

Assessment of the Quality and Reliability of the Information on Retinal Detachment on YouTube

 Süleyman Demir¹

¹ Department of Ophthalmology, Adana 5 Ocak State Hospital, Adana, Türkiye

Abstract

Aim: This study aimed to evaluate the reliability and effectiveness of YouTube videos on retinal detachment.

Methods: A total of 85 videos were analyzed on YouTube using the search terms "retinal detachment", "retinal detachment symptom" and "retinal detachment symptoms and treatment". A total of 63 videos were included in the study. Finally, the quality and reliability of the videos included in the study were evaluated using the DISCERN score, the Global Quality Scale (GQS) and the JAMA score.

Results: The mean the DISCERN score was 55.8 ± 18.1 , the JAMA score was 2.6 ± 1.4 , and the GQS score was 3.7 ± 1.3 for a total of 63 videos analyzed. The total number of likes of the videos watched was 3090 ± 1977 , while the total number of dislikes was 50.2 ± 40.6 . The total duration of the videos was 392 ± 93.1 seconds. The DISCERN, the JAMA and the GQS scores of videos uploaded by physicians were found to be statistically significantly higher than videos uploaded by YouTube health channels ($p < 0.001$, $p < 0.001$, $p < 0.001$, respectively).

Conclusions: The quality of videos on YouTube providing information about retinal detachment is adequate. Retinal detachment is an emergency. For this reason, these videos must be adequate and not misleading, as patients first consult YouTube instead of going to the emergency room or ophthalmologist. There is therefore a need for more videos uploaded by health professionals.

Keywords: DISCERN score, YouTube, retinal detachment, GQS score

1. Introduction

The separation of the sensory retina from the underlying retinal pigment epithelium is known as retinal detachment. Rhegmatogenous retinal detachment is the most prevalent type of retinal detachment, affecting about 1 in 10,000 individuals annually.¹ Retinal detachment comes in three different forms: tractional, exudative, and rhegmatogenous.² Retinal detachment causes anxiety in patients and vision loss if left untreated.³

The Internet has become a popular source of information and 80% of Internet users turn to web-based sources for health information.^{4,5} Websites like Google (www.google.com) and YouTube (www.youtube.com) are displayed at the top of these pages. Both extremely harmful and deceptive information as well as extremely helpful and educational information can be found on these platforms. The second most popular website in the world and the biggest media-sharing platform is YouTube. 5 billion videos are viewed on YouTube every day, and there are an estimated 2.3 million active


users on the platform, which is a considerable increase from 30 million users in June 2018.^{6,7} According to numerous studies assessing the quality of health-related YouTube videos, the majority of videos were found to be of low to medium quality, especially when posted by non-medical users.

Although there have been studies on the use of online videos on YouTube for vitreoretinal surgery training and retinal detachment surgery.^{8,9} In the literature search, no recent study found that analyzed patient-oriented retinal detachment videos on YouTube that did not include surgical videos. Retinal detachment is an ocular emergency that requires urgent and rapid treatment. If left untreated and delayed, it may cause permanent vision loss. It is a very common condition with an incidence of 1 in 10,000.¹ For this reason, these videos should be sufficient and not misleading, as patients first apply to YouTube instead of going to the emergency room or ophthalmologist. This study aimed to investigate the quality and reliability of YouTube videos providing information about retinal detachment.

2. Materials and methods

2.1. Ethical disclosure

It was not necessary to obtain approval from an institutional review board for this study.

Corresponding Author: Süleyman Demir, ssuleyman810@gmail.com, Received: 19.04.2024, Accepted: 21.08.2024, Available Online Date: 22.08.2024 Cite this article as: Demir S. Assessment of the Quality and Reliability of the Information on Retinal Detachment on YouTube. J Cukurova Anesth Surg. 2024; 7(3): 128-31. <https://doi.org/10.36516/jocass.1471157> Copyright © 2024 This is an open access article distributed under the terms of the Creative Commons Attribution-Non-Commercial-No Derivatives License 4.0 (CC-BY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal. 

2.2. Study design

A search was performed using the keywords " Retinal detachment", "A sign of retinal Detachment", and "Retinal detachment symptoms and treatment" searched on YouTube (<http://www.youtube.com>) on 30 January 2024. All video searches were performed by clearing all search history without logging into the user's account. A complete search history clearance was performed on all video searches. According to the standard search preference, videos were sorted according to the number of views. "Sort videos by relevance" was selected as the standard search preference.

