Acta Medica Young Doctors

Orginal Article

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Accepted: 2025-10-25

Türkoğlu, S., & Say, A. (2025). Quality and Reliability of YouTube Videos on Uterine Fibroid Embolization: A Cross-Sectional Analysis. *Acta Medica Young Doctors*, *1*(3), 73–80.

https://doi.org/10.5281/zenodo.17876692

Quality and Reliability of YouTube Videos on Uterine Fibroid Embolization: A Cross-Sectional Analysis

ABSTRACT

Background: Uterine fibroid embolization (UFE) is a minimally invasive, uterus-preserving treatment for symptomatic uterine fibroids. Despite its clinical effectiveness, public understanding of UFE remains limited, prompting many patients to rely on YouTube for health information. However, the accuracy and educational value of UFE-related content on this platform have not been comprehensively evaluated.

Objective: To assess the quality, reliability, and educational usefulness of YouTube videos about UFE using validated scoring instruments and to analyze viewer engagement patterns.

Methods: A cross-sectional observational study was conducted on YouTube videos identified using the keyword “Uterine Fibroid Embolization.” After applying predefined inclusion and exclusion criteria, eligible videos were evaluated for duration, engagement metrics, and content characteristics. Video quality was assessed using DISCERN, JAMA benchmark criteria, and the Global Quality Score (GQS). Interaction Index and View Rating were calculated to determine user engagement. Statistical analyses included the Kruskal–Wallis H test and Bonferroni-corrected pairwise comparisons.

Results: A total of 475 videos published between 2020 and 2025 were analyzed. The largest proportion (34.7%) was uploaded in 2025, and India (38.1%) and the United States (23.8%) were the most common video sources. Median video duration was 61.5 seconds, and median view count was 624. Significant differences were observed across years for both Interaction Index ($\chi^2(5)=12.08$, p=0.034) and View Rating ($\chi^2(5)=40.78$, $p<0.001$). Pairwise comparisons showed that 2024 videos had higher interaction scores than those from 2020 (adjusted $p=0.039$), while 2025 videos demonstrated significantly higher viewing rates than most other years (adjusted $p<0.05$). Quality assessments revealed substantial variability, with many videos lacking essential information on risks, complications, and treatment alternatives.

Conclusion: YouTube hosts a large quantity of content on UFE, but its quality and reliability vary widely. Viewer engagement does not correlate with educational value, indicating that popular videos may be incomplete or misleading. These findings underscore the need for healthcare professionals and professional societies to promote high-quality, evidence-based digital resources to support informed patient decision-making.

Keywords: Uterine Fibroid Embolization, UFE, YouTube, patient education, video quality

Introduction

Uterine fibroid embolization (UFE) is a well-established, minimally invasive interventional radiology procedure used to treat symptomatic uterine fibroids by occluding their arterial blood supply. Since its introduction in the 1990s, UFE has become an important alternative to surgical treatments such as hysterectomy and myomectomy, offering shorter recovery times, high rates of symptom relief, and uterus-preserving benefits for eligible patients [1,2]. Despite its proven effectiveness, public awareness and understanding of UFE remain limited, and misconceptions regarding safety, fertility outcomes, and procedural risks are still prevalent among patients. As a result, many women increasingly turn to online platforms, particularly YouTube, in search of accessible explanations of fibroids and available treatment options [3,4]

YouTube is one of the most widely used sources of health information globally, with more than two billion users and a rapidly expanding library of patient-directed medical content. Its visual format makes it an appealing medium for explaining interventional procedures such as UFE, which may otherwise be difficult for non-specialists to conceptualize [5]. varies substantially in quality, accuracy, and completeness. Prior studies across various medical specialties have shown that online video content often contains inaccurate, biased, or incomplete information, raising concerns about the potential impact of misinformation on patient decision-making and expectations [6,7].

