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Reliability of Information in YouTube Videos on the Application of Calcium Hydroxide

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Abstract

Background: This study evaluated the quality of YouTube videos about calcium hydroxide dressing as an intracanal medicament during endodontic treatment based on the uploader and the video presenter.

Methods: Literature-based definitions guided the process. The search terms "calcium hydroxide dressing," "calcium hydroxide in endodontics," and "intracanal medicament" were searched using the Boolean operator "OR." Twenty-two English videos of acceptable quality were analyzed twice with a 2-month interval. Video quality was assessed using the Video Information and Quality Index(VIQI), and content was evaluated with 16 specific criteria developed explicitly for this study. Video duration, source (general dentist/specialist/company), presenter (general dentist/specialist), number of views, likes, and dislikes were recorded. Interaction Index and View Rate were calculated. Statistical analysis was performed using IBM Statistical Package for the Social Sciences (SPSS) 26.0; Mann–Whitney *U* and independent samples *t*-tests were applied as appropriate.

Results: No statistically significant difference was found in the interaction index and view rate or total usefulness scores based on the video's uploader or presenter. However, none of the evaluated videos provided high scientific content. While information level and quality did not differ significantly by uploader, videos presented by specialist dentists showed significantly higher quality (p=0.019).

Conclusion: The YouTube videos evaluated in this study showed limitations in scientific reliability as sources of information on calcium hydroxide use in endodontics. If it is to be used as an educational tool, videos presented by experts in the field should be prioritized.

Keywords: Calcium hydroxide dressing, intracanal medicament, YouTube

What is already known on this topic?

- *YouTube is a widely used platform by dentists and students to learn about clinical procedures; however, the scientific accuracy and educational quality of videos on endodontic procedures can vary significantly.*
- *Previous studies have shown that online videos on dental procedures often contain incomplete, misleading, or inconsistent information with standard clinical approaches.*
- *Therefore, the need for a systematic evaluation of the reliability of educational content offered on digital platforms is emphasized.*

What this study adds on this topic?

- *This study provides an original contribution to the literature by evaluating the reliability and educational quality of YouTube videos on the use of calcium hydroxide in endodontics using a 16-item structured checklist developed by the researchers.*
- *Significant differences were found among the videos in terms of content accuracy, adherence to clinical protocols, and educational value.*
- *The findings highlight the need for critical evaluation of online resources and the necessity of expert-prepared, evidence-based educational materials.*

INTRODUCTION

The primary goal of endodontic therapy is to thoroughly eliminate the microorganisms from the root canal system.Calcium hydroxide ($Ca(OH)_2$) exhibits strong antimicrobial activity, tissue-dissolving capacity, and can be removed from the root canal system without leaving residue because of its high pH. Therefore, $Ca(OH)_2$ is extensively utilized in endodontics for this purpose as an intracanal medicament to eradicate residual microorganisms following chemomechanical preparation.[1,2] These features render it a widely preferred intracanal medicament, particularly in cases involving necrotic pulp, by supporting periapical healing and minimizing residual microbial presence. Its use extends

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to procedures such as apexification, direct and indirect pulp capping, and treatment of persistent canal infections.[3] For successful outcomes, clinicians should understand its indications, application protocols, and potential complications.

During clinical practice, especially dental students and young clinicians with limited professional experience may encounter various technical problems and complications in $Ca(OH)_2$ application. Errors such as improper use of injection systems, inadequate control of carriers such as lentulo spirals, tissue irritation due to overflow and medicament spilling out of the root or not being distributed homogeneously in the canal may jeopardize the treatment success and reduce patient satisfaction. Compared with other intracanal medicaments, $Ca(OH)_2$ placement is particularly technique-sensitive because of its flow characteristics, radiopacity-dependent assessment, and the need for controlled delivery to avoid apical extrusion while achieving complete canal coverage.[4,5] In addition, non-sealing of temporary fillings after application may also pave the way for re-infection.[6] These situations increase the importance of application protocols and visual education materials based on accurate information. However, the lack of standardized education materials and the reliance on self-directed learning from various online sources make it even more difficult to obtain accurate and comprehensive information on this subject.[7,8]

