

# YouTube as an Information Source on Dentin Grafts: A Quality and Content Analysis

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## Abstract

**Aim:** YouTube has become a widely used platform for seeking health-related information by both patients and healthcare professionals. Although dentin grafts have attracted increasing interest in contemporary dental practice, the quality and reliability of YouTube videos on this topic remain unclear. The aim of this study was to evaluate YouTube videos related to dentin grafts in terms of overall video quality, reliability, and dentin graft-specific content coverage. **Materials and Methods:** In this cross-sectional content analysis, a systematic search was conducted on YouTube on April 5, 2026, using predetermined English keywords related to dentin grafts. To reduce algorithm-related bias, the searches were performed in incognito mode, on the same device, and on the same day. After applying the inclusion and exclusion criteria, 23 videos were included in the analysis. The videos were assessed independently by two evaluators using the Global Quality Scale (GQS), the Journal of the American Medical Association (JAMA) benchmark criteria, and a 10-item dentin graft-specific content score. Inter-rater agreement was analyzed using Cohen's kappa test, and the relationships between variables were examined using Spearman correlation analysis. **Results:** A total of 23 videos were analyzed. The mean GQS score was  $2.87 \pm 1.604$ , the mean JAMA score was  $2.39 \pm 1.196$ , and the mean dentin graft-specific content score was  $4.48 \pm 3.356$ . Inter-rater agreement was found to be good for all assessment parameters. Very strong positive correlations were identified between the GQS and JAMA scores ( $\rho = 0.982$ ,  $p < 0.001$ ), between the GQS and the dentin graft-specific content score ( $\rho = 0.970$ ,  $p < 0.001$ ), and between the JAMA and the dentin graft-specific content score ( $\rho = 0.926$ ,  $p < 0.001$ ). **Conclusion:** YouTube videos related to dentin grafts were generally found to be limited in terms of quality, reliability, and content coverage. Higher-quality videos were also found to be more reliable and to provide more comprehensive dentin graft-specific information. There is a need for more accurate, reliable, and comprehensive educational videos to support patient education and clinical awareness.

**Keywords:** YouTube, dentin graft, video analysis, information quality, reliability.

## Introduction

Today, the internet and social media platforms are increasingly preferred for accessing health-related information. In particular, YouTube is widely used as a source of information by both patients and healthcare professionals. With millions of daily views and tens of thousands of newly uploaded videos, this platform plays a central role in audiovisual information delivery [1]. However, the availability of such a vast amount of content may lead to substantial variation in the accuracy, reliability, and educational adequacy of the information presented [2]. This situation necessitates a critical evaluation of the content provided, particularly in topics such as dental procedures that may influence individuals' health-related decisions [3].

Dentin-derived grafts have attracted increasing interest in dentistry for the treatment of periodontal defects, alveolar ridge augmentation, and bone regeneration procedures [4][8]. Owing to the chemical similarity between dentin and bone, these grafts exhibit osteoconductive properties and have gained a place in clinical practice as an alternative to autologous bone grafts [5][9]. These grafts are generally

prepared autologously from the patient's extracted teeth and offer the advantages of an unlimited source and low morbidity [10][11]; this makes dentin grafts an important material in contemporary dental practice.

Previous studies have evaluated YouTube videos on various dental topics, such as orthodontics, implantology, whitening, and endodontics, in terms of quality, reliability, and content coverage [12][14]; however, videos related to dentin grafts have not been sufficiently investigated. Therefore, the analysis of YouTube videos focusing on dentin graft applications is of critical importance for both clinical practice and patient education.

Incomplete, misleading, promotional, or low-quality videos may shape patient expectations and negatively affect clinical awareness and level of knowledge [15][17]. Therefore, the systematic evaluation of online video content in terms of quality, reliability, and scope is of great importance.

The aim of this study was to evaluate YouTube videos related to dentin graft applications in terms of quality, reliability, and dentin graft-specific content coverage.

## Materials And Methods

**Ethical Considerations**This study was designed as a cross-sectional observational content analysis of data obtained from a publicly accessible online video-sharing platform (YouTube). Since no human participants, interventions, identity information, or identifiable personal data were involved, ethics committee approval was not required.

