

EVALUATING THE QUALITY OF INSTAGRAM VIDEOS AS AN INFORMATION SOURCE ON IMMEDIATE DENTIN SEALING: A CROSS-SECTIONAL STUDY

Hemen Dentin Kapama Konusunda Bilgi Kaynağı Olarak Instagram Videolarının Kalitesinin Değerlendirilmesi: Kesitsel Bir Çalışma

Merve HABERAL¹  Mehmet Robin ALTINKILIÇ¹ 

¹ Department of Restorative Dentistry, Faculty of Dentistry, Kırıkkale University, KIRIKKALE, TÜRKİYE

ABSTRACT

Objective: This study aimed to evaluate the quality and reliability of Instagram videos related to immediate dentin sealing, a technique-sensitive procedure in adhesive dentistry. Two validated tools were used to determine whether these videos provide accurate and evidence-based information.

Material and Methods: A systematic search of Instagram was conducted on May 23, 2025, using the hashtags #immediatedentinsealing and #dentinsealing. Videos were screened based on predefined inclusion and exclusion criteria. Among 220 identified videos, 55 met the eligibility criteria. Each video was independently evaluated by two restorative dentistry experts using the Modified DISCERN and the Global Quality Scale scoring systems. Fleiss' kappa was used to assess inter-rater reliability, while Kruskal-Wallis and Spearman's correlation tests were employed to analyze group differences and associations among variables.

Results: Most of the videos (92.72%) were uploaded by dentists or healthcare professionals. Despite this, the mean Modified DISCERN and Global Quality Scale scores were 2.90±1.08 and 2.64±1.11, respectively, indicating low to moderate content quality. No statistically significant differences in quality scores were found among uploader categories ($p>0.05$). A very strong positive correlation was observed between Modified DISCERN and Global Quality Scale scores ($r=0.851$, $p<0.01$), showing consistency between tools.

Conclusion: Instagram is used to share immediate dentin sealing-related content. However, the number of relevant videos is limited, and their scientific accuracy and reliability are often insufficient. Stricter quality control and promotion of evidence-based communication are needed to enhance the educational value of such content.

Keywords: Dental restoration, immediate dentin sealing, health information systems, social media

ÖZ

Amaç: Bu çalışma, adeziv diş hekimliğinde teknik hassasiyeti yüksek bir prosedür olan hemen dentin kapama ile ilgili Instagram videolarının kalite ve güvenilirliğini değerlendirmeyi amaçlamıştır. Videoların ne ölçüde doğru ve kanıta dayalı bilgi sunduğunu belirlemek için iki geçerli değerlendirme aracı kullanılmıştır.

Gereç ve Yöntemler: 23 Mayıs 2025 tarihinde Instagram'da #immediatedentinsealing ve #dentinsealing etiketleri kullanılarak sistematik bir arama gerçekleştirilmiştir. Videolar, önceden belirlenmiş dâhil etme ve dışlama kriterlerine göre taranmıştır. Belirlenen 220 video arasından 55'i çalışma kriterlerini karşılamıştır. Her video, restoratif diş hekimliği alanında uzman iki kişi tarafından Modifiye DISCERN ve Global Kalite Ölçeği skorlama sistemleri kullanılarak bağımsız şekilde değerlendirilmiştir. Değerlendiriciler arası uyumu analiz etmek için Fleiss' kappa, grup farklarını ve değişkenler arası ilişkileri incelemek için ise Kruskal-Wallis ve Spearman korelasyon testleri kullanılmıştır.

Bulgular: Videoların büyük çoğunluğu (%92,72) diş hekimleri veya sağlık profesyonelleri tarafından paylaşılmıştır. Ancak buna rağmen, Modifiye DISCERN ve Global Kalite Ölçeği ortalama puanları sırasıyla 2,90±1,08 ve 2,64±1,11 olarak bulunmuş ve içerik kalitesinin düşük ila orta düzeyde olduğunu göstermiştir. Yükleyici grupları arasında istatistiksel olarak anlamlı bir fark gözlenmemiştir ($p>0,05$). Modifiye DISCERN ve Global Kalite Ölçeği skorları arasında çok güçlü pozitif bir korelasyon tespit edilmiştir ($r=0,851$, $p<0,01$), bu da her iki aracın uyumlu değerlendirme sağladığını göstermektedir.