This Excel file contains the following information: the video link, the quality of the uploader, the total number of views, the date the video was uploaded, the content of the video, its length (minutes), the date it was viewed, the amount of time that has passed since the video was uploaded, the number of comments, likes, and dislikes, and the Video Power Index (VPI). The video power index (VPI) is calculated using the following formula: Ratio of likes $\times 100 / \text{likes} + \text{dislikes}$. Ultimately, the research design was established by expunging the computer's previous searches and cookies used for the study.

2.3. Data collection

It used the "relevance" and "view counts" filters to search for the predetermined search terms. The most popular and appropriate videos for each search term were identified, and the data from all the videos in the study was stored in an Excel file. Duplicate videos, videos that lasted less than 30 seconds, and videos unrelated to retinal detachment, in languages other than English, contained news and entertainment, or had extremely poor audio and visual quality were not included in the current investigation.

The research examined 85 videos in total. The total number of videos was excluded 22 videos. A total of 63 videos were analyzed. One investigator (expert ophthalmologist SD) examined the videos.

2.4. Evaluation of the data

The researcher used the Global Quality Scale (GQS) and Quality Criteria for Consumer Health Information (DISCERN), Journal of the American Medical Association (JAMA) score system which has been used in numerous YouTube studies in the past, to evaluate the 63 videos that were included in the study in separate settings.

The DISCERN scoring system assesses the quality of information provided to patients about treatment options and the dependability of publications¹⁰. Each of the 15 questions in the DISCERN scoring system is given a score between 1 and 5. This instrument assesses the medical information's objectivity and exhaustibility, particularly concerning therapy. Eight questions in the first section assess the validity of a publication (in this case, an online video), and seven questions in the second section assess the information linked to treatment¹¹. The DISCERN scoring system ranges from 15 to 75 points and classifies items as very poor (15-26 points), poor(27-38 points), fair (39-50 points), good (51-62 points), and excellent (63-75 points).

A technique of scoring developed by Bernard et al. is called the Global Quality Score (GQS).¹² The ability of a video to educate patients is assessed using the Global Quality Score (GQS). A five-point Likert scale is used by the GQS system to assess the overall quality of a video's content. An outstanding quality is denoted by five points, while the lowest quality is represented by one point.

Information from health-related websites can be assessed using a well-known quality assessment tool, the Journal of the American Medical Association (JAMA) score system. There is a maximum score of four points and four possible criteria (authorship, attribution, disclosure, and currency). Each criterion is worth one point. The best quality is denoted by four points.^{13, 14} The videos were categorised into 4 categories as videos uploaded by physicians, academic institutions, YouTube health channels and patients. DISCERN scoring system and GQS scoring system are shown in Table 1.^{11, 12} The JAMA scoring system is shown in Table 2.^{13, 14}

Table 1
DISCERN scoring system and GQS scale

Scores	DISCERN Questions
1-5	Are the aims clear?
1-5	Does it achieve its aims?
1-5	Is it relevant?
1-5	Is it clear what sources of information were used to compile the publication?
1-5	Is it clear when the information used or reported in the publication was produced?
1-5	Is it balanced and unbiased?
1-5	Does it provide details of additional sources of support and information?
1-5	Does it refer to areas of uncertainty?
1-5	Does it describe how each treatment works?
1-5	Does it describe the benefits of each treatment?
1-5	Does it describe the risks of each treatment?
1-5	Does it describe what would happen if no treatment is used?
1-5	Does it describe how the treatment choices affect overall quality of life?
1-5	Is it clear that there may be more than 1 possible treatment choice?
1-5	Does it provide support for shared decision-making?
Scores	GQS
1	Poor quality, not at useful for patient
2	Generally poor quality, very limited us
3	Moderate quality, somewhat useful for
4	Good quality, useful patients
5	Excellent quality, very useful for patient

GQS: Global Quality Scale

Table 2
JAMA Score system

JAMA Criteria (One point for each Yes, Zero points for each No)
1. Authorship: Authors and contributors, their affiliations, and relevant credentials should be provided
2. Attribution: References and sources for all content should be listed clearly, and all relevant copyright information should be noted
3. Disclosure: Website "ownership" should be prominently and fully disclosed, as should any sponsorship, advertising, underwriting, commercial funding arrangements or support, or potential conflicts of interest
4. Currency: Dates when content was posted and updated should be indicated

JAMA: Journal of the American Medical Association

2.5. Statistical analysis:

The Statistical Package for the Social Sciences version 25.0 program (IBM Corp., Armonk, NY) was used to statistically analyze the study's data. The values of the median (minimum-maximum) and percentages are used to express descriptive data. Using the Shapiro-Wilk test, the data's conformance to the normal distribution was examined. One-way ANOVA test was used to compare means between

groups. Tukey's test was used for post hoc comparisons. Spearman's correlation was used to evaluate the analysis of correlation. A statistically significant p-value was defined as less than 0.05.