**Study Design**This study was planned as a cross-sectional content analysis of YouTube videos related to dentin graft applications.

**Video Search Strategy and Selection**The videos were systematically searched on the YouTube platform on April 5, 2026. The search process was conducted in incognito mode to standardize user behavior and minimize the effect of personalized algorithms. All searches were performed on the same device and on the same day to control for algorithmic variability.

The keywords used were:"dentin graft," "dentin graft application," "autologous dentin graft," "tooth-derived graft," and "tooth graft."

For each keyword, the first 15 pages of results suggested by YouTube were evaluated. This approach was adopted to analyze the content most frequently encountered by users.

Video selection was performed in two stages:

Videos retrieved from all keywords were combined.

Duplicate videos were removed.

As a result of this process, 57 videos constituted the preliminary screening pool.

**Inclusion and Exclusion Criteria**

**Inclusion criteria**• Videos directly related to dentin grafts• Videos presenting clinical, educational, or demonstrative content• Videos containing sufficient audiovisual information

**Exclusion criteria**• Videos unrelated to dentin grafts• Duplicate or reuploaded videos• Advertising, commercial, or promotional content• Videos consisting only of short clips/trailers• Videos without audio or narration• Videos with insufficient audiovisual quality for evaluation

In accordance with these criteria, 23 videos were included in the final analysis.

**Video Evaluation Process**The videos were analyzed independently by two evaluators (H.F.A. and M.A.A.). The evaluators were familiar with the subject based on their academic work on dentin grafts and were calibrated before the analysis to ensure the standardized application of the assessment scales; a pilot evaluation was also performed on five videos. During the evaluation process, GQS, JAMA benchmark criteria, and the content score were rated independently. In cases of disagreement between the evaluators, the videos were discussed and the final scores were determined by consensus.

**Assessment Tools**The videos were evaluated under three main categories:

**1. Overall Video Quality (GQS)**The overall quality and educational value of the videos were assessed using the 5-point Global Quality Scale (GQS). This scale measures the flow, comprehensibility, and educational usefulness of the video.

**GQS classification:**For analysis, the scores were grouped as follows:• 1-2: low quality• 3: moderate quality• 4-5: high quality

**2. Video Reliability (JAMA Criteria)**The reliability of the videos was assessed using the Journal of the American Medical Association (JAMA) benchmark criteria. These criteria are widely used to evaluate the reliability of information in health-related content.

**The four evaluated criteria were:**• Authorship• Attribution• Currency• Disclosure

Each criterion was scored as 1 point, and the total score ranged from 0 to 4.

**Score classification:**• 0-1: low reliability• 2: moderate reliability• 3-4: high reliability

**3. Dentin Graft-Specific Content Score**To evaluate the educational content related to dentin grafts, a topic-specific 10-item content assessment system was developed based on the literature [18][20]. The videos were examined according to the following categories (Table 1):

**Table 1**Criteria used for dentin graft-specific content analysis of YouTube videos

| Criterion                  | Description   | Score |
|----------------------------|---|-------|
| Definition of dentin graft | Whether the video explains what dentin graft is   | 0/1   |
| Indications                | Whether the clinical indications for dentin graft use are mentioned                                   | 0/1   |
| Advantages                 | Whether the advantages of dentin grafting are discussed   | 0/1   |
| Disadvantages/limitations  | Whether the limitations or disadvantages are mentioned  | 0/1   |
| Biological properties      | Whether the biological properties, such as osteoinductive or osteoconductive potential, are explained | 0/1   |
| Preparation method         | Whether the preparation or processing method of dentin graft is described                             | 0/1   |

| Criterion                          | Description  | Score |
|------------------------------------|--|-------|
| Clinical application steps         | Whether the clinical application procedure is explained                      | 0/1   |
| Complications/risks                | Whether possible complications or risks are mentioned                        | 0/1   |
| Comparison with alternative grafts | Whether dentin graft is compared with other graft materials                  | 0/1   |
| Postoperative/healing information  | Whether postoperative follow-up, healing, or clinical outcomes are discussed | 0/1   |

A score of 1 was assigned when the video contained information related to a given criterion, and a score of 0 was assigned when such information was absent. The total score ranged from 0 to 10.