Sonuç: Instagram, hemen dentin kapama ile ilgili içeriklerin paylaşımında kullanılan bir platformdur. Ancak, ilgili videoların sayısı sınırlı olup bilimsel doğruluk ve güvenilirlikleri çoğu zaman yetersizdir. Bu tür içeriklerin eğitsel değerini artırmak için daha sıkı kalite kontrol önlemleri ve kanıta dayalı iletişimin teşvik edilmesi gerekmektedir.

Anahtar Kelimeler: Diş restorasyonu, hemen dentin kapama, sağlık bilgi sistemleri, sosyal medya



Correspondence / Yazışma Adresi:

Department of Restorative Dentistry, Faculty of Dentistry, Kırıkkale University, KIRIKKALE, TÜRKİYE

Phone / Tel: +905366592335

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Dr. Merve HABERAL

Department of Restorative Dentistry, Faculty of Dentistry, Kırıkkale University, KIRIKKALE, TÜRKİYE

E-mail / E-posta: mervehaberal@hotmail.com

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INTRODUCTION

Restorative dentistry focuses on restoring the function, aesthetics, and longevity of teeth compromised by fracture, decay, or wear.^{1,2} A primary challenge in this field involves establishing durable bonds between restorative materials and tooth structure, particularly dentin.³ Immediate dentin sealing (IDS) has become an essential technique in contemporary adhesive dentistry, significantly improving bonding efficacy and long-term restoration outcomes.⁴ This procedure entails applying a bonding agent to freshly prepared dentin surfaces prior to final restoration placement, which reduces postoperative sensitivity, enhances bond strength, and improves restoration prognosis.⁵

The clinical importance of IDS stems from its capacity to regulate moisture and prevent microbial contamination during tooth preparation. These factors may otherwise compromise the bonding interface.⁶ IDS minimizes contamination risks, stabilizes the prepared surface, and maintains bond integrity.⁵ These benefits are particularly valuable in clinically challenging areas such as cervical margins and deep cavities, where moisture control and bacterial exclusion are most difficult to achieve.^{6,7}

By preventing collagen matrix degradation and obstructing fluid or bacterial penetration into dentinal tubules, IDS creates a stable adhesive interface.⁸ The technique not only decreases postoperative sensitivity but also improves bond stability, thereby contributing to more durable restoration outcomes. However, successful application demands careful attention to bonding agent selection, timing, and dentin preparation protocols. Suboptimal technique may compromise bond strength and overall procedural effectiveness.^{6,9} Consequently, obtaining precise, technique-specific information is paramount for achieving optimal clinical results.

Social media platforms including Instagram, Facebook, and YouTube have evolved into significant sources of dental information.¹⁰ Instagram serves as a particularly popular medium for practitioners to share clinical techniques, case presentations, and educational materials.¹¹ Nevertheless, concerns persist regarding the quality and reliability of healthcare information disseminated through these channels.¹² Oversimplified explanations or outright misinformation can misguide both dental professionals and patients, potentially leading to substandard treatment outcomes and unrealistic expectations.¹³

Although social media platforms are widely accessible, they often lack scientifically validated, evidence-based content. This is especially problematic for technique-sensitive procedures such as IDS. Many instructional videos and case demonstrations available online have not undergone peer review, raising concerns about their

accuracy and clinical validity.¹⁴ This study aims to critically evaluate the quality of IDS-related content shared through Instagram videos, specifically assessing its accuracy, evidence base, and clinical relevance for dental practitioners and patients. As social media continues to grow as a primary health information resource, ensuring the dissemination of reliable, scientifically sound knowledge about IDS remains crucial for all members of the dental community.

