Reliability of YouTube as a Source of Information on Age-Related Macular Degeneration during the COVID-19 Pandemic

Gamze Karataş* and Mehmet Egemen Karataş

Department of Ophthalmology, Osmaniye State Hospital, Osmaniye, Turkey

*Corresponding Author: Gamze Karataş, Department of Ophthalmology, Osmaniye State Hospital, Osmaniye, Turkey.

Abstract

Purpose: The aim of the study was to assess the quality of videos on YouTube about Age-Related Macular Degeneration.

Material-Method: This study is a retrospective and cross-sectional study. A YouTube search for the term "Age-Related Macular Degeneration" and "Senile Macular Degeneration" were made, and the first 200 videos were recorded. The number of views, upload time (i.e. age) of all videos, video duration, and source (i.e. physicians, healthcare providers) were recorded. Video sources were evaluated as physicians and healthcare providers. The *Journal of the American Medical Association* (JAMA) and Global Quality scores of all videos were also evaluated and recorded by two experienced ophthalmologists.

Results: Considering our exclusion criteria from the 200 videos we evaluated, 158 videos were included in the study. The mean JAMA score was 1.94 ± 1.02, and the mean Global Quality score was 3.30 ± 0.69. For videos uploaded by physicians (n = 70, 44%), the mean JAMA score was 2.70 ± 0.77, and the mean GQS was 3.47 ± 0.62. For videos uploaded by healthcare providers (n = 88, 56%), the mean JAMA score was 1.36± 0.78, and the mean GQS was 3.18 ± 0.73. JAMA score was statistically significant between videos uploaded by physicians and healthcare providers (p < 0.001).

Conclusion: As a result of the videos reviewed, YouTube videos can be educational, and informative for patients, and physicians. Only if the video source and content are selected correctly.

Keywords: YouTube; Age-Related Macular Degeneration; COVID-19 Pandemic; Senile Macular Degeneration

Introductıon

Online services required by our age and pandemic conditions have an important place in every aspect of our lives. Nowadays we are less involved in social life, accessibility of health services, and health information on the internet has gained importance. However, the accuracy, reliability, and comprehensiveness of easily accessible information are necessary for users to receive reliable information.

YouTube™ (http://www.youtube.com); It is the second most visited website in the world with open access, where everyone can share, easy to use, and access [1,2]. All videos/shares contained in such a frequently used online platform must contain correct information and convey the correct information to its users.

Age-related macular degeneration is an ophthalmological disease that is frequently seen over the age of 50 and causes irreversible blindness [3]. In AMD patients; decreased visual acuity, central scotoma, and metamorphosis appear as a symptom. Less common among findings contrast decreased sensitivity, decreased color vision, photopsia, and increased sensitivity to glare. The clinical spectrum of AMD encompasses drusen, hyperplasia of the retinal pigment epithelium (RPE), geographic atrophy, and choroidal neovascularization (CNV). These changes affect the macula of the retina and subsequently may affect central or reading visual acuity [4].

Aim of the Study

Our study aims to analyze the informative videos of Age-related macular degeneration, one of the ophthalmologic disease, which has a large place on YouTube™. Thus, we will evaluate the quality of those who use YouTube™ as an educational and information resource.

Material and Method

Our study is a retrospective and cross-sectional study. Searched online on Youtube on October 1, 2020 and all video searches were done by clearing all search history without any user login. The standard search preferences were selected as "sort videos by relevance". We searched these terms; 'Age-related macular degeneration', 'senile macular degeneration'. The first 200 videos were considered because they were the most common and easily accessible, as medical students or patients were unlikely to continue searching after this point [5].

Only videos longer than 60 seconds in English that provide information about AMD (without multiple content) were included in the study. Duplicate videos, videos in other languages, irrelevant videos, videos with multiple content, videos shorter than 60 seconds were excluded.

The number of views, upload time (i.e. age) of all videos, video duration, and source (i.e. physicians, healthcare providers) were recorded. Video uploaders consisted of physicians, healthcare providers, pharmaceutical companies, and health-related channels.

Since pharmaceutical companies and health-related channels have few videos, we have combined them all under the name of the healthcare provider. Video sources were evaluated as physicians and healthcare providers. All videos are *Journal of the American Medical Association* (JAMA), and Global Quality Scores (GQS) were also evaluated by two experienced ophthalmologists and recorded.

JAMA scoring system used to evaluate the reliability of online health-related resources. It consists of 4 criteria: authorship, attribution, disclosure, currency. 0 or 1 point is taken for each section and four points indicate the highest quality [6]. JAMA scoring system is shown in table 1.