Given the increasing reliance of patients on digital media for understanding medical treatments, it is essential to evaluate whether YouTube provides accurate and reliable information about UFE. High-quality content has the potential to improve patient awareness, reduce anxiety, and support shared decision-making, whereas misleading or promotional videos may contribute to misconceptions and undermine evidence-based care [8]. Despite the clinical importance of UFE and its growing popularity as a treatment option, there is limited research assessing the quality of UFE-related content available on YouTube [9,10]

This study aims to systematically evaluate the accuracy, reliability, and educational value of YouTube videos about uterine fibroid embolization. By analyzing content characteristics and applying validated scoring tools, we seek to identify strengths, deficiencies, and potential risks associated with online information about UFE. The findings may guide clinicians, educators, and professional societies in improving patient-directed communication and highlight the need for higher-quality digital health resources.

Methods

Study Design and Objective

This cross-sectional observational study aimed to evaluate the **quality, reliability, and educational value** of YouTube videos related to *Uterine Fibroid Embolization (UFE)*. The analysis focused on video characteristics, viewer engagement metrics, and validated scoring systems widely used for assessing online health information.

Video Search Strategy

A systematic search of YouTube was performed using the keyword “Uterine Fibroid Embolization”. Search results were sorted by relevance, and all videos meeting the predefined eligibility criteria at the time of data collection were screened. Because YouTube search results are dynamic and influenced by platform algorithms, the sample represents a snapshot of available content at the search date.

Eligibility Criteria

Inclusion criteria:

- Videos related to Uterine Fibroid Embolization (UFE) explaining the procedure, indications, outcomes, or patient experiences.
- Videos available in English.
- Publicly accessible videos with measurable engagement metrics.

Exclusion criteria:

- Non–English-language videos.
- Duplicated videos or mirrored content.
- Advertisements, purely promotional clips without educational intent.
- Videos lacking audio or visual clarity.

Statistical Analysis

Descriptive statistics were calculated for all readability scores from both language models across the nine scales. The Shapiro-Wilk test was performed to assess the normality of data distribution. As the data followed a normal distribution, results are presented as mean ± standard deviation. Comparisons between the two language models (ChatGPT and Gemini) were conducted using Student's t-test for independent samples. A p-value of less than 0.05 was considered statistically significant. All statistical analyses were performed using IBM SPSS Statistics version 27 (IBM Corp., Armonk, USA).

Results

The analysis conducted for the study identified a total of 475 videos between 2020 and 2025. Of these videos, 165 (34.7%) were published in 2025. Figure 1 shows the distribution of videos by year. Figure 2 shows the distribution of videos by country. The location of 115 (24.2%) of the videos is unknown. Furthermore, it was observed that the most frequently published videos, with 181 (38.1%), were from India, followed by the USA with 113 (23.8%). The median length of the analyzed videos was 61.5 (123.5) seconds, and the median number of likes was 8 (29.75). Table 1 shows the video data. Interaction Index results revealed a statistically significant difference between years, chi2(5, N = 447) = 12.08, $p = 0.034$. Pairwise comparisons using the Bonferroni correction indicate that 2024 differs significantly from 2020 (Adj. $p = 0.039$). This is shown in Figure 3. View Rating results revealed a highly statistically significant difference between years, chi2(5, N = 472) = 40.78, $p < 0.001$. Pairwise comparisons using the Bonferroni correction revealed that 2025 had significantly higher mean ranks than many other years (e.g., 2024, 2023, 2022, and 2020) (Adj. $p < 0.05$). This is shown in Figure 4.

