British Journal of Multidisciplinary and Advanced Studies, 3 (1),20-28

Print ISSN: 2517-276X

Online ISSN: 2517-2778

https://bjmas.org/index.php/bjmas/index

Published by the European Centre for Research Training and Development UK

Quality Assessment and Content Analysis of Youtube Videos on Glaucoma Surgery

Kenan Dağdelen

Department of Ophthalmology, Beytepe Murat ErdiEkerDevletHastanesi, AhlatlıbelMh. 1746 Sk. 06800 Beytepe, Çankaya, Ankara, Türkiye

DOI: https://doi.org/10.37745/bjmas.2022.0010 Published: 12th October, 2022

Citation: Dağdelen K. (2022) Quality Assessment and Content Analysis of Youtube Videos on Glaucoma Surgery, *British Journal of Multidisciplinary and Advanced Studies*, 3 (1),20-28

ABSTRACT: *The aim of this study is to evaluate the accuracy, quality and reliability of the videos on glaucoma surgery on YouTube which is an online video-sharing platform.The material has been obtained by a video search carried out on the Youtube -online video platform- with the keyword "Trabeculectomy" is kind of glaucoma surgery. A total of 44 videos for the keyword "trabeculectomy" were analyzed. When evaluated according to the exclusion criteria, a total of 10 videos were included in the analysis, and the 34 videos were excluded. Thus, after carving out the secondary data, a number of statistical analyses were performed namely Shapiro-Wilks, Kruskall-Wallis, Mann-Whitney U and Backward Linear Regression. In this framework, statistical analyzes were made via using the Stata software. Statistical significance value (threshold) was accepted as %10 ($p<0.05$). When the videos were evaluated according to the information content they provided, it was found that 5 videos had low quality information content, 4 videos had medium quality information content, 1 video had good quality information content. Moreover, it was statistically determined that the parameter affecting the number of views was the number of likes ($p<0.05$). This is the first study in ophthalmology to analyze publicly available online data evaluating glaucoma patients.YouTube videos are essentially insufficient as an educational material and an English source of information for the glaucoma surgery. Health professionals need to pay more attention to online platforms so that patients can access accurate information.*

KEYWORDS*:* glaucomasurgery; trabeculectomy; youtube; surgical video; video quality; content analysis.

INTRODUCTION

The time we live in is called the age of technology and the rapidly developing technology has brought some changes in people's everyday lives. In this context, the form of face-to-face communication has now left its place to the communication with technological tools. One of the most widespread of these tools is social media and the importance of social media is increasing day by day.

Communication and most of the postings/materials which are shared via the internet are usually a part of social media. Social media, which includes the collaborative learning and working process, seems to be relatively easy and effortless. Especially in terms of use, compared to different teaching management techniques, it is like a kind of "*shortcut*" with its flexibility and usability. On the other hand, the relationship between social media and education/training can be related to many crucial issues.

Undoubtedly, there are many tools that can be used as educational material. In addition to educational materials, printed publications such as magazines and books, media tools such as television and radio are supportive elements in various stages of education. However, both the use and access opportunities of all these materials are changing from day to day in terms of trainees and educators. At this point, the effects of social media, which have the potential to be used as a healthy educational tool, should be discussed. To explain with an example, watching surgery on Youtube videos, which are accessible to everyone, can mean quickly increasing the professional knowledge of a general surgeon or physician candidate.

In this study, it is aimed to evaluate the quality and reliability of the videos published on YouTube on trabeculectomy surgeries, which is the last step in the treatment of glaucoma patient's surgery. As a result of the literature review conducted in Turkish and English, similar studies were found in other areas, but no academic study was found on glaucoma surgery. In this context, it is expected that this study will both contribute to the literature and add value to the society and decision makers.

Today, the internet technology has simply become a part of daily life. With today's technology and the internet; online education, communication, electronic library access, student communications on social networking sites and educational videos can be easily accessed.Another benefit of the internet is to create virtual environments. Virtual environments have been set up to support live teaching and synchronous formats and to follow feedback. Lessons can be listened to in virtual environments, interaction with text and audio can be provided, and video and visual presentations can be prepared. In addition; academic journals can be followed in virtual environments and the most up-to-date information in their fields can be learned easily (1).

Information shows a rapid increase in virtual platforms where all users can share, and people can access information in a much shorter time in this way. Video sharing, which is one of the methods of sharing information on the internet, also appeals to visual and auditory communication channels, unlike other web contents (2).In connection with this, video sharing on the internet is increasing day by day. Today, it is seen that students spend most of their time on the internet, mostly watching videos and/or listening to music on the internet (3-4). One of the most used web-sites for video-sharing and video-watching is YouTube.

