

ORIGINAL ARTICLE

Evaluation of the Usefulness of Youtube Videos as Sources Related to Vitrectomy in Vitreous Hemorrhage

Vitreus Hemorajisinde Vitrektomi Cerrahisi ile İlgili Youtube Videolarının Kaynak Olarak Yararlılığının Değerlendirilmesi

¹Murat Serkan Songur , ²Mehmet Çitink 

¹Yozgat Bozok Üniversitesi Tıp Fakültesi

²Sağlık Bilimleri Üniversitesi, Ankara Uluçanlar Göz Eğitim ve Araştırma Hastanesi

Correspondence

Murat Serkan Songur, Çapanoğlu Mahallesi, Cemil Çiçek Caddesi, Yozgat, 66100, Türkiye

E-Mail: mssongur@yahoo.com

How to cite ?

Songur MS, Çitink M. Evaluation of the Usefulness of Youtube Videos as Sources Related to Vitrectomy in Vitreous Hemorrhage. Genel Tıp Derg. 2022; 32(2): 114-118

ABSTRACT

Objective: To evaluate the usefulness of YouTube videos about vitrectomy in vitreous hemorrhage surgery as a resource.

Methods: The first 100 videos were evaluated when they were scanned by typing "vitreous hemorrhage vitrectomy" in the YouTube search engine. These videos were also analyzed and scored using DISCERN, Journal of the American Medical Association (JAMA) and Global Quality (GQ) scoring systems.

Results: The mean DISCERN score of the evaluated videos was 37.2 ± 6.5 ; mean JAMA score 1.9 ± 0.5 ; The mean GQ score was 2.0 ± 0.5 . According to the results, vitrectomy in vitreous hemorrhage surgery videos, DISCERN score is weak; The JAMA score was evaluated as low quality and poor quality in the GQ score.

Conclusion: Although there are enough videos on YouTube with vitrectomy in vitreous hemorrhage, its usefulness as a resource is low and its quality is poor.

Keywords: Vitreous hemorrhage, vitrectomy, YouTube, DISCERN score, JAMA score, Global Quality score.

ÖZ

Amaç: Vitreus hemorajisinde vitrektomi cerrahisiyle ilgili YouTube videolarının kaynak olarak yararlılığını değerlendirmek.

Gereç ve Yöntem: YouTube arama motorunda 'vitreus hemorajisinde vitrektomi' yazarak taratıldığında, ilk çıkan 100 video değerlendirildi. Bu videolar ayrıca, DISCERN, Journal of the American Medical Association (JAMA) ve Global Quality (GQ) skorlama sistemleri ile analiz edilerek skorlandı.

Bulgular: Değerlendirilen videoların ortalama DISCERN skoru 37.2 ± 6.5 ; ortalama JAMA skoru 1.9 ± 0.5 ; ortalama GQ skorlaması ise 2.0 ± 0.5 idi. Sonuçlara göre vitreus hemorajisinde vitrektomi cerrahisi videoları, DISCERN skoru zayıf; JAMA skoru düşük kalite ve GQ skorlamasında ise zayıf kaliteye sahip olarak değerlendirildi.

Sonuç: Vitreus hemorajisinde vitrektomi cerrahisi ile YouTube da yeterince video bulunmasına rağmen, kaynak olarak yararlılığı düşük ve kalitesi zayıftır.

Anahtar Kelimeler: Vitreus hemorajisi, vitrektomi, YouTube, DISCERN skoru, JAMA skoru, Global Quality skoru.

Introduction

Vitrectomy is the surgical method used in the treatment of vitreous hemorrhage (1-3). When it is performed with 23-, 25- and 27-gauge (G) trocars, it has advantages over the traditional 20G procedure, such as being sutureless, shortening the surgical time, and reducing ocular trauma and inflammation (4,5).