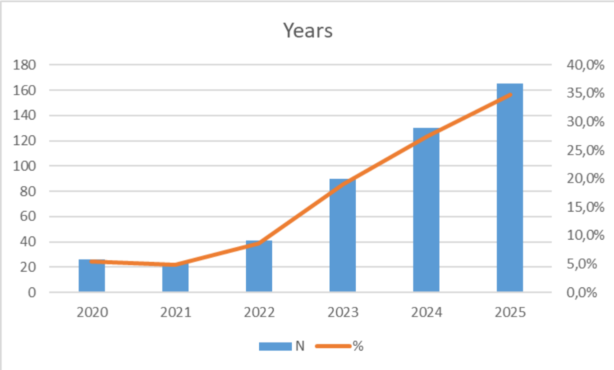

Figure 1: Distribution of videos by year

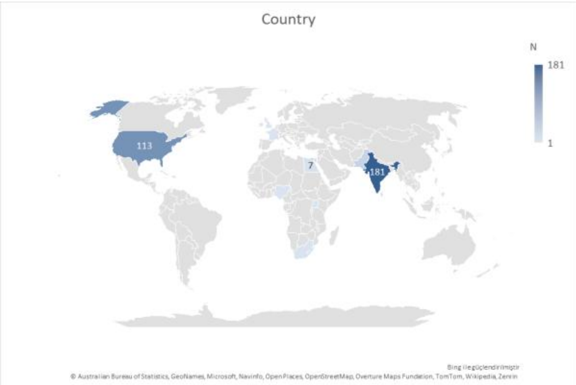

Figure 2: Distribution of videos by country

Discussion

This study evaluated the quality, reliability, and educational value of YouTube videos related to Uterine Fibroid Embolization (UFE), a minimally invasive therapy that remains under-recognized among patients despite its well-established clinical efficacy. Our findings demonstrate substantial variability in the accuracy and completeness of UFE-related content on YouTube [14,15]. Although the platform hosts several high-quality educational videos produced by interventional radiologists and reputable healthcare organizations, a significant proportion of videos were of low to moderate quality based on DISCERN, JAMA, and Global Quality Score (GQS) assessments [16,17]

Consistent with prior studies examining online medical content, videos uploaded by qualified healthcare professionals generally achieved higher quality and reliability scores compared with those produced by patients, commercial entities, or non-medical creators [18]. Professional videos more frequently provided clear descriptions of indications, procedural steps, expected outcomes, and potential complications—key information required for informed decision-making. Nevertheless, the overall average DISCERN and JAMA scores indicate that even professionally produced content often lacks essential elements such as transparent authorship, source attribution, or disclosure of conflicts of interest. These omissions reduce the credibility of the information from the perspective of patient education standards [19]

One notable finding was the lack of correlation between video quality and viewer engagement metrics, including total views, likes, and comments. This indicates that popularity does not reliably reflect educational value. Videos with poor quality or incomplete information still attracted substantial public engagement, raising concerns that misinformation or oversimplified content may be influencing patient perceptions of UFE [20,21]. Given that falsely reassuring or overly promotional messaging can distort expectations, this trend underscores the need for interventional radiologists and professional societies to take a more active role in producing and disseminating evidence-based digital content [22,23].

Content analysis further revealed that certain critical topics—including complications, radiation exposure, contraindications, and alternative treatment options such as myomectomy, hysterectomy, or medical therapy—were infrequently addressed [24]. This is problematic, as omission of risks and alternatives may lead to biased or incomplete understanding of UFE. Patients increasingly rely on online sources to supplement their physician consultations; therefore, high-quality, comprehensive digital resources are essential to support informed consent and shared decision-making [25].

These findings align with studies in cardiology, obstetrics, neurosurgery, and orthopedics, which similarly report inconsistent quality of YouTube videos on procedural and disease-related topics [26]. Collectively, this evidence suggests that, while YouTube offers valuable opportunities to improve patient education, its unregulated nature poses significant challenges. Future work could involve automated quality classification using artificial intelligence, development of verified medical content badges, or partnerships between professional societies and YouTube to ensure greater visibility of authoritative resources [27-30].

Results of the Kruskal-Wallis H test for Uterine Fibroid Embolization (UFE) videos revealed statistically significant differences across years (2020–2025) for both the Interaction Index ($\chi^2(5) = 12.078$, $p = 0.034$) and View Rating ($\chi^2(5) = 40.77$, $p < 0.001$). These findings indicate that UFE-related content did not exhibit a homogeneous distribution over time in terms of user engagement and viewing rates. Bonferroni-adjusted pairwise comparisons for the Interaction Index showed that 2024 had a significantly higher mean interaction score compared to 2020 (Adj. $p = 0.039$). This suggests that UFE videos were more likely to be commented on, liked, or shared by users during this period. More pronounced differences were observed in View Rating results. Pairwise comparisons demonstrated that videos published in 2025 had significantly higher average view rates than most other years, particularly 2024, 2023, and 2022 (Adj. $p < 0.024$). This substantial increase may reflect a growing public interest in medical topics such as UFE or changes in platform algorithms that favor such content. Overall, these findings provide strong evidence that UFE-related video content has gained popularity and impact over time in terms of both engagement and viewership, reflecting the evolution of health awareness and digital media consumption.