3. Results

A total of 85 videos were analyzed. Videos unrelated to retinal detachment (n = 8), duplicate videos (n = 5), videos in any language other than English (n = 7), videos shorter than 30 seconds (n = 2) were excluded. Table 3 summarizes the descriptive statistics of the 63 included videos. The nation of origin was used to categorize 63 videos in total. In total, 52 videos originated from the USA (82.5 %); 2 videos originated from other countries (3.2 %); and the origin of 9 videos was unknown (14.2%).

Additionally, one of the following publishers (physician, academic institution, YouTube health channel, patients) and categories were given to the 63 videos. Seven of the videos belonged to physicians (n= 7, 11.1 %), 23 belonged to academic institutes (n= 23, 36.5 %), 24 belonged to YouTube health channel (n= 24, 38.0 %) and 9 belonged to patients (14.2 %).

The DISCERN, GQS, and the JAMA scores differed between 4 different video uploaders (One-way ANOVA; $p < 0.001$, $p < 0.001$, $p < 0.001$). According to post-hoc analyses, videos uploaded by physicians are statistically significantly higher than YouTube health channels and videos uploaded by patients in terms of DISCERN score, GQS score and JAMA score ($p < 0.001$, $p < 0.001$, $p < 0.001$, respectively). Similarly, videos uploaded by academic institutes were significantly higher than YouTube health channels and videos uploaded by patients in terms of DISCERN score, GQS score and JAMA score ($p < 0.001$, $p < 0.001$, $p < 0.001$, respectively).

Furthermore, no significant difference was found between the DISCERN, GQS, and the JAMA scores between the videos uploaded by physicians and academic institutions in the subgroup analyses ($p = 0.22$, $p = 0.81$, $p = 0.42$, respectively). The DISCERN score, JAMA score and the GQS score were compared according to publishers and the results are shown in Table 4. In addition, Spearman's correlation analysis showed that there was no correlation between the DISCERN score, GQS score and the JAMA score of the videos and the year as the video year approached the present ($p = 0.78$, $p = 0.85$, $p = 0.52$, respectively).

Table 3

Descriptive statistics of retinal detachment videos

Descriptive statistics	Mean \pm SD	Range
Number of likes	3090 \pm 1977	1-84000
Number of dislikes	50.2 \pm 40.6	0-2000
Number of total views	16.500 \pm 1.800.000	21-8.700.000
Time since upload date (day)	1639 \pm 150	30-4350
Duration (second)	392 \pm 93.1	34-3794
Number of comments	158 \pm 122	0-6615
VPI score	88.10 \pm 11.28	0-99.38
DISCERN score	55.8 \pm 18.1	15-75
JAMA score	2.6 \pm 1.4	0-4
GQS score	3.7 \pm 1.3	1-5

JAMA: Journal of the American Medical Association; GQS: Global Quality Score. GQS: Global Quality Score; SD: Standard deviation, VPI: Video power index; JAMA: Journal of the American Medical Association;

Table 4

According to publishers DISCERN score, JAMA score, and GQS score

Publishers	n	DISCERN	JAMA	GQS
Physicians	7	66.6 \pm 7.3	3.2 \pm 0.8	4.2 \pm 0.8
Academic institution	23	61.8 \pm 11.8	3.7 \pm 0.3	4.0 \pm 0.6
YouTube health channel	24	52.8 \pm 13.4	2.4 \pm 1.2	3.3 \pm 0.9
Patients	9	40.8 \pm 3.1	2.6 \pm 1.2	2.9 \pm 0.3
p* values		$p < 0.001$	$p < 0.001$	$p < 0.001$

