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Original Article

Evaluation of Reliability and Quality of Youtube Videos Describing the Heimlich Maneuver Using Scoring Systems

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ABSTRACT

Objective: Foreign body aspiration (FBA) is a life-threatining event. Knowing universal choking signs and applying the Heimlich Maneuver correctly and in a timely manner can be life-saving. We evaulated the reliability and quality of Youtube videos describing the Heimlich Maneuver.

Materials and Methods: This study is a cross-sectional study. Between 5-7 May 2025, we evaluated Heimlich Maneuver videos uploaded to Youtube in one year. In total, 525 videos were detected. 79 videos were included based on inclusion criterias. We evaulated the explanation of the Heimlich Maneuver and the correct application of first aid steps in FBA with Global Quality Scale (GQS).

Results: A total of 79 videos about the Heimlich maneuver were included in the study. The majority of the videos were uploaded by unknown individuals (43.0%). The maneuver was most frequently performed on humans (32.9%). All videos had a Heimlich maneuver steps' point of 4. The median GQS score was 3. A negative significant correlation was found between video duration and number of likes (r=-0.283, p=0.011) and number of views (r=-0.292, p=0.009). A positive and strong correlation was found between video duration and GQS score (r=0.672, p<0.001). A negative significant correlation was observed between the number of likes and GQS score (r=-0.308, p=0.006) and between the number of views and GQS score (r=-0.305, p=0.006). In addition, a weak but significant positive correlation was determined between the Heimlich maneuver steps' point and GQS score (r=0.242, p=0.031).

Conclusion: Although all 79 videos of 525 correctly described the application of the Heimlich maneuver, it was determined that these videos were at an intermediate level in terms of first aid steps to be applied during FBA.

Keywords: Abdominal Thrusts, Foreign Body Aspiration, Heimlich, Meneuver, Youtube

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INTRODUCTION

Foreign body aspiration (FBA) cause airyway obstruction, thereby impair oxygenation and ventilation and can be a life-threatining event. According to American National Safety Council data, 5.500 deaths occurred due to FBA in 2023 [1].

If you see an adult eating or a small child playing with a toy and notice any of the following signs and symptoms, such as a weak or absent cough, high-pitched squeaking noises or silence, pale or blue skin colour, an inability to cough, speak or cry, a panicked, confused or surprised appearance or them holding their throat, it indicates that the airway is obstructed by foreign body aspiration (FBA) and requires immediate emergency medical treatment [2]. According to European Resuscitation Council (ERC) Guidelines 2021, the steps to be applied in case of airway obstruction due to FBA are as follows[3] (Table 1).

Table 1. ERC Guidline: Foreign body airway obstruction

1. Suspect choking if someone is suddenly unable to speak or talk particularly if eating.
2. Encourage the victim to cough.
3. If the cough becomes ineffective, give up to 5 back blows:
   a) Lean the victim forwards.
   b) Apply blows between the shoulder blades using the heel of one hand.
4. If back blows are ineffective, give up to 5 abdominal thrusts (Heimlich maneuver):
   a) Stand behind the victim and put both your arms around the upper part of the victim's abdomen.
   b) Lean the victim forwards.
   c) Clench your fist and place it between the umbilicus (navel) and the ribcage.
   d) Grasp your fist with the other hand and pull sharply inwards and upwards.
5. If choking has not been relieved after 5 abdominal thrusts, continue alternating 5 back blows with 5 abdominal thrusts until it is relieved, or the victim becomes unconscious.
6. If the victim becomes unconscious, start CPR(cardiopulmonary resuscitation).

These first aid steps can be applied by trained individuals other than healthcare providers and can be life-saving. Suga et al.[4] shows that the Heimlich maneuver has a 46,6% success rate. Although there is possibility of damage to abdominal and thoracic organs(pneumothorax, diaphragmatic hernia, abdominal aortic rupture, etc.) due to the pressure applied during the Heimlich maneuver, it is still recommended as a first aid step for FBA cases in ERC and American Redcross guidlines [2-7].

Youtube is the most popular and well known website among information sources. Seeking health information online is increasing everyday. In 2020, a study shows that %55 of 16-74 years-old adults generally found health information (related to injury, disease, nutrition, improving health status, etc.) online [8]. Compared to written texts, YouTube videos are easy to access and understand. These advantages help people learn medical information more easily [9]. However, misinformation is also frequently encountered on YouTube. In a recent systematic analysis, the reliability of health-related YouTube content was found to be below-average [10].

