

Quality of YouTube Videos About Cataracts and Surgical Management

Katarakt ve Cerrahi Tedavisi ile İlgili YouTube Videolarının Kalitesi

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Abstract

Objective: In recent years, YouTube has been frequently used as a source of information in the medical field. To clarify the quality of Turkish language YouTube videos about cataracts and surgical management.

Methods: Two experienced ophthalmologists searched for the terms "cataract", "cataract surgery", "phacoemulsification cataract surgery", and "intraocular lens" in YouTube. Queries were performed only in the Turkish language. Video characteristics were recorded, and quality and reliability of each video was analyzed with the global quality score (GQS), the modified DISCERN form, and the patient education materials assessment tool (PEMAT).

Results: A total of 184 YouTube videos were evaluated to for inclusion in the analysis, and 58 videos did not match with study inclusion criteria. The mean number of views was significantly higher in favor of professional videos ($p=0.006$). The duration on YouTube was significantly longer for non-professional videos (217.5 days vs. 400.0 days, $p=0.005$). Moreover, "like count" and "comment count" were significantly higher for professional videos ($p=0.001$ and $p=0.003$). Modified DISCERN score was 3.5 for professional videos and 2.1 for non-professional videos, and GQS was 3.4 for professional videos and 2.3 for non-professional videos ($p=0.001$ for both parameters). In addition, 75 (91.5%) videos uploaded by professional health care providers had PEMAT score >70 , and 20 (58.8%) non-professional videos had PEMAT score >70 ($p=0.001$).

Conclusion: The present study demonstrated that view numbers, like count, and comment count were significantly higher for professional videos, but duration on YouTube was significantly longer for non-professional videos. Quality of professional YouTube videos about cataracts and surgical management were significantly better according to the modified DISCERN score, GQS, and PEMAT score.

Keywords: Cataracts, DISCERN, global quality score, PEMAT, YouTube

Öz

Amaç: Son yıllarda Youtube tıbbi bilgi kaynağı olarak sıklıkla kullanılmaktadır. Katarakt ve cerrahi tedavisiyle ilgili, Türkçe YouTube videolarının kalitesini netleştirmek amaçlanmıştır.

Yöntem: Deneyimli iki göz doktoru YouTube'da "katarakt", "katarakt ameliyatı", "fakoemülsifikasyon katarakt ameliyatı" ve "göz içi lens" terimlerini araştırdı. Sorgulamalar yalnızca Türkçe dilinde gerçekleştirilmiştir. Video özellikleri kaydedildi ve her videonun kalitesi ve güvenilirliği, küresel kalite puanı (GQS), değiştirilmiş DISCERN formu ve hasta eğitim materyalleri değerlendirme aracı (PEMAT) ile analiz edildi.

Bulgular: Toplam 184 YouTube videosu analize dahil edilmek üzere değerlendirildi ve 58 video çalışmaya dahil edilme kriterleriyle eşleşmedi. Ortalama izlenme sayısı, profesyonel videolar lehine anlamlı derecede yüksekti ($p=0,006$). Profesyonel olmayan videolarda YouTube'da kalma süresi anlamlı derecede



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Öz

daha uzundu (217,5 gün vs. 400,0 gün, $p=0,005$). Ayrıca profesyonel videolarda "beğeni sayısı" ve "yorum sayısı" anlamlı düzeyde daha yüksekti ($p=0,001$ ve $p=0,003$). Modifiye DISCERN puanı profesyonel videolar için 3,5, profesyonel olmayan videolar için 2,1, GQS ise profesyonel videolar için 3,4, profesyonel olmayan videolar için 2,3 olarak belirlendi (her iki parametre için de $p=0,001$). Ayrıca profesyonel sağlık hizmeti sağlayıcıları tarafından yüklenen videoların 75'inin (%91,5) PEMAT puanı >70 iken, profesyonel olmayan videoların 20'sinin (%58,8) PEMAT puanı >70 idi ($p=0,001$).

Sonuç: Bu çalışma, profesyonel videolarda izlenme sayısının, beğeni sayısının ve yorum sayısının anlamlı derecede yüksek olduğunu, ancak profesyonel olmayan videolarda YouTube'da kalma süresinin önemli ölçüde daha uzun olduğunu gösterdi. Katarakt ve cerrahi tedavisiyle ilgili profesyonel YouTube videolarının kalitesi; değiştirilmiş DISCERN puanı, GQS ve PEMAT puanına göre önemli ölçüde daha iyi bulundu.

Anahtar Kelimeler: Katarakt, DISCERN, global kalite puanı, PEMAT, YouTube.

