YOUTUBE'DA FLEKSÖR TENDON YARALANMALARI: HASTALARIN İZLEDİĞİ BİLGİLER NE KADAR GÜVENİLİR?

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ÖZET

Amaç: Sağlıkla ilgili bilgi arayan bireylerin en sık başvurduğu platformlardan biri YouTube'dur. Bu nedenle bu çalışmanın amacı, YouTube®'da bulunan fleksör tendon yaralanmaları ile ilgili videoların güvenilirliğini ve kalitesini değerlendirmektir.

Materyal-Metod: Kesitsel tipteki bu YouTube video çalışmasında, "flexor tendon injury" anahtar kelimesi kullanılarak bir arama yapılmış ve 50 video analiz edilmiştir. Videoların karakteristik özellikleri kaydedilmiş, güvenilirlikleri ve kaliteleri modified DISCERN ve Küresel Kalite Skalası (KKS) kullanılarak değerlendirilmiştir.

Bulgular: Çalışma kriterlerine uyan toplam 40 video analiz edilmiştir. KKS'ye göre videoların kalitesi orta düzeyde olup, ortalama puanları 3,14/5 olarak bulunmuştur. Güvenilirlikleri ise sorgulanabilir düzeydedir (2,78/5). Videoların yarısı hekimler tarafından hazırlanmış olup, video üreticileri veya içerikleri arasında kalite ve güvenilirlik açısından istatistiksel olarak anlamlı bir fark bulunmamıştır. Video üreticileri ikili olarak karşılaştırıldığında, hastalar tarafından oluşturulan videolar (diğerleri kategorisi hariç) tüm gruplara kıyasla daha düşük kalite ve güvenilirliğe sahiptir.

Sonuç: YouTube'daki fleksör tendon yaralanmalarıyla ilgili videoların kalitesi orta düzeyde olup, güvenilirlikleri sorgulanabilir düzeydedir. İzlenme sayısı, beğeni ve beğenmeme sayıları videoların kalitesini doğru şekilde yansıtmamaktadır. Fleksör tendon yaralanmaları hakkında hastaları bilgilendirmek amacıyla, kapsamlı ve kanıta dayalı bilgiler içeren videoların uzmanlar tarafından hazırlanması önerilmektedir.

Anahtar Kelimeler: Fleksör tendon yaralanması, Fleksör tendon onarımı, Sosyal medya, Kalite

FLEXOR TENDON INJURIES ON YOUTUBE: HOW RELIABLE IS THE INFORMATION PATIENTS ARE WATCHING?

Abstract

Objective: One of the most frequently visited platforms for individuals seeking health-related information is YouTube. So this study aims to evaluate the reliability and the quality of videos related to flexor tendon injury available on YouTube®.

Materials & Method: In this cross-sectional YouTube video study, a search was conducted using the keyword "flexor tendon injury," and 50 videos were analyzed. The characteristic features of the videos were recorded, and their reliability and quality were assessed using the modified DISCERN and Global Quality Scale (GQS).

Results: A total of 40 videos that met the inclusion criteria were analyzed. The quality of the videos was categorized as moderate according to the GQS, with a score of (3,14/5) and their reliability is questionable (2,78/5). Half of the videos were produced by physicians, and no statistically significant differences were found in terms of quality and reliability between the video producers or the video content. When comparing the video producers in pairs, videos created by patients were found to be of lower quality and reliability in all group comparisons, except for those involving the others-produced videos.

Conclusion: Videos related to flexor tendon injuries on YouTube are of moderate quality and their reliability is questionable. The number of views, likes, and dislikes may does not accurately reflect the quality of the videos. It is recommended that informative videos, based on comprehensive and evidence-based information, be created by experts to educate patients about flexor tendon injuries.