In this study, we wanted to evaluate the reliability and quality of YouTube videos to describing the Heimlich maneuver, which is easy to apply and life-saving for everyone.

MATERIALS AND METHODS

Study Design and Data Collection

This study is a cross-sectional observational study. We evaluated the Heimlich Maneuver uploaded on Youtube in one year. We used "Heimlich Maneuver, abdominal thrusts and foreign body aspiration" terms to search videos on YouTube. In total, 525 videos were detected between 5-7 May 2025. Two doctors rated videos independently based on inclusion and exclusion criteria. 79 videos were included.

Inclusion criteria were that the videos were educational, in English, and uploaded between Janury 2024 and May 2025. Exclusion criteria were news, patients' experiments, repeated videos, advertisements, entertainment content (fun), languages other than English, non-medical content, pet first aid, videos about Heimlich's history (Fig. 1).

We recorded video duration; number of views and likes; subject used (animation, human, mannequin, still image), uploading participant (healthcare professional, hospital, health organizations, unknown.), number of correct Heimlich maneuver steps (4 points) (Table 2) and Global Quality Scale(GQS) score (Table 3).

We evaluated the videos according to the steps recommended by ERC and American Redcross First Aid [2,3]. We scored four steps of the Heimlich maneuver described in the ERC guideline and American Red Cross First Aid lessons according to their application status. We gave 1 point for each step, with a maximum of 4 points (Table 2).

The quality and reliability of Youtube videos were assessed using GQS score. We calculated the GQS score by assesing

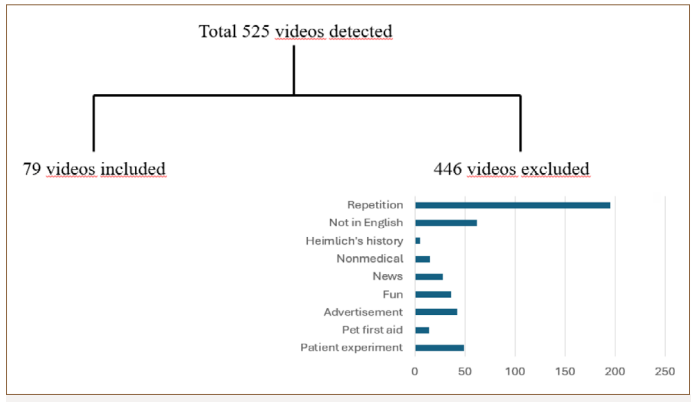

Figure 1. Study Flow Chart.

Table 2. Heimlich Maneuvers Steps

Heimlich Maneuvers Steps	Point
1. Stand behind the victim and put both your arms around the upper part of the victim's abdomen.	1
2. Lean the victim forwards.	1
3. Clench your fist and place it between the umbilicus (navel) and the ribcage.	1
4. Grasp your fist with the other hand and pull sharply inwards and upwards.	1
Total score	4

Table 3. Global Quality Scale (GQS)

Global Quality Scale	Score
Poor quality, poor flow of the site, most information missing, not at all useful for patients;	1
Generally poor quality and poor flow, some information listed but many important topics missing, of very limited use to patients;	2
Moderate quality, suboptimal flow, some important information is adequately discussed but others poorly discussed, somewhat useful for patients;	3
Good quality and generally good flow, most of the relevant information is listed, but some topics not covered, useful for patients;	4
Excellent quality and excellent flow, very useful for patients.	5

compliance with the first aid steps described in the ERC guideline. The GQS has five points (Table 3). Score of 4-5 points means high-quality, 3 points mean moderate quality and 1-2 points means low quality [11,12].

Ethical Approval and Declaration of Helsinki

Since YouTube is an open-access social platform, ethics committee approval was not required. This study was completed in accordance with the tenets of the Declaration of Helsinki.

Statistical Analysis

Data analysis was performed using IBM SPSS Statistics for Windows, Version 27.0 (IBM Corp., Armonk, NY, USA). The distribution of continuous variables was assessed using the Kolmogorov–Smirnov test. Descriptive statistics for data that did not show normal distribution were presented as median (1st quartile – 3rd quartile range), and categorical data were presented as numbers and percentages. Kruskal–Wallis test was used to evaluate differences between more than two independent groups. Frequencies of categorical variables were presented comparatively in tables and chi-square analysis was applied. Correlation analysis was performed using the Spearman rank correlation coefficient to examine the relationship between variables. In all tests, $p<0.05$ was considered statistically significant.