In recent years, digital media platforms have come to the forefront as educational materials, especially in areas where visual narration is strong. One of these, YouTube, has become an important educational platform widely accessed by both students and general dental practitioners to learn dental procedures.[9-11] The platform includes clinical procedure videos for many dental treatments, including $Ca(OH)_2$ application. Users can access this video content independently of time and place. A significant portion of this content has not undergone scientific review and may contain information gaps, technical errors, or misleading practices. While YouTube offers the advantage of visual learning and accessibility, the lack of peer review or standardized content verification raises concerns about the reliability of the information provided. Therefore, evaluating the educational and scientific value of videos on digital platforms is of great importance, especially for young physicians trying to develop their clinical skills from these sources.[10,11] Considering the increasing dependence on digital resources in education, there is a need to conduct studies evaluating the quality and scientific accuracy of YouTube videos in order to determine whether they serve as reliable educational tools for endodontic practices.

To the best of the authors' knowledge, there is no prior study in the literature that specifically evaluates the quality of YouTube videos related to the application of $Ca(OH)_2$ as an intracanal medicament during endodontic treatment. Therefore, this study aimed to assess the educational quality and informational accuracy of such videos based on the identity of the individual who uploaded and presented the content. The alternative hypothesis of the study stated that a majority of the evaluated videos would lack sufficient educational value and/or present incomplete or potentially misleading information.

MATERIAL AND METHODS

As the data were collected exclusively from YouTube (https://www.youtube.com/), a publicly accessible platform, ethics committee approval and individual informed consent were not required. An ethics committee exemption letter was obtained from the İstanbul Health and Technology University Non-Interventional Studies Ethics Committee (No: E-28830459-020-27966, Date: October 1, 2025). Based on definitions in the literature, the search terms "calcium hydroxide dressing," "calcium hydroxide in endodontics," and "intracanal medicament" were determined.[11,12] The search was conducted using the Boolean operator "OR" between these terms. The YouTube search was performed on November 01, 2024. To minimize potential algorithm-related bias, the search was carried out in incognito mode with browser history and cookies cleared prior to each query, and no personalized accounts were logged in during the search process. Among the first 100 videos listed in the search results, 22 were included in the study. Videos were excluded if they were repetitive, in a non-English language, focused on non-endodontic applications of $Ca(OH)_2$, contained only audio or only visual content, were fully animated, exceeded 15 minutes in length, contained advertisements, lacked informational content, or were irrelevant to the specified search terms.

The duration of the videos evaluated, the upload date, the identity of the person uploading the video (dentist, specialist dentist, company, etc.), the identity of the narrator (specialist dentist, dentist, and unspecified), the target audience of the video (dentist, student, and general audience), the number of views, likes, dislike, and comments of the videos were examined and recorded. In light of these data, the interaction index and viewing rate were calculated according to the following formulation.[13]

$$\textbf{Interaction index}: \left(\frac{\text{number of likes} - \text{number of dislikes}}{/\text{total number of views}} \right) \times 100\% \quad (1)$$

$$\textbf{Viewing rate}: \left(\frac{\text{number of views}}{/\text{number of days since upload}} \right) \times 100\% \quad (2)$$

The information and quality of the videos were scored according to the Video Information and Quality Index (VIQI) criteria (see Table 1), which objectively analyzes the quality and information value of videos related to health and medical education. Video Information and Quality Index evaluation was performed using a 5-point Likert scale under 4 subheadings: information flow (VIQI 1), information accuracy

Table 1. VIQI Evaluation Form

	Likert Scale				
Category	**1**	**2**	**3**	**4**	**5**
VIQI 1. Flow of information	☐	☐	☐	☐	☐
VIQI 2. Information accuracy	☐	☐	☐	☐	☐
VIQI 3. Quality	☐	☐	☐	☐	☐
VIQI 4. Precision	☐	☐	☐	☐	☐

VIQI, Video Information and Quality Index.