This study has limitations. YouTube search results are dynamic and influenced by algorithms that evolve over time; thus, video availability and ranking may change. Only English-language videos were included, limiting generalizability to non-English-speaking populations. Additionally, subjective scoring tools, although validated, may introduce reviewer bias despite strong inter-rater reliability in this study. However, these limitations do not detract from the primary conclusion that the quality of UFE-related YouTube content is highly variable and often inadequate from an evidence-based patient education standpoint.

Conclusion

YouTube serves as a widely accessible platform for patient education on Uterine Fibroid Embolization, yet the quality and reliability of available videos vary considerably. While some videos produced by interventional radiologists and reputable healthcare institutions provide accurate and comprehensive information, many popular videos lack essential details or present incomplete or potentially misleading content. Viewer engagement metrics do not correlate with educational quality, indicating that patients may be exposed to suboptimal or biased information when seeking guidance about UFE.

Acknowledgments

Declaration of Interest Statement

The authors declare no conflicts of interest related to this study. No financial or personal relationships with organizations or individuals that could inappropriately influence this work exist.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. This work was conducted as an independent academic investigation.

Author Contributions Statement

All authors contributed to the conception and design of the study, analysis and interpretation of data, drafting of the manuscript, critical revision for intellectual content, and final approval of the version to be published. All authors agree to be accountable for all aspects of the work.

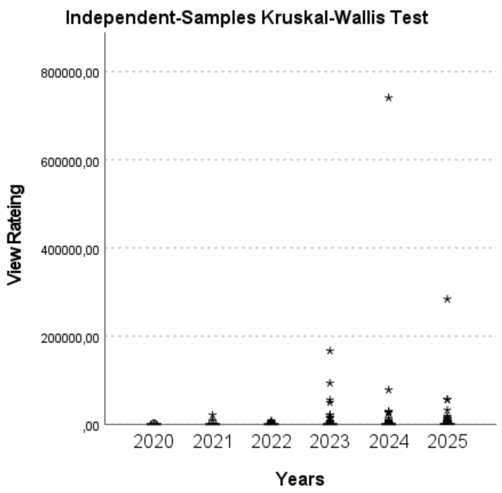

Figure 4: View Rateing test

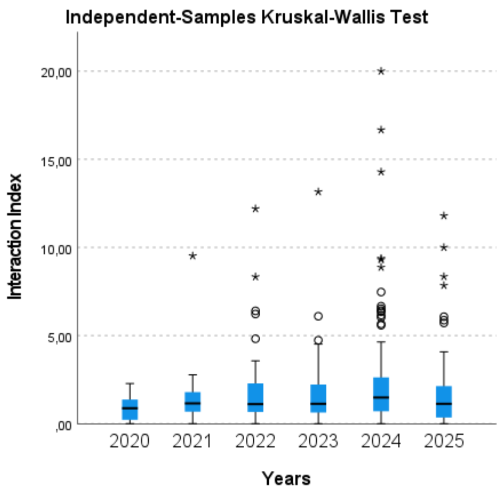

Figure 3: Interaction ındex

Table 1. Descriptive of variables

Variables	Minimum	Maximum	Median (IQR)
Duration	8	4252	61,5 (123,5)
Like Count	0	32804	8 (29,75)
Comment Count	0	1029	0 (4)
Days since upload	0	2166	532,5 (708,2)
View Count	1	4674121	624 (2477)
Interaction Index	0	20	1,18 (1,7)
View Rateing	0,32	740748,18	145,36 (662,70)

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