YouTube is a video sharing platform that increases engagement by allowing users to easily upload and view videos and vote on shared videos. It is increasingly used to share health information provided by various organizations (hospitals, governments, companies,

and private users) (6). YouTube is the second most visited website in the world (7). Considering that health education videos on YouTube lack quality control measures and review processes to ensure accuracy, patients may be exposed to false or misleading information (8). Therefore, YouTube needs detailed reviews on the quality, effectiveness and usefulness of the videos. In this study, we evaluated the usefulness of the previously non-evaluated most frequently viewed YouTube videos showing vitrectomy surgery for treatment of vitreous hemorrhage.

Materials and Methods

This study was conducted in January 2021 by retrospectively reviewing videos that were publicly available on YouTube. The principles of the Declaration of Helsinki were adhered to throughout the study. We evaluated the first 100 videos that populated after typing "vitreous hemorrhage vitrectomy" in the YouTube search engine. These videos were evaluated in terms of duration, likes, dislikes, release date, content, and number of views. Only videos in English were taken into consideration.

Videos were independently evaluated by two experienced ophthalmologists (MSS, MÇ). All videos were independently scored by using DISCERN, Journal of the American Medical Association (JAMA), and Global Quality (GQ) systems and the results were averaged.

There are total of 16 questions in DISCERN scoring system. Every question gets scored with a range from 1 to 5. The first 8 questions are used to determine the credibility of the web page. The second part, questions 9 through 15, evaluates the quality of information about treatment options. The 16th, and last question, is a general evaluation of the website (9). The total score ranges between 16 and 75 with scores between 16-26 indicating very poor, 27-38 poor, 39-50 moderate, 51-62 good, and 63-75 excellent quality (10). DISCERN questions are shown in table I.

JAMA criteria are used to evaluate the basic information presented in websites. Basically, it evaluates authorship, bibliography, patent right, and timeliness. Each criterion gets 1 point and a score of 1 indicates the weakest quality and 4 indicates the highest quality (11).

GQ scoring provides the opportunity to interpret the videos in general and evaluates the overall quality of the videos according to the flow of information presented (12). In the GQ system, the score ranges from 1 to 5. The GQ scoring system is shown in table I (13).

All analyses were performed using the SPSS Windows V.21.0 software package (SPSS Inc., Chicago, Illinois). Continuous data were presented as mean ± standard deviation or mean. The distribution of variable data was determined using visual (histograms, probability plots) and analytical methods (Kolmogorov-Smirnov / Shapiro-Wilk's test). Data with normal distribution were compared using the Student's t-test, while those with non-normal distribution were compared using the Mann-Whitney U test. Spearman correlation was used to examine the relationships between variables. P-value lower than 0.05 was considered significant.

Table I: Questions in the DISCERN scoring system and the Global Quality (GQ) scoring system.

Questions in the DISCERN scoring system	
1st PART	
Question 1	Are the objectives clear?
Question 2	Does it achieve its objectives?
Question 3	Is it relevant?
Question 4	Are the publication sources used to compile information compatible?
Question 5	Is it clear when information is used or reported?
Question 6	Is it balanced and unbiased?
Question 7	Does it provide supplementary resources and information?
Question 8	Does it refer to indefinite fields?
2nd PART	
Question 9	Does it explain how each treatment works?
Question 10	Does it explain the benefits of each treatment?
Question 11	Does it explain the risks of each treatment?
Question 12	Does it explain what can happen if left untreated?
Question 13	Does it explain how much each treatment can affect quality of life?
Question 14	Does it explain that there may be more than one possible treatment choice?
Question 15	Does it provide support for joint decision making?
3rd PART	
Question 16	What is the overall quality rating?
Global Quality (GQ) scoring system	
Very poor quality	Not likely to be used for patient education
Poor quality	Limited use for patients, because only little information is available
- moderate quality and flow	It is somewhat helpful; important topics are missing; some information is available
4- Good quality and flow	It is useful for patients, because the most important topics are covered
5-Excellent quality and flow	Very useful for patients

Results

In our study, we evaluated the first 100 videos that populated after searching for the keyword in YouTube's search engine and 86 of those videos met the inclusion criteria and were analyzed and evaluated. One of the videos was excluded because it was irrelevant, 2 of them were published in languages other than English, and 11 of them were excluded because vitreous hemorrhage was treated with treatment that did not include vitrectomy. The general features of the videos are summarized in table II.