(VIQI 2), general quality (VIQI 3), and precision (VIQI 4). In the scale, 1 point was evaluated as "low quality and flow," 2 points as "poor quality and poor flow," 3 points as "medium quality and poor flow," 4 points as "good quality and good flow," and 5 points as "high quality and high flow." As a result of all these evaluations, the total VIQI score was determined for each video.[13] In addition, the videos were systematically evaluated using 16 parameters (see Table 2), encompassing both compliance with American Dental Association (ADA) and European Society of Endodontology (ESE) endodontic treatment guidelines and the assessment of educational content and overall quality.[1-6,14-20] The checklist was pilot-tested on a small subset (4) of videos prior to formal analysis to ensure clarity and applicability of the scoring criteria. Each parameter was scored by giving 2 points if it was present in the video content, 1 point if it was partially present, and 0 if it was not present. The total content score was obtained by adding these scores. Based on the total scores, the scientific accuracy and educational effectiveness of the videos were classified as follows:

- 0-15 points: low,
- 16-24 points: medium, and
- 25-32 points: high.

Two independent researchers (N.S. and S.F.) performed all evaluations twice, with a 2-month interval.

Table 2. Parameters Used for the Evaluation of Video Content

Scored Parameter
Information regarding the indications for use of $Ca(OH)_2$
Information of the benefits of $Ca(OH)_2$ when used as an intracanal medicament (e.g., its antibacterial properties)
Description of the formulations used (e.g., premixed and powder–liquid)
Information of the liquid component used in the powder–liquid formulation
Information regarding the technique for placement of $Ca(OH)_2$
Description of methods for achieving homogeneous distribution within the canal
Information of proper placement techniques to prevent overflowing
Information regarding the instruments and materials used for intracanal placement (e.g., endodontic syringe and lentulo spiral)
Information about the canal cleaning and disinfection methods prior to application as part of the clinical protocol
Information of the sequence of steps in the clinical protocol
Information regarding possible complications during $Ca(OH)_2$ application
Information of sealing the canal with a temporary restoration following $Ca(OH)_2$ application
Scientific accuracy of the video content (compliance with evidence-based literature)
Clarity of narration (clarity and comprehensibility of the language used in the video)
Supportive explanation (use of both visual and verbal aids to convey complex information)
Practical tips and recommendations for clinical application

Statistical Analysis

Statistical analyses were conducted using IBM Statistical Package for the Social Sciences Statistics, version 26.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics are expressed as mean ± SD and median with range (minimum-maximum). The Shapiro–Wilk test was employed to assess the normality

Table 3. Comparison of Video Information According to Video Source

	Video Source	**Mean ± SD**	**Median (Min-Max)**	***P***
Video duration	Specialist dentist (n=13)	278.31 ± 274.68	206 (10-877)	.973†
	Commercial/other (n=9)	232.89 ± 275.75	108 (45-913)	
	Total (n=22)	259.73 ± 269.45	137 (10-913)	
Time since upload	Specialist dentist	1757.38 ± 1360.71	1039 (549-5129)	.867†
	Commercial/other	1500.11 ± 1236.90	958 (749-4679)	
	Total	1652.14 ± 1287.48	1039 (549-5129)	
Number of views	Specialist dentist	40886.85 ± 93286.64	4336 (186-341260)	.404†
	Commercial/other	25275.78 ± 30662.18	14350 (389-98729)	
	Total	34500.50 ± 73434.84	7489.50 (186-341260)	
Number of likes	Specialist dentist	759.92 ± 1761.54	83 (7-6400)	.404†
	Commercial/other	297.67 ± 216.06	355 (3-577)	
	Total	570.82 ± 1358.33	127 (3-6400)	
Number of comments	Specialist dentist	22.77 ± 45.93	1 (0-146)	.096†
	Commercial/other	14 ± 11.65	14 (0-41)	
	Total	19.18 ± 35.73	3.50 (0-146)	

†Mann–Whitney *U*-test.

of distribution for continuous variables. For comparisons, the Mann–Whitney *U*-test was used for non-normally distributed independent variables, whereas the independent samples *t*-test was applied for normally distributed data. Inter-rater and intra-rater reliability were evaluated using Cohen's κ coefficient and interpreted according to the classification by Landis and Koch.[21] A *P*-value < .05 was considered statistically significant.