Introduction

Cataracts are simply defined as clouding of the lens in the eye that deteriorates vision, and cataracts have become a serious and challenging health problem in the last century. Previous reports have demonstrated that cataracts are the reason for almost half of blindness cases⁽¹⁾. Vision of 90% of individuals who live in developing countries is negatively affected due to cataracts⁽²⁾. The definitive treatment option for cataracts is surgery. Phacoemulsification cataract surgery is accepted as a surgical technique for the management of cataracts with a high success rate and acceptable complication rates. Moreover, multifocal intraocular lenses (IOL) were developed for cataract treatment, and the safety and efficiency of multifocal IOL were proven by *in vitro* and *in vivo* studies⁽³⁾. Many patients investigate their illness and treatment options from magazines, books, and the internet before attending the professional health care system, and many people obtain information from social media applications, including Instagram, Twitter, and YouTube⁽⁴⁾.

YouTube is the largest social media application, and billions of videos are shared in this application. In a study by Freeman and Chapman⁽⁵⁾ which evaluated the impact of content type on public attention, they revealed that public interest was significantly higher for visual content than for written content and audio sources. Video uploads are not restricted to the YouTube platform, and some videos can be misleading and others may include false information. Ergul⁽⁶⁾ analyzed YouTube videos about uterine leiomyoma, and the author stated that despite high view rates, YouTube videos had insufficient and inadequate information about uterine leiomyoma. In another study, Cetin et al.⁽⁷⁾ evaluated videos about coronary artery bypass grafting on YouTube and found that videos uploaded by professional health care providers were reliable and had good quality.

Although previous studies have evaluated the quality and reliability of YouTube videos about various medical conditions, no study has investigated the quality of YouTube videos about cataracts and surgical treatment. In this study, we aimed to clarify the quality of Turkish-language YouTube videos on cataracts and surgical management.

Materials and Methods

The present study was done between 15th February 2023 and 30th February 2023, and two experienced ophthalmologists searched for the terms "cataract", "cataract surgery", "phacoemulsification cataract surgery", and "multifocal intraocular lens" in YouTube. Queries were performed only in Turkish. Videos with 1-16 minutes in length were evaluated for inclusion, and YouTube videos with language other than Turkish, videos unrelated to cataracts and cataract surgical treatment, and personal advertising videos were excluded from analysis. A playlist was created from the selected YouTube videos, and each video was analyzed by two experienced ophthalmologists. The study was conducted after obtaining Local Ethics Committee of Dokuz Eylül University approval (number: E-87347630-659-848886).

Selected YouTube videos were classified into two groups: Professional and non-professional. Videos uploaded by professional healthcare providers and health institutions were accepted as professional videos. Personal experience videos and new update videos were classified as non-professional videos. For each video, the number of views, video length, and duration on YouTube were recorded. Moreover, counts of "likes", "dislikes", and "comments" and population targeted by the video (healthcare providers or patients) were noted. The quality and reliability of each video were analyzed using the global quality score (GQS), the modified DISCERN form, and the patient education materials assessment tool (PEMAT). Two ophthalmologists scored each video separately, and if

the ophthalmologists gave different scores for a video, the average of the two scores were accepted.

Evaluation of the Modified DISCERN Score, Global Quality Score and Patient Education Materials Assessment Tool Score

The modified version of DISCERN is a basic form of the 16-question DISCERN scale, which includes five yes or no questions. Each "yes" answer scores 1 point, and each "no" answer scores 0. Five points for the modified DISCERN score indicate the highest quality of video⁽⁸⁾. GQS consists of five questions, each question is scored between 1 and 5, and higher scores demonstrate high quality of video⁽⁹⁾. PEMAT is another form to analyze the applicability and understandability of videos, which includes 17 questions (13 questions for video intelligibility, and 4 questions for video applicability). Each answer is scored as 0 or 1, and a total PEMAT score higher than 70% is associated with high video quality⁽¹⁰⁾.

To clarify and compare the quality and reliability of professional and non-professional videos, selected videos were categorized into two groups. The professional and non-professional video groups were compared with regard to video features, modified DISCERN score, GQS, and PEMAT score.

Statistical Analysis

The Statistical Package for the Social Sciences version 26 (SPSS IBM Corp., Armonk, NY, USA) program was used. The normality of variable distribution was analyzed using the Kolmogorov-Smirnov test. Normally distributed parameters were analyzed with the Student's t-test, and non-normal values were analyzed using the Mann-Whitney U test. Quantitative parameters are presented as mean \pm standard deviation or median (interquartile range) values. Categorical variables were categorized and compared using the χ^2 test or Fisher's Exact test. The data were analyzed at a 95% confidence level, and a p-value <0.05 was set as statistically significant.