Keywords: Flexor tendon injury, Flexor tendon repair, Social media, Quality

1. INTRODUCTION

Internet usage has become increasingly widespread in various aspects of our lives, ranging from social media to online shopping (1). Along with this, the tendency of patients to use the internet to understand their health conditions has also increased (2). One of the most frequently visited platforms for individuals seeking health-related information is YouTube (1, 3). A phone survey conducted in the United States revealed that, as of September 2020, more than 74% of adults were using YouTube (4). A large majority of young adults, specifically 77%, use YouTube (5). The free and easy access to YouTube has also contributed to the increase in its usage rate.(6). Similar to access, uploading videos to YouTube is also relatively easy, and the videos do not undergo any formal review process(6). According to YouTube's terms of service, "Content is the responsibility of the individual or organization providing the service."(4) This situation raises concerns about the accuracy and quality of the information on YouTube and may lead to the dissemination of incorrect information. When the subject is health, the transmission of misinformation becomes particularly alarming (1, 6, 7). On the other hand, well-prepared health-related videos can positively impact patients' recovery (8).

Flexor tendon injuries occur at a rate of 7 per 100,000 individuals annually, with a higher prevalence among men in their thirties (9). In developed and industrialized countries, flexor tendon injuries are most commonly caused by workplace accidents, while in countries with lower socioeconomic levels, they are frequently associated with conflicts, often involving sharp objects (10, 11). The treatment of flexor tendon injuries is a multidisciplinary approach, with the primary concern being the restoration of the patient's pre-injury functionality. There is no non-surgical repair option for flexor tendon injuries, except for surgery. Tendon repair should be performed with the least possible manipulation and must be strong enough to allow for early mobilization post-repair. Rehabilitation protocols are highly variable, primarily including early passive and early active motion, but there is no established gold standard between the protocols Complete recovery can take up to one year (12).

The higher usage of YouTube among young adults, the predominance of young adults in individuals with flexor tendon injuries, and the fact that patients often visit YouTube to seek information about their health conditions are among the well-established facts. However, to the best of our knowledge, there are no studies evaluating the quality of YouTube videos as a source of information for patients with flexor tendon injuries.

Therefore, the aim of our study is to assess the characteristics, quality, and reliability of videos shared on YouTube regarding flexor tendon injuries.

2. MATERIALS AND METHODS

This study was conducted as a cross-sectional analysis and did not require ethical approval.

Search strategy

The video-based search on the YouTube online video sharing platform (https://www.youtube.com/) was conducted on November 29, 2024, using the English keyword "flexor tendon injury." The search term was chosen as it is one of the most frequently used keywords in the literature regarding flexor tendon injuries and rehabilitation. After the search term was entered, the videos were ranked according to relevance. Previous studies have shown that the first 50 videos are acceptable in terms of sample size. For this reason, the first 50 videos in the ranking were included for evaluation(2). The links to the videos were transferred to an Excel file. Videos that were not in English, lacked proper sound support, were not related to flexor tendon injuries, or were categorized as YouTube shorts were excluded from the study. (Fig 1) The analysis of the obtained videos was conducted by independently 2 physiotherapists (over 5 years of experience in the field of hand therapy) over 4 weekly period from November 29, 2024 to December 31, 2024. The average of their assessments was taken into account. When the evaluators experienced uncertainty regarding the videos, decisions were made through joint discussion.

Characteristics of the videos

For each video, data was collected on the duration (in days) since the upload date, view count, number of likes and comments, video duration, video power index (VPI): (likes*100) / (likes + dislikes) * (views/days) / 100, video producer and content details. The video contents were classified into surgery, rehabilitation, case, anatomy, assessment, patient experience and mixed category encompassing anatomy, assessment, and treatment. The video producer was classified as a physician, therapist (physiotherapist or occupational therapist (OT)), patient, unspecified and other (students and physician and OT together).

Assessment of video quality and reliability

Modified DISCERN and the Global Quality Scale were used to assess the content quality and reliability of the videos. The modified DISCERN scale is adapted from the original DISCERN instrument. It consists of a total of five questions designed to assess the

reliability of health information in videos. The responses to the questions are scored as 1 for "yes" and 0 for "no," with a maximum possible score of 5 on the scale and high scores indicates high reliability (13). The quality of each video was assessed using the Global Quality Scale (GQS), a 5-point scale. A score of 1 or 2 indicates low quality, a score of 3 denotes moderate quality, and scores of 4 or 5 represent high quality (Table 1) (14).

