ORIGINAL RESEARCH   ORİJİNAL ARAŞTIRMA

Content and Quality Evaluation of Turkish Videos Uploaded on YouTube About Post and Core Systems: A Cross-Sectional Analysis

Post ve Kor Sistemler Hakkında YouTube'a Yüklenen Türkçe Videoların İçerik ve Kalite Değerlendirmesi: Kesitsel Bir Analiz

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ABSTRACT Objective: To evaluate what Turkish videos offer to patients, practitioners, and the public and to investigate the validity, reliability, accuracy, quality, and information content about posts on YouTube. **Material and Methods:** The terms "post kor yapımı" (post core preparation), "fiber post kor" (fiber post-core), "prefabrike post" (prefabricated post), and "döküm post" (cast post) were searched in Turkish on YouTube. The first 100 videos related to each search term were selected, and 400 videos were collected. The videos' descriptive features, ownerships, forms, and purposes were recorded. The interaction index and viewing rate were calculated for the viewer's interaction. The Global Quality Score (GQS) and Video Information and Quality Index (VIQI) were used to measure the quality, fluency, usefulness, information accuracy, and flow of the videos. Statistical analyses were performed at a 5% significance level. **Results:** Eighteen YouTube videos were screened for evaluation. In 15 of them, the video narrator was a dentist, and the patient narrated the experience in two videos. It was observed that the videos were mostly to inform patients, and the information sharing for dentists was low and insufficient content. Among the determined parameters, the definition of post was the most mentioned item (94.4%), and the frequency of mention of other parameters was very low. Additionally, GQS and VIQI values were also found to be low. **Conclusion:** Dentists should be encouraged to share more theoretically and practically satisfactory videos. Dental academic institutions and organizations must focus on this issue and have more professional videos.

Keywords: Content analysis; educational content;
               patient information; video analysis; YouTube

ÖZET Amaç: Bu araştırmanın amacı, Türkçe videoların hastalara, pratisyenlere ve topluma neler sunduğunu değerlendirmek ve YouTube'daki gönderilerin geçerliliğini, güvenirliğini, doğruluğunu, kalitesini ve bilgi içeriğini araştırmaktır. **Gereç ve Yöntemler:** YouTube'da "post kor yapımı", "fiber post kor", "prefabrike post" ve "döküm post" terimleri Türkçe olarak arandı. Her arama terimine ilişkin ilk 100 video seçilerek 400 video toplandı. Videoların tanımlayıcı özellikleri, video kanalları sahipliği, videoların biçimleri ve amaçları kaydedildi. İzleyicinin etkileşimi değerlendirmek için etkileşim indeksi ve izleme oranı hesaplandı. Videoların kalitesi, akıcılığı, kullanışlılığı, bilgi doğruluğu ve akışı için Global Kalite Puanı [Global Quality Score (GQS)] ve Video Bilgi ve Kalite İndeksi [Video Information and Quality Index (VIQI)] kullanıldı. İstatistiksel analizler %5 anlamlılık seviyesinde yapıldı. **Bulgular:** Dâhil etme kriterleri sonrası 18 YouTube videosu değerlendirme için tarandı. Bunlardan 15'inde video anlatıcısı diş hekimiydi ve 2 videoda ise hasta deneyimini anlattı. Videoların çoğunlukla hastaları bilgilendirme amaçlı olduğu, diş hekimlerine yönelik bilgi paylaşımının ise çok az ve içerik olarak yetersiz olduğu görüldü. Belirlenen parametreler arasında en çok bahsedilen madde (%94,4) "post tanımı" olurken, diğer parametrelerin bahsedilme sıklığı oldukça düşüktü. Ayrıca GQS ve VIQI değerlerinin de düşük olduğu görüldü. **Sonuç:** Diş hekimlerinin teorik ve pratik açıdan tatmin edici daha fazla video paylaşmaları teşvik edilmelidir. Diş hekimliği akademik kurum ve kuruluşlarının bu konuya odaklanması ve daha profesyonel videolara sahip olması gerekmektedir.