MATERIALS AND METHODS

On May 23, 2025, between 20:00 and 22:00, Instagram was systematically searched using the hashtags #immediatedentinsealing and #dentinsealing to retrieve relevant video content. Prior to the search, browsing history was cleared to prevent algorithmic bias. Videos under the specified hashtags were scanned, and all videos matching the topic were initially recorded. Videos were excluded if they were unrelated to IDS, duplicated, lacked audio, were in a language other than English or Turkish, or failed to include content relevant to the IDS procedure. The remaining videos were screened for inclusion based on whether they provided information or demonstrations related to IDS, including clinical applications, procedural steps, or materials used. Data collected for each video included the number of views, likes, comments, duration, upload date, and the viewing rate, calculated as: $(\text{Number of Views/Days Since Upload}) \times 100$. The uploaders of the videos were also evaluated based on follower count, following count, total number of posts, and frequency of video sharing. For analytical purposes, the origin of each video was categorized into the following groups: (1) dentists and healthcare professionals, (2) health-related businesses, (3) institutions including hospitals, universities, and clinics, (4) others.

The quality of the videos was evaluated using the Global Quality Scale (GQS) and the modified DISCERN scoring systems. The DISCERN tool is designed to assess health information related to treatment options. The modified version consists of five questions, with each positive answer scored as 1 point, resulting in a total score ranging from 0 to 5 (Table 1).¹⁵ The GQS evaluates the content quality, accuracy, and usefulness of the videos on a scale from 1 to 5 (Table 2).¹⁶

Table 1: Modified DISCERN scoring system

Item	Questions (1 point for every Yes, 0 point for every No)
1.	Are the aims clear and achieved?
2.	Are reliable sources of information used?
3.	Are additional sources of information listed for patient reference?
4.	Are areas of uncertainty mentioned?
5.	Is the information presented balanced and unbiased?

Table 2: Global Quality Scale (GQS) scoring system

Score	Description
1	Poor quality, poor flow of the site, most information missing, not at all useful for patients
2	Generally poor quality and poor flow, some information listed but many important topics missing, of very limited use to patients
3	Moderate quality, suboptimal flow, some important information is adequately discussed but others poorly discussed, somewhat useful for patients
4	Good quality and generally good flow, but some topics not covered, useful for patients
5	Excellent quality and excellent flow, very useful for patients

The assessment process was independently conducted by two researchers (M.H. and M.R.A.), both experts in restorative dentistry. In cases of discrepancy regarding video classification or scoring, disagreements were resolved by referring to the relevant literature and reaching consensus through discussion.

Statistical Analysis

In this study, statistical analyses were conducted to assess both reliability and significance. Fleiss' kappa was used to evaluate inter-rater reliability. The normality of the variables was tested using the Shapiro-Wilk test. As most variables did not follow a normal distribution, the Kruskal-Wallis test was employed to compare groups, and Spearman's rho was used to analyze correlations between quantitative parameters. A significant level of $p < 0.05$ was considered statistically significant for all tests.

RESULTS

A total of 210 videos were retrieved using the hashtag #immediatedentinesealing, and 12 videos were found using the hashtag #dentinesealing. Since 2 of these videos included both hashtags, the final number of unique videos recorded was 220. After excluding the videos that did not meet the inclusion criteria, 55 videos were included in the final analysis.

Figure 1 presents the average values for video duration, number of likes, comments, reposts, views, viewing rates, and the number of days since upload.

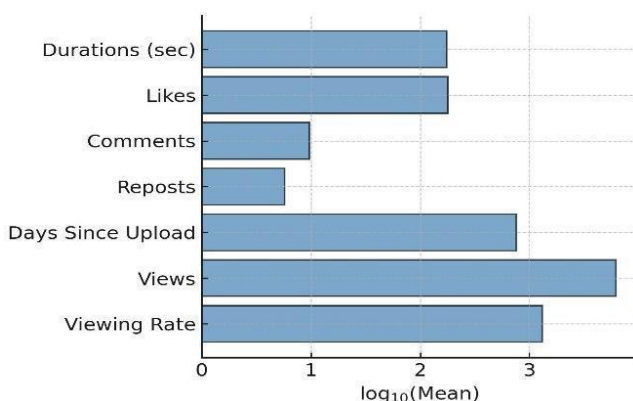


Figure 1: Profiles of Instagram videos content

Among the uploaders that shared the videos, dentists and healthcare professionals constituted the largest group, representing 92.72% (n=51) of the total. They were followed by hospitals/universities/clinics with 3.63% (n=2), health-related businesses with 1.81% (n=1), and others also with 1.81% (n=1).

The number of accounts followed by these uploaders, their follower counts, the number of videos they shared, and the corresponding mean values are presented in Figure 2.