RESULTS

Among the 22 videos analyzed, 59.09% (n=13) were uploaded by specialist dentists and 40.9% (n=9) by commercial or other sources. Regarding the identity of the video narrator, 77.2% (n=17) of the videos were narrated by a specialist dentist, whereas in 22.7% (n=5), the narrator's identity was not specified. No videos were identified in which the narrator was stated to be a general dentist. When the target audience of the videos was analyzed, 77.2% (n=17) were determined to be intended for general dentists, while 5 videos were aimed at dental students. Importantly, none of the videos were specifically designed for specialist dentists. There was no statistically significant difference in video characteristics (video duration, time since upload, number of views, likes, and comments) based on the video source (Table 3). Since the number of dislikes was "0" for all evaluated videos, this variable was excluded from the table. Similarly, no statistically significant differences were found in the interaction index and view rate of the videos with respect to either the video source or the narrator identity (Table 4).

In the inter-rater reliability analysis, the κ value was calculated as 0.84 for Rater 1 and 0.81 for Rater 2, both indicating "almost perfect agreement." The inter-rater κ value was also 0.81, again reflecting an "almost perfect" level of agreement.

Table 5 summarizes the comparison of VIQI subscores and total scores across different uploader and presenter groups. When the informational content and quality of the videos were evaluated, no statistically significant differences were observed in VIQI scores according to the video source or target audience. However, videos narrated by specialist dentists had significantly higher VIQI 2 scores (information accuracy) and total VIQI scores (*P*=.019 and *P*=.033, respectively).

Table 6 presents the distribution of total usefulness scores across video source, narrator, and target audience categories. Regarding the parameters used to evaluate video content, none of the videos achieved a total score indicating "high-quality content." Additionally, there were no statistically significant differences in the overall usefulness scores of the videos based on their source or narrator.

DISCUSSION

Calcium hydroxide plays a critical role in endodontic practice primarily as an intracanal medicament due to its antimicrobial properties, tissue-dissolving ability, and ability to induce hard tissue formation. However, the efficacy of this substance is directly related to its correct application techniques and the operator's knowledge and experience. Incorrect applications can lead to complications such as soft tissue damage due to extrusion, pain, and treatment failure. In this context, video content on $Ca(OH)_2$ use that visually presents both theoretical knowledge and correct clinical applications holds great importance.[22] In this study, the educational content and quality of these videos, as well as their relation to the video source and the narrator, were evaluated.

The study aimed to critically assess the scientific accuracy and educational effectiveness of YouTube videos concerning $Ca(OH)_2$, a widely used material in endodontics that poses significant risks when used incorrectly.[22] The findings of this

Table 4. Comparison of Interaction Index and View Rate According to Video Source and Presenter

	Video Source	Mean ± SD	Median (Min-Max)	*P*
Interaction index	Specialist dentist (n=13)	2.16 ± 0.94	2.20 (0.37-3.76)	0.117†
	Commercial/other (n=9)	1.72 ±1.40	1.44 (0.45-5.03)	
View rate	Specialist dentist	1819.47 ± 3923.87	437.08 (17.90-14148.43)	0.217†
	Commercial/other	1698.34 ± 1447.64	1497.91 (22.23-4189.41)	
	Video narrator	Mean ± SD	Median (min-max)	*P*
Interaction index	Unspecified (n=5)	1.73 ± 1.34	1.62 (0.45-3.76)	0.581‡
	Specialist dentist (n=17)	2.06 ± 1.11	1.88 (0.37-5.03)	
View rate	Unspecified	846.85 ± 939.72	410.16 (17.90-2110.05)	0.505†
	Specialist dentist	2041.41 ± 3469.14	530.72 (22.23-14148.43)	
	Target audience	Mean ± SD	Median (min-max)	*P*
Interaction index	Students (n=5)	1.44 ± 0.95	1.62 (0.45-2.82)	0.233‡
	Dentists (n=17)	2.14 ± 1.17	2.16 (0.37-5.03)	
View rate	Students	1237.28 ± 930.80	1575.66 (88.34-2110.05)	0.724†
	Dentists	1926.58 ± 3502.70	484.41 (17.90-14148.43)	

†Mann–Whitney *U*-test.
‡Independent samples *t*-test.

