., 2019) highlight the fact that individuals lack sufficient information about first aid in emergency scenarios, particularly among high school students and graduates. Understanding how to prevent and treat choking is an essential skill that everyone should have. Given the prevalence of discomfort in the society, it is deemed essential and crucial to be knowledgeable of and adept at treating choking situations (13). It is recommended that researchers visit Madrasah Aliyah Negeri 2 Banyumas to investigate the heimlich maneuver, as no prior study has been carried out based on interviews acquired at MAN 2 Banyumas. The purpose of this study is to investigate the heimlich maneuver and its degree of understanding among Madrasah Aliyah Negeri 2 Banyumas students. The purpose of this study is to assess the heimlich maneuver knowledge of MAN 2 Banyumas pupils.

## Methods

Using a cross-sectional approach, this research technique employs descriptive quantitative methods. As many as 230 eleventh graders from Madrasah Aliyah Negeri 2 Banyumas made up the sample for this research. This study's sample strategy used purposive sampling in conjunction with data analysis, namely univariate analysis. Approval number B.L.PPM-UHB/468/06/2024 indicates that this study has been authorized by Universitas Bangsa's Harapan Research Ethics Committee.

## Results

Table 1. Frequency Distribution Based on Respondent Characteristics

Characteristics	Total	
	f	%
<b>Age</b>		
16 years	68	29.6
17 years	162	70.4
<b>Gender</b>		
Male	102	44.3
Female	128	55.7

Table 1. reveals that out of a total of 230 respondents, 128 are female (or 55.7% of the total), and that out of 162 respondents, 70.4% are between the ages of 17.

Table 2. Frequency Distribution of Knowledge Level

Knowledge level	f	%
Good (76%-100%)	35	15.2
Fair (56%-75%)	114	49.6
Less (<56%)	81	35.2
Total	230	100

Table 2. frequency distribution of knowledge level about heimlich maneuver shows significant variation among respondents. Most of the respondents, namely 114 (49.6%) had a sufficient level of knowledge.

Table 3. Knowledge about Heimlich Maneuver Based on Gender and Age

	Knowledge Level					
	Good		Fair		Less	
	f	%	f	%	f	%
Gender						
Female	23	10,0	62	27,0	43	18,7
Male	12	5,2	52	22,6	38	16,5
Age						
16 Years	12	5,2	36	15,7	20	8,7
17 Years	23	10,0	78	33,9	61	26,5

Based on the data obtained from table 3, it shows that most of the female respondents as many as 62 (27.0%) have sufficient knowledge. Meanwhile, the knowledge of respondents based on age shows that most have sufficient knowledge aged 17 years as many as 78 (33.9%).





## Discussion

### *Frequency Distribution of Respondents' Characteristics Based on Gender and Age*

One hundred twenty-eight participants (55.7% female) and one hundred two participants (44.3% male) made up the study's respondent characteristics according to the data shown in table 1. However, when broken down by age, 162 respondents (70.4% of the total) were under the age of 17, while 68 respondents (29.6% of the total) were under the age of 16. Consistent with these findings, Nanda (2022) found that there are 192 female students (58.2% of the total), 106 male students (32.1% of the total), and 114 female students (34.5% of the total) who are 16 or 17 years old. This lines up with what we know from the survey, which found that 16–17 year olds make up the majority of high school pupils.

Responses broken down by gender revealed that 74.2% of the whole sample consisted of females (89 total). A total of 49 pupils, or 40.8% of the total, were 17 years old when they filled out the survey. Students in eleventh grade made up the largest responder group, with 70 people (58.3%) filling out the survey. Studies back this up (14). The research analysis shows that the majority of respondents are female and that their ages vary from sixteen to seventeen. People in this age bracket are considered adolescents since they are still maturing and learning to fend for themselves. Since they are still developing their sense of self and awareness of their surroundings, teenagers need direction. In order for teenage groups to progress towards maturity, adolescents also need several pleasant experiences (15).

### *Frequency Distribution of Students' Knowledge Level About Heimlich Maneuver*

According to the study's findings that are detailed in table 2, the distribution of respondents' knowledge levels was as follows: 35 (15.2%) had high knowledge, 114 (49.6%) had adequate knowledge, and 81 (35.2%) had no knowledge at all. Generally speaking, the majority of pupils fall into the intermediate knowledge level group, according to this survey. After seeing a thing, one gains knowledge about it. Humans are able to perceive the world around them via their five senses of sight, sound, smell, taste, and touch (16). Consistent with this finding, Purnomo's study (2021) on high school students' understanding of basic life support and choking procedures found that 60% of respondents had enough knowledge. The heimlich maneuver, back blow, and chest thrust are not part of the

choking assistance procedures that students are familiar with, but they are aware of the symptoms of choking. Nevertheless, this runs counter to the findings of Siahaan's (2019) study, which indicate that a mother's familiarity with the Heimlich technique leads to a deficit of knowledge in 37 (74.0%) of the children.