Statistical analysis

The statistical analyses were performed with SPSS Version 20.00 (SPSS Inc., Chicago, IL). Values with p <0.05 were considered statistically significant. The normality of the data was assessed using both visual inspection and statistical tests (Shapiro-Wilk test). Non-normally distributed variables were presented as median (25th-75th interquartile range (IQR)). The Kruskal-Wallis test was used to determine statistically significant differences between more than two groups of an independent variable. Mann-Whitney U test was used for pairwise comparison between groups for data that did not follow a normal distribution. The relationship between scales was assessed using Spearman's rank correlation coefficient.

3. RESULTS

Out of the 50 videos examined, 40 were incorporated into the study. The overall characteristics of the selected videos, including days since upload, video duration, the number of views, likes, dislikes, comments, and vpi and reliability scores are presented in Table 2. The characteristics and analyses of the videos, categorized by their categories and sources, are provided in Tables 3 and 4, respectively. Of the 40 videos evaluated, 20 (50%) were produced by physicians, 8 (20%) by therapist (OT or PT), 2 (5%) by patients, 8 (20%) by unspecified and 2 (5%) by others (physician and medical students). The analyses revealed that no statistically significant difference was found between the groups in terms of days since upload, video duration, the number of views, likes, dislikes, comments, and vpi and reliability scores, neither for the video creators nor for the video categories (Table 3 and 4) (p> 0.05). Based on the comparison of modified DISCERN and GQS scores among video creators, a statistically significant difference was found (p <0.05) in the following contexts: in the physician-patient comparison, favoring physicians for both modified DISCERN and GQS scores; in the therapist-patient comparison, favoring therapists for the modified DISCERN score; and in the patient-unspecified comparison, favoring the unspecified category for both modified DISCERN and GQS scores (Table 5).

The modified DSICERN score was positively correlated with the GQS scores (r = 0.803 and r = 0.505, p <0.01) (Table 6).

4. DISCUSSION

In this study, our aim was to assess the reliability and quality of YouTube videos related to flexor tendon injuries. According to the results, the quality of the videos on flexor tendon injuries was found to be of moderate quality (3.14/5) (15) and and their reliability is questionable (2,73/5).

In our study, the most frequently shared content type is a mixed format that combines anatomy, surgery, assessment, and rehabilitation, accounting for 30% of the content. Additionally, the highest proportion of video producers are physicians, contributing to 50% of the total video content. Notably, a significant proportion of videos related to rehabilitation (%87.5) were produced by occupational therapists.

In similar studies evaluating the quality of YouTube videos in the healthcare field, content created by physicians is generally found to have higher quality (15-18). On the other hand, in a YouTube-based study conducted by Chang et al. on epidural steroid injections, it was found that even videos produced by physicians had low reliability and quality (19). In our study, no significant differences in quality were identified either among video producers or the content. Similar studies have demonstrated that the type of video does not influence its quality. (7, 20) Because, in addition to the producer and content, various factors such as the flow of the video and the scope of the topic influence video quality. Moreover, the quality of the videos has been assessed in terms of their appropriateness for patients. However, many videos have been prepared in a more academic manner, primarily aimed at professionals in the field. When comparing video producers in terms of quality and reliability, all pairwise comparisons, except for the one involving others (student, Physician &OT), showed that the videos produced by physicians, therapists and unspecifieds were of higher quality than those produced by the patients. Despite the extremely low quality of the patient videos, their views was remarkably high. In a study conducted by Özdemir et al., YouTube videos related to cancer rehabilitation were evaluated. Similarly, they found that videos shared by patients about their experiences received high viewership, but their quality was low. As Özdemir et al. (6) also pointed out, patients may be drawn to videos produced by other patients in order to obtain information about

the disease progression and treatments. However, there is a need for greater use of evidence-based content.

As stated in other studies, (2, 15) features such as video views or like counts may not provide an accurate indication of video quality. Nevertheless, not all studies in the literature share the same perspective. For instance, in the study conducted by Altun et al. (21) and Ozdemir et al.(6) they were observed that high-quality videos had higher view rates, more likes, and better reliability scores. Further research is needed to draw a definitive conclusion on this matter. In our study, no correlation was found between the Video Power Index, calculated based on video views and like counts, and video quality. However, a significant positive correlation was found between the GQS and Modified DISCERN scores.