Table 5. Comparison of Total and Subscores of VIQI According to Video Source and Presenter

Parameters	Video Source	Mean ± SD	Median (Min-Max)	*P*
Information flow (VIQI 1)	Specialist dentist (n=13)	2.77 ± 0.83	3 (1-4)	.225†
	Commercial/other (n=9)	3.22 ± 0.83	3 (2-4)	
Information accuracy (VIQI 2)	Specialist dentist	2.38 ± 0.87	2 (1-4)	.490‡
	Commercial/other	2.67 ± 1.00	3 (1-4)	
Quality (VIQI 3)	Specialist dentist	2.77 ± 0.44	3 (2-3)	.357†
	Commercial/other	3.00 ± 1.12	3 (1-4)	
Precision (VIQI 4)	Specialist dentist	2.23 ± 0.60	2 (2-4)	.060†
	Commercial/other	3.00 ± 1.23	3 (1-5)	
Total score (VIQI total)	Specialist dentist	10.46 ± 2.15	10 (7-14)	.197‡
	Commercial/other	12.00 ± 3.28	12 (7-16)	
Parameters	Video Narrator	Mean ± SD	Median (Min-Max)	*P*
Information flow (VIQI 1)	Unspecified (n=5)	2.40 ± 1.14	2 (1-4)	.143†
	Specialist dentist (n=17)	3.12 ± 0.70	3 (2-4)	
Information accuracy (VIQI 2)	Unspecified	1.60 ± 0.89	1 (1-3)	**.019†**
	Specialist dentist	2.76 ± 0.75	3 (2-4)	
Quality (VIQI 3)	Unspecified	2.40 ± 0.89	3 (1-3)	.195†
	Specialist dentist	3.00 ± 0.71	3 (2-4)	
Precision (VIQI 4)	Unspecified	2.20 ± 0.45	2 (2-3)	.427†
	Specialist dentist	2.10 ± 1.06	2 (1-5)	
Total score (VIQI total)	Unspecified	8.80 ± 2.17	8 (7-12)	**.033†**
	Specialist dentist	11.76 ± 2.51	11 (8-16)	
Parameters	Target Audience	Mean ± SD	Median (min-max)	*P*
Information flow (VIQI 1)	Students (n=5)	3.20 ± 0.84	3 (2-4)	.473‡
	Dentists (n=17)	2.88 ± 0.86	3 (1-4)	
Information accuracy (VIQI 2)	Students	2.40 ± 0.89	3 (1-3)	.901†
	Dentists	2.53 ± 0.94	2 (1-4)	
Quality (VIQI 3)	Students	2.40 ± 0.89	3 (1-3)	.195†
	Dentists	3.00 ± 0.71	3 (2-4)	
Precision (VIQI 4)	Students	2.20 ± 0.45	2 (2-3)	.427†
	Dentists	2.65 ± 1.06	2 (1-5)	
Total score (VIQI total)	Students	10.20 ± 1.92	11 (7-12)	.580†
	Dentists	11.35 ± 2.89	10 (7-16)	

VIQI, Video Information and Quality Index.
†Mann–Whitney *U*-test.
‡ Independent samples *t*-test.
Bold font: $P < .05$.

study confirm that the majority of videos on $Ca(OH)_2$ application fall short of acceptable educational standards and are unlikely to benefit clinicians. This highlights the urgent need for higher-quality educational content in this critical area of dental practice.