The extent to which individuals are able to learn from one another and from the media is heavily influenced by their level of education. A greater level of education increases the likelihood that a person will gain useful information and have a fulfilling life (16). The results are consistent with those of Harigustian's (2020) study, which found that 62.7% of moms do not know how to do the Heimlich technique on a child who is choking, with the degree of schooling being a determinant of this knowledge gap. The researcher believes that respondents' lack of exposure to material on the heimlich maneuver is the reason they have inadequate knowledge about the move. Notoatmodjo (2018) posits that education, media, and information exposure are three of the most influential elements on an individual's level of knowledge.

### *Knowledge about the Heimlich Maneuver Based on Gender and Age*

Results from the survey, as shown in table 3, indicate that most respondents, both male and female, had a modest degree of expertise. Findings showed that among female respondents, 23 (10%) had excellent knowledge, 62 (27.0%) had adequate knowledge, and 43 (18.7%) possessed inadequate knowledge. Twelve men (5.2% of the total) have excellent knowledge, fifty-two (22.6%) have adequate knowledge, and thirty-eight (16.5%) have inadequate knowledge. Scientific evidence supports the idea that a mother's degree of education has an effect on her level of awareness regarding choking (48%), and that a mother's mentality influences the initial handling of a kid who chokes (44%). (17). Nevertheless, the results of this study contradict those of Suparmanto's research (2023), which found that out of 30 mothers surveyed (90.9%), very few had enough information on how to handle choking using the hemlich maneuver method. This research lends credence to Amin's idea (2019), which postulates that there are fundamental structural variations between the sexes' brains that manifest in many ways, including distinct capacities for processing, acquiring, and storing information. Looking at it through the lens of gender differences, we can see that women have a bigger hippocampus than males do, which means they may be better able to





enhance their long-term memory. Because of this, women are able to absorb and retain information more quickly, giving them an advantage in knowledge when compared to males. This is consistent with the findings of Kahtan's study (2021) about the demographics of the sample, which consisted of high school students (mostly female) between the ages of 16 and 17, the majority of whom have enough understanding of basic life support. In the view of the researcher, teenage curiosity and cognitive development peak between the ages of 16 and 17. The World Health Organization backs this up (Syaiful 2019). Between the ages of sixteen and seventeen, a person goes through a period of cognitive growth known as adolescence. During this time, they learn to reason and think critically in order to address challenges that they encounter in their daily lives.

After considering the points raised before, the researcher has come to the conclusion that respondents' ages may be utilized to gauge their level of understanding. Science and the pursuit of knowledge know no bounds and do not see chronological age as a limiting factor. Every person, from the youngest to the oldest, has the inherent right to seek out and acquire knowledge. pupils' varying degrees of understanding, according to the researcher, is the root cause of the persistence of pupils' lack of information. Even after reaching the "understanding" stage, respondents who have enough information nonetheless can't apply what they've learned. The stage of knowing is reached by respondents with less knowledge when they can merely recall and discuss what they have learnt. Notoatmodjo (2018) backs this up. The six steps of the knowledge process are as follows: knowing, comprehending, applying, analyzing, synthesizing, and evaluating. When a foreign object blocks an airway, a first aid procedure called the Heimlich Maneuver (or belly thrusts) might be performed. By rapidly compressing the diaphragm, the heimlich technique may release trapped air from the lungs and clear the airway of any foreign objects (18). There are a lot of research that back up the heimlich maneuver's core idea, showing that it works to increase thoracic pressure and remove foreign materials from the airway. Physiological research has shown that abdominal thrusts, even in a life-or-death scenario, may provide enough pressure to clear the airway of foreign objects (19).

The results of this research highlight the need for more time and effort to educate students at Madrasah Aliyah Negeri 2 Banyumas on the heimlich maneuver. Although most participants

had a good grasp of the general ideas and symptoms of choking, they still need further training in the particular procedures. This confirms what earlier research and emergency theory have shown: that the heimlich technique is best learned and practiced via formal education and training (20).

### **Conclusion**

The researchers have found that out of the total number of respondents, 128 are female (55.7%) and the oldest responder is 17 years old (162; 70.4%). It has been determined that 114 respondents (or 49.6%) possess enough knowledge based on the study that has been conducted. The study's findings indicate that among the respondents, 62 (27.0%) are female and 78 (33.9%) are 17 years old, with the former group having the most adequate understanding.

### **Limitations**

In this study, the questionnaire was distributed via whatsapp with google form so that researchers could not directly supervise respondents, it is feared that respondents will discuss to find answers and search for answers from the internet. In this study, the lack of filling out the questionnaire was carried out offline in class.

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### **Author's contributions**

Made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data: IY. SS. HSM. AM. TH; Involved in drafting the manuscript or revising it critically for important intellectual content: IY. SS. HSM; Given final approval of the version to be published. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content: IY. SS. HSM. AM. TH; Agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved: IY. SS. AM. All authors read and approved the final manuscript.

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### **Availability of data and materials**





The data that support the findings of this study are available from the corresponding author. [IY]. upon reasonable request

### **Declarations**

Ethics approval and consent to participate  
Not applicable

### **Competing Interest**

The authors declare no competing interest

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