JAMA Score	
Authorship	Authors and contributors, their affiliations, and relevant credentials should be provided
Attribution	References and sources for all content should be listed clearly, and all relevant copyright information should be noted
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
Currency	Dates when content was posted and updated should be indicated

Table 1: *JAMA scoring system.*

JAMA: Journal of the American Medical Association.

GQS is a scoring system in which the general information flow for a patient of a particular website is evaluated, the quality of the information. A 5-point scale is used. Videos rated with scores of 4 or 5 points were considered as high quality, 3 points were considered intermediate quality, and scores of 1 or 2 points were considered as low-quality [7]. As a result of this assessment, it gives an idea of how useful, understandable, and reliable it is for patients [8]. GQS scoring system is shown in table 2.

Global Quality Score	
1)	Poor quality, very unlikely to be of any use to patients
2)	Poor quality but some information present, of very limited use to patients
3)	Suboptimal flow, some information covered but important topics missing, somewhat useful to patients
4)	Good quality and flow, most important topics covered, useful to patients
5)	Excellent quality and flow, highly useful to patients

Table 2: *GQS scoring system.*

GQS: Global Quality Scores.

Each video included in the study was analyzed by 2 experienced ophthalmologists and recorded data. The reproducibility of the JAMA, and GQS were tested and interobserver intraclass correlation coefficients revealed a Spearman correlation coefficient of greater than 0.90.

Statistical analysis

All statistical analyzes of the collected data were done using SPSS software version 22.0 (IBM Co., Armonk, NY, USA). The mean ± standard deviation and median values were calculated for the collected data by measuring JAMA, and GQS scores. Shapiro - Wilk W was applied to evaluate for normal distribution of continuous variables, Mann - Whitney U to compare variables, Spearman correlation test to examine relationships between variables between groups. $P < 0.05$ was considered significant.

Results

Considering our exclusion criteria from the 200 videos we evaluated, 158 videos were included in the study. 70 (44%) of these videos were uploaded by physicians and 88 (56%) by healthcare providers users.

The total viewing average was 37.807 ± 13.253. An average number of videos watched by physicians 13.773 ± 16.453, healthcare providers 56.379 ± 17.531. There was no statistically significant difference between the number of views of physicians and healthcare providers (p = 0,326).

The average time of all videos to be online on YouTube (age) was 1438 ± 828 days. An average number of ages of the videos of the physicians 1649 ± 938 and healthcare providers 1277 ± 693 days. There was no statistically significant difference between the number of ages of physicians and healthcare providers (p = 0.163).

The average length (min) of all videos was 14.05 ± 19.11 min. The average number of lengths of the videos of the physicians 19.81 ± 20.83 and healthcare providers 9.59 ± 16.82. There was no statistically significant difference between the number of length of physicians and healthcare providers (p = 0.110).

The mean JAMA score was 1.94 ± 1.02, and the mean Global Quality score was 3.30 ± 0.69. Interobserver intraclass correlation coefficients for JAMA, and Global Quality scores were 0,887 [95% confidence interval (CI), 0,769 - 0,964], 0,956 (95% CI, 0,906 - 0,995), and 0,911 (95% CI, 0,717 - 0,969), respectively.

For videos uploaded by physicians (n = 70, 44%), the mean JAMA score was 2.70 ± 0.77, and the mean GQS was 3.47 ± 0.62. For videos uploaded by healthcare providers (n = 88, 56%), the mean JAMA score was 1.36 ± 0.78, and the mean GQS was 3.18 ± 0.73. GQS was no statistically significant difference between the number of length of physicians and healthcare providers (p = 0.202). JAMA score was statistically significant between videos uploaded by physicians and healthcare providers (p < 0.001) (Figure 1).
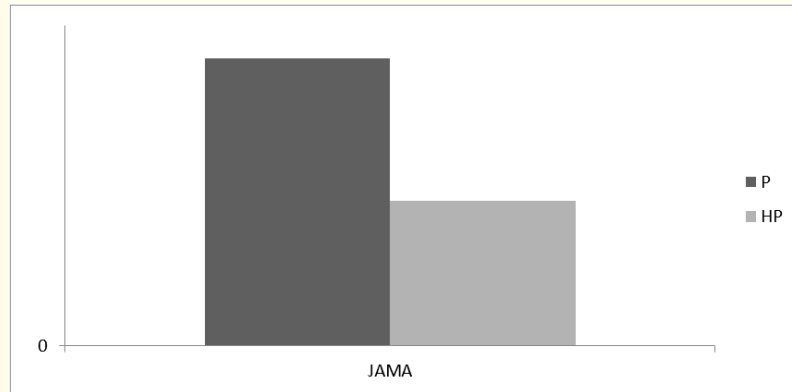

Figure 1: The distribution of JAMA score of among groups (P < 0.001*).
JAMA: Journal of the American Medical Association P: Physicians HP: Healthcare Providers.

