

Do The Videos About Hallux Rigidus on YouTube Generally Exhibit High Quality?

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Introduction: Hallux Rigidus is a disease characterized by pain and weakness in the first metatarsophalangeal joint of the foot. Patients with this condition describe severe pain when walking and taking steps. Research on the quality of information available on the Internet is lacking. In our study, we aimed to analyze the videos about Hallux Rigidus on YouTube, one of the video sharing applications.

Methods: Our research is based on data collected from a video sharing site (YouTube) on 12 July 2023. The search is done through the configuration process. "Change hallux" was typed into the search engine. The popularity of the video was analyzed using the Video Power Index (VPI) $[(\text{Like}/(\text{Like}+\text{Dislike})) \times 100]$. Videos were classified into five different groups based on the source they were uploaded to: [1] Community/Nonprofits, [2] Medical Professionals, [3] Medical Schools Patient, [4] Universities / Schools, and [5] Patients / Independent users / Other places. The quality of movies is evaluated with the Global Quality Score (GQS). All videos were evaluated by one surgeon. A modified DISCERN scale was used to assess the reliability and quality of information provided in the videos.

Results: Fifty videos were analyzed in this study. The average number of views of the video is 6507, and the average length of the video is 958 seconds. When the video-based scores of the DISCERN variable were compared with the GQS, the scores of the patient/independent user/other group were lower, but it was not significant ($p>0.05$).

Conclusion: We believe the content of this video is good and informative. Do not use channels other than healthcare providers or dubious channels, as videos uploaded by individuals can be misleading.

Keywords: Hallux rigidus, YouTube, pain, video

Introduction

Social media is a general definition that covers all technological online environments where people share thoughts, knowledge, experiences and comments with other people. Social media platforms can be counted as Wikipedia, online forums, social networks (Facebook, Twitter), video sharing sites (YouTube, VuMedi, Vimeo),

blogs (WebMD), audio files called podcasts, and live chat environments. All Hundreds of pages of information, pictures and media elements are added to the Internet network from these media at any time. For example, the total amount of video content uploaded per minute to the popular video site YouTube is more than 100 hours and this is increasing (1).

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Social media is a new topic for orthopedics and traumatology. In fact, Orthopedics is one of the leading fields of specialization in the field of medicine, which has always been intertwined with technological innovations. Therefore, in the virtual world, Orthopedics is expected to reach the high level it deserves. You can access many publications with the use of the Internet, as well as numerous professional resources are available (2).

Hallux rigidus is a problem arising from pain and limitation of movement in the first metatarsophalangeal joint of the foot. Diagnosis of this condition includes physical examination and direct radiography. Patients with this condition describe severe pain when walking and taking steps (3). These diseases can inflict pain on every step we take for most of the day. Today, the closest source of information for patients who need information about this disease is the internet. 95% of internet users use YouTube (4). Having rich video content is one of the most important factors that direct patients to where the disease is being investigated. The Internet is an important and accessible source of information. Research on the quality of information available on the Internet is lacking. In current study, we aimed to analyse the videos about hallux rigidus on the YouTube platform, one of the widely used video sharing sites.

Materials and Methods

Ethical Statement

Ethics committee approval is not required as humans or animals were not included in this study. Similar studies have been conducted without ethics committee approval (5).

Study Design

Our research is based on data collected from a video sharing website (YouTube) on July 12, 2023. Before conducting the research, the Internet browser's search history was removed to support the integrity of the results. The search is done through the configuration

process. "Change hallux" was typed into the search engine. Silent, uninterrupted and advertising videos are not included. The first selection includes the first 50 videos of the study by exclusion. Video watch time, upload date, likes and dislikes, daily view index, number of comments, video length, status etc. analysis of animation content and playback settings with information. In addition, Video Power Index (VPI) $[(\text{like} / (\text{like} + \text{dislike})) \times 100]$ is used to measure the popularity of videos (5). The videos are divided into 5 categories according to the source of the upload: [1] Community Organizations/Non-Profit Organizations, [2] Doctors, [3] Health-Related Websites, [4] Universities/Academic Institution and [5] Patient /Individual User/Other.

The Global Quality Score (GQS) is used to rate the quality of videos uploaded specifically to online platforms such as YouTube. It contains a rating from 1 to 5; 5 is good and 1 is bad quality. To determine its quality, GQS considers aspects such as the originality, authenticity, reliability of the video and the presentation of all content (Table-1) (6). All videos were evaluated by one surgeon. A modified DISCERN scale was used to assess the reliability and quality of the information presented in the videos (Table 2).

The DISCERN scale is measured on a 0-to-5-point scale. A higher score indicates that the information presented in the video is more secure (7).

Statistical Analysis

Analysis was performed using the Statistical Analysis for Social Sciences (IBM SPSS v.27, New York, USA). The Kolmogorov-Smirnov/Shapiro-Wilk was used to test the normal distribution. Descriptive data are presented using the mean and standard deviation of normal distribution. Most of the group differences were compared with the Mann-Whitney U and chi-square tests. Parameters were compared with one-way ANOVA. Significance level was accepted as $p < 0.05$.

Results

A total of 50 video were analysed in this study. The average number of views of the video is 6507, and the average length of the video is 958 seconds. The characteristics of the videos are seen in Table-3. All videos are 3 animations, 29 are real images and 18 are combinations of animation and real images.