Anahtar Kelimeler: İçerik analizi; eğitim içeriği;
                       hasta bilgisi; video analizi; YouTube

The structural integrity of endodontically treated teeth is often impaired due to extensive caries, previous restorative procedures, trauma, and access cavities.[1] The complications this structural weakness can create have long been a concern in dentistry.[1,4] Biomechanical factors such as decreased water content, collagen alteration, effects of irrigants, overaggressive endodontic procedures during canal preparation, filling techniques such as lateral compaction, which can create microcracks due to unbalanced forces, and loss of proprioception also negatively affect the viscoelastic properties of dentin in the pulpless teeth.[2] Restorative failures, irretrievable tubercle and crown fractures, and vertical root fractures are the main factors that contribute to failure after endodontic treatment.[2] The indication of restoration in root canal-treated teeth to compensate for lost dental tissues and restore functional properties has been one of the controversial issues of restorative dentistry for many years.[3] Studies and developments continue post-endodontic reconstruction to increase biomechanical performance and ensure long-term success.[2] Although minimally invasive therapeutic techniques are popular practices to implement this philosophy because they preserve the remaining tooth tissue, posts are still necessary in many cases.[3] The primary purpose of intracanal posts is to provide anchorage to the coronal restoration in teeth with insufficient dentin support due to the loss of substantial hard tissue.[1] Factors such as the presence of ferrules, the number of residual walls, residual tooth volume, depth of proximal margins, and occlusal details are effective in rehabilitating the tooth.[4] Diagnosing the post-placement and deciding the appropriate post-system for clinical behavior is difficult for most clinicians and is a highly subjective topic.[2,4]

Post systems are divided into types according to their manufacturing technique, retention type, whether they are conical or cylindrical, and material type.[5,6] According to manufacturing methods, they are classified into prefabricated, cast, indirect, and direct techniques. Metallic, non-metallic and high-performance polymer polyetherketoneketone posts are systems according to their material types.[5] In recent decades, rapid developments in adhesive dentistry have led to changes and innovations in post-core concepts, and evolution has been observed from macro-mechanical retained systems to more adhesive-retained ones.[1] With the change from metallic posts to fiber and ceramic posts with tooth-colored non-metallic post systems, both aesthetically pleasing results have been achieved, and mechanical and physical properties have been increased.[7] Protecting dentin by avoiding excessive post-space preparation is one of the basic principles; it is also necessary to ensure a suitable adaptation to the prepared post-space.[6] The need to customize posts to achieve adaptation, especially in irregularly shaped, oval, or flattened canals, challenges clinicians.[8] Viewing videos shared on the internet is an educational option to follow current concepts regarding different adhesive systems, cementation protocols, types of cement, complications, and solutions in clinical practice.

Online resources are frequently used platforms for patients to access medical information and are attractive and helpful in providing information about individuals' health.[9] The internet is also a medium where professional and layperson individuals share their experiences and knowledge.[9] Video streaming websites provide more engaging visual content than other social media channels and are more easily accessible communication networks.[10] Among video streaming websites, YouTube™ is the most popular and visited after Google. YouTube subscribers can also upload videos.[11] It is easy and convenient to view videos unregistered and can be accessed with smart technologies, which has increased its popularity.[12] On this platform, doctors upload videos to inform their patients, patients to share their experiences, and commercial companies to advertise.[13] Patients are willing to be informed about treatment contents. Presenting dental procedures with high-quality videos, illustrations, simulations, images, or real procedures makes them more understandable.[9] Although not established for this purpose, it has become an educational tool.[10] Especially during the coronavirus disease-2019 epidemic, there has been an increase in the use of online education methods, online courses, didactic courses, visual curricula, lectures, webinars, hands-on workshops, and communications learning tools. Although these videos have educational aspects, they have

some drawbacks.[9] Since there is no need for formal identification and no rigid regulations, anyone can share content under education and science.[12] The information cannot be peer-reviewed, and the quality assessment of the information is not carried out.[10] Since it is not possible to verify the accuracy of the information, there is a high potential for it to contain inaccurate, deceptive, and incorrect information.[14] Analyses have been performed on different disciplines and topics to evaluate YouTube videos in dentistry, such as patient-perspective root canal treatment, teeth whitening, instrument separation in root canal treatment, periradicular surgery, pulpotomy and pulp capping, porcelain laminate veneers, traumatic dental injuries, regenerative endodontics, endodontic access cavity preparation, root canal preparation, and avulsions. Although there were high-quality ones in these studies, most of the uploads were incomplete, outdated, or not completely reliable, and it was emphasized that they were not a sufficient source for obtaining information.[9-12,14-22] However, it is predicted that the internet and technology will be the primary sources of information in the following years, and therefore, access to quality videos is important.[11,16,20]