The scores were categorized into three groups:• 0-3: insufficient content• 4-6: moderate content• 7-10: comprehensive content

**Evaluators and Reliability**The evaluators independently assessed the GQS, JAMA benchmark criteria, and dentin graft-specific content scores.

Inter-rater agreement was analyzed using Cohen's kappa test, and good agreement was found for all assessment parameters. Agreement for the GQS scores was  $\kappa = 0.613$  ( $p$ ), agreement for the JAMA benchmark criteria was  $\kappa = 0.648$  ( $p$ ), and agreement for the content scores was  $\kappa = 0.690$  ( $p$ ).

**Statistical Analysis**Statistical analysis of the data was performed using IBM SPSS Statistics (version 27.0). Descriptive statistics were presented as mean, standard deviation, and minimum-maximum values.

Inter-rater agreement was analyzed separately for each assessment category, including the GQS, JAMA benchmark criteria, and dentin graft-specific content scores, using Cohen's kappa test. Kappa values were interpreted as poor <0.20, fair 0.21-0.40, moderate 0.41-0.60, good 0.61-0.80, and very good 0.81-1.00 agreement. Following the inter-rater agreement analysis, the final dataset was established through consensus discussion in cases of disagreement.

For the evaluation of relationships between variables, the associations between GQS and JAMA, GQS and dentin graft-specific content score, and JAMA and dentin graft-specific content score were examined using Spearman correlation analysis. This analysis allowed the assessment of the strength and direction of monotonic associations between the variables.

In all analyses, statistical significance was accepted at ( $p$ ).

**Results**

In this study, the overall video quality (GQS), reliability level (JAMA benchmark criteria), and dentin graft-specific content scores of YouTube videos related to dentin grafts were evaluated, and the relationships among these variables were analyzed.

A total of 23 videos were analyzed. Examination of the descriptive statistics for the GQS, JAMA, and dentin graft-specific content scores revealed that the mean GQS score was  $2.87 \pm 1.604$  (minimum 1, maximum 5), the mean JAMA score was  $2.39 \pm 1.196$  (minimum 1, maximum 4), and the mean dentin graft-specific content score was  $4.48 \pm 3.356$  (minimum 1, maximum 10). The content scores were observed to show a wider distribution compared with the other variables (Table 2).

**Table 2**Descriptive statistics for GQS, JAMA, and dentin graft-specific content scores

| Descriptive Statistics | N  | Minimum | Maximum | Mean | Std. Deviation |
|------------------------|----|---------|---------|------|----------------|
| GQS                    | 23 | 1       | 5       | 2.87 | 1.604          |
| JAMA                   | 23 | 1       | 4       | 2.39 | 1.196          |
| CONTENT                | 23 | 1       | 10      | 4.48 | 3.356          |

The relationships between the variables were evaluated using Spearman correlation analysis. The analysis revealed a very strong positive correlation between GQS and JAMA (correlation coefficient rho = 0.982;  $p < 0.001$ ). Similarly, very strong and statistically significant correlations were found between GQS and the dentin graft-specific content score (rho = 0.970;  $p < 0.001$ ) and between JAMA and the dentin graft-specific content score (rho = 0.926;  $p < 0.001$ ). These findings indicate that the three assessment tools demonstrated a high degree of overlap in the constructs they measured (Table 3).

**Table 3**Spearman correlation analysis of GQS, JAMA, and dentin graft-specific content score

| VARIABLES                       | CORRELATION COEFFICIENT (RHO) | P value |
|---------------------------------|-------------------------------|---------|
| GQS - JAMA                      | 0.982                         | <0.001  |
| GQS -Dentin Graft Content Score | 0.970                         | <0.001  |
| JAMA-Dentin Graft Content Score | 0.926                         | <0.001  |

**Discussion**

This study aimed to evaluate YouTube videos related to dentin grafts in terms of overall video quality, reliability, and dentin graft-specific content coverage. A total of 23 videos were analyzed; the mean GQS score was  $2.87 \pm 1.604$ , the mean JAMA score was  $2.39 \pm 1.196$ , and the mean dentin graft-specific content score was  $4.48 \pm 3.356$ .

