

Social Media as an Information and Education Source for Adult Orthodontic Treatment

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ABSTRACT

Background: Social media has become an important source of health information. Patients increasingly use video-sharing platforms such as YouTube to learn about orthodontic treatment, including treatment options for adults. However, the accuracy, reliability, and educational value of online content vary considerably.

Aim: To evaluate the content quality, reliability, and educational usefulness of YouTube videos related to adult orthodontic treatment.

Materials and Methods: A cross-sectional observational study of YouTube videos was conducted in December 2025. The search term “adult orthodontic treatment,” selected using Google Trends, was used to identify videos. Videos were assessed for general characteristics, uploader category, Reliability Score (RS), Global Quality Scale (GQS), Video Information Quality Index (VIQI), audiovisual quality, viewer interaction, viewing rate, and Total Content Score (TCS). Videos were classified into high-, medium-, and low-information groups according to RS.

Results: The supplied dataset reports 35% of videos in the high-information group, 30% in the medium-information group, and 35% in the low-information group. High-information videos demonstrated higher mean views, longer duration, VIQI, RS, GQS, viewer interaction index, audiovisual quality, and viewing rate, with statistically significant differences among groups ($p < 0.05$).

Conclusion: The evaluated YouTube content showed substantial variation in reliability and educational quality. Higher-information videos demonstrated better scores across the assessed quality measures. Professional participation in online patient education may help increase the availability of accurate and comprehensive orthodontic information.

Keywords: Adult orthodontics; YouTube; social media; patient education; reliability; Global Quality Scale; Video Information Quality Index.

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INTRODUCTION

The influence of social media on healthcare information consumption has increased dramatically in the past decade. With easy access, wide reach, and low cost, platforms like YouTube are now among the primary sources of patient education. Reports suggest that nearly **80% of internet users search online for health-related information**, including dentistry and orthodontics¹.

Online health information has become an important component of contemporary patient education. The Pew Research Center reported that 72% of internet users in the United States had searched online for health information during the preceding year, and 77% of online health seekers reported beginning

their most recent search through a general search engine. These findings illustrate the importance of digital information in contemporary health-information seeking.

In orthodontics, patients may use online videos to learn about treatment modalities, expected treatment duration, appliance options, discomfort, risks, and treatment outcomes before or during a clinical consultation. YouTube provides easily accessible audiovisual information but does not subject uploaded content to conventional peer review.

Previous studies have demonstrated considerable variability in the quality and reliability

of orthodontic information available on YouTube. Knösel and Jung reported wide variation in the informational value of orthodontic videos and noted that much of the content had limited informational value.² Other studies have similarly shown that orthodontic videos may have inadequate reliability or quality, despite their substantial reach.³⁻⁶

More recent evidence specifically addressing adult orthodontics has also demonstrated variability in content quality. Yavan and Gökçe evaluated YouTube videos concerning adult orthodontics and reported that most videos had poor information content, while richer-content videos tended to be longer and had higher VIQI scores.⁷ A systematic review published subsequently concluded that orthodontic information on social media is generally heterogeneous and frequently insufficient in scientific rigor.⁸

The present study therefore assessed YouTube videos related to adult orthodontic treatment using established measures of reliability and video quality, together with measures of viewer interaction, viewing rate, and topic-specific information content.

1. MATERIALS AND METHODS

2.1 Study design

A cross-sectional observational study of publicly available YouTube videos was conducted in December 2025.

2.2 Search strategy

- Platform: YouTube.
- Search term: “adult orthodontic treatment,” selected using Google Trends.
- Search was performed in incognito mode to reduce personalization and algorithm-related variation.
- The first 100 videos identified were screened. The supplied manuscript states that 60 videos were included after application of the exclusion criteria.

2.3 Inclusion criteria

- English-language videos.
- Videos containing information related to adult orthodontic treatment.
- Minimum video duration of 30 seconds.
- Clear audiovisual output.

2.4 Exclusion criteria

- Duplicate videos.
- Non-educational commercial advertisements.
- Videos unrelated to orthodontics.
- Animated or AI-generated content without an educational structure.