This study aims to evaluate what videos offer to patients, dental professionals, and the public and to investigate the validity, reliability, quality, and information content of posts and cores on YouTube in Turkish. From the patient's perspective, it aimed to determine which issues were missing to increase the content levels of the information and videos that could positively or negatively change patients' treatment preferences. In terms of dental professionals, it was aimed to identify current evidence-based approaches for viewers to complete their missing information. The null hypothesis is that YouTube videos are inadequate in content and quality and contain incomplete information.

MATERIAL AND METHODS

A new account was created before the study. Computer history and cookies were deleted from the browser (Google Chrome), and the query was made using a cleared cache and an incognito window.

Terms related to posts were searched on the YouTube website (http://www.youtube.com) on February 2, 2024 by a single researcher (endodontist, HA). The literature was examined in detail for the necessary keywords, which were determined in Turkish. Default features were used in the "relevance" filter. No specific period was specified, and video duration was not restricted. Ethics committee approval was not obtained because the review was conducted on publicly available data. The research was conducted following the principles of the Declaration of Helsinki.

In the search query, the terms "post kor yapımı" (post core preparation), "fiber post kor" (fiber post-core), "prefabrike post" (prefabricated post) and "döküm post" (cast post) were searched in Turkish. The first 100 videos related to each search term were selected, and 400 videos were collected. Exclusion criteria were non-Turkish, irrelevant to the topic, poor audio and video quality, missing general video information, duplicate videos, and videos without explanations and subtitles. To avoid losing the data of the 400 videos obtained, the videos' uniform resource locators were recorded. Afterward, the videos were examined for compliance with the inclusion criteria (Figure 1).

We recorded descriptive features of each video, such as duration (in minutes), number of views, number of likes, days since upload, number of comments, and comment contents. Dislike numbers could not be determined because YouTube has discontinued this feature. The viewer's interaction was estimated using the interaction index and viewing rate. With these two indexes, users' interaction was evaluated. Unlike studies that used the number of dislikes for the interaction index, the number of likes was divided by the total number of views and multiplied by 100.[9,23] For view rate, the views were separated by the days since uploads and multiplied by 100.[15,20]

Video ownerships were categorized as follows: a) dental practitioner (dentist/specialist), b) clinic/university/hospital, c) layperson, and d) others (TV channel, dental assistant, unclear source, manufacturing company). The video form was grouped as a) real procedure, b) clinical explanation, c) animation, d) preclinical education, and e) real procedure+clinical explanation. For the purpose of the video, the
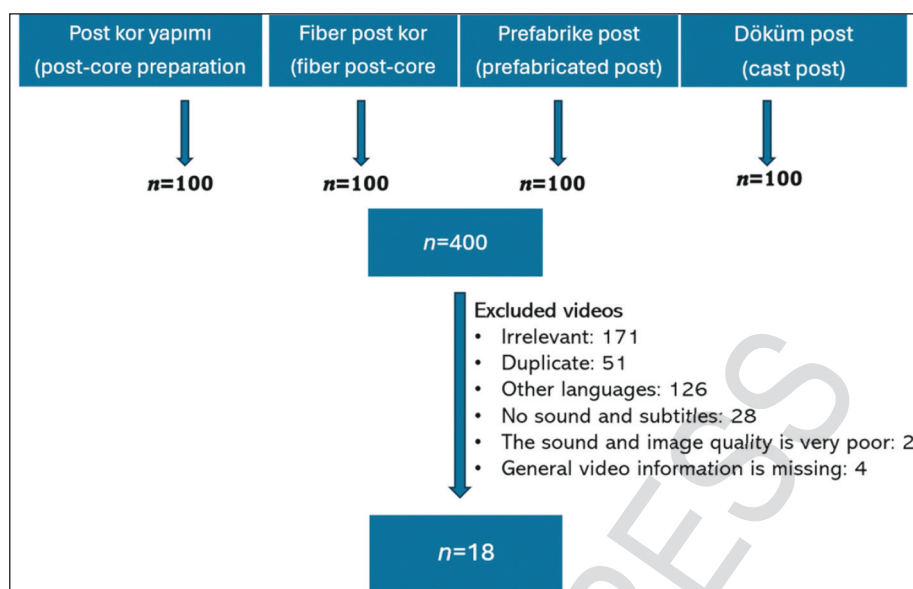
FIGURE 1: PRISMA flow diagram schematizing the video selection process.