None of the evaluated videos contained advertisements. All videos were uploaded by ophthalmologists. There was a significant correlation between the viewing rates of all videos and the number of likes ($p < 0.001$; $r = 0.867$) and dislikes ($p < 0.001$; $r = 0.808$). No correlation was found between the duration of the videos and the rate of viewing ($p = 0.817$; $r = 0.272$). Among all videos, 69 videos were surgical, while 17 videos did not have a surgical presentation. There was no significant difference between the duration of the videos with and without surgery. The number of likes and dislikes and the number of views of the non-surgical videos were significantly higher than the surgical videos. However, there was no significant difference in terms of DISCERN ($p = 0.070$), JAMA ($p = 0.063$) and GQ ($p = 0.116$) scores between videos with surgical content and videos without surgical content (table II).

Table II: General features of videos and comparison of videos with and without surgery.

General features of videos			
Broadcast Time (seconds)	581.2		
Number of Likes	71.5		
Number of Dislikes	3.8		
Broadcast History (month)	43.5		
Number of views	14412.5		
Comparison of videos with and without surgery			
	Videos Containing Surgery (n=58)	Non-Surgical Videos (n=26)	P value
Broadcast Time (seconds)	500.4±83.1	909.0±108.5	0.092
Number of Likes	42.7±7.5	188.2±35.3	0.002
Number of Dislikes	2.4±0.6	9.1±1.6	0.010
Number of views	9725.9±266.2	33434.6±694.0	0.026
DISCERN score	36.6±6.7	39.8±5.0	0.070
JAMA score	1.8±0.4	2.1±0.6	0.063
Global Quality score	2.0±0.5	2.2±0.6	0.116

Data are shown as mean or mean ± standard deviation.

The mean DISCERN score of the evaluated videos was 37.2 ± 6.5 , the mean JAMA score was 1.9 ± 0.5 , and the mean GQ score was 2.0 ± 0.5 . According to the results, videos depicting vitrectomy in the treatment of vitreous hemorrhage had weak DISCERN score, low quality based on the JAMA score, and poor quality based on the GQ score.

Discussion

In our study, we found that DISCERN, JAMA and GQ scores of the YouTube videos on vitrectomy surgery for vitreous hemorrhage were low and the videos were of insufficient quality.

Social media has become the mainstay of today's society as it is an easily and quickly accessible tool for information exchange. As of 2017, the number of active social media users worldwide has reached 2.46 billion (14). The use of social media is very high among young people in particular. According to the report of the Pew research center, 88% of young people aged 18-29 use social media. This rate decreases with age, falling to 78% for ages of 30-49, 64% for ages of 50-69, and 37% in those over the age of 65 (15). A literature review suggested that social media has a positive effect on chronic disease care (16).

Guthrie et al. (17), evaluated the first 10 pages of YouTube videos about retinitis pigmentosa and found that 82 out of 162 videos were misleading and less than one-third of the videos that were scientifically useful. Similarly, Borgersen et al. (18) evaluated YouTube videos that populated when direct ophthalmoscope keyword was searched and reported that only 27 of 7640 videos were suitable for use. Benjamin et al. (19) evaluated YouTube videos containing pediatric strabismus surgeries and stated that 48% of the videos consisted of patient and parent explanations, and the accuracy and quality of the videos were generally poor.

Sahin et al. (20) reported that one-third of the videos on premature retinopathy on YouTube were misleading and could lead to harmful results. Abdelmseh et al. (21) examined the quality of YouTube videos regarding age-related macular degeneration. Of the videos they reviewed, 60% were rated as partially useful, 35% as misleading, and 5% as irrelevant. The evaluation of reliability showed that 60% of the videos were partially reliable, 35% unreliable, and only 5% reliable.