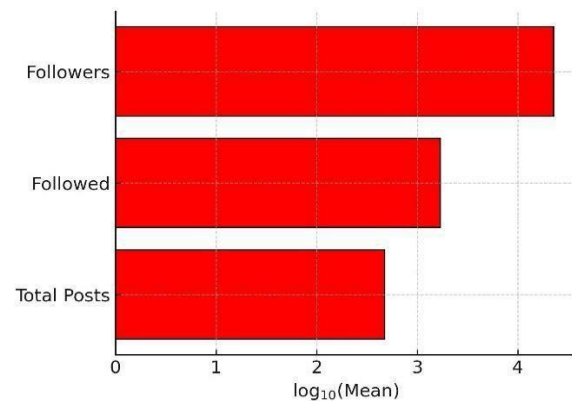


Figure 2: The uploaders' account information

Discrepancies between the two independent evaluators in the classification and scoring of the videos, as assessed using two distinct evaluation instruments, were resolved through iterative review and consensus. The inter-rater reliability analysis indicated a strong level of agreement between the raters ($p < 0.05$).

The Modified DISCERN and GQS scores by source of upload are presented in Table 3. No statistically significant differences were observed in either the Modified DISCERN or GQS scores among dentists/health professionals, hospitals/universities/clinics, health-related businesses, and other groups ($p > 0.05$).

As shown in Table 4, a very strong positive correlation was identified between Modified DISCERN-GQS scores, as well as between likes-views. Additionally, a strong positive correlation was observed between likes-comments, followers-likes and followers-views. In contrast, weak positive correlations were found between video duration-likes, duration-comments, duration-views, viewing rate-likes, viewing rate-reposts, and views-number of days since upload. Furthermore, weak negative correlations were observed between reposts-duration, reposts-days since upload, and days since upload-viewing rate. Moderate correlations were observed between views-viewing rate, views-comments, days since upload-comments, days since upload-likes, days since upload-video duration, days since upload-followers, followers-duration and followers-comments.

Table 3: Modified DISCERN and GQS scores categorized by type of uploaders

	Modified DISCERN	GQS
Dentists/ healthcare professionals (n=51)	2.90±1.08	2.64±1.11
Hospitals/universities/clinics (n=2)	2±0	2±0
Health-related businesses (n=1)	4±NA	3±NA
Others (n=1)	1±NA	1±NA

GQS: Global quality scale

*NA: Not applicable (Standard deviation and range are not applicable for n=1)

Table 4: The degree of association among video-related variables

	Duration(s)	Likes	Comments	Reposts	Day since upload	Views	Viewing Rate	Modified DISCERN	GQS	Followers
Duration(s)		r=0.344 p=0.010	r=0.435 p=0.001	r=-0.342 p=0.011	r=0.482 p<0.01	r=0.309 p=0.022	NS	NS	NS	r=0.459 p<0.01
Likes	r=0.344 p=0.010		r=0.728 p<0.01	NS	r=0.496 p<0.01	r=0.902 p<0.01	r=0.392 p=0.003	NS	NS	r=0.755 p<0.01
Comments	r=0.435 p=0.001	r=0.728 p<0.01		NS	r=0.540 p<0.01	r=0.552 p<0.01	NS	NS	NS	r=0.565 p<0.01
Reposts	r=-0.342 p=0.011	NS	NS		r=-0.267 p=0.049	NS	r=0.278 p=0.040	NS	NS	NS
Day since upload	r=0.482 p<0.01	r=0.496 p<0.01	r=0.540 p<0.01	r=-0.267 p=0.049		r=0.437 p<0.01	r=-0.396 p=0.003	NS	NS	r=0.569 p<0.01
Views	r=0.309 p=0.022	r=0.902 p<0.01	r=0.552 p<0.01	NS	r=0.437 p<0.01		r=0.534 p<0.01	NS	NS	r=0.787 p<0.01
Viewing Rate	NS	r=0.392 p=0.003	NS	r=0.278 p=0.040	r=-0.396 p=0.003	r=0.534 p<0.01		NS	NS	NS
Modified DISCERN	NS	NS	NS	NS	NS	NS	NS		r=0.851 p<0.01	NS
GQS	NS	NS	NS	NS	NS	NS	NS	r=0.851 p<0.01		NS
Followers	r=0.459 p<0.01	r=0.755 p<0.01	r=0.565 p<0.01	NS	r=0.569 p<0.01	r=0.787 p<0.01	NS	NS	NS	