subgroups were a) information for professionals, b) information for patients, and c) preclinical education or information for dental assistants.

To examine the content quality of the videos according to evidence-based information, the parameters in Table 1 were examined. For each parameter, a score of 1 was given if it was included in the video content and a score of 0 if it was not included. After each topic was scored, the total score constituted the content usefulness score of the video. Videos with a total score of 0-3 were categorized as low content, those with 4-7 points as medium content, and those above 8-10 points as high content videos.[12]

The 5-point Global Quality Score (GQS) index was used to evaluate the videos' quality, fluency, and usefulness for patients or dental professionals (Figure 2).[10,14] This index evaluates the educational content of videos in general. A maximum score of 5 indicates excellent academic quality and reliability.

In addition, the Video Information and Quality Index (VIQI) was used to evaluate the video's information accuracy, flow, and quality cumulatively (Figure 2). In this index, scores were assigned to four items on a 5-point Likert scale, and the total score was calculated.

TABLE 1: Parameters used in evaluating video information content and the number and percentage of mentions of these parameters in the videos.			
Content information items	Yes	No	%
1. Post definition	17	1	94.4
2. Post placement, indications, contraindications, advantages	7	11	38.9
3. Risks, complications	3	15	16.7
4. Post types and post-selection criteria	7	11	38.9
5. Tooth group, placement method, treatment time, post preparation, post length and diameter	3	15	16.7
6. Remaining tooth tissue, presence of ferrule	2	16	11.1
7. Post placement steps, luting cement types	4	14	22.2
8. Core materials, final restoration	5	13	27.8
9. Prognosis, survival	0	18	0
10. Cost	1	17	5.6

FIGURE 2: Definitions of GQS and VIQI.
GQS: Global Quality Score; VIQI: Video Information and Quality Index.

Two calibrated observers evaluated and scored the videos' GQS and VIQI indices separately. In case of disagreement between reviewers, an extensive discussion was held until a consensus was reached.

STATISTICAL ANALYSIS

Data were entered into a package program (SPSS version 27, SPSS Inc., Chicago, IL, USA), and analyses were performed at a 5% significance level. Shapiro-Wilk test was used to determine the normality distribution of quantitative variables. Descriptive statistics of the parameters were shown as mean, median, standard deviation, minimum, and maximum. Kruskal-Wallis and Mann-Whitney U tests were used to analyze the differences between groups in numerical variables. Agreement between observers was found by using an intraclass correlation coefficient analysis.

RESULTS

Following the exclusion criteria, 18 YouTube videos were screened for evaluation (Figure 1). Table 2 presents the videos' number of views, duration, number of likes, number of comments, interaction index, viewing rate mean, standard deviation, median, minimum, and maximum values.

When the video narrator was examined, 15 of the 18 videos were dentists (83.3%, eight people were general dentists, four people were prosthodontists, two people were endodontists, and one person was an undergraduate student), two were patients (11.1%), and one was a dental assistant (5.6%). As for the channel ownership of the videos, it was found that seven of them were dentists (38.9%), 7 of them were clinic/hospital/university/professional organi-

	X̄	SD	Median	Minimum	Maximum
Number of views	7927.11	13719.04	2652	17	58110
Number of likes	131.33	396.02	13.5	0	1700
Duration	8.69	12.46	3.03	0.35	43.87
Number of comments	25.78	71.54	0	0	303
Interaction index	1.33	1.74	0.77	0	7.41
Viewing rate	2742.82	3617.4	1067.05	4.45	13153.93

TABLE 2: Mean, standard deviation, median, minimum, and maximum values of descriptive features of the videos.

