

Mother Knowledge and Attitudes towards Choking First Aid for Children 0-5 Years Old

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Abstract

Choking in toddlers can be fatal, underscoring the importance for mothers to be well-versed in first aid and to exhibit a supportive attitude when responding. However, there are still gaps in mothers' understanding of proper first aid techniques and psychological factors that influence their responses in emergency situations. This study aims to determine mothers' knowledge and attitudes regarding first aid for choking children. The research design was descriptive quantitative with Cross Sectional approach. The sample in this study was 100 mothers. The sampling techniques used are proportional sampling and convenience random sampling. The researched collected data in January 2024 using knowledge and attitude questionnaires, and then analyzed using univariate analysis. The results showed 66% of participants answered important statements incorrectly, namely first aid for choking by only giving a drink, 43% of participants answered abdominal thrust is not the first aid for choking in children over 1 year old. Participants' attitudes showed that 97% would give back blow or abdominal thrust, and 81% would give chest thrust. The conclusion of this study is that the mother's knowledge is lacking in several crucial statements regarding choking management, although the attitude of most mothers agrees to provide back blow, abdominal thrust and chest thrust actions, so education, simulation and training are still needed. For further research, it can compare whether there is an increase in knowledge and attitudes after providing education and training according to the needs of mothers in handling choking.

Keywords: Attitude, choking, first aid, knowledge, mother

Introduction

According to WHO in Triwidiyanti 2023, there were about 17,537 cases of choking in toddler age, with 59.5% caused by food, 31.4% by foreign objects, and 9.1% caused by other causes (Triwidiyanti, 2023). Deaths due to airway obstruction in children under 5 years alone occur in almost 90% (Putri et al., 2021). According to Harigustian (2017), choking is when the upper airway is totally or partially blocked by objects outside the body. Choking is a very dangerous emergency because within minutes, the victim will lose the breathing reflex, heart rate, and death (Tarigan, 2019). Factors that influence choking cases in children, namely incomplete swallowing techniques, narrow airways, the habit of putting something in the mouth, and active physical activities (Damayanti, 2022). According to Wu et al. (2018), foreign objects that are often found in children who experience choking in the intensive care unit of university hospitals in China are the majority of round foreign objects, such as nuts and fruits, and all patients die from asphyxia or serious complications (Wu et al., 2018). In Indonesia, there are cases of children experiencing choking. One of them occurred in 2019; a 40-day-old baby was choked by a banana and died because the mother did not know that the child's digestion was not ready for food other than breast milk (Afifah, 2019). In 2023, a 5-year-old child died from choking while playing alone behind his house while eating rambutan (Utomo, 2023). Based on these conditions, it is important for the closest person, especially the mother, to immediately act to remove the foreign object in the child's mouth.

According to Lawrence Green's theory, one of the predisposing factors that influence a person's actions is knowledge (Rachmawati, 2019). Mothers need to have knowledge about the first aid that can be given, namely, infants can be given chest thrusts or back blows and abdominal thrusts in children >1 year (Safitri, 2022). The results of the literature review showed that there were seven studies discussing the level of maternal knowledge of choking first aid. Four of them got the results of poor maternal knowledge due to ignorance of mothers related to choking mechanisms,

did not know how to provide first aid, and lacked information provided to mothers (Fatmawanti et al., 2022; Harigustian, 2020a; Sarabi & Nosratabadi, 2022; Tarigan, 2019). Meanwhile, the other three studies found moderate and good results because mothers had been exposed to information on choking management and were influenced by the respondents' education level (Asmar et al., 2023; Putri et al., 2021; Wulandini et al., 2018). Another predisposing factor that influences choking first aid, according to Lawrence Green's theory, is attitude (Rachmawati, 2019). Attitude, according to Gordon Allport (1935), is defined as a kind of readiness to act towards something in a certain way. Most mothers who have children for the first time will tend to show panic and anxiety reactions and do not know what to do when the child is choking (Susilia et al., 2023). The results of research conducted by Siregar & Pasaribu (2022) showed unfavorable maternal attitudes due to the lack of maternal knowledge in handling choking incidents by only giving drinking water to reduce coughing and tightness due to choking, maternal unpreparedness in dealing with problems, and maternal age, which still has not reached adulthood (Siregar et al., 2022). Meanwhile, the results of favorable maternal attitudes in the study of Purnamasari et al. (2023) were caused by knowledge, experience, education level, age, and mother's activeness in attending integrated services post.