Our study has several limitations. The first limitation is the small sample size of our study. The reason we limited our sample to the first 50 videos is that, as noted in previous research (2) viewers typically only engage with the first 50 videos. However, this may have led us to miss high-quality videos that appeared further down in the search results. The second limitation is the use of unvalidated and subjective scoring systems. So two independent evaluators scored the videos; however, in cases where there was uncertainty regarding the videos, decisions were made through joint discussion. Upon discussing the reasons for indecision, it was identified that disagreements and confusion occurred when evaluating aspects such as whether the video was clear and understandable, whether the information provided was balanced and unbiased, and when determining the quality of the video flow. While other studies have commonly employed the JAMA (Journal of the American Medical Association) criteria to assess video reliability, we did not use it in our study. This is because the JAMA benchmark criteria were developed for evaluating medical information on websites, rather than YouTube video (8). The final limitation of our study is that we included only videos in English. However, considering that English is the most widely spoken language globally, we believe this limitation is relatively minor.

5. SONUÇ

Videos related to flexor tendon injuries on YouTube are of moderate quality and their reliability is questionable. While videos created by patients generally receive high view counts, their quality tends to be low. The number of views, likes, and dislikes does not accurately reflect the quality of the videos. It is recommended that informative videos, based on comprehensive and evidence-based information, be created by experts to educate patients about flexor tendon injuries.

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Tables

Table 1. Scales Used to Evaluate the Reliability and Quality of Videos

	Modified DISCERN Scale
1	Is the video clear, concise, and easy to understand?
2	Are valid sources cited?
3	Is the information provided objective and impartial?
4	Are supplementary information sources provided for patient reference?
5	Are areas of uncertainty/controversy addressed?
	Global Quality Scale (GQS)
1	Poor quality, inadequate video flow, significant information gaps, and minimal relevance for patients.
2	Overall substandard quality and poor coherence, with some information provided but many critical topics omitted, offering limited value to patients.
3	Moderate quality with poor coherence, where some key information is sufficiently covered while other aspects are inadequately addressed, offering partial utility for patients.
4	High quality with generally smooth flow. The majority of relevant information is presented, though some topics are not included, making it beneficial for patients.
5	Outstanding quality and seamless flow, highly informative and valuable for patients.

Table 2. Descriptive characteristics of the videos

Features of video	Median (IQR 25–75), min-max
Days since upload	1577,50 (1029,25-2265,25), 562-5002
Video duration, second	9,43 (4,41-20,03), 1,30-60,40
Video views	13579 (3573- 68813), 145-898984
Like count	192,50 (51-796,25), 0-3600

Dislike count	0 (0-0), 0-0
Comment count	6,50 (0-55), 0,732
Video power ındex	10 (3,10-44,11), 0,12-227,82
Modified DISCERN	2,78 (2,16-3,36) 1-4,50
GQS	3,15 (2,20-3,76), 1,50-4,50

GQS: global quality scale; vpı: video power index; s: second; min:minımum; max: maximum; IQR – interquartile range

Table 3. Characteristics of the analyzed videos according to their category

Variable	Mix (n=12)	Surgery (n=6)	Rehabilitation (n=10)	Case (n=3)	Anatomy (n=3)	Assessment (n=4)	Patient experience (n=2)	p
Days since upload	1322 (562-5002)	1421,50 (801-3946)	1648 (626-3031)	1664 (1242-3024)	14209 (12701-24909)	1616 (845-3572)	1397 (1198-1596)	0,989
Duration, (s)	14,59 (1,37-46,33)	11,07 (6,24-60,40)	5,68 (1,30-21,56)	14,10 (10,20-23,09)	2,57 (1,34-23,04)	5,30 (3,10-21,01)	12,68 (8,27-17,10)	0,117
Views (n)	4713 (145-187165)	11895,50 (1147-898984)	22712 (312-163882)	59727 (11973-163572)	14209 (12701-24909)	4141 (276-33259)	44716 (26316-63116)	0,418
Likes (n)	63,50 (2-1000)	201 (24-3600)	220 (0-1600)	734 (258-1100)	155 (115-583)	89 (4-235)	990 (880-1100)	0,169
Comments (n)	2,57 (0-163)	14 (0-452)	10 (0-124)	26 (0-46)	5 (0-49)	2 (0-13)	587,50 (443-732)	0,227