JAMA: Journal of the American Medical Association; GQS: Global Quality Score,

*One-way Anova Test

4. Discussion

YouTube is the most popular video-sharing website worldwide. This platform has informative, entertaining, and practical videos. Although social media has a lot of potential to make medical information easily accessible, it is impossible to guarantee that the information is impartial and accurate. Experts are concerned about the quality of videos, particularly those that contain health-related topics. Because of this, professionals have evaluated health-related YouTube videos, and the results have generally shown that the quality of these films is poor to mediocre.¹⁵⁻¹⁸ Patients may turn to YouTube in search of information because the content offered by medical professionals in patient education materials might be written at a comprehension level that is too high for them to grasp, making it impossible for them to evaluate the value, dependability, and accuracy of the information.¹⁹

In this study, it was determined that the DISCERN, JAMA and the GQS scores of retinal detachment videos on YouTube were good and the videos were of sufficient quality. Videos uploaded by physicians and academic institutions were found to be statistically significantly higher than YouTube health channels and videos uploaded by patients in terms of the DISCERN score, the GQS score and the JAMA score. In subgroup analyses, no significant difference was found in the DISCERN, GQS and the JAMA scores between videos uploaded by physicians and academic institutions ($p = 0.22$, $p = 0.81$, $p = 0.42$, respectively).

Previous studies have observed that despite the almost similar benefits of videos uploaded by physicians and non-physicians, videos uploaded by physicians have lower viewership rates, although videos uploaded by doctors are more trustworthy than those uploaded by non-physicians.²⁰ One possible reason for those outcomes could be that patients don't comprehend doctor-produced videos well enough. Songur et al. found that the retinal detachment surgery videos on YouTube had a medium DISCERN score, low JAMA and GQ scores, and poor-quality videos. Additionally, they found that videos with surgical content had higher scores overall than those without.⁹ Although Songur et al. found retinal detachment videos to be low in terms of video quality, it is thought that the difference between the two studies may be due to the fact that they also analyzed videos containing retinal detachment surgery.

The results of this study were found to be superior in terms of video quality compared to the study of Kucuk et al. who analyzed refractive surgery videos on YouTube. Kucuk et al. showed mean GQS, DISCERN score, and JAMA score values as 1.7, 33.2 and 0.7, respectively.²¹ This may be because the refractive surgery videos do not sufficiently understand the patients and the study includes videos with more patient experience than this study.

4.1. Limitations of the study

There are various restrictions on this study. The study's main drawback is that it only examined English-language videos. Additionally, keep in mind that YouTube's video specifications are subject to change. One potential limitation of this study is that it only

looked at 63 videos. Nonetheless, three search terms were employed to choose these 63 videos from 85 total videos using the "most viewed" and "relevance" filtering techniques. To the best of our knowledge, this study is the first to analyze only videos that have retinal detachment.

5. Conclusion

In conclusion, the quality of the videos on YouTube about "retinal detachment" was generally good enough. Although the quality of videos not uploaded by doctors was found to be lower, the quality of these videos was also found to be acceptable. The health professionals should share and peer-review videos that are related to health. Clear information should also be included in these expert-shared videos. It should be presented in an understandable manner rather than using technical terminology. Since retinal detachment is an urgent situation, these videos must be at a sufficient level and uploaded by physicians, since patients apply to YouTube instead of going to the emergency room or ophthalmologist.

Conflict of interest statement

The authors declare that they have no financial conflict of interest with regard to the content of this report.

Funding source

The authors received no financial support for the research, authorship, and/or publication of this article.

Author Contributions

Authors reviewed the results and approved the final version of the manuscript.