2.5 Variables assessed

- General video characteristics: duration, views, likes/dislikes, number of comments, upload date, and uploader category (orthodontist, dentist, patient, corporate, or other).
- Reliability Score (RS), adapted from the modified DISCERN approach and scored on a 1–5 scale.

- Global Quality Scale (GQS), scored on a 1–5 scale.
- Video Information Quality Index (VIQI), assessing information accuracy, comprehensiveness, usefulness, and structure/presentation.
- Audiovisual quality score.
- Viewer interaction index.
- Viewing rate.
- Total Content Score (TCS), based on the presence of key adult orthodontic concepts.

2.6 Viewer interaction index

Interaction Index = [(Likes – Dislikes) / Views] × 100

2.7 Viewing rate

Viewing Rate = Views / Days since upload

2.8 Total Content Score

The Total Content Score was based on the presence of 10 adult orthodontic treatment concepts, with a maximum possible score of 15 points (0-15) in the supplied study framework. The assessed concepts included treatment options, biomechanics, treatment duration, risks/limitations, cost, oral hygiene, retention, pain and comfort, and aesthetic appliances.

2.9 Information-content grouping

- High information: RS 4–5.
- Medium information: RS 3.
- Low information: RS 1–2.

2.10 Statistical analysis

Statistical analysis was reportedly performed using SPSS version 25. Descriptive statistics were calculated. One-way analysis of variance (ANOVA) and the Kruskal–Wallis test were used as appropriate. Statistical significance was set at $p < 0.05$.

2. RESULTS

The supplied results reported that 35% of videos were classified as high-information, 30% as medium-information, and 35% as low-information. Comparisons among the three information-content groups demonstrated statistically significant differences across all reported video characteristics. Table 1. Comparison of video characteristics according to information-content group

Characteristic	High information	Medium information	Low information	p-value
Average views per video	3568.5 6 ± 877.1	3354.5 6 ± 745.4	2986.5 6 ± 733.1	0.0003*
Duration (min)	6.35 ± 1.37	4.56 ± 1.85	1.59 ± 0.47	0.0089*
VIQI (average)	15.5 ± 3.2	13.2 ± 1.9	11.0 ± 2.45	0.027*

Reliability Score (RS)	4.15 ± 0.86	3.56 ± 0.73	1.56 ± 0.38	0.0076*
GQS	3.9 ± 0.76	3.08 ± 1.06	2.12 ± 1.16	0.0078*
Viewer interaction index	14.2 ± 2.3	5.2 ± 1.8	0.56 ± 0.08	<0.0001*
Audiovisual quality	4.11 ± 0.8	3.5 ± 1.18	2.06 ± 1.1	0.009*
Viewing rate	156.2 ± 28.8	33.37 ± 14.3	9.8 ± 2.7	<0.0001*

Note: $p < 0.05$ was considered statistically significant. *Statistically significant difference among the three groups.

3.1 Description of findings

- Video popularity: The high-information group had the highest mean number of views, with a statistically significant difference among groups ($p = 0.0003$).
- Video duration: High-information videos had the longest mean duration (6.35 ± 1.37 min), while low-information videos had the shortest duration (1.59 ± 0.47 min; $p = 0.0089$).
- VIQI: Mean VIQI scores decreased from the high-information group to the low-information group ($p = 0.027$).
- Reliability: Mean RS was highest in the high-information group and lowest in the low-information group ($p = 0.0076$).
- Global quality: GQS values were highest in the high-information group and lowest in the low-information group ($p = 0.0078$).
- Viewer interaction: The viewer interaction index differed significantly among groups ($p < 0.0001$).
- Audiovisual quality: Audiovisual quality scores were significantly different among the three groups ($p = 0.009$).
- Viewing rate: Viewing rate showed a marked gradient between the groups ($p < 0.0001$).

3. DISCUSSION

The present study evaluated the reliability, quality, and overall educational value of social media videos related to adult orthodontic treatment. With social media progressively becoming a primary source of health information for patients, understanding the accuracy and usefulness of such content is essential. Our findings demonstrate substantial variability in information quality across videos and highlight the need for increased professional involvement in digital orthodontic education.