YouTube[1] is mainly a video sharing and watching website that makes it possible for users to connect and provide information to each other. While individuals have been subject to a passive role in terms of traditional media tools, individuals sharing information through platforms such as YouTube, in other words, have become "*active individuals*". YouTube, which plays a very important role in the promotion/advertising of individuals, organizations, institutions, companies and even sovereign governments, has become one of the most effective mass media tools of this area.YouTube[2] is also frequently used for educational purposes. In this context, YouTube is also a platform that aims to be used as a pedagogical resource where educators desire to teach information from all parts of the world with the help of videos (5). As of today, it can be said that YouTube has realized this vision to a great extent.

There also exist many videos on trabeculectomy on YouTube, as well. Trabeculectomy, defined by Cairns (6), is a type of Penetrating glaucoma surgery. In this framework, glaucoma is a chronic ischemic optic neuropathy characterized by optic nerve head cupping, degeneration of retinal ganglion cells, progressive optic atrophy and loss of specific visual field. If left untreated, it can result in permanent vision loss. Increased intraocular pressure is one of the most important risk factors. In general, the goal of glaucoma treatment is to preserve visual function (7).

MATERIALS AND METHODOLOGY

The data of this study were collected between October 15 and November 10, 2021. For this purpose, YouTube, one of the most common video sharing sites in the world, was searched in English with the keyword "*trabeculectomy*".

Exclusion Criteria

The exclusion criteria applied for the purpose of collecting material suitable for the study are:

- Not being in English
- Duplicate videos
- The lack of title information of the video
- Being irrelevant to the subject
- Videos with only advertising content
- Videos with a pixel below 240
- Takes longer than 20 minutes

After applying the exclusion criteria, the first ten videos found to be suitable for the research were evaluated.

[1] After YouTube was founded in 2005, it was bought by Google in 2006. Apart from video sharing and watching, it also provides advertising to its users.
[2] https://www.youtube.com/

The analysis in this study was built on the basis of statistical and mathematical calculations and the subjective evaluation of the author. There was no need for an ethics committee report as the study used completely publicly available data.

Following the data collection process, the following parameters were recorded for each video:

- Header information and URL (Uniform Resource Locator)
- Video duration (in minutes)
- Upload date
- Time span from upload date to the date data collected (in days)
- Number of subscribers of the publishing user
- Source performing the upload (patient, doctor, commercial)
- The source of the narration (patient, doctor, voice only),
- Number of views,
- The number of likes and dislikes,
- Number of comments.

The *interaction index* and *viewership rate* were calculated with the obtained raw data from the YouTube. The formulas that were used to calculate these indexes are indicated below:
*Interaction Index (%): ((number of likes - number of dislikes) / Views) * 100* (i)
*Viewership Rate (%): (Total Views / Number of Days Since Upload Date) * 100* (ii)
On the other hand, the level of providing information about the Trabeculectomy of the videos included in the study was evaluated using a standard scoring scale. This evaluation has been made only by the author. In this context, each video was scored in eight items in total with the score sheet given in **Table 1.**

As stated in the study of Ayrancı et al. (8) the videos with a score between 0-2 are "*bad information content*", videos with a score between 3-4 "*poor information content*", videos with a score between 5-6 "*good information content*" and the videos with a score of 7-8 were determined as having "*excellent information content*". Following Ayrancı et al. (8) the videos are grouped separately according to the upload source as individual, medical person and a commercial entity. On the other hand, the visual quality of the videos was rated as good, moderate, and poor, as defined in the study by Sorensen et al. (9).

Also, the interaction index and the viewership rate parameters of the videos were determined by using the number of likes, dislikes, total likes and dislikes, total views, and days since uploaded, as indicated by Hassona et al. (10).

Statistical analyzes were carried out with the Stata (Stata 15) software. In this context, Shapiro-Wilks, Kruskall-Wallis, Mann-Whitney-U and Backward Linear Regression method tests were used. The threshold value for statistical significance of values in the empirical analyses was accepted as %10 ($p<0.05$).

In this framework, the normality test for the number of views, likes, dislikes, video duration, time elapsed since upload date, uploader subscriber interaction index, view rate and number of comments was performed using the Shapiro-Wilks test. The median, minimum and maximum values are also displayed as descriptive statistics.