The biggest obstacle to using YouTube as a health resource is the difficulty in discerning the accuracy of the information (22). It can be difficult to find videos from trusted sources, as YouTube only ranks the content based on popularity of videos. Therefore, both misleading and false videos can be more popular because YouTube's ranking does not focus on reliability (23). Amante et al. (24) found that the most statistically analyzed parameters in YouTube videos were the video score and the number of likes, and that young and highly educated people watched

these videos more frequently.

Kucuk et al. (25) evaluated refractive surgery videos on YouTube and reported that the mean DISCERN score of the videos was 33.2 ± 15.3 , the mean JAMA score was 0.7 ± 0.8 , and the mean GQ score was 1.7 ± 0.8 and as a result, the video quality was poor. In their study on YouTube videos about keratoplasty, Kalayci et al. (26) reported that the median DISCERN score was 42.1 (22-75), the median JAMA score was 1.8 (0-4), and the median GQ score was 2.3 (1-5). Likewise, Altunel et al. (27) evaluated YouTube videos about multifocal lenses by using these 3 scoring systems and reported that the quality of the videos was low (median DISCERN score: 33 (17-65); median JAMA score: 1.2 (0-3); median GQ score: 2 (1-4)). In the study on YouTube related to strabismus, although slightly higher scores were found (mean DISCERN score: 42.2 ± 15.3 ; mean JAMA score: 1.9 ± 1.2 ; mean GQ score: 2.7 ± 1.1), most of the videos were found to be useless and of low quality (28). In our study, the mean DISCERN score was 37.2 ± 6.5 ; the mean JAMA score was 1.9 ± 0.5 and the mean GQ score was 2.0 ± 0.5 , and the videos were generally of poor quality. To the best of our knowledge, there is no scientific article examining the quality of YouTube videos related to vitrectomy in vitreous hemorrhage.

Our study has several limitations. First, we did not have enough pre- and post-operative information about videos that we considered as surgical. Second, we evaluated only English language videos. Third, although evaluated independently by two experienced surgeons, the video evaluation was subjective. Further studies are needed to better assess the quality of these videos.

In conclusion, according to our findings, YouTube videos labeled "vitrectomy in vitreous hemorrhage" often contain poor quality content and incomplete information. We believe that it would be more useful to present these videos after they are reviewed by professionals and checked for accuracy and quality.

Financial support: the authors declare that they did not receive any financial support for this study.

Conflict of Interest: the authors declared that there is no conflict of interest.

Ethics Committee Approval: this study did not require local ethics committee approval as it included publicly available video-sourced data.