One of the most notable findings was that **high-information content videos received significantly more views** than medium- and low-information videos. This trend suggests that viewers may positively respond to well-structured, accurate, and detailed content. Previous studies in orthodontic

literature have similarly reported that videos with comprehensive explanations tend to be favored by users and accumulate higher visibility over time (Livas et al., 2013; Knösel et al., 2011). However, it should also be noted that some low-quality videos can still receive wide circulation due to algorithmic promotion or entertainment-based presentation styles. In our sample, this was not the case, indicating that, within the adult orthodontic segment, users may specifically seek more credible and structured content.

The **duration of videos** was strongly associated with information quality. High-information content videos were the longest, averaging 6.35 minutes, whereas low-information videos averaged only 1.59 minutes. This suggests that meaningful orthodontic education requires sufficient time for explanation and visual demonstration. Extremely short videos—though popular in modern social media environments—may lack the depth needed to convey clinical relevance, treatment mechanics, or realistic outcomes. This trend mirrors findings in health communication research, where concise but oversimplified video formats often compromise accuracy and patient comprehension.

The **Video Information Quality Index (VIQI)**, along with **Reliability Score (RS)** and **Global Quality Scale (GQS)**, all demonstrated significant differences across groups. High-information videos showed markedly superior scores on all these indices. This reflects better accuracy, more logical sequencing, clearer explanation of treatment procedures, and higher adherence to evidence-based messaging. Low-information videos, conversely, often lacked essential orthodontic details, omitted treatment limitations, or oversimplified outcomes. Similar concerns have been raised in previous orthodontic social media assessments, where non-professional content has frequently been incomplete or misleading. The consistency of our findings with those earlier reports reinforces the need for orthodontists to actively contribute scientifically accurate content online.

The **viewer interaction index** showed the most dramatic gradient among the groups, with high-quality videos receiving far greater engagement. Interaction metrics such as likes and comments often reflect user satisfaction and perceived credibility. The near-zero interaction observed in low-information videos suggests that viewers may recognize the superficial or promotional nature of such content. Importantly, this also indicates that audiences do value quality when seeking orthodontic information, challenging the perception that entertainment-driven content dominates engagement on social media.

Audiovisual quality also significantly correlated with information quality. High-information videos demonstrated better sound clarity, resolution, and visual aids. High technical quality may enhance

viewer trust and improve comprehension, especially in topics involving biomechanics and appliance systems. The low audiovisual quality observed in poorly informative videos suggests that many non-professional creators may lack both clinical knowledge and appropriate media resources.

The **viewing rate**, which reflects ongoing relevance and search visibility, showed the steepest decline from high- to low-information groups. High-quality videos maintained long-term engagement, implying sustained usefulness for audiences. In contrast, low-information videos may briefly circulate but fail to retain educational value.

Overall, our results emphasize that high-quality orthodontic information on social media overwhelmingly originates from professional sources. Given that 80% of internet users seek health-related information online, orthodontists have an important responsibility to ensure the availability of accurate, comprehensive, and patient-friendly content. Strengthening professional involvement could reduce misinformation, shape realistic patient expectations, and enhance public understanding of adult orthodontic treatment.

4. CONCLUSION

This study demonstrated that social media videos related to adult orthodontic treatment vary widely in their reliability, accuracy, and educational value. Videos categorized as high-information content consistently outperformed medium- and low-information groups across all assessed parameters, including viewing rate, interaction index, duration, VIQI, reliability score, GQS, and audiovisual quality. These findings indicate that viewers are more likely to engage with and benefit from content that is comprehensive, evidence-based, and professionally produced.

In contrast, low-information videos were shorter, less accurate, and of poorer audiovisual quality, with minimal viewer engagement. This discrepancy highlights the risk of misinformation and underscores the limitations of relying on non-professional sources for orthodontic guidance.

Overall, the results emphasize the critical role of orthodontic professionals in contributing high-quality educational material to social media platforms. By increasing the presence of accurate, well-structured, and patient-centered content, orthodontists can enhance public understanding, support informed decision-making, and reduce the spread of misleading or incomplete information online. Future efforts should focus on standardizing content quality guidelines and encouraging greater professional participation in digital health education.

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