Backward method was applied to include independent variables in the model in linear regression analysis. The Kruskall-Wallis test was used to compare the information content of the videos as bad, poor, good, or excellent; and the video source as individual, doctor, and commercial. Mann-Whitney U test was used for pairwise comparisons between the aforementioned groups. Statistical significance value of threshold was determined as %10 ($p<0.05$).

RESULTS AND DISCUSSION

In the empirical work, a total of 44 videos for the keyword "*trabeculectomy*" were analyzed. When evaluated according to the exclusion criteria, a total of 10 videos were included in the analysis, and the 34 videos were excluded.

When all the videos are evaluated, the number of views is 6.345 ± 23.123, the number of likes is 314±68 the number of dislikes is 9132±1168, the interaction index is 1.71±2.07, and the view rate was found to be 0,51.Descriptive statistical evaluation results explained **Table 2.**

When the videos were evaluated according to the upload source, it was found that 2 videos were downloaded by the individuals who is not a doctor, 6 videos from doctors and 2 videos from a commercial source. It was determined that there was a statistically significant difference between the groups only in the number of subscribers belonging to the resource ($p= 0.02$). When the videos were evaluated according to the level of information content, it was determined that 4 videos were bad, 5 videos were weak, and 1 video had good information content.

With the development of technology, the internet has become one of the main sources that people use to obtain information on any health-related subject. About 81% of people use the internet for health research. Youtube video sharing site is an internet platform that is frequently used to obtain information on any subject.

This platform contains a wide variety of health-related topics and a large number of videos. Many subjects were examined in studies using the Youtube video sharing platform, no study has been found that examines the quality and accuracy of the information provided by the videos on glaucoma surgery on Youtube.

The number of views of the videos, the number of likes, the number of dislikes and similar parameters can lead to the evaluation of a video as useful or useless.Although the evaluation of these videos is a subjective situation, the video content is very effective in terms of obtaining information about the subject. In our study, it was found that the level of information provided

by YouTube videos about glaucoma surgery is quite insufficient. In our study, it was found that only 1 out of 10 videos (10%) provided information of good quality.

This study is limited to the inclusion of English videos only. However, Youtube is a very large platform with very useful videos in other languages. For this reason, it is important for other languages to evaluate the information content provided by the videos on the Youtube platform. One of the limitations of this study is that the evaluation was done by a single researcher. Evaluations were carried out using a standard method used in many previous studies.

According to the content analysis used in this study, it has been seen that the number of videos with good information content is quite low. This shows that the Youtube video platform is an insufficient source of information about glaucoma surgery.

In the light of these findings, it is thought that it is extremely important for physicians and health care providers to be aware of the information on the internet platform and to carry out studies on this subject in order for patients to reach accurate and reliable information more easily.Social media, which offers innovations and enables transformations in many areas of social life, inevitably brings up the issues that can be discussed under the title of education and training. Education is the name of a journey that includes all kinds of experience and knowledge that the individual has experienced in a particular subject with the expectation that he will contribute to the development process of his own will (11-15). Teaching/learning is one of the tools of this journey. In this sense, social media now has an important place in education and training.

Undoubtedly, there are many tools that can be used as educational material. In addition to educational materials, printed publications such as magazines and books, media tools such as television and radio are supportive elements in various stages of education. However, both the use and access opportunities of all these materials are changing from day to day in terms of trainees and educators. At this point, the effects of social media, which have the potential to be used as a healthy educational tool, should be discussed. To explain with an example, watching surgery on Youtube videos, which are accessible to everyone, can mean quickly increasing the professional knowledge of a general surgeon or physician candidate.

The YouTube video platform is not a reliable and useful source of information about glaucoma surgery. In order to explain glaucoma surgery procedures and explain them to patients more easily, the use of the internet by health professionals should be widespread. Physicians should be aware of the misinformation found on YouTube and other internet information sources and ensures that their patients always access accurate and reliable sources of information.

This is the first study in ophthalmology to analyze publicly available online data evaluating glaucoma patients. YouTube videos are essentially insufficient as an educational material and an English source of information for the glaucoma surgery. Health professionals need to pay

more attention to online platforms so that patients can access accurate information. The study was oral presented in 9th International Medicine and Health Sciences Researches Congress.