Results

A total of 184 YouTube videos were evaluated for inclusion in the analysis, and 58 videos did not match the study inclusion criteria. A total of 21 videos had irrelevant content, 10 videos were in another language than Turkish, and 32 videos had inappropriate duration. At the end of the evaluation, 116 videos matched the study inclusion criteria, 82 videos were categorized as professional videos, and 34 videos were

categorized as non-professional videos. The flowchart of the study is presented in Figure 1.

Video features including "video length" and "dislike count" were similar between professional and non-professional videos ($p=0.579$ and $p=0.077$). The mean number of views was significantly higher in favor of professional videos (3522.5 vs. 2088.0, $p=0.006$). In contrast, the duration on YouTube was significantly longer for non-professional videos (217.5 days vs. 400.0 days, $p=0.005$). Moreover, "like count" and "comment count" were significantly higher for professional videos ($p=0.001$ and $p=0.003$) (Table 1).

The modified DISCERN score was 3.5 for professional videos and 2.1 for non-professional videos, and the GQS was 3.4 for professional videos and 2.3 for non-professional videos ($p=0.001$ for both parameters). In addition, 75 (91.5%) videos uploaded by professional health care providers or health institutions had a PEMAT score >70 , and 20 (58.8%) non-professional videos had a PEMAT score >70 ($p=0.001$) (Table 2).

The correlation of video characteristics with the DISCERN score and GQS are summarized in Table 3. There was a significant correlation between the number of views, duration on YouTube, number of comments, and GQS score ($p=0.001$, $p=0.001$, and $p=0.001$; respectively). Also, the DISCERN score was significantly correlated with view numbers, duration on YouTube, like count, and comment count ($p=0.001$, $p=0.001$, $p=0.014$, and $p=0.001$, respectively).

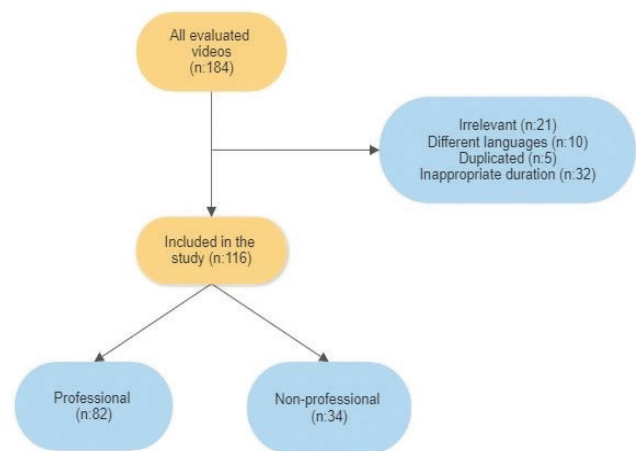


Figure 1. Flowchart for the YouTube video screening and selection process

Table 1. Comparison of video features between groups

	Professional	Non-professional	p-value
Number of videos	82 (70.7%)	34 (29.3%)	
Video features*			
Number of views	3522.5 (1956.3-5965.5)	2088.0 (476.0-4512.8)	0.006
Video length (min)	4.8 (2.5-9.3)	4.9 (3.2-8.2)	0.579
Duration on YouTube (days)	217.5 (120.0-367.5)	400.0 (150.0-590.0)	0.005
Like count	95.0 (19.0-107.0)	31.5 (9.8-59.5)	0.001
Dislike count	11.5 (3.0-24.5)	10.0 (0.8-12.6)	0.077
Comment count	35.0 (12.4-203.0)	20.5 (2.0-46.2)	0.003
Target group, n (%)			0.160
Healthcare providers	22 (26.8%)	5 (14.7%)	
Patients	60 (73.2%)	29 (85.3%)	

*: Median (interquartile range)

Table 2. Comparison of video quality scores between groups

	Professional	Non-professional	p-value
PEMAT score, n (%)			
(>70%)	75 (91.5%)	20 (58.8%)	0.001
(≤70%)	7 (8.5%)	14 (41.2%)	
Global quality score*	3.4±1.0	2.3±0.9	0.001
Modified DISCERN score*	3.5±1.0	2.1±1.0	0.001

*: Mean ± standard deviation, PEMAT: Patient education materials assessment tool

Table 3. Correlation of video features with DISCERN score and GQS score

	Number of views	Video length	Duration on YouTube	Likes	Dislikes	Comment
DISCERN						
CC	0.459	0.004	-0.494	0.228	0.138	0.568
p-value	0.001	0.965	0.001	0.014	0.140	0.001
GQS						
CC	0.309	0.042	-0.369	0.127	0.064	0.369
p-value	0.001	0.655	0.001	0.176	0.492	0.001