Based on the results of interviews with two mothers who have children under 5 years old and a cadre in Gudang Village, it was stated that there was a child who experienced choking caused by marbles due to lack of maternal supervision. At the time of the incident, the mother of the child was hysterical and confused about what action to take. According to the first mother, it was said that her 2-year-old child had experienced choking due to meatballs that were not cut into small pieces, making it difficult for the child to chew. The mother took action by inserting her mother's finger into the child's mouth and turning the child's body downward. The second mother also recounted an incident where her child was choked by a ring and had a mild cough.

Both mothers in Gudang Village agreed that choking is a dangerous condition that can cause death but did not know the proper help to be given when a child is choking. Both mothers also expressed fear when they saw their children experiencing choking. From these data, it was found that there were still gaps in mothers' understanding of correct first aid techniques and psychological factors that ultimately influenced their responses in emergency situations, so the researcher felt that this problem was considered urgent to conduct research on mothers' knowledge and attitudes in the conative domain (the mother's tendency to act) with the title of the study "Mother Knowledge and Attitudes towards Choking First Aid for Children 0-5 years old"

Research Methods

This study used a quantitative descriptive method with a cross-sectional approach on a population of 420 mothers who have toddlers in Gudang Village. There are 2 variables, namely knowledge and attitude. The sampling method used the Slovin formula, with the results of the sample used as many as 100 people. The number of samples was recalculated using the proportional stratified random sampling formula to determine the number of samples for each block association in Gudang Village, and then participants were selected by convenience random sampling. The instrument used was a modification of Kurniawan's (2019) knowledge questionnaire, consisting of 24 items and a researcher-made attitude questionnaire with 12 statement items. Both questionnaires were tested for validity and reliability with the results of Cronbach's alpha for the knowledge questionnaire of 0.70 and for the attitude questionnaire of 0.73, which means that the questionnaire of maternal knowledge and attitudes towards choking first aid in toddlers has good reliability, with a Cronbach alpha value > 0.6 . Knowledge is said to be good, judging by the number of correct and incorrect answers on each questionnaire statement item, while for a supportive attitude it is seen from the answers strongly agree and disagree, and for an unsupportive attitude from the answers less agree, disagree, and strongly disagree.

Data collection was carried out on January 18-31, 2024, at integrated services post and pre-primary school in Gudang village. Researchers gave informed consent to respondents for approval, explained the instructions for filling out the questionnaire, and distributed knowledge and attitude questionnaires to mothers who agreed to become respondents. The data collected for knowledge was given a score of 1 for correct answers and a score of 0 for wrong answers, and attitudes were scored 1-5 for answers from strongly agree to strongly disagree. Furthermore, it was analyzed using SPSS to determine the number of correct and incorrect answers as well as answers that support and do not support.

This study has obtained ethical approval from the health research ethics commission of the Faculty of Health Sciences and Technology (FITKes), Jendral Achmad Yani University Cimahi with ethical number 022/KEPK/FITKES-Unjani/I/2024. In its implementation, this study followed the principles of research ethics, including informed consent, in which research subjects were provided with complete information about the purpose, procedures, risks, and benefits of the study before giving consent to participate. In addition, this study guaranteed confidentiality and anonymity of the subjects' data to protect their privacy. All procedures performed were in accordance with the ethical standards of health research to ensure that the subjects' rights were respected and their well-being was maintained throughout the study.

Results

Table 1. shows the demographic data of the participants, which is mostly in the age range of 26-35 years (56%) with the age of the child almost entirely (84%) is in the age of 1-5 years. In the education category, most mothers have a high school / vocational high school education level, which is 45%. The employment category is dominated by the mother's job as a housewife, which is 94%.