GQS: Global quality scale

* r: Spearman's correlation coefficient; NS: Result not statistically significant

DISCUSSION

Social media platforms have evolved into influential tools for global information exchange, transcending their original purpose as personal communication channels. Notably, the World Health Organization has leveraged Instagram during public health emergencies, demonstrating the platform's substantial impact on public awareness.¹⁷ The visual appeal and concise format of short videos enhance their effectiveness in rapidly disseminating health-related messages.¹⁸ Within specialized fields such as restorative dentistry, users frequently share procedural demonstrations, clinical insights, and personal experiences. However, the lack of professional oversight and scientific validation raises significant concerns regarding the reliability and accuracy of such user-generated content.

IDS is a contemporary dental technique that involves applying a bonding agent to freshly prepared dentin surfaces before impression-taking for indirect restorations. This method has gained growing clinical interest due to its potential to improve restoration outcomes, reduce postoperative sensitivity, and enhance patient comfort. However, its technique-sensitive application and clinical effectiveness, particularly in relation to postoperative hypersensitivity and long-term durability, remain under active investigation.⁶

Recent systematic analyses of dental-related content on social media have primarily focused on YouTube, often examining educational materials intended for dental education and patient information purposes.^{16,19-21} However, to date, no study has evaluated the representation of IDS, a technically complex procedure, on social media. This study presents the first comprehensive evaluation of IDS-related video content on Instagram.

The findings indicate that the IDS-related content shared on the platform is limited in number and that a significant portion lacks scientific validity and professional review. Considering the clinical significance of IDS, the availability of accurate, evidence-based information on digital platforms is essential. This study fills a notable gap in the literature and underscores the importance of raising awareness among dental professionals and educators regarding the credibility of online health information.

This study evaluated the quality and characteristics of Instagram videos related to IDS using the Modified DISCERN tool and the GQS. A total of 220 videos were initially identified, of which only 55 met the inclusion criteria. This finding suggests that a substantial proportion of the content on the platform is not suitable for either patient education or professional guidance. Moreover, this result aligns with previous studies that have assessed dental-related content on Instagram.^{14,22}

In this study, the majority of the recorded videos were shared by dentists and healthcare professionals. Similar findings have been reported in several studies in the literature.^{14,23} However, there are also studies with contrasting results. For instance, in a study examining orthognathic surgery-related content on Instagram, most of the posts were shared by patients documenting their personal experiences.²⁴ As a result, the content largely consisted of subjective information not based on professional expertise. This may contribute to the spread of misinformation that lacks scientific accuracy. In contrast, the higher proportion of professional contributions in this study may be attributed to the nature of IDS, which constitutes a technical step in the restorative procedure and requires both theoretical and practical knowledge, rather than being based on patient experience.

Although the majority of the videos analyzed in this study were shared by dentists and healthcare professionals, the low scores obtained from the modified DISCERN and GQS assessments are noteworthy. This suggests that professional credentials alone are not sufficient indicators of the quality of health-related information. Similar findings have been reported in previous research. For instance, Singh et al. observed that most dentistry-related YouTube videos uploaded by professionals still scored poorly on the DISCERN scale, indicating suboptimal content quality.²⁵ Similarly, Marwah et al. analyzed YouTube videos shared during the early phase of the COVID-19 pandemic and found that numerous videos, including those uploaded by healthcare professionals, did not meet acceptable standards based on GQS, DISCERN, and JAMA criteria.²⁶ These findings indicate that despite the presence of medical expertise, content frequently fails to meet essential criteria such as scientific accuracy, clarity, and neutrality. Therefore, it becomes clear that health information shared on open-access platforms must be not only expertise-driven but also evidence-based, pedagogically sound, and subject to quality control.