RESULTS

A total of 79 videos describing the Heimlich maneuver were included in the study. The median duration of the videos was 43 seconds. The majority of videos were uploaded by unknown individuals (43.0%), followed by organizations (38.0%), healthcare professionals (11.4%), and hospitals (7.6%). The subject of the videos was most frequently humans (32.9%), followed by still images (27.8%), mannequins (24.1%), and animations (15.2%). The median number of likes was 2, and the median number of views was 85. All videos had a Heimlich maneuver steps point of 4. The median GQS score was 3 (Table 4).

Video duration varied according to uploader type; videos

Table 4. Descriptive characteristics of Heimlich maneuver videos analyzed on YouTube

Variable	Total (n=79)
Video Duration(second)	43 (28-114)
Uploader by, n (%)	
Hospital	6 (7.6)
Healthcare Professional	9 (11.4)
Organization	30 (38.0)
Unknown	34 (43.0)
Performed on, n (%)	
Human	26 (32.9)
Manikin	19 (24.1)
Animation	12 (15.2)
Image	22 (27.8)
Number of Likes	2 (0-8)
Number of Views	85 (19-658)
Heimlich maneuver steps' points	4 (4-4)
GQS* score	3 (2-4)

GQS: Global Quality Scale.

Table 5. Comparison of video characteristics by uploader type

Variable	Hospital (n=6)	Healthcare Professional (n=9)	Organization (n=30)	Unknown (n=34)	p
Video Duration(second)	104 (47-204)	36 (25-43)	57 (32-169)	36 (24-88)	0.080
Performed on, n (%)					
Human	3 (11.5)	1 (3.8)	13 (50.0)	9 (34.6)	0.560
Manikin	2 (10.5)	4 (21.1)	5 (26.3)	8 (42.1)	
Animation	0 (0.0)	2 (16.7)	4 (33.3)	6 (50.0)	
Image	1 (4.5)	2 (9.1)	8 (36.4)	11 (50.0)	
Number of Likes	3 (0-16)	8 (1-25)	1 (0-4)	3 (0-12)	0.225
Number of Views	131 (3-11231)	1085 (16-3696)	52 (19-403)	152 (24-880)	0.471
Heimlich Maneuver steps' points	4 (4-4)	4 (1-4)	4 (4-4)	4 (4-4)	0.106
GQS* score	3 (3-4)	2 (2-3)	3 (2-4)	2 (1-3)	0.131

GQS; Global Quality Score.

uploaded by hospitals were the longest, but this difference was not statistically significant (p=0.080). The median GQS score was highest for hospital videos and lower for videos uploaded by healthcare professionals, but this difference was also not statistically significant (p=0.131). Heimlich maneuver steps' point was similar across all groups (p=0.106) (Table 5 and Figs. 2-3).

There were differences in video duration and GQS scores according to the type of subjects on which the maneuver was performed, but these were not statistically significant. The median GQS score was 3 for human and mannequin applications, while it was 2 for animations (p=0.897). The Heimlich maneuver steps' points remained constant across all groups (p=0.228) (Table 6 and Figs. 4-5).

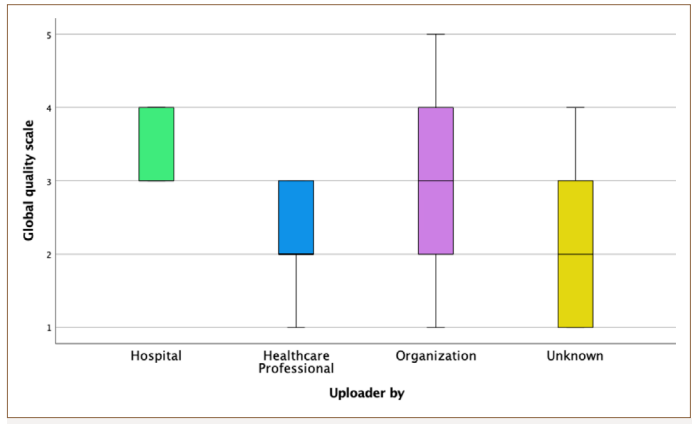

Figure 3. GQS scores by uploader type.