In addition, a very strong positive correlation was found between GQS and JAMA ( $\rho = 0.982$ ;  $p < 0.001$ ), a very strong positive correlation was found between GQS and the dentin graft-specific content score ( $\rho = 0.970$ ;  $p < 0.001$ ), and a very strong positive correlation was also found between JAMA and the dentin graft-specific content score ( $\rho = 0.926$ ;  $p < 0.001$ ). These findings suggest that the analyzed videos were not at an ideal level in terms of overall quality, reliability, and content coverage. Similarly, low GQS and JAMA scores have also been reported in YouTube analyses conducted on other dental topics [16][17].

The findings obtained indicate that higher quality videos are also more reliable and address dentin graft-specific topics more comprehensively. The very strong correlations identified among the three parameters suggest that video quality is closely associated with reliability and content richness [21]. This finding indicates that, as quality increases in the content available on the platform, reliability and content coverage also improve concurrently. Similar studies in the literature have likewise reported strong positive correlations between GQS and JAMA scores, suggesting that this may represent a general trend [22]. Indeed, in an evaluation conducted in pediatric dentistry, a weak positive correlation was also identified between video content quality score and the like index [23]; this suggests that there may not always be a direct correspondence between quality and engagement metrics. Nevertheless, some studies have reported that YouTube videos on dental topics are of insufficient quality [24]. This once again highlights the need for careful evaluation of information presented on open-access platforms such as YouTube, particularly for health-related topics [25].

In applications such as dentin grafting, which may affect clinical decision-making in the treatment of periodontal defects, alveolar ridge augmentation, and bone regeneration, the quality of YouTube videos is of particular importance [5][7]. The generally low quality of the videos may create a basis for the dissemination of incomplete, superficial, or misleading information that could influence patient expectations [15]. This may negatively affect clinical awareness and patient education, and may also lead individuals to base their health-related decisions on inaccurate or incomplete information. Particularly in more specific topics such as periodontal surgery and graft applications, patients' tendency to seek online resources indicates that accurate and comprehensive information may be an important factor supporting the clinical process [17].

Among the strengths of this study are the use of a systematic search strategy, the preference for incognito mode, the performance of all searches on the same day and on the same device, the inclusion of two independent evaluators, the calibration process, the pilot evaluation, and the assessment of inter-rater agreement using Cohen's kappa analysis [14]. These factors increased the objectivity

and reproducibility of the evaluation and are also consistent with similar methodological approaches reported in the literature [16].

However, the study also has some limitations. The evaluation of only the YouTube platform resulted in the exclusion of other social media platforms from analysis. In addition, the possibility that videos may be deleted, updated, or have their visibility changed over time affects the dynamic nature of the findings. The limited sample size and the fact that the evaluation was conducted using specific keywords also restrict the generalizability of the results. These limitations are among the points frequently emphasized in similar studies [26].

Overall, the current quality of YouTube videos related to dentin grafts indicates that both clinicians and patients should approach such content critically. The production of higher quality, more reliable, and more comprehensive educational videos may be beneficial for both patient information and clinical practice. Future studies planned with larger samples and including different digital platforms may contribute to a more comprehensive identification of the knowledge gap in this field.

## Conclusion

Within the limitations of this study, YouTube videos related to dentin grafts were found to be generally inadequate in terms of quality, reliability, and content coverage. The very strong positive correlations identified among GQS, JAMA, and the dentin graft-specific content score indicate that higher-quality videos also provide more reliable and more comprehensive information. Considering the potential impact of online videos on patient expectations and clinical awareness, both clinicians and patients should approach such content critically. The preparation of more accurate, reliable, and comprehensive educational videos on dentin grafts may contribute to improving patient education and to the more effective dissemination of clinically useful information.

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