# Pediatric asthma inhaler technique: quality and content analysis of YouTube videos

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# Introduction

With the rise of digital health resources, YouTube has become a major platform for healthcare education. While it provides accessible information, concerns exist regarding the reliability and accuracy of its content (Gonzalez-Estrada et al., 2015; Osman et al., 2022). Previous research suggests that YouTube videos on pediatric asthma inhaler techniques may not align with established asthma management guidelines (Fernandes & Barbosa, 2018). Studies indicate that misinformation on digital platforms can influence medical decision-making, leading to improper inhaler use among pediatric asthma patients (Richards & McMurray, 2015). As healthcare professionals increasingly incorporate digital tools into patient education, it is critical to assess the quality and reliability of online resources (Canbolat et al., 2024; Neumann & Herodotou, 2020). This study evaluates the quality, reliability, and content accuracy of YouTube videos on pediatric asthma inhaler techniques to assess their effectiveness as an educational resource.

# Purpose

This study aims to:

Assess the reliability and the quality of YouTube videos on pediatric asthma inhaler techniques using the Modified **DISCERN** Score and Global Quality Scale (GQS).

Analyze video content for alignment with Global Initiative for Asthma (GINA) guidelines.

Identify common errors in inhaler technique presented in videos.

**Determine the** relationship between video popularity (views, likes, comments) and content accuracy.

# Methods

#### Study Design

This study utilized a descriptive, retrospective, and cross-sectional design to evaluate the quality, reliability, and content of YouTube videos on pediatric asthma inhaler techniques (Canbolat et al., 2024).



# Search Strategy

independent pediatric Four nursing experts conducted a systematic search on YouTube using the keywords:

Videos filtered were by relevance, and only Englishvideos language uploaded within the past 15 years were included. Each video was title, on screened based content relevance, and inhaler demonstration Of technique.

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"Pediatric Metered Dose Inhaler"

"Pediatric Accuhaler"

"Pediatric Diskus"

# Methods

#### Data Collection & Analysis

Videos were independently reviewed and evaluated by two researchers using:

- **Modified DISCERN Score** A 5-point scale assessing video reliability (Singh et al., 2012)
- **Global Quality Scale (GQS)** A 5-point Likert scale measuring content quality (Bernard et al., 2007)
- Video Checklist Based on Global Initiative for Asthma (GINA) guidelines, evaluating inhaler technique steps (GINA, 2023)

Additionally, engagement metrics were recorded, including:

- Total views, likes, dislikes, and comments
- Video duration



Video Power Index (VPI) – A measure of video popularity (Gonzalez-Estrada et al., 2015)



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### Results

- pMDI single-breath videos had the highest reliability but were less popular.
- Tidal breathing videos were more popular but contained more errors.

#### Most common errors:

- Failing to check the dose counter (72.7– 81.4%).
- Incorrect inhalation technique (63.6%).
- Not replacing the inhaler cap and disassembling the spacer (84.2–92.9%).

#### Video reliability scores:

- Modified DISCERN Score: 3.05/5 (moderate reliability).
- Global Quality Scale (GQS) Score: 3.61/5 (moderate to good quality).

#### Video popularity vs. quality:

- High-quality videos had fewer views.
- Popular videos contained more errors.

#### Statistical findings:

- Significant differences in video reliability across inhaler types (p = 0.03).
- Higher-quality videos correlated with better reliability scores (r = 0.550, p < 0.001).

#### Key Takeaways

Healthcare professionals should prioritize inperson inhaler technique education to counteract common errors in online videos.

Reliable digital health resources should be recommended to caregivers and patients.

Asthma education should include digital literacy training to help users identify trustworthy online content.

Future research should address misinformation and develop high-quality, standardized inhaler technique videos.

#### References



#### **Publication**