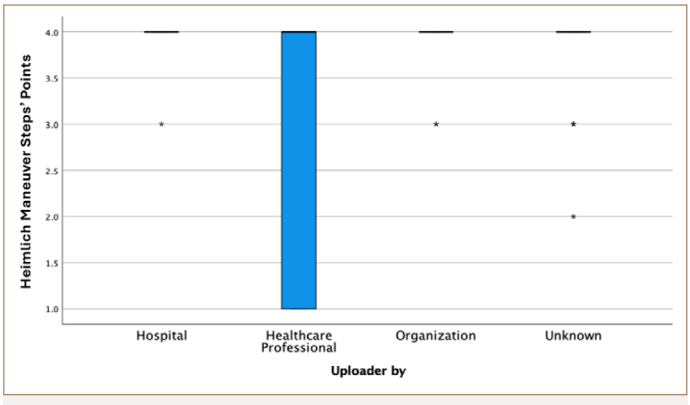

Figure 2. Heimlich Maneuver steps' points by uploader type.

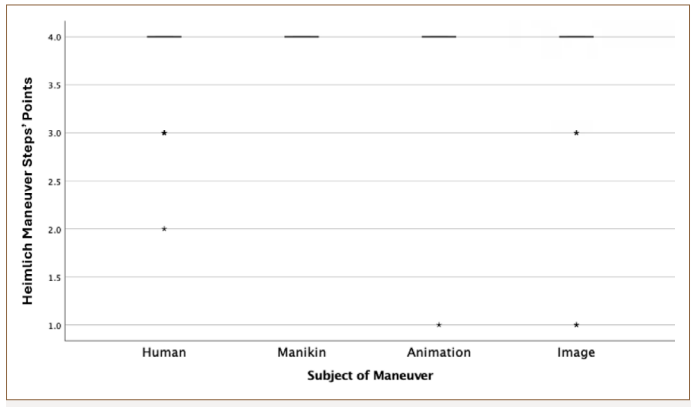

Figure 4. Heimlich Maneuver steps' points by subject of maneuver.

Table 6. Comparison of video characteristics by subject on which maneuver is performed

Variable	Human (n=26)	Manikin (n=19)	Animation (n=12)	Image (n=22)	p
Video Duration(second)	47 (31-140)	38 (19-93)	29 (22-43)	56 (35-181)	0.058
Likes	2 (0-5)	0 (0-8)	7 (0-12)	3 (0-9)	0.271
Views	68 (18-605)	54 (12-2023)	181 (29-755)	136 (21-580)	0.910
Heimlich Maneuver steps' points	4 (4-4)	4 (4-4)	4 (4-4)	4 (4-4)	0.228
GQS* score	3 (2-3)	3 (1-4)	2 (2-3)	3 (1-4)	0.897

GQS; Global Quality Score.

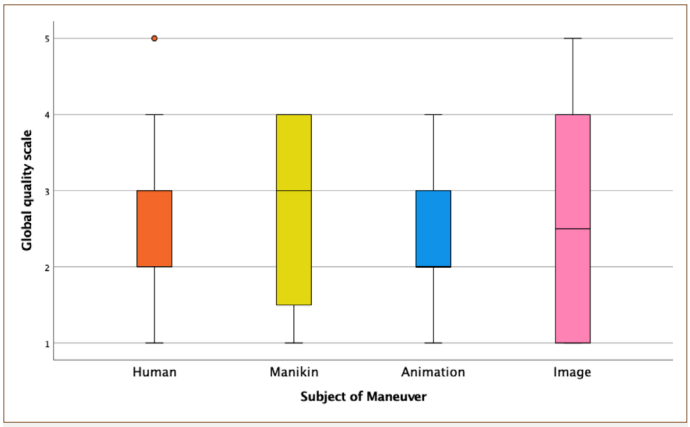

Figure 5. GQS scores by subject of maneuver.

A negative significant correlation was found between video duration and number of likes (r=-0.283, p=0.011) and number of views (r=-0.292, p=0.009). On the other hand, a positive and strong correlation was found between video duration and GQS score (r=0.672, p<0.001).