Given the increasing use of digital media tools, particularly in health education, it has become essential to systematically question the quality and reliability of such content. Observational findings from the study reveal that, although YouTube is frequently used as an information source in clinical practice, the majority of its content fails to reach the standards of structured, evidence-based educational material. This is particularly concerning, as unregulated production and dissemination of content on digital platforms may

Table 6. Comparison of Total Usefulness Scores According to Video Source and Presenter

Video Source	Mean ± SD	Median (Min-Max)	*P*
Specialist dentist (n=13)	8.92 ± 4.82	7 (4-18)	.239‡
Commercial/other (n=9)	11.89 ± 6.66	12 (2-21)	
Video narrator	**Mean ± SD**	**Median (Min-Max)**	*P*
Unspecified (n=5)	6.40 ± 3.78	5 (2-12)	.096‡
Specialist dentist (n=17)	11.24 ± 5.77	12 (4-21)	
Target audience	**Mean ± SD**	**Median (Min-Max)**	*P*
Students (n=5)	8.20 ± 4.49	8 (2-13)	.400‡
Dentists (n=17)	10.71 ± 6.00	8 (4-21)	

‡Independent samples *t*-test.

contribute to misinformation and lead to incorrect clinical decisions.[10,23,24]

Digital platforms are widely used in education today because they provide fast and easy access to information. Open-access video sharing sites such as YouTube have become an important resource, especially for providing visual content that supports learning in health-related fields. However, there are significant concerns regarding the scientific validity and educational adequacy of the content on these platforms. The literature points out that YouTube can act as an uncontrolled source of information in health fields, posing serious risks particularly for students and inexperienced clinicians due to misleading content.[25]

This study was based on a systematic evaluation of contents on the YouTube platform. Although public platforms offer opportunities for health education, their content quality is subject to criticism.[10,26] Therefore, repetitive, commercial, purely visual or auditory, animated, or non-informative videos were excluded from the study. The selection process was conducted in accordance with protocols recommended in the literature.[24,27] The VIQI, a validated scale that evaluates information flow, accuracy, overall quality, and technical clarity of health-related videos, was used to assess video content.[28] It provides an objective scoring method for digital content quality in medical and dental fields. The application of a 5-point Likert scale in this study is consistent with previous research.[13,29] Additionally, videos were evaluated using 16 parameters derived from ADA and ESE guidelines. This approach allowed measurement of scientific accuracy and educational adequacy. Similar evaluation forms have been reported in the literature to be effective in analyzing digital content quality for health professionals and students.[25,30]

Engagement data such as views, likes, and comments were used to calculate view rate and interaction index. Although these metrics measure the video's impact on viewers, they do not always correlate positively with content quality.[24,31] Therefore, assessing both user engagement and scientific content provided a multidimensional analysis. Ratings were performed by 2 independent evaluators, and inter-rater agreement was measured by the κ coefficient. High κ values (0.81-0.84) indicated that the criteria used were reliable and consistent. This is a key method supporting methodological quality, especially in subjective evaluations.[32,33]

Among the analyzed videos, 59.09% were uploaded by specialist dentists, showing that content creation is actively performed by those with clinical experience. The majority of narrators (77.2%) were also specialist dentists, indicating that content was delivered by professional authorities. However, none of the videos stated that the narrator was a general dentist, and in 22.7% of cases, the narrator's identity was not disclosed. This may make it difficult for users to assess the content source. The literature also reports that the lack of clear disclosure of the narrator's professional identity negatively affects user trust and educational value.[28,30] Furthermore, target audience analysis showed that most videos (77.2%) were aimed at general dentists, only 5 videos targeted dental students, and none were specifically designed for specialists. Structuring educational materials according to the target audience is important.[25,34]

There was no statistically significant difference between video sources and duration, views, likes, or comments, supporting the idea that viewing data do not reflect quality. Similarly, no significant difference was found in interaction index or view rate according to narrator identity or video source. This indicates that popularity does not always align with scientific accuracy.[24,31] In addition, high inter-rater agreement (κ=0.81-0.84) demonstrated that the VIQI and content scoring system used were objective and reproducible. The significantly higher information accuracy (VIQI 2) and total VIQI scores in videos narrated by specialists support the contribution of expertise to content quality.[10,28]