Table 1. Frequency distribution of demographic characteristics of mothers with children aged 0-5 years in Gudang Village, Tanjungsari District, Sumedang Regency (n = 100)

Chracteristics	Frequency	Percentage (%)
Age		
17-25 years	19	19
26-35 years	56	56
36-45 years	24	24
>45 years	1	1
Education		
Elementary school	15	15
Junior high school	28	28
Senior high school	45	45
Diploma	4	4
Bachelor's degree	8	8
Occupation		
Housewife	94	94
Self-employed	2	2
Health worker	2	2
Civil servant	2	2
Age of Child		
<3 months	4	4
3-12 months	12	12
1-4 years	84	84

Source: Primary Data 2024.

Table 2 shows that most mothers (52%) had not received information on choking, indicating a knowledge gap regarding the management of this condition. For those mothers who had received information, the main sources were health workers and social media/internet, highlighting the important role of medical personnel and digital access in health education.

Table 2. Frequency distribution of mothers' experience of receiving information who have children 0-5 years old

Chracteristics	Frequency	Percentage (%)
Experience with information (n=100)		
Yes	48	48
No	52	52
Information Sources (n=48)		
Health workers	15	15
Television	14	14
Magazines/newspapers	4	4
Social media & internet)	15	15

Source: Primary Data 2024

Table 3. shows that there are still quite a lot of participants who answered incorrectly on 9 questionnaire statements, which may increase the risk of choking incidents in children aged 0-5 years. The 9 statements include statement number 3, where 35% of participants answered that eating while laughing, talking, and walking are not causes of choking. This lack of awareness

could lead to increased incidents, as caregivers may not take sufficient precautions during mealtime. Statement number 5 regarding the symptoms of choking: whereas as many as 59% of participants answered that mild category choking can be characterized by coughing until death, demonstrating confusion about symptom severity and appropriate interventions. Number 10, as many as 77% answered that the most common symptom is reddened eyes. This suggests that caregivers might overlook more critical signs such as difficulty breathing, inability to speak, or silent choking episodes, which require immediate action.

Table 3. Frequency distribution of respondents' answers based on each item of the mother's knowledge questionnaire statement on first aid for choking in children 0-5 years old (n = 24)

No	Statement	Correct	False
1.	Choking is the obstruction of the airway by either a small object, food, toy, or other liquid.	95 (95%)	5 (5%)
2	Rushed chewing of food is one of the causes of choking.	92 (92%)	8 (8%)
3	Eating while laughing, talking, and walking are not causes of choking.	55 (55%)	45 (45%)
4	Choking can also be caused by incomplete chewing.	87 (87%)	13 (13%)
5	Mild choking can be characterized by coughing and death.	41 (41%)	59 (59%)
6	When choking is left untreated within 4 minutes, the body will develop bluish skin.	73 (73%)	27 (27%)
7	Within 4-6 minutes, a person who chokes with a total blockage left untreated will experience death.	77 (77%)	23 (23%)
8	Mild choking can be characterized by the victim still being able to talk and still being able to breathe.	86 (86%)	26 (26%)
9	Severe choking is characterized by continuous coughing, an inability to cough at all, a blue face, and fainting.	87 (87%)	13 (13%)
10	The most common symptom of choking is redness of the eyes.	23 (23%)	77 (77%)
11	Choking cannot cause death.	77 (77%)	23 (23%)
12	All choking children will faint or become unconscious.	68 (68%)	32 (32%)
13	The First aid when a child is choking is to give a drink.	34 (34%)	66 (66%)
14	First aid for choking is to give abdominal thrusts to children aged 1 year and above.	57 (57%)	43 (43%)
15	Stomping on the abdomen aims to make the foreign object come out.	71 (71%)	29 (29%)
16	Patting the child's back should not be done to a choking child.	66 (66%)	34 (34%)
17	In children under 1 year of age, the infant should be placed on the back of the choking child, or the infant should be patted on the chest when lying on his/her back.	86 (86%)	14 (14%)
18	In children aged 1 year and above, treatment is carried out by giving a blow to the child's stomach 5 times.	74 (74%)	26 (26%)
19	Basic life support is not required in unconscious children.	69 (69%)	31 (31%)
20	The position when performing abdominal strokes in children aged 5 years and over the position of the helper is behind the child.	88 (88%)	12 (12%)
21	Patting the child's back can use the base of the palm.	93 (93%)	7 (7%)
22	Prevention of choking in children under 1 year of age by not giving food that is hard or difficult to chew.	90 (90%)	10 (10%)
23	Parents can keep toys or dangerous objects away to reduce the risk of choking in children.	90 (90%)	10 (10%)
24	Parents do not need to utilize health services in child emergencies.	83 (83%)	17 (17%)

Source: Primary Data 2024.

