An Evaluation of the Quality and Readability of Online Information on Video-Assisted Thoracoscopic Surgery (VATS)

Yash Mathur [1], Elizabeth Sentner [2], Kishore Doddakula [2]

[1] School of Medicine, University College Cork, Cork, Ireland
[2] Department Of Cardiothoracic Surgery, Cork University Hospital, Cork, Ireland

DOI: 10.33178/SMJ.2026.34

Abstract

Background: The internet has become a primary resource for patients diagnosing symptoms or researching treatment options. While the convenience of online health information is undeniable, the accuracy and clarity of this content vary significantly. Poor-quality information can confuse patients, leading to anxiety or unrealistic expectations. Video-assisted thoracoscopic surgery (VATS) - often referred to as "keyhole" thoracic surgery - is a complex, widely used technique for treating lung issues. Because VATS involves sophisticated technology and specific recovery protocols, it can be difficult for non-medical audiences to understand.
Health literacy guidelines universally recommend that patient education materials be written at a sixth-grade reading level (approximate age 11–12) to ensure comprehension across diverse populations. However, evidence suggests most online surgical information is written for highly educated audiences. To date, there has been no comprehensive study evaluating whether online material regarding VATS is accurate, trustworthy, or readable for the average patient.

Objective: The primary objective of this study was to assess the readability (reading ease), reliability (trustworthiness), and content quality (completeness) of publicly available websites designed for patients undergoing video-assisted thoracoscopic surgery.

Methods: We performed a cross-sectional review of patient-oriented websites. We searched the three most popular search engines (Google, Bing, and Yahoo) using common terms a patient might use: “VATS surgery,” “video-assisted thoracoscopic surgery,” and “thoracoscopic lung surgery.” We screened the first 20 results from each search. We excluded academic journals, videos without text, and non-English sites to focus solely on material written for the general public. Two independent reviewers scored the eligible websites. Reliability was measured using the JAMA benchmarks (checking for authors, dates, and references) and the DISCERN instrument (assessing consumer health information quality). Readability was calculated using ten validated algorithms, including the Flesch-Kincaid Grade Level, to create an average "reading grade." Finally, we assessed content quality using a 10-point checklist to see if the site covered essentials: why surgery is needed, how it is done, the risks involved, recovery details, and non-surgical alternatives.

Results: A total of 81 unique websites were analysed. The quality of information was generally poor.
1.Reliability: The mean JAMA score was 1.8 ± 1.1 out of 4, meaning most sites did not list an author, cite sources, or show update dates.
2.Readability: The average text required a 14th-grade reading level (university sophomore level) to understand. This is significantly higher than the recommended 6th-grade level. Only 5 websites (6.2%) met the target reading standard.
3.Content:On average, websites only covered 6.5 out of 10 essential topics. Crucially, 35% failed to mention surgical risks, and 42% did not discuss alternative treatments, leaving patients with an incomplete picture of their options

Conclusions: The majority of online resources regarding VATS are too difficult for the average patient to read and frequently omit critical safety information, such as risks and alternatives. This "complexity gap" prevents patients from fully understanding their procedure, which hinders their ability to give informed consent. There is an urgent need for clinicians and healthcare systems to develop standardized, easy-to-read, and comprehensive online resources to better support patients facing thoracic surgery.