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

References

- Steel D. Retinal detachment. *BMJ clinical evidence* 2014. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3940167/>
- Lin JB, Narayanan R, Philippakis E, et al. Retinal detachment. *Nature reviews. Disease primers* 2024; 10(1): 18. <https://doi.org/10.1038/s41572-024-00501-5>
- Zaky H, Salem A, Alzubaidi M, et al. Using AI for Detection, Prediction and Classification of Retinal Detachment. *Studies in health technology and informatics* 2023; 305: 636-9. <https://doi.org/10.3233/shti230578>
- Celik H, Polat O, Ozcan C, et al. Assessment of the Quality and Reliability of the Information on Rotator Cuff Repair on YouTube. *Orthopaedics & traumatology, surgery & research.* 2020; 106(1): 31-4. <https://doi.org/10.1016/j.otsr.2019.10.004>
- Wasserman M, Baxter NN, Rosen B, et al. Systematic review of internet patient information on colorectal cancer surgery. *Diseases of the colon and rectum* 2014; 57(1): 64-9. <https://doi.org/10.1097/dcr.000000000000011>
- Kwok TM, Singla AA, Phang K, et al. YouTube as a source of patient information for varicose vein treatment options. *Journal of vascular surgery. Venous and lymphatic disorders.* 2017; 5(2): 238-43. <https://doi.org/10.1016/j.jvsv.2016.10.078>
- Desai T, Shariff A, Dhingra V, et al. Is content really king? An objective analysis of the public's response to medical videos on YouTube. *PloS one.* 2013; 8(12): e82469. <https://doi.org/10.1371/journal.pone.0082469>
- Kutluturk I, Aykut V, Durmus E. The use of Online Videos for Vitreoretinal Surgery Training: A Comprehensive Analysis. *Beyoglu Eye Journal* 2022; 7(1): 9-17.

<https://doi.org/10.14744/bej.2022.46338>

- Songur MS, Citirik M. Evaluation of the Usefulness of YouTube Videos on Retinal Detachment Surgery. *Cureus.* 2021; 13(11): e19457. <https://doi.org/10.7759/cureus.19457>
- Rees CE, Ford JE, Sheard CE. Evaluating the reliability of DISCERN: a tool for assessing the quality of written patient information on treatment choices. *Patient Education and Counseling.* 2002; 47(3): 273-5. [https://doi.org/10.1016/S0738-3991\(01\)00225-7](https://doi.org/10.1016/S0738-3991(01)00225-7)
- Charnock D, Shepperd S, Needham G, et al. DISCERN: an instrument for judging the quality of written consumer health information on treatment choices. *Journal of epidemiology and community health.* 1999; 53(2): 105-11. <https://doi.org/10.1136/jech.53.2.105>
- Bernard A, Langille M, Hughes S, et al. A systematic review of patient inflammatory bowel disease information resources on the World Wide Web. *The American journal of gastroenterology* 2007; 102(9): 2070-7. <https://doi.org/10.1111/j.1572-0241.2007.01325.x>
- Mangan MS, Cakir A, Yurttaser Ocak S, et al. Analysis of the quality, reliability, and popularity of information on strabismus on YouTube. *Strabismus.* 2020; 28(4): 175-80. <https://doi.org/10.1080/09273972.2020.1836002>
- Silberg WM, Lundberg GD, Musacchio RA. Assessing, controlling, and assuring the quality of medical information on the Internet: Caveant lector et viewor--Let the reader and viewer beware. *Jama.* 1997; 277(15): 1244-5.
- Cakmak G, Mantoglu B. Reliability and Quality of YouTube Contents Pertaining to Pancreatic Cancer. *Cureus.* 2021; 13(3): e14085. <https://doi.org/10.7759/cureus.14085>
- Kuru T, Erken HY. Evaluation of the Quality and Reliability of YouTube Videos on Rotator Cuff Tears. *Cureus.* 2020; 12(2): e6852. <https://doi.org/10.7759/cureus.6852>
- Aydin MF, Aydin MA. Quality and reliability of information available on YouTube and Google pertaining gastroesophageal reflux disease. *International journal of medical informatics.* 2020; 137: 104107. <https://doi.org/10.1016/j.ijmedinf.2020.104107>
- Erdem MN, Karaca S. Evaluating the Accuracy and Quality of the Information in Kyphosis Videos Shared on YouTube. *Spine.* 2018; 43(22): E1334-e1339. <https://doi.org/10.1097/brs.0000000000002691>
- Williams AM, Muir KW, Rosdahl JA. Readability of patient education materials in ophthalmology: a single-institution study and systematic review. *BMC ophthalmology.* 2016; 16: 133. <https://doi.org/10.1186/s12886-016-0315-0>
- Tartaglione JP, Rosenbaum AJ, Abousayed M, et al. Evaluating the Quality, Accuracy, and Readability of Online Resources Pertaining to Hallux Valgus. *Foot & ankle specialist.* 2016; 9(1): 17-23. <https://doi.org/10.1177/1938640015592840>
- Kuuk B, Sirakaya E. An Analysis of YouTube Videos as Educational Resources for Patients About Refractive Surgery. *Cornea.* 2020; 39(4): 491-4. <https://doi.org/10.1097/ico.0000000000002237>