Table 4. It can be seen from each statement item on the tendency of mothers' actions related to choking, that there are 3 statements that indicate an unsupportive attitude, namely statement number 2, where 13% of participants will not do anything when their child chokes because they are afraid of being wrong. This shows a lack of confidence and understanding of the correct first aid techniques. Statement number 5, 52% answered that giving a drink is enough to overcome choking and statement number 7, 37% of participants answered that they would remove an invisible foreign object in the child's mouth by hand. This is a misconception that can worsen the child's condition.

Table 4. Frequency distribution of respondents' answers based on each statement item of the attitude questionnaire: the tendency to act of mothers towards first aid for choking in children 0-5 years (n = 12).

No	Statement	Favorable	Unfavorable
1.	(+) When I see my child choking, I will try to calm down and control myself (not panic).	20 (20%)	80 (80%)
2	(-) When my child is choking, I will not take any action for fear of making a mistake and endangering the child.	13 (13%)	87 (87%)
3	(+) If my child becomes unconscious while choking, I will immediately take him/her to the nearest hospital/clinic by positioning the child face down.	4 (4%)	96 (96%)
4	(+) When the child is conscious, I would ask the child to cough until the foreign object/food comes out of the mouth.	10 (10%)	90 (90%)
5	(-) I think giving a drink when the child is choking is enough to resolve the choking incident.	52 (52%)	48 (48%)
6	(+) If the foreign body in my child's mouth is visible, I will remove it by hand.	11 (11%)	89 (89%)
7	(-) If the foreign body in my child's mouth is not visible, I will try to remove it by hand.	37 (37%)	63 (63%)
8	(+) What I will do when my child is choking is to gently pat the child's back with the base of my palm for about 5 times or by giving a pounding on the abdomen of children over 1 year old	3 (3%)	97 (97%)
9	(+) If my child is choking and unconscious, I will perform chest compressions.	19 (19%)	81 (81%)
10	(+) If the foreign body in my child's mouth has come out, I will make sure that it has come out completely.	6 (6%)	94 (94%)
11	(+) If the foreign body is out, I will look at the child's condition to see if there is chest expansion.	5 (5%)	95 (95%)
12	(+) If the foreign body in my child's mouth is out, I will calm the child down by giving them a drink.	1 (1%)	99 (99%)

Source: Primary Data 2024.

Discussion

Mothers' Knowledge Level on First Aid for Choking in Children 0-5 Years old

Table 3 shows 15 statements regarding knowledge; most of the participants answered correctly, namely, statement points regarding the definition of choking, the causes of choking, namely, chewing food in a hurry and eating while laughing, talking, or walking, the chewing process is not perfect, late choking treatment can cause death, signs and symptoms of mild and severe choking, first aid by pounding on the stomach, patting the back/pounding on the chest, and prevention. This may be influenced by the age of the participants, where most of them were in the adult age range of 26-35 years. According to Tarigan (2019), the age of 26-35 years is included in the productive age group that has reached maturity in caring for and guiding children. In addition, a person's attention span and mindset tend to get better over time (Tarigan, 2019). Supported by research conducted by Siregar et al. (2022), where 63% of participants were aged 20-30 years, which is said to be a mature age and ready to receive various information, including information about health.

Educational background is also likely to influence participants to answer correctly the 15 statement items. Most of the participants had the last educational background of senior high school. According to research conducted by Kurniawan (2019), individuals with a high school education are sufficient to be able to receive information and take the initiative to seek information about health. People with higher education will be more logical in thinking and making decisions (Siregar et al., 2022). This is supported by research conducted by Sari et al. (2018), Putri et al. (2021), and Asmar et al. (2023); the results of good maternal knowledge in these studies were influenced by the mother's level of education. In these studies, the majority of mothers were at the upper secondary level.

