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YouTube as a source of information on thoracic outlet syndrome: quality and reliability analysis

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ABSTRACT

Objectives: This study aimed to evaluate the quality, reliability, and characteristics of the most-viewed YouTube videos on thoracic outlet syndrome and to identify differences in quality based on content and source.

Methods: A systematic search was conducted on YouTube using four keywords related to thoracic outlet syndrome. A total of 200 videos were initially selected, of which 75 met the inclusion criteria after excluding duplicates, non-English videos, off-topic content, and videos under one minute. Video characteristics, including views, likes, duration, content type, and source, were recorded. Reliability and quality were assessed using the modified DISCERN scale, Journal of the American Medical Association benchmark criteria, and the Global Quality Scale.

Results: Among the analyzed videos, 46.7% were uploaded by non-physician health workers, 40% by physicians, and 13.3% by independent users. Disease-specific information constituted 50.7% of the content, while 20% focused on exercises, 17.3% on conservative management, and smaller percentages on patient experiences and surgical techniques. The median scores were modified DISCERN: 3.0, Journal of the American Medical Association benchmark criteria: 2.0, and Global Quality Scale: 3.0. Only 29.3% of the videos were categorized as high-quality, while the majority were of medium or low quality. All high-quality videos were found to have modified DISCERN>3. Positive correlations were identified between modified DISCERN, Journal of the American Medical Association benchmark criteria, and Global Quality Scale scores ($P<0.05$).

Conclusions: YouTube serves as a moderately reliable resource for information related to thoracic outlet syndrome; however, the overall quality