Analysis by Video Upload Source 21 videos were uploaded by doctors, 18 videos were uploaded by health sites, 4 videos were uploaded by health institutions, 5 videos were uploaded by schools/educational institutions, 2 were uploaded by health-related websites. There was no significant difference between GQS scores and modified DISCERN scores in

Table 1. The parameters of the Global Quality Scale (GQS)

Score	Description
1	The videos categorized as low quality had several shortcomings, including a poor flow of content on the site, a lack of crucial information, and overall lack of usefulness for patients.
2	The videos exhibited a generally poor quality, characterized by a lack of coherence and organization on the website. While some information was present, many important aspects were missing, resulting in limited usefulness for patients.
3	Overall, the videos exhibited low quality and a lack of cohesive site flow. While some information was provided, numerous crucial aspects were absent, making them of limited utility for patients.
4	The videos were of high quality with good streaming overall. They covered most of the relevant information, although some topics were missing. Overall, they were useful for patients.
5	The videos are of excellent quality and have a smooth flow. They are highly beneficial for patients as they provide comprehensive and clear information.

Table 2. Modified DISCERN Scale (Yes:1, No:0, points for each question)

Score	Description
1/0	Was the video clear, concise, and comprehensible?
1/0	Was it sourced from reputable sources?
1/0	Was the information presented balanced and unbiased?
1/0	Were additional sources of information provided for the audience/patients?
1/0	Did the video address controversial or ambiguous topics?

Table 3. General characteristics of videos

Video features	Median (IR*)
View count	6507 (7429)
Duration (seconds)	958 (818.47)
Total Likes	159 (2453.63)
Total Dislikes	2.7 (7.17)
Number of Comments	7 (12.36)
View Rate	17.38 (14.92)
VPI	98.33 (3.62)

*IR=Interquartile Range

Table 4. Average GAS and DISCERN scores by video creator

Variables	Number (%)	GQS	Modified Discern	P value
Medical society/non-profit organization	4	3.21±0.36	3.2±0.23	>0.05
Physician	21	3.19±0.46	3.6±0.69	>0.05
Health related website	18	3.24±0.18	3.3±0.51	>0.05
University/academic	5	3.72±0.57	3.7±1.09	>0.05
Patient/ independent user/other	2	2.23±0.41	2±0	>0.05

the evaluation made according to the presence or absence of the video ($p>0.05$). Average of DISCERN and GQS scores were calculated separately by the video creator (Table 4). When the video-based scores of the DISCERN variable were compared with the GQS, it was observed that the independent user/patient/other group were lower but not significant ($p>0.05$)(Table 4).

Discussion

The purpose of our research is to analyse the content and quality of YouTube videos for hallux rigidus. Our findings show the reliability and quality of these videos vary by location. In particular, videos shared by independent users or not related to the medical industry are seen as poor quality and less reliable.

When patients need to search for information about any disease, they often prefer internet because of its easy accessibility. This is seen in diseases that are common in the community. If we consider videos about lateral epicondylitis (1-3% of people see this disease), there is a lot of content on YouTube (8-11). During the evaluation of the video, it was determined that the content of video was different. Differences in online information can confuse patients and damage the doctor-patient relationship. Accurate and reliable information can enable patients to play an important role in decision making and reduce stress (12, 13).

Studies in the literature have evaluated the mismatch between video quality and user interest (5,14-16). Singh et al. (16) used DISCERN scoring system to evaluate video content, while Bernard et al. GQS is preferred to measure the quality of videos (17). In a study of Kilinc et al., (5, 14-16) DISCERN was applied to the reliability of the video and GQS was recommended for the overall quality of the video. In our study, we evaluated the quality of the films using the GQS, and the reliability and completeness of the data using the modified DISCERN scale. It should be noted that this model is widely used in many studies in the current literature (5, 14-16).

There are mixed results regarding shared page views, content quality, and likes/dislikes in the literature. While some studies have shown that videos with positive content are more popular, some have shown that videos with negative content are more popular (18, 19). In our study, no significant difference was found between adjusted DISCERN score, GQS and views, video duration, like/dislike, comments, and VPI. Many of the ideas that remain in the literature have many causes. Medical content may be less popular, making doctors the primary target audience for such content. Therefore, videos with good content will attract more likes and views, as they will attract the attention of doctors. In addition, non-health professionals may watch more videos about community diseases, which may have consequences that are irrelevant to the quality of video content.

While evaluating the research data, it was determined that a large number of patients or doctors did not provide enough health-related videos on the Internet (20). However, in our study, we found that the participation of non-health professionals in the sharing of these videos is still low. In addition, when we examined the video quality, we found that the DISCERN and GQS scores of the patient/non-patient/independent user/other groups were lower than the other group. Conversely, universities/technical institutions scored the highest. Regarding our specific research topic, since the number of non-health professionals sharing medical videos is small; we can assume that viewers will access to the best content.

Our study has some limitations that are not unique to our study but are often encountered in YouTube analysis. The nature of YouTube as a social media is one of its limitations. New videos are added all the time and the view, like/dislike and comment ratings are constantly changing. Also, even if you clear your internet browser's history, past searches will still work. In addition, our work may be affected by geolocation searches, limited to English videos.

Conclusion

As we know, thumb stiffness videos are mostly uploaded by doctors. We stated that these videos are informative about good content and accurate information. Since videos uploaded by people can be misleading, channels that are suspicious or not medical professionals should not be used.

Conflict of Interest

The author declares no conflict of interest.

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