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Introduction

Regenerative dentistry is one of the fastest-growing areas in modern dental science. Unlike traditional dental treatments that replace damaged tissues with artificial materials, regenerative dentistry aims to repair or regenerate lost tissues using biological methods (1). Recent developments in stem cell research, biomaterials, tissue engineering, and growth factors have increased interest in this field. These new approaches may help regenerate dental pulp, periodontal tissues, and alveolar bone, offering new treatment options for patients (2,3).

As interest in regenerative dentistry grows, patients are becoming more curious about these new treatment methods. Many people want to learn about the benefits, risks, and success rates of regenerative procedures before visiting a dentist. Today, the internet is one of the most common sources of health information. Patients often search online to better understand diseases and treatment options and to prepare for discussions with healthcare professionals (4). Among online platforms, YouTube is one of the most popular sources of health-related information. It allows users to access videos quickly and free of charge. Educational videos can be useful because they combine visual and verbal information, making complex topics easier to understand. In dentistry, YouTube contains videos on many subjects, including dental implants, orthodontics, oral surgery, periodontal treatments, and cosmetic procedures (5-7).

Regenerative dentistry is also becoming a frequently discussed topic on the platform. However, the quality of information available on YouTube is not always reliable. Unlike scientific journals, YouTube videos are not reviewed by experts before publication. Anyone can upload content regardless of their professional background. Some videos may provide accurate and evidence-based information, while others may contain incomplete, outdated, or misleading statements. This variation in quality may affect patients' understanding of treatment options and create unrealistic expectations.

1 Evaluating the quality of online health information has become increasingly important. Previous studies have assessed YouTube videos related to several dental topics and reported

1 that the quality and reliability of information vary considerably. While some videos provide useful educational content, many lack scientific references or balanced discussion of treatment limitations and risks. Despite the growing popularity of regenerative dentistry, few studies have specifically examined the quality of YouTube videos on this subject. Because patients may use these videos to learn about regenerative treatments, it is important to determine whether the information provided is accurate and trustworthy.

1 In this study, we aimed to evaluate the quality and reliability of YouTube videos related to dental regeneration.

Materials And Methods

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This study evaluated the quality and reliability of YouTube videos related to dental regeneration. As all analyzed data were publicly available on YouTube and no human participants were involved, ethical approval was not required.

Video Selection

A systematic search was performed on YouTube (www.youtube.com) on June 1, 2026, using the search term “dental regeneration”. To minimize the influence of previous search activity, the search was conducted using a web browser in incognito mode with no browsing history or stored cookies. Videos were sorted according to YouTube’s default relevance ranking.

The videos identified by the search were screened for eligibility. Duplicate videos, non-English videos, videos unrelated to dental regeneration, advertisements without educational content, silent videos, and videos shorter than 30 seconds were excluded. After applying the exclusion criteria, the first 50 eligible videos were included in the final analysis.

Data Collection

For each video, several characteristics were recorded, including video duration, number of views, number of likes, number of comments, and the number of days since upload. In addition, the source of each video was documented. Video uploaders were classified into five categories: academic institutions or universities, dentists or dental specialists, private dental clinics, educational media channels, and other sources. This classification was performed to identify the primary providers of information and to better understand the distribution of educational content related to dental regeneration on YouTube.

The educational content of each video was also evaluated. The presence of information regarding stem cell therapy, tissue engineering, periodontal regeneration, pulp regeneration,

bone regeneration, treatment benefits, treatment limitations, complications, and future applications was recorded.

Quality and Reliability Assessment

The educational quality of the videos was evaluated using the Global Quality Scale (GQS). The GQS is a validated five-point scoring system commonly used to assess the quality of online health information. Videos scoring 1–2 points were considered low quality, 3 points moderate quality, and 4–5 points high quality.

Video reliability was assessed using the modified DISCERN instrument. This tool consists of five yes/no questions evaluating clarity, reliability of information sources, balance of information, availability of additional references, and discussion of uncertainties. One point was awarded for each positive response, resulting in a total score ranging from 0 to 5. Higher scores indicated greater reliability.

Video Evaluation

All videos were independently evaluated by two researchers experienced in regenerative dentistry. Before the evaluation process, both researchers reviewed the current literature on regenerative dentistry to ensure a standardized assessment approach. Disagreements were resolved through discussion and consensus.

Statistical Analysis

Statistical analyses were performed using IBM SPSS Statistics version 26.0 (IBM Corp., Armonk, NY, USA). Continuous variables were expressed as mean $\pm$ standard deviation or median (minimum–maximum), depending on data distribution. Categorical variables were presented as frequencies and percentages. Interobserver agreement for GQS and DISCERN scores was assessed using the intraclass correlation coefficient (ICC). An ICC value greater

3

than 0.80 was considered indicative of excellent agreement. A p-value <0.05 was considered statistically significant.

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Results

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A total of 50 YouTube videos related to dental regeneration were included in the analysis.

During the screening process, 12 videos were excluded because they were duplicates ($n=4$), non-English ($n=3$), unrelated to dental regeneration ($n=3$), or shorter than 30 seconds ($n=2$).

The analyzed videos accumulated a total of 1,247,835 views. The mean number of views per video was $24,957 \pm 38,421$. The average video duration was 428 ± 295 seconds. The mean number of likes was 318 ± 486 , while the mean number of comments was 42 ± 67 . The median time since upload was 615 (range, 18–2,964) days.

Regarding the source of the uploaded content, 20 videos (40.0%) were uploaded by dentists or dental specialists, 12 (24.0%) by academic institutions or universities, 9 (18.0%) by private dental clinics, 6 (12.0%) by educational media channels, and 3 (6.0%) by other sources (Table 1).