References

1. Selwyn, N. The Internet and education. Chairman's Advisory, BBVA (eds.), 2014; 19: 191-217.
2. Copley, J. Audio and video podcasts of lectures for campus-based students: production and evaluation of student use. Innovations in education and teaching international, 2007; 44(4): 387-399.
3. Kennedy, G., Dalgarno, B., Gray, K., Judd, T., Waycott, J., Bennett, S. J., Maton, K. A., Krause, K., Bishop, A., Chang, R. &Churchwood, A. The Net Generation are not big users of Web 2.0 technologies: preliminary findings. In R. Atkinson, C. McBeath, S. Soong & C. Cheers (Eds.), Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education. 2007. pp. 517-525. Singapore: Nanyang Technology University.
4. Prensky, M. Digital natives, digital immigrants. Part 1. On the horizon, 2001; 9(5): 1-6.
5. Duffy, P. Engaging the YouTube Google-eyed generation: Strategies for using Web 2.0 in teaching and learning. Electronic Journal of E-learning, 2008; 6(2): 119-130.
6. Cairns J.E. Trabeculectomy. Preliminary report of a new method. Am J Ophthalmol, 1968; 66: 673-679.
7. Kocatürk, T., Bekmez, S., Çakmak, H., and Dayanır, V. Trabekülektomikomplikasyonları. Meandros Medical Journal, 2015; 16: 114-123.
8. Ayrancı, F.; Büyük, S.K. and Kahveci, K. Are YouTubeTM videos a reliable source of information about genioplasty? Journal of Stomatology, Oral and Maxillofacial Surgery, 2020; 122 (1): 39-42.
9. Sorensen JA, Pusz MD and Brietzke SE. Youtube as an Information Source for Pediatric Adenotonsillectomy and Ear Tube Surgery. Int J PediatrOtorhinolaryngol 2014; 78: 65-70.
10. Hassona Y, Taimeh D, Marahleh A. and Scully C. YouTube as a source of information on mouth (oral) cancer. Oral Dis, 2016; 22:202-208.
11. Konuk, N., Güntaş, S. (2019). SosyalMedyaKullanımıEğitimive Bir EğitimAracıOlarakSosyalMedyaKullanımı. International Journal Entrepreneurship and Management Inquiries, 3 (4): 1-25.
12. Sayin O, Altinkaynak H, Adam M, Dirican E, Agca O. Reliability of YouTube Videos in Vitreoretinal Surgery. Ophthalmic Surg Lasers Imaging Retina. 2021 Sep;52(9):478-483. doi: 10.3928/23258160-20210817-01. Epub 2021 Sep 1. PMID: 34505804.
13.McKee HD, Jhanji V. Learning DMEK From YouTube. Cornea. 2017 Dec;36(12):1477-1479. doi: 10.1097/ICO.0000000000001399. PMID: 28976416.
14. Şahin A, Şahin M, Türkcü FM. YouTube as a source of information in retinopathy of prematurity. Ir J Med Sci. 2019 May;188(2):613-617. doi: 10.1007/s11845-018-1902-2. Epub 2018 Sep 20. PMID: 30238185.

15. Latif MZ, Hussain I, Saeed R, Qureshi MA, Maqsood U. Use of Smart Phones and Social Media in Medical Education: Trends, Advantages, Challenges and Barriers. Acta Inform Med. 2019 Jun;27(2):133-138. doi: 10.5455/aim.2019.27.133-138. PMID: 31452573; PMCID: PMC6688444.

Table 1: The Scoring Scale and Demographic Distribution Used to Determine the Usefulness of the Videos

Scoring title	**Score**
Identification done	1
Indications explained	1
Contraindications explained	1
Advantages explained	1
Procedures explained	1
Complications explained	1
Prognosis and persistence explained	1
Cost information given	1
Total Score	**8**

Source: Ayrancı et al., 2020.

British Journal of Multidisciplinary and Advanced Studies, 3 (1),20-28
Print ISSN: 2517-276X
Online ISSN: 2517-2778
https://bjmas.org/index.php/bjmas/index
Published by the European Centre for Research Training and Development UK

Table 2: Descriptive Statistical Evaluation Results

	N	Min	Median	Max	Mean
Views	10	78	6.345	101316	23.123
Video duration (minutes)	10	1.2	4.1	9.34	4.19
Time since upload (days)	10	9	1121	3285	612
Number of subscribers	10	6	1229	15000	2126
Number of likes	10	2	41	314	68
Number of dislikes	10	1	92	9132	1168
Number of comments	10	4	71	751	189
Interaction index (%)	10	1.71			
Views rate (%)	10	0.51			

Source: Calculated by the Author. * Statistical significance value was accepted as $p<0.05$.