CC: Correlation coefficient, GQS: Global quality score

Discussion

Social media platforms have dramatically changed how people can obtain information about any issue, and health-related matters are significantly affected by this situation. Patients have access to accurate information on medical issues. Previous statistics revealed that more than 90% of internet users watch YouTube videos, and features such as being free and easy to access make this platform more popular⁽¹¹⁾. Thus, we conducted a study to investigate the quality of YouTube videos about cataracts and the most common cataract surgeries, one of the most common

disorders in the field of ophthalmology. Our findings revealed that view numbers, like counts, and comment counts were significantly higher for professional videos, but duration on YouTube was significantly longer for non-professional videos. Moreover, the quality and reliability of professional YouTube videos about cataracts and surgical management were significantly higher according to the modified DISCERN, GQS, and PEMAT scores.

The GQS and modified DISCERN score were developed to analyze the quality and reliability of the visual content. Yuksel and Ozgor⁽¹²⁾ analyzed YouTube videos about pregnancy

during the COVID-19 pandemic, and the authors emphasized that most YouTube videos about pregnancy and COVID-19 had low quality according to the DISCERN score. In a study on general surgery, Ferhatoglu et al.⁽¹³⁾ found low quality and reliability of YouTube videos on obesity surgery. However, Ferhatoglu et al.⁽¹³⁾ found significantly higher DISCERN scores for YouTube videos uploaded by professional sources. In another study, Kılınc and Sayar⁽¹⁴⁾ evaluated the quality of YouTube videos about orthodontic surgery using GQS and stated that YouTube videos about orthodontics had poor quality. In our study, we found significantly higher modified DISCERN scores and GQS for YouTube videos about cataracts and surgical management shared by professional sources.

The PEMAT tool was developed to evaluate the ease of understanding and practical applicability of information sources. Wong et al.⁽¹⁵⁾ used PEMAT for evaluating YouTube videos about laryngeal cancer, and the authors showed the understandability of YouTube videos using the PEMAT score. Ji et al.⁽¹⁶⁾ evaluated the intelligibility of YouTube videos about bladder overactivity and found that videos uploaded by professional healthcare workers had significantly better PEMAT scores. In this study, professional videos about cataracts and surgical management had significantly higher PEMAT scores.

For YouTube videos, "like number", "view number" and "comment count" are critical to stand out in the channel and achieve more interaction. Sevgili and Baytaroglu⁽¹⁷⁾ analyzed YouTube video features of professional and non-professional videos about cardiovascular diseases, and the authors did not find any significant difference with regard to "comment count", and "number of views". Kumar et al.⁽¹¹⁾ emphasized that "view numbers" but not "like count" and "comment number" was significantly higher for professional YouTube videos about pregnancy and COVID-19. In the present study, "view number", "like number", and "comment count" were significantly higher for professional YouTube videos about cataracts and cataract surgery.

Study Limitations

Our analysis was performed only in the Turkish language, which could be accepted as a study limitation. However, we believe that conducting research using multiple languages can complicate data analysis. Additionally, we selected four keywords for analysis, but beyond these four terms, people could use other keywords while searching about cataracts

and surgical treatment on YouTube. Finally, many resources continuously shared videos about cataracts and cataract surgery, and our study only included a certain duration.

Conclusion

We found that YouTube videos about cataracts and cataract surgery are popular and easily accessible sources for the public. In addition, the present study demonstrated that view numbers, like count, and comment count were significantly higher for professional videos, but duration on YouTube was significantly longer for non-professional videos. In addition, the quality and reliability of professional YouTube videos about cataracts and surgical management were significantly better according to the modified DISCERN, GQS, and PEMAT scores. Patients should be especially careful when obtaining information from unprofessional videos.

Ethics

Ethics Committee Approval: The study was conducted after obtaining Local Ethics Committee of Dokuz Eylül University approval (number: E-87347630-659-848886).

Informed Consent: There are no patients in our study evaluating cataract-related videos on the YouTube platform. Since it did not involve a patient, consent was not required.

Authorship Contributions

Surgical and Medical Practices: S.G.K., B.Ş., Concept: S.G.K., Design: S.G.K., Data Collection or Processing: S.G.K., B.Ş., Analysis or Interpretation: S.G.K., B.Ş., Literature Search: B.Ş., Writing: S.G.K., B.Ş.

Conflict of Interest: No conflict of interest was declared by the authors.

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