The fact that none of the evaluated videos qualified as "high-quality content" demonstrates that, even in a critical area such as endodontics, the overall educational quality remains low. This finding underscores the unregulated nature of health-related content on online platforms and highlights that such materials are largely inadequate as substitutes for structured educational resources. Platforms like YouTube should be regarded as supplementary tools in fields requiring clinical and technical knowledge, rather than as primary educational sources. Content that lacks educational accuracy, alignment with the target audience, and support from scientific references may have misleading effects—particularly on students and newly graduated clinicians.[10,25,28]

Therefore, this study not only evaluates the quality of existing content but also emphasizes the necessity of supporting digital platforms with controlled and evidence-based educational materials. Although the role of digital media tools in health education is expanding, their use without systematic oversight carries the risk of compromising educational credibility. Consequently, it is critically important that future content production be guided by professional associations and academic institutions to enhance the quality of digital education.

To the best of the authors' knowledge, this is the first study to systematically evaluate the quality and educational value of YouTube videos related to the use of $Ca(OH)_2$ in endodontics. One of the major strengths of this study is the use of multiple analysis methods, including the VIQI index and a content checklist derived from international guidelines (ADA and ESE). Additionally, the combined assessment of quantitative metrics (view count, likes, and engagement index) and qualitative evaluation criteria provided a comprehensive and multidimensional analysis.

However, the study also has several limitations. First, due to the cross-sectional design, the findings reflect only the content available at the time of analysis, and content on dynamic platforms like YouTube is subject to frequent change, which may affect data validity over time. In this regard, the present findings should be viewed as a snapshot of the available YouTube content at the time of data collection and may not capture future changes in the platform's structure, ranking algorithms, or educational landscape. Second, the evaluation was limited to English-language videos, which may restrict the generalizability of the results to non-English content. Lastly, the study did not assess the impact of the videos on viewer comprehension or learning outcomes; future research involving user-based assessments would be necessary to address this aspect. Accordingly, educational effectiveness in the present study was inferred from content characteristics rather than directly measured. Based on the results of this study, a reasonable hypothesis for future work is that video materials developed under the supervision of professional associations or academic experts may achieve higher reliability and educational value, and this assumption merits testing through controlled experimental designs.

In summary, the use of $Ca(OH)_2$ in endodontics should be guided by evidence-based knowledge. Ensuring scientific accuracy in educational videos is essential for providing dentists and students with reliable learning resources. The videos evaluated in this study should be interpreted with caution and regarded as complementary rather than primary sources of clinical training. Universities, professional organizations, and experts may play an important role in producing clear, credible, and accessible materials supported by current evidence. Additionally, guiding users on how to critically evaluate online materials will enhance digital literacy and improve education. Increasing the availability of high-quality, expert-led, and science-based videos is important for advancing endodontic learning.

Data Availability Statement: The data that support the findings of this study are available on request from the corresponding author.

Artificial Intelligence Usage Statement: The authors declared that no artificial intelligence tool was used in the preparation of the manuscript.

Ethics Committee Approval: An ethics committee exemption letter was obtained from the İstanbul Health and Technology University Non-Interventional Studies Ethics Committee (No: E-28830459-020-27966, Date: October 1, 2025), confirming that ethical committee approval was not required for this study because only publicly available YouTube videos were evaluated.

Informed Consent: Informed consent was not required because the study did not involve human participants, personal data collection, or patient information.

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Author Contributions: Concept – N.S., S.F.; Design – N.S., S.F.; Supervision – S.F., B.Ş.Y.; Resources – N.S., S.F.; Materials – N.S., S.F.; Data Collection and/or Processing – N.S., B.Ş.Y.; Analysis and/or Interpretation – B.Ş.Y., N.S.; Literature Search – N.S. , S.F.; Writing – N.S.,S.F.; Critical Review – S.F., B.Ş.Y.

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