Of the 24 statement items regarding knowledge of choking, there are 9 statements with a high percentage of incorrect answers chosen by participants, which are crucial statements, namely regarding the causes,

signs and symptoms, mechanisms, and treatments when children experience choking. Mothers' ignorance of the causes of choking poses a risk of choking in children aged 0-5 years. Supported by research conducted by Triwidiyantari (2022), the results of a survey conducted by The Home Safety Council found that many people in the United States do not know the causes of choking. Cases of choking in the United States in 2015 in children there reached 710 cases (American Academy of Pediatrics, 2010). The more knowledge about the causes of choking, the better it is to take steps for prevention.

Mothers' ignorance of the signs and symptoms of choking will cause mothers to provide help to their children too late if left unchecked because they do not recognize the signs of choking; the consequences will be fatal because they cannot breathe and cause death. Research conducted by Harigustian (2017) showed that the common signs of choking response in children under 5 years old are not clear; therefore, mothers need to know the common signs of choking, such as weak crying, altered breathing sounds, and weak coughing (Harigustian, 2020).

Mothers' ignorance of choking mechanisms can affect a person's level of knowledge and can also hinder taking quick and appropriate action when facing emergency situations such as choking. Supported by research conducted by Harigustian in 2017 regarding the description of mothers' knowledge of choking mechanisms, most participants had insufficient knowledge (70%) because the average respondent did not know the choking mechanism. By knowing the choking mechanism, it allows participants to quickly recognize the signs of choking symptoms and take first aid actions.

Addition, mothers who do not know the proper first aid for children who are choking will have fatal consequences for the child because it can cause death. In this study, the crucial things found that can worsen the condition of choking victims can be seen from the participants' answers in Table 3. Participants answered that giving a drink is enough to overcome choking, not giving abdominal strokes to children over 1 year old, and not giving backblows when the child is choking. According to the 118 Emergency

Ambulance Foundation in 2015, almost 90% of children under 5 years old died from choking (Putri et al., 2021).

Participants who answered incorrectly on the questionnaire statement items may be due to the fact that most participants had never received information related to choking management. Seeking information is important to increase knowledge. Supported by a statement according to Harigustian (2017), people who do not often seek information about learning through social media will not increase one's knowledge and insight, but seeking information frequently will increase insight and knowledge about things they want to know, such as handling choking.

To increase the correct knowledge answers, it is still necessary to provide education from midwives or other health workers about choking so that all people are exposed to the mechanism, signs and symptoms, causes, and handling of choking so that more participants know this knowledge. Education or health education can be provided by health workers, one of which is through integrated services post activities because most mothers with children 0-5 years old attend integrated services post activities. In addition, information about choking can also be disseminated through social media. In 2023, there are 167 million social media users in Indonesia, so information about choking can be received by many people (Widi, 2023).

Attitude: Mothers' Tendency to Act on First Aid for Choking in Children 0-5 Years Old

Mothers' attitude towards choking first aid can be seen in Table 4. Most of the participants, more precisely 9 out of 12 statements, answered agree, which tends to have a supportive attitude by providing choking treatment in the form of back blows or abdominal thrusts in children over 1 year of age, chest compression or chest thrust, taking the child to the hospital/clinic, asking the child to help until the foreign object comes out, and removing foreign objects using hands if the foreign object is visible.

Participants who showed a supportive attitude in the tendency to act in providing

choking first aid may be influenced by 48% of participants who had been exposed to information about choking first aid, which can be seen in Table 2. The information obtained has an impact on the knowledge that participants have about choking, and knowledge will affect the attitude shown. Susilia et al. (2021), in their research, stated that attitudes influence mothers' decisions in providing help. In line with research conducted by Siregar & Pasaribu (2022), where there is a relationship between knowledge and attitude with a P value of 0.001, which is less than a P value of 0.005.

The participants' supportive attitudes, according to the answers in Table 4, may also be influenced by the fact that most of the participants were in the age range of 26-35 years, which is an adult age that is believed to have a level of maturity and strength to think and do something (Dewi; Wawan, 2011). In this study it was also found that most of the participants had children aged 1-5 years, where according to Purnamasari et al. (2023), the age of the child affects the mother's attitude, especially at the age of 0-12 months, where mothers tend to be afraid of taking action on their children due to the fear of not being able to take good care of the baby, especially when the baby is very small. In contrast to older children, it is likely that mothers will be more courageous in taking action when in an emergency.