References

- Blodi BA, Paluska SA. Cataract after vitrectomy in young patients. *Ophthalmology* 1997;104(7):1092-5.
- Melberg NS, Thomas MA. Nuclear sclerotic cataract after vitrectomy in patients younger than 50 years of age. *Ophthalmology* 1995;102(10):1466-71.
- Novak MA, Rice TA, Michels RG, Auer C. The crystalline lens after vitrectomy for diabetic retinopathy. *Ophthalmology* 1984;91(12):1480-4.
- Chen E. 25-gauge transconjunctival sutureless vitrectomy. *Current Opinion in Ophthalmology* 2007;18(3):188-193.
- Khan MA, Kuley A, Riemann CD, Berrocal MH, Lakhnani RR, Hsu J, et al. Long-term visual outcomes and safety profile of 27-Gauge pars plana vitrectomy for posterior segment disease. *Ophthalmology* 2018;125(3):423-431.
- Ed Bennet. "Social media and hospitals: from trendy to essential," in *Future scan 2011*, Health Administration Press, 2011.
- Nason K, Donnelly A, Duncan HF. YouTube as a patient-information source for root canal treatment. *Int Endod J* 2016;49(12):1194-1200.
- Desai T, Shariff A, Dhingra V, Minhas D, Eure M, Kats M. Is content really king? An objective analysis of the public's response to medical videos on YouTube. *PLOS ONE* 2013;8:e82469.
- Charnock D, Shepperd S, Needham G, Gann R. DISCERN: an instrument for judging the quality of written consumer health information on treatment choices. *J Epidemiol Community Health* 1999;53(2):105-111.
- Singh AG, Singh S, Singh PP. YouTube for information on rheumatoid arthritis: a wakeup call? *J Rheumatol* 2012;39(5):899-903.
- Silberg WM, Lundberg GD, Musacchio RA. Assessing, controlling, and assuring the quality of medical information on the Internet. *JAMA* 1997;277(15):1244-1245.
- Weil AG, Bojanowski MW, Jamart J, Gustin T, Lévêque M. Evaluation of the quality of information on the Internet available to patients undergoing cervical spine surgery. *World Neurosurg* 2014; 82(1-2):31-39.
- Erdem MN, Karaca S. Evaluating the accuracy and quality of the information in kyphosis videos shared on YouTube. *Spine* 2018;43(22):1334-39.
- Social media statistics & facts. Statista. <https://www.statista.com/topics/1164/social-networks/>. Accessed December 18, 2018.
- Social media use in 2018. Pew Research Center. <http://www.pewinternet.org/2018/03/01/social-media-use-in-2018/>. Accessed December 19, 2018.
- Patel R, Chang T, Greysen SR, Chopra V. Social media use in chronic disease: a systematic review and novel taxonomy. *The American Journal of Medicine* 2015;128(12):1335-50.
- Guthrie G, Davies RM, Fleming CK, Browning AC. YouTube as a source of information about retinitis pigmentosa. *Eye* 2014;28(4):499-500.
- Borgersen NJ, Henriksen MJV, Konge L, Sørensen TL, Thomsen ASS, Subhi Y. Direct ophthalmoscopy on YouTube: analysis of instructional YouTube videos' content and approach to visualization. *Clinical Ophthalmology* 2016;10:1535.
- Young BK, Verter E, Howard MA. Quality analysis of publicly available videos for pediatric strabismus surgery. *Journal of American Association for Pediatric Ophthalmology and Strabismus* 2020;24(2):102-104.
- Şahin A, Şahin M, Türkcü FM. YouTube as a source of information in retinopathy of prematurity. *Irish Journal of Medical Science* 2049;188(2):613-617.
- Abdelmsei M. Evaluation and reliability of YouTube videos for Age-Related Macular Degeneration (AMD)-A warning sign. *Journal of Clinical and Experimental Ophthalmology* 2016;7:05.
- Vance K, Howe W, Dellavalle RP. Social internet sites as a source of public health information. *Dermatol Clin* 2009;27(2):133-6.
- Syed-Abdul S, Fernandez-Luque L, Jian WS, Li YC, Crain S, Hsu MH, et al. Misleading health-related information promoted through video-based social media: anorexia on YouTube. *Journal of Medical Internet Research* 2013;15(2):e30.
- Amante DJ, Hogan TP, Pagoto SL, English TM, Lapane KL. Access to care and use of the Internet to search for health information: results from the US National Health Interview Survey. *J Med Internet Res* 2015;17(4):e106.

25. Kuçuk B, Sirakaya E. An analysis of YouTube videos as educational resources for patients about refractive surgery. *Cornea* 2020;39(4):491-494.
26. Kalayci M, Cetinkaya E, Suren E, Yigit K, Erol MK. Are YouTube Videos Useful in Informing Patients about Keratoplasty? In *Seminars in Ophthalmology* 2021;2:1-6.
27. Altunel O, Sirakaya E. Evaluation of YouTube videos as sources of information about multifocal intraocular lens. In *Seminars in Ophthalmology* 2021;3:1-5.
28. Mangan MŞ, Cakir A, Yurttaser Ocak S, Tekcan H, Balci S, Ozcelik Kose A. Analysis of the quality, reliability, and popularity of information on strabismus on YouTube. *Strabismus* 2020;28(4):175-80.