Discussion

Today, the most preferred way to access information is internet use. In addition, medical students, doctors, patients, and people related to medical issues can access the fastest information is the internet.

Since we know that YouTube is one of the most used sites on the internet and we think that video narratives can be more visually informative, we decided to review videos about AMD on YouTube [1].

AMD is a disease of increasing importance and awareness in the population over 50 years of age. It is important to be detected early and to start treatment on time in terms of protecting vision longer [9]. And for this reason, information about this disease is made in the press and on the internet. Not only patients but also physicians and medical students, as well as many other subjects, conduct their training on AMD online. For this reason, the accuracy, reliability, and comprehensibility of the contents here gain importance.

In our study, the quality of information about the disease (symptoms, treatment) was evaluated for patients and physicians dealing with AMD. There was no statistically significant difference between physicians and healthcare providers in terms of monitoring, duration, and video length. We attribute this to the fact that YouTube, a public platform, does not limit people's video content. This situation revealed that we need to decide between these two groups using scoring systems. And to be objective in making this assessment, two experienced ophthalmologists evaluated each video separately, and international, objective scoring systems were used. In previous studies, different scoring systems were used in terms of the reliability of the videos on the websites [10,11]. We used scoring systems that evaluate different aspects to reach a more objective result.

JAMA is a scoring system for assessing health-related online source reliability. JAMA is used in the literature to evaluate the source reliability of video content on websites [12]. In our study, the mean JAMA score was 1.94 ± 1.02, for videos uploaded by physicians the

mean JAMA score was 2.70 ± 0.77, uploaded by healthcare providers the mean JAMA score was 1.36 ± 0.78. JAMA; It is a scoring system that deals with online videos in a more academic sense. Authors and references should be clearly stated. We attribute this low JAMA score to the lack of explicit sources of physicians and healthcare providers. Besides, JAMA scores were statistically higher since the videos of the physicians group were intended for other physicians and medical students as well as patients, as they were more academic. On the other hand, the videos of the healthcare providers were far from the academic approach because they were mostly aimed at patients and the JAMA scores were low accordingly.

GQS scoring system was used to evaluate the educational quality of the videos and categorizes benefits to patients. This scoring system has been used as an evaluation tool in many studies in the literature before [10-13]. In our study, the mean Global Quality score was 3.30 ± 0.69, for videos uploaded by physicians the mean GQS was 3.47 ± 0.62, uploaded by healthcare providers the mean GQS was 3.18 ± 0.73. There was no statistically significant difference between the GQS of physicians and healthcare providers (p = 0.202). We explain this result as follows: In both groups, there are useful ingredients for patients. Since the audience of the physicians group was both patients and medical professionals, their narratives were more understandable to both academics and patients. This explains their higher score in both scoring systems. However, as the target group of the healthcare providers group was patients, GQS also scored higher than JAMA and no statistically significant difference was found with the physicians group.

In this study, in which we examined YouTube videos about AMD, when we evaluate it for patients, it may be misleading to diagnose the disease only through videos because there may be different diseases with similar complaints. But these videos can understand that their complaints are important and cause them to consult an ophthalmologist without delay. It may be possible to obtain better visual results with early diagnosis and treatment. Otherwise, we think that incomplete and incorrect information may cause false expectations for patients.

Physicians/medical students who want to learn about AMD disease on YouTube videos can improve their applications/practices with the right video selection if they have sufficient theoretical knowledge. However, the content and technique of the videos to be selected especially for students are important. First of all, they should prefer videos that explain the pathophysiology of the disease, in which the resources are given clearly, and then the clinical diagnosis and treatment videos. It is the healthiest way to access correct and reliable information without disturbing the systematic order.

Finally, due to the restrictions in social areas required by today's conditions (pandemic life), online access to medical information has begun to be seen as a part (perhaps the first step) of healthcare. Although it is a good development in terms of fast access to information, it also carries risks. Access to accurate and reliable information is extra important as the subject is human health.

Considering the data of our study and previous studies, our recommendation; Medical videos can be scored according to the scoring systems used internationally with the boards formed by the specialists. Labels can be made to indicate who (physician, patient) is suitable for the content of the videos so that the most accurate source and content for the person can be safely accessed. Thus, users can know in advance how much they will benefit from the video and its reliability.

Conclusion

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Competing Interests

The authors declare that they have no conflict of interest.

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Data Availability

Applicable.

Ethical Approval

This article does not contain any studies with human participants performed by any of the authors.

Consent to Participate

This article does not contain any studies with human participants performed by any of the authors.

Consent for Publication

This article does not contain any studies with human participants performed by any of the authors.

Financial Interest

We have no financial disclosures to report.

Code Availability

Not applicable.

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