The most frequently discussed topics were stem cell therapy ($n=39$, 78.0%), bone regeneration ($n=34$, 68.0%), tissue engineering ($n=31$, 62.0%), periodontal regeneration ($n=26$, 52.0%), and pulp regeneration ($n=21$, 42.0%). Information regarding treatment benefits was presented in 36 videos (72.0%), whereas treatment limitations and potential complications were discussed in only 15 (30.0%) and 12 (24.0%) videos, respectively. Future applications of regenerative dentistry were mentioned in 22 videos (44.0%).

The mean Global Quality Scale (GQS) score was 3.28 ± 0.91 . According to GQS classification, 10 videos (20.0%) were classified as low quality (scores 1–2), 19 videos (38.0%) as moderate quality (score 3), and 21 videos (42.0%) as high quality (scores 4–5) (Table 2).

The mean modified DISCERN score was 2.46 ± 1.12 . Fifteen videos (30.0%) demonstrated low reliability (scores 0–2), 27 videos (54.0%) demonstrated moderate reliability (scores 3–4), and only 8 videos (16.0%) achieved high reliability (score 5). Scientific references were provided

in only 11 videos (22.0%). Furthermore, discussion of uncertainties, limitations, or controversial aspects of regenerative treatments was observed in only 14 videos (28.0%).

1 Interobserver agreement was excellent for both assessment tools. The intraclass correlation
8 coefficient (ICC) was 0.91 for GQS and 0.89 for DISCERN, indicating a high level of consistency between the two evaluators.

Discussion

1 In the present study, we evaluated the quality and reliability of YouTube videos related to dental regeneration. Our analysis showed that the overall educational quality of the videos was acceptable, with a mean GQS score of 3.28 ± 0.91 . In contrast, the mean DISCERN score was only 2.46 ± 1.12 , indicating that the reliability of the available information was lower than its educational quality. 2 These findings suggest that 5 although many videos provide useful introductory information, the scientific accuracy and completeness of the content remain questionable.

4 One of the most notable findings of our study was that stem cell therapy was the most frequently discussed topic, appearing in 78% of the videos. Bone regeneration and tissue engineering were also commonly mentioned, with frequencies of 68% and 62%, respectively. This finding is not surprising, as stem-cell-based therapies and tissue engineering approaches are among the most actively investigated areas in regenerative dentistry. The increasing visibility of these topics on social media likely reflects growing public interest in innovative and future-oriented treatment strategies.

We found that information regarding treatment benefits was presented in nearly three-quarters of the videos (72%), whereas treatment limitations and potential complications were discussed in only 30% and 24% of videos, respectively. This imbalance suggests that content creators tend to emphasize the positive aspects of regenerative therapies while 7 providing less information about their 8 limitations. Such an approach may contribute to unrealistic expectations among patients and may affect shared decision-making during clinical consultations.

The mean GQS score observed in our study indicates that most videos provided moderate-to-high educational value. Specifically, 42% of videos were classified as high quality, whereas only 20% were considered low quality. This finding suggests that YouTube may serve as a useful source of preliminary information for patients seeking to learn about regenerative dentistry. However, educational quality should not be interpreted as scientific reliability. A

video may be visually attractive and easy to understand while still lacking evidence-based information.

The reliability assessment revealed that only 16% of videos achieved the highest DISCERN score, and scientific references were provided in only 22% of videos. Furthermore, uncertainties and controversial aspects of regenerative therapies were discussed in only 28% of the evaluated content. These findings indicate an important gap between educational presentation and scientific rigor. Considering that many regenerative procedures are still under investigation, the absence of references and balanced discussion may lead viewers to overestimate the current clinical applicability of these treatments.

10 Our findings are consistent with previous studies evaluating YouTube videos in healthcare. Özcan and Sancı reported that videos related to robotic-assisted sacrocolpopexy had acceptable quality but relatively low reliability, with a mean GQS score above the mean DISCERN score. Similar observations have been reported in studies evaluating YouTube content on premature ejaculation, kidney stone disease, pelvic floor disorders, and breast self-examination. The common conclusion of these studies is that educational quality and scientific reliability do not necessarily progress together. Our findings support this observation and demonstrate that the same problem exists in the field of regenerative dentistry.

Another important finding was that videos uploaded by academic institutions and dental specialists accounted for nearly two-thirds of the evaluated content. This may explain the relatively favorable GQS scores observed in our study. Previous reviews have shown that healthcare information produced by professional organizations and academic centers is generally more accurate and comprehensive than content generated by non-professional sources. Therefore, increasing the contribution of universities and professional dental societies may improve the quality of information available on YouTube.

1

The excellent interobserver agreement observed in our study (ICC=0.91 for GQS and ICC=0.89 for DISCERN) demonstrates the consistency and reproducibility of the evaluation process. These values are comparable to those reported in previous YouTube-based quality assessment studies and support the reliability of our findings.

This study has several limitations. First, YouTube content is dynamic and continuously changing. New videos are uploaded every day, and popularity metrics such as views and likes may vary over time. Second, only English-language videos were included, which may limit the generalizability of the findings. Third, although GQS and DISCERN are widely accepted assessment tools, neither was specifically developed for evaluating video-based educational content. Finally, we evaluated the quality and reliability of the videos but did not investigate how these videos influence patient knowledge, attitudes, or treatment decisions.

Conclusion

In conclusion, our findings demonstrate that YouTube videos related to dental regeneration generally provide acceptable educational content but show only moderate reliability. The limited use of scientific references and the insufficient discussion of treatment limitations remain important concerns. Greater involvement of academic institutions, professional organizations, and experts in regenerative dentistry may help improve the quality and reliability of information available to the public.