While 3 out of 12 other statements, there are still participants who answered disagree, which shows a non-supportive attitude, and the statement is a crucial statement, which, according to researchers, allows to increase the risk of death in children due to choking. The 3 statements include 13% of participants still feel afraid to provide first aid for choking in children. This is because mothers are afraid of being wrong and afraid of harming the child. Lack of maternal knowledge related to choking first aid that makes the mother lack confidence to act. Supported by research conducted by Halawa in 2020, the factor that affects a person's self-confidence is knowledge. Someone who has low knowledge will also have low confidence in doing something so that the ability to deal with a problem such as handling choking will not increase. In line with research conducted

by Liyan & Irdawati in 2024, the results of high self-efficacy (57.6%) were obtained in participants with good knowledge (45.9%).

Most participants felt that giving a drink was enough to overcome choking. This method is not appropriate because drinking water will not help remove foreign objects from the airway. When a child is choking, foreign objects trapped in the airway can be pushed deeper, which can worsen the obstruction. There were also 37% of participants who would still try to remove an invisible foreign body in the child's mouth using their hands without realizing that this action would make the foreign body in the child's mouth deeper and endanger the child even to the point of causing death if the blockage became total.

The unsupportive attitude shown by participants may be due to the lack of information mothers have regarding choking management. It was found that more participants had never received information about choking in this study. Lack of information will affect the participants' level of knowledge and have an impact on the actions that will be taken as described by Putri et al. in 2021. To overcome participants unfavorable attitudes, health education, training, or simulations can be provided to increase knowledge, which will affect the attitudes that mothers will take. Supported by Damayanti's research (2022), which states that parents' knowledge increased after being given health education accompanied by demonstration activities and training on how to provide choking first aid.

The results of this study directly support the research objectives, namely to determine the level of knowledge and attitudes of mothers regarding first aid in choking cases and identify gaps that still exist. The data obtained shows that there is still ignorance and lack of understanding and confidence of mothers in taking action when dealing with choking cases. The results of this study also have limitations, namely at the time of data collection, some participants were doing other activities so they asked to leave the distributed questionnaires. This caused the absence of direct supervision from the researcher when participants filled out the questionnaire, which could potentially affect

the accuracy of the answers.

Conclusion

The results of the study on mothers' knowledge of first aid for choking in children 0-5 years old in Gudang Village, Tanjungsari District, Sumedang Regency, showed that most participants answered 15 out of 24 statements correctly. However, mothers' knowledge was lacking in several crucial statements regarding choking first aid actions, namely statements about choking first aid by only giving a drink, abdominal thrust is not the first aid for choking in children over 1 year old, and back blow should not be done. For attitude, it shows that most participants answered agree, which leads to a supportive attitude regarding the crucial actions of choking first aid with back blow, abdominal thrust, and chest thrust. However, there are other crucial statements regarding attitudes that many answered disagree, which is not supportive because it will only give a drink and remove foreign objects in the child's mouth that are not visible using hands. Future research can compare whether there is an increase in knowledge and attitudes after providing education and training according to the needs of mothers on their knowledge and attitudes towards first aid for choking in children under 5 years old how to provide choking first aid.

The nursing implication is to integrate first aid training into routine education programs at the primary health center. This training can be conducted periodically, for example every three months, by involving mothers with children under five years old so that they are better prepared for emergency situations. In addition, a module or practical guide on choking management is also needed. This can be in the form of brochures, educational videos, or live simulations provided during counseling sessions, so that information can be received more effectively. The implementation of education is not only limited to primary health center, but can also be expanded by collaborating with community health post and schools to organize training for parents and teachers. Given that children often experience choking while eating or playing, this training is

essential for the environment where children interact. Evaluation of the effectiveness of the training also needs to be done to ensure the improvement of mothers' knowledge and skills in dealing with choking. This evaluation can be in the form of pre-test and post-test or direct observation during the simulation.

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