Recent studies have drawn more attention to the connection between video duration and the quality of health-related content on digital platforms. While short-form formats such as Instagram Reels and YouTube Shorts are becoming more popular, some research suggests that these formats reduce the depth and accuracy of medical communication. For instance, Thang et al. found that many acne treatment videos on TikTok, Instagram, and YouTube lacked essential clinical information and received low DISCERN and GQS scores.²⁷ This suggests a possible compromise between brevity and content quality. In another study, Zhu et al. noted that short videos are effective at attracting attention, but they often focus on persuasive

elements rather than delivering evidence-based health information.²⁸ As a result, their informational integrity may be weakened. Vitale et al. also examined videos on YouTube, Instagram, and TikTok and reported a positive relationship between video length and both reliability and comprehensiveness.²⁹ Their findings showed that longer videos tend to offer more educational value. In this study, the low reliability scores of most Instagram videos support the idea that time limits on the platform can make it difficult to present complex topics such as diagnostic steps, treatment methods, or long-term outcomes. These short videos often highlight only the most visually appealing moments and leave out important context and explanations.

Social media platforms like Instagram play an increasingly complex role in oral health communication, extending beyond information sharing to influence health literacy and consumer perception. Ghalavand et al. highlighted both the potential and limitations of these platforms, noting that while they improve access to information, they also facilitate information overload, fear-based messaging, and insufficient content quality.³⁰ A key factor driving this imbalance is the platform algorithms, which prioritize high-engagement, visually appealing content over evidence-based information. Similarly, Al-Khalifa et al. found that Instagram content tagged with toothpaste-related hashtags influenced consumer behavior more through branding and aesthetics than through accurate health messaging.³¹ These findings suggest that algorithmic visibility shapes public exposure to oral health content more than professional credibility does. Consistent with these patterns, our study showed that although most videos were uploaded by healthcare professionals, modified DISCERN and GQS scores were low, emphasizing that content visibility and engagement metrics often outweigh quality and reliability in the digital information environment.

One considerable drawback of digital media platforms is the absence of established systems for verifying the validity and trustworthiness of health-related video content, as such materials often bypass expert evaluation and standardized oversight. The current study revealed notable positive relationships among several interaction metrics, including likes-comments, likes-views, followers-viewing rates, and followers-likes. These observations suggest that dental practitioners and clinics may increasingly utilize social media as a means of showcasing clinical practices to enhance visibility and patient engagement, rather than focusing on sharing in-depth educational information regarding diagnostic causes, therapeutic procedures, or long-term outcomes. In this study, a very strong positive correlation was observed between Modified DISCERN and GQS scores,

indicating that these two tools generally provide consistent evaluations of video quality and reliability. This result aligns with several previous studies conducted within the field of dentistry. For instance, Aragão et al. evaluated Portuguese-language YouTube videos on dental trauma and reported a statistically significant positive correlation between DISCERN and GQS scores, suggesting a shared sensitivity to content reliability and overall educational value.³² Similarly, Başkan and Başkan found that dental trauma videos with low DISCERN scores also tended to score poorly on GQS and JAMA criteria, reinforcing the view that low-quality content is consistently detected across different evaluation frameworks.³³ Additionally, Bozkurt and Özdemir, in their analysis of videos on guided tissue regeneration, observed that GQS, DISCERN, and usefulness scores were closely aligned, particularly in content uploaded by verified professionals.³⁴ These findings are consistent with the results of our study, in which higher Modified DISCERN scores strongly paralleled higher GQS ratings. Taken together, these studies suggest that while each scale assesses slightly different dimensions of content quality, their concurrent use provides a more reliable and holistic appraisal of online dental health information.

Like many social media-based investigations, this study has certain limitations. One notable constraint is the dynamic nature of content retrieved via hashtag searches on Instagram, which may vary depending on the timing of the search. Such temporal fluctuations can introduce potential bias and limit reproducibility. Posts from users who did not use hashtags or who used less common tags may have been excluded from the analysis, potentially leading to an incomplete representation of available content. Additionally, personalization algorithms based on the user's device history and cached data may influence the visibility and ranking of search results, thereby affecting the objectivity and consistency of the collected data. These factors should be considered when interpreting the findings, as they may impact the generalizability.

In conclusion, Instagram is a widely used platform for sharing clinical information and experiences related to procedures such as IDS. However, limitations such as restricted video duration, lack of quality control mechanisms, difficulties in clearly defining the target audience, and the absence of standardized content guidelines may hinder effective knowledge dissemination, especially for procedures requiring detailed explanation and clinical accuracy.

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