A negative significant correlation was observed between the number of likes and GQS score (r=-0.308, p=0.006) and between the number of views and GQS score (r=-0.305, p=0.006). In addition, a weak but significant positive correlation was determined between the Heimlich maneuver steps' point and GQS score (r=0.242, p=0.031).

DISCUSSION

We aimed to evaluate YouTube videos in terms of teaching the Heimlich maneuver and properly applying first aid steps in cases of FBA. We scanned 525 videos about performing the Heimlich maneuver uploaded to YouTube in one year and included 79 YouTube videos in our study.

The majority of the videos were uploaded by unknown individuals (43.0%), followed by organizations (38.0%). In the study of Acar et al.[13], they also found the majority of videos(31%) were uploaded anonymously. In the study of Adly et al.[14], 36% of videos were uploaded by non-medical individuals. Our results are similar to the literature.

The maneuver was most frequently performed on humans (32.9%), followed by still images (27.8%). In the study of Adly et al.[14], 64.2% of maneuvers were performed on humans in videos uploaded between 2020-2023. In the study of Acar et al.[13], the maneuver was performed 71.8% on humans.

GQS score had the highest median for hospital videos and was lower for videos uploaded by healthcare professionals. According to the study of Baker et al.[15], there was no significant association between the video uploader and the GQS score(p=0.676). In our study, we also found that video quality does not change depending on the uploader.

We found a positive and strong correlation between video duration and GQS score (r=0.672, p<0.001). In the study of Krakowiak et al.[16], the mean of the GQS score of videos under 10 minutes was 2.5, while the mean of the GQS score of videos over 10 minutes was 3 (p<0.05) [16]. According to these results, as the video duration increases, the quality of the video increases.

We found a negative significant correlation between video duration and number of likes (r=-0.283, p=0.011) and number of views (r=-0.292, p=0.009) and also found a negative significant correlation between the number of likes and GQS score (r=-0.308, p=0.006) and the number of views and GQS score (r=-0.305, p=0.006). In the study of Azer et al.[17], they found that there was no significant correlation between video scores-number of views and video scores-number of likes (r=0.06 and r=0.02, p=0.59). Fayed et al.[18], also found that the average views did not differ significantly video quality

(p=0.469). A high number of likes and views does not indicate that the video is of high quality.

We found that the Heimlich maneuver was described correctly in all videos included in the study. However, when we evaluated the videos in terms of first aid steps applied in FBA, the median GQS score was determined as 3. This shows that the majority of videos were moderately educational. According to the study by Acar et al.[13], Heimlich maneuver videos were not particularly educational because most of the videos scored below average. Adly et al.[14], also found that Heimlich maneuver videos uploaded by professionals received more views and scored higher, although there was no statistical difference. Accordingly, the educational value of the Heimlich maneuver videos on YouTube is low. When compared to the study by Acar et al.[13], we found the quality of the educational videos to be at a moderate level. When compared to the study by Adly et al.[14], we found that the views and scores of the videos of professionals did not change.

We would also like to point out that only a small portion of the 525 videos we examined (79 videos) were educational and their quality was at a moderate level. This shows us that incorrect and incomplete information is shared much too often and can mislead the public.

CONCLUSION

Of the 525 videos published on YouTube about the Heimlich maneuver in one year, only 79 were included. Although all 79 videos correctly described the application of the Heimlich maneuver, it was determined that these videos were at an intermediate level in terms of first aid steps to be applied during FBA. The number of likes and views does not indicate the quality of the video. Video quality does not change depending on the uploader. Although YouTube is a platform where first aid practices can be easily learned, it is also a social platform where there are a plenty of incorrect and incomplete information. It would be beneficial for health professionals to pay more attention to first aid videos on such public platforms in order to educate the public.

Limitations

This study has several limitations. First, we only included videos in English. There might have been better videos in other languages. Second, we assessed data of just one year. There might've been many more scientific videos in previous years. Third, videos were evaluated by only two doctors. There may be bias among the raters.

DECLARATIONS

Conflict of Interest: Authors have no conflict of interest to declare.

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Author Contributions: Concept – AG; Design – AG; Supervision – DCG; Resource – AG; Materials – AG; Data collection and/or processing – DCG; Analysis and/or interpretation – DCG; Literature review – AG; Writing – AG; Critical Review – DCG, AG.

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