Vpı	4,21 (0,12-57,91)	8,49 (1,43-227,82)	34,19 (3,07-168,43)	48,08 (7,20-54,09)	14,6869 (4,94-22,52)	2,49 (0,33-9,31)	30,75 (21,97-39,55)	0,120
Modified DISCERN	3,14 (2-4)	2,50 (1,50-3)	3 (1,50-4,50)	3 (2,50-4)	2,50 (1-3,50)	2,50 (1,50-3)	. (1-1)	0,074
GQS	3,58 (1,50-4,50)	2,50 (1,50-3,50)	3,50 (2-4,50)	3,33 (3-3,50)	3 (1,50-3,50)	2,50 (1,50-3,50)	.(1,50-1,50)	0,087

Kruskal–Wallis test (comparison of the groups); GQS: global quality scale; vpı: video power index; s: second

Table 4. Characteristics of the analyzed videos according to their source

Variable	Physician (n=20)	Therapist (n=8, OT:7/PT:1)	Patient (n=2)	Unspecified (n=8)	Other (n=2, student:1, Physician &OT:1)	P
Days since upload	1560 (699-5002)	1648 (834-3031)	1397 (1198-1596)	1727,50 (564-3181)	2100,50 (562-3639)	0,991
Duration, (s)	14,21 (2,57-60,40)	8,27 (3,25-46,33)	12,6850 (8,27-17,10)	1,80 (1,30-30,4)	9,85 (8,31-11,40)	0,094
Views (n)	12048,50 (145-898984	14167,50 (276-135630)	44716 (26316-63116)	22712 (312-163882)	93728,50 (292-187165)	0,757
Likes (n)	177,50 (2-3600)	169,50 (4-1600)	990 (880-1100)	177 (0-1100)	504,50 (9-1000)	0,588
Comments (n)	6,50 (0-452)	3,75 (0-124)	587,50 (443-732)	6,50 (0-91)	81,50 (0-163)	0,177
Vpı	7,09 (0,12-227,82)	10,66 (0,33-75,60)	30,75 (21,97-39,55)	29,4998 (2,59-168,43)	25,97 (0,52 51,43)	0,427
Modified DISCERN	2,73 (1-4)	2,75 (1,50-4,50)	. (1-1)	3,12 (1,50-4)	3,50 (3-4)	0,098
GQS	3(1,50-4,50)	3,25 (1,50-4,50)	. (1,50-1,50)	3,37 (2-4,50)	3,75 (3,50-4)	0,128

Kruskal–Wallis test (comparison of the groups); GQS: global quality scale; vpı: video power index; s: second

Table 5. Comparison of Modified DISCERN and GQS Scores Among Video Producer

Video source	Score	Mann- Whitney U Test			
		Therapist (n=8, OT:7/PT:1)	Patient (n=2)	Unspecified (n=8)	Other (n=2, student:1, Physician &OT:1)
Physician (n=20)	Modified DISCERN: 2,73 (1-4)	0,958	0,025*	0,334	0,155
	GQS: 3 (1,50-4,50)	0,483	0,048*	0,287	0,161
Therapist (n=8, OT:7/PT:1)	Modified DISCERN: 2,75 (1,50-4,50)		0,034*	0,486	0,287
	GQS: 3,25 (1,50-4,50)		0,060	0,871	0,499
Patient (n=2)	Modified DISCERN: - (1-1)			0,033*	0,102
	GQS: - (1,50-1,50)			0,034*	0.102
Unspecified (n=8)	Modified DISCERN: 3,12 (1,50-4)				0,423
	GQS: 3,37 (2-4,50)				0,417

statistically significant (p <0.05, Mann–Whitney U test (pairwisecomparison of the groups); GQS: global quality scale.

Table 6. Comparison of the Modified DISCERN and GQS scores

Score	Spearman's rho	
	GQS	VPI
Modified DISCERN	0,803*	0,067
GQS		0,084

statistically significant (p <0.01, Spearman's correlation analysis); GQS: global quality scale.

Figure 1. Flowchart depicting the steps involved in the selection process