SD: Standard deviation.

zations (38.9%), two of them were laypersons (11.1%), and two people (11.1%) were in the others.

It was observed that the video's purpose was mostly to inform the patients (n=13, 72.2%). Only two of them provided information for clinicians (11.1%). Two videos were for preclinical training (11.1%), and one video (5.6%) was for informational purposes for dental assistants. In video form, 10 videos contained clinical explanation (55.6%), 3 videos contained clinical explanation + real procedure (16.7%), two contained preclinical education (11.1%), one contained assistant training (5.6%), and two contained patients' experiences (%11.1) was determined.

Parameters used in evaluating video information content and the number and percentage of mentions of these parameters in the videos are tabulated in Table 1. Among the determined parameters, "the definition of post" was the most mentioned item (94.4%). The frequency of mention of other parameters was very low. Prognosis/survival was not mentioned in any video, and cost was mentioned in only one video. The overall mean of the determined parameters was only 2.72, and the median was 2. None

of the videos had a high level of information content, and only three had a medium level (14.7%). Fifteen videos had low-level content (83.3%).

Table 3 shows the descriptive values of the interaction index, which uses the number of likes and the total number of views together, according to video narrator, ownership, dentist specialist, and video content quality. Among the analyzed variables, only the video content quality interaction index had a statistical difference (p=0.028). Medium-quality content videos receive more interaction than low-quality content videos.

Table 4 summarizes the distribution of viewing rate, which evaluates the number of views based on uploading time, according to groups. The viewing rate did not change in the video narrator, ownership, dentist specialist, and video content quality subgroups (p>0.05).

Table 5 presents the mean, median, standard deviation, minimum, and maximum values of the videos' GQS results. The median value of GSQ was as low as 2, and the videos contributed little to the audience. There was no statistical difference accord-

TABLE 3: Interaction index values according to video narrator, ownership, doctor expertise, and video content quality.						
	Interaction index					
	$\bar{X}$	**Median**	**SD**	**Minimum**	**Maximum**	
Total (n=18)	1.33	0.77	1.74	0	7.41	
	$\bar{X}$	**Rank**	**SD**	**Minimum**	**Maximum**	**p value**
Video narrator						
Patient (n=2)	0.49	7.5	0.02	0.47	0.50	0.51
Dentist/specialist (n=15)	1.41	9.4	9.4	1.88	0	
Dental assistant (n=1)	1.92	15	-	-	-	
Ownership/sources						
Dentist/specialist (n=7)	2.27	11.64	2.51	0	7.41	0.51
Clinic/hospital/university (n=7)	0.68	7.64	0.58	0	1.56	
Layperson (n=2)	0.49	7.5	0.02	0.47	0.50	
Other (n=2)	1.19	10.5	1.04	0.45	1.92	
Dentist specialist						
General (n=8)	1.96	9.19	2.37	0	7.41	0.24
Prosthodontists (n=4)	0.70	6.63	0.75	0	1.75	
Endodontist (n=2)	0.12	3.5	0.01	0.1	0.15	
Undergraduate student (n=1)	2.38	13	-	-	-	
Video content quality						
Low-quality content (n=15)	1.13	8.27	1.83	0	7.41	0.028*
Medium-quality content (n=3)	2.35	15.67	0.59	1.75	2.98	

*It shows a statistically significant difference; SD: Standard deviation.

TABLE 4: Viewing rate values according to video narrator, ownership, doctor expertise, and video content quality.						
			Viewing rate			
	X̄	Median	SD	Minimum	Maximum	
Total (n=18)	2742.82	1067.05	3617.4	4.45	13153.93	
	X̄	Rank	SD	Minimum	Maximum	p value
Video narrator						
Patient (n=2)	4530.16	14	692.14	4040.74	5019.58	0.28
Dentist/specialist (n=15)	2401.28	8.6	3886.23	4.45	13153.93	
Dental assistant (n=1)	4291.25	14	-	-	-	
Ownership/sources						
Dentist/specialist (n=7)	3153.75	8.43	5055.31	4.45	13153.93	0.16
Clinic/hospital/university (n=7)	845.41	7.57	963.26	199.9	2770.97	
Layperson (n=2)	4530.16	14	692.14	4040.74	5019.58	
Other (n=2)	6158.12	15.5	2640.16	4291.25	8025	
Dentist specialist						
General (n=8)	1745.56	8.63	2263.83	11.3	6868.79	0.34
Prosthodontists (n=4)	2162.54	7.25	3910.99	35.42	8025	
Endodontist (n=2)	6700.03	10.5	9127.2	246.12	13153.93	
Undergraduate student (n=1)	4.45	1	-	-	-	
Video content quality						
Low-quality content (n=15)	2807.17	9.73	3706.5	11.3	13153.93	0.68
Medium-quality content (n=3)	2421.03	8.33	3856.69	4.45	6868.79	

SD: Standard deviation.

TABLE 5: Global Quality Score values according to video narrator, ownership, doctor expertise, and video content quality.						
			Global Quality Score			
	X̄	Median	SD	Minimum	Maximum	
Total (n=18)	2.61	2	0.78	2	4	
	X̄	Rank	SD	Minimum	Maximum	p value
Video narrator						
Patient (n=2)	2	5.5	0	2	2	0.29
Dentist/specialist (n=15)	2.73	10.3	0.8	2	4	
Dental assistant (n=1)	2	5.5				
Ownership/sources						
Dentist/specialist (n=7)	3	12	0.82	2	4	0.28
Clinic/hospital/university (n=7)	2.43	8.21	0.79	2	4	
Layperson (n=2)	2	5.5	0	2	2	
Other (n=2)	2.5	9.25	0.71	2	3	
Dentist specialist						
General (n=8)	2.5	6.75	0.76	2	4	0.39
Prosthodontists (n=4)	2.75	8.5	0.5	2	3	
Endodontist (n=2)	3	9	1.41	2	4	
Undergraduate student (n=1)	4	14				
Video content quality						
Low-quality content (n=15)	2.4	8.27	0.63	2	4	0.02*
Medium-quality content (n=3)	3.67	15.67	0.57	3	4	

*It shows a statistically significant difference; SD: Standard deviation.

ing to video narrator, ownership, and dentist specialist (p>0.05), whereas medium-quality content videos exhibited higher GQS values than low-quality content videos (p=0.02).

VIQI values are given in Table 6. The median of the videos was found to be 12. Medium-quality content videos showed higher scores than low-quality ones (p=0.006). No difference was observed between the groups in video narrator, ownership, and dentist specialty (p>0.05).

In terms of video comments, patients' comments included questions such as whether the procedure was painful, the success of the treatment, whether the tooth would decay over time, and the waiting time for the procedure to be applied. However, in videos for professionals, comments were made on more economical luting cement options instead of resin, how many posts can be applied to molar teeth, drills used in post preparation, and disinfection of fiber posts.

Inter-examiner agreement was high in both VIQI and GQS index scores (0.86 for GQS, 0.82 for VIQI).

DISCUSSION

Internet-sourced medical information in healthcare disciplines has increased significantly in recent years. It has become one of patients' first tools to explore information about dental procedures.[11] For this reason, the current study emphasized the volume of information related to posts in Turkish. It aimed to evaluate the demographic characteristics, content quality, information completeness, and competencies of videos. It was assessed whether the videos were evidence-based or not on YouTube, which dental professionals and laypersons can easily access. To our knowledge, no published article in the literature has evaluated the video content quality and accuracy of posts. It was observed that there were minimal videos to inform both dental professionals and laypersons. By keeping the search terms comprehensive, all available videos were tried to be included in the study. Despite this, only 18 videos in Turkish were identified and included.

In addition to the limited number of videos, the information content of the videos examined was insufficient. The helpful information in the videos on critical clinical points such as bonding systems, different cementation protocols, surface treatments, and types of posts was minimal. Except for the "definition of posts", the inclusion rate of other information

TABLE 6: VIQI values according to video narrator, ownership, doctor expertise, and video content quality.						
	VIQI					
	$\overline{X}$	Median	SD	Minimum	Maximum	
Total (n=18)	11.56	12	3.05	7	18	
	$\overline{X}$	Rank	SD	Minimum	Maximum	p value
Video narrator						
Patient (n=2)	9	10.5	0	9	9	0.42
Dentist/specialist (n=15)	11.87	9.8	3.2	7	18	
Dental assistant (n=1)	12	3	-	-	-	
Ownership/sources						
Dentist/specialist (n=7)	13.71	11.86	2.29	11	18	0.39
Clinic/hospital/university (n=7)	10.14	7.29	3.34	7	16	
Layperson (n=2)	9	10.5	0	9	9	
Other (n=2)	11.5	8	0.71	11	12	
Dentist specialist						
General (n=8)	10.63	6.38	3.25	7	15	0.33
Prosthodontists (n=4)	11.75	8.63	0.96	11	13	
Endodontist (n=2)	14	10.5	2.83	12	16	
Undergraduate student (n=1)	18	13.5	-	-	-	
Video content quality						
Low-quality content (n=15)	10.8	8	2.6	7	16	0.006*
Medium-quality content (n=3)	15.33	17	2.52	13	18	

*It shows a statistically significant difference; VIQI: Video Information and Quality Index; SD: Standard deviation.

in the content was below 40%. No videos were considered high-quality content; even 15 (83.3%) were low-quality. The main factor of this finding was that the videos were not satisfactory related information and mainly provided general information to patients. The lack of information content was consistent with most previous YouTube studies.[12,24] Patients need procedure-related information with the increasing demand for post-core restorations to save their teeth. More understandable information sharing through audiovisual materials creates a tendency for patients to query YouTube.[12] Clinicians diagnose posts after clinical and radiographic examinations; this allows individuals to receive initial information from the doctor and is an advantage in obtaining more reliable information. However, dentists should be encouraged to share more theoretical and practical videos. There is a risk that inaccurate information may cause patients to change their treatment options.[19]

Not only patients but clinicians also use online videos to improve their self-confidence, understand the procedure steps, and fill in their missing knowledge; another vital purpose of YouTube is its academic and educational aspects.[20] This study found only two videos for dentists, except for two videos providing preclinical training. Details regarding post indications, bonding systems, luting agents, post-surface treatments, current post systems, and critical clinical tips, which are challenging points for clinicians, were missing. Although there was information about the preparation of cast posts, no information about customized fiber posts could be observed. Due to the disadvantages of cast posts, their use has become obsolete.[1,5] Posts can be adapted to irregularly shaped, non-uniform, or greatly enlarged root canals using customized and relined fiber posts or fiber bundles.[2] A presentation of the procedure for customized formed fiber posts (reline of fiber posts with resin composite) would have helped many practitioners who felt inadequate. Similarly, how to shape bundled fiber posts in the root canal and its stages could be presented in detail.[1] Another custom-shaped post type is zirconia posts, and no video providing information about this post type has been found.[7] While the form-congruence feature of computer-aided design and computer-aided manufacturing fabricated post-cores

to the root canal and the ability to eliminate laboratory procedures and enable treatment in a single session is a prominent advantage, physicians' ignorance of the subject may cause them to hesitate in their application. This information can be revised and presented with current concepts and innovations. In addition, harmful information, such as using diamond burs in post-space preparation, was also included. In preclinical training videos, demonstrations were made with an outdated prefabricated stainless-steel post or a plastic imitation product. The uploading of lectures and PowerPoint presentations by competent institutions, the support of commercial organizations with visual animations, and the real procedures of clinicians increase the instructiveness.[14] Dental academic institutions and organizations must focus on this issue and have more professional videos.[19] Therefore, educators should revise their teaching methodologies and convert them into video format.

The source of video uploaders varies depending on the topics. The majority of the videos with the highest viewing rates and interaction rates on some issues of great interest in society, such as tooth whitening, are uploaded by laypersons.[9] TV channels have a higher ownership rate on issues such as porcelain laminate veneers, which are more widely covered in visual media.[16] Dentists or specialists upload videos on technical and professional topics such as instrument separation in root canal treatment, digital dentistry, regenerative endodontics, or traumatic dental injuries.[10,13,17,18] In the current study, the videos were uploaded mainly by dental professionals. Dentists and clinics/hospitals/organizations were the sources of 14 videos. Only two videos in which patients shared their experiences were uploaded. It has been reported that the videos uploaded by laypersons have more social purposes, while those uploaded by medical organizations have more educational aspects.[11]

It has been reported that videos produced by regulatory bodies or manufacturing companies have shorter video durations but higher quality scores due to their support with superior shooting techniques and effective animations.[25] Videos with a target audience of more dental professionals are interested in by fewer people and have low viewing rates. Although there may be a loss of focus on the subject in long

videos, there is a positive correlation between total content score, VIQI score, GQS values, and video duration.[19] VIQI and GQS scores were reported to be higher in high-quality content videos.[24] Longer videos are more likely presentations such as lectures or preclinical training. Although shorter videos may be more attractive, they do not touch on essential topics in terms of content. This results in insufficient information. It was observed that the only difference affecting the interaction index in the criteria evaluated was video content quality. Medium-quality videos were found to have a higher interaction index than low-quality ones. However, the viewing rate was not different in any descriptive variable.

This study observed that the scores of GSQ, VIQI, and information content accuracy analysis, regardless of their source, are very low, a common finding with previous studies in different dental disciplines.[10,14] The median GQS value was 2, a low score. GQS values were found to be higher in videos with medium-quality content. The median VIQI value was 12, and statistically different values were found only in the video content quality groups. Videos with medium-quality content had a similarly higher VIQI value. The null hypothesis was accepted due to both the low GQS value and the insufficient VIQI value.

The typical limitations of the studies that analyze YouTube videos are that the contents are dynamic, and the findings are time-and date-dependent as videos can be deleted and new ones can be added. Secondly, different videos can be found using other search terms. In the current study, a comprehensive search was conducted using different search terms, and this limitation was overcome by trying to access all videos. Another limitation is that no established method for analyzing video information content exists. Before the study, a comprehensive literature review regarding posts and cores was conducted, and a checklist was made of the topics that could be mentioned. Another limitation was that only videos with Turkish spoken or subtitled languages were included and analyzed. Since the study aims to explore existing videos for individuals seeking information in Turkish, other languages were not examined, but further studies should be carried out, especially the analysis of English videos.

CONCLUSION

There were very few YouTube videos shared in Turkish about posts, and 18 YouTube videos were screened for evaluation. The information content was insufficient. Except for the "definition of posts" among the determined information content items, the inclusion rate of other information in the content was below 40%. There were no videos that were considered high-quality content. Dental professionals mainly uploaded the videos, and most of them were for patient information. Videos and information content intended to inform clinicians or undergraduate students were very limited. Since the videos contain low educational quality and non-comprehensive information, dentists should be encouraged to share more theoretically and practically satisfactory videos. Specialized healthcare professionals and universities should share peer-reviewed and beneficial materials to increase the usefulness of YouTube and similar digital platforms. High-quality and reliable videos can also increase the learning capacity of dental professionals. Further studies should analyze videos in other languages, especially English, and examine their differences from Turkish videos.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: *Hakan Aydın, Kerem Yılmaz;* ***Design:*** *Hakan Aydın;* ***Control/Supervision:*** *Hakan Aydın;* ***Data Collection and/or Processing:*** *Hakan Aydın;* ***Analysis and/or Interpretation:*** *Hakan Aydın, Kerem Yılmaz;* ***Literature Review:*** *Hakan Aydın;* ***Writing the Article:*** *Hakan Aydın;* ***Critical Review:*** *Hakan Aydın, Kerem Yılmaz;* ***References and Fundings:*** *Hakan Aydın;* ***Materials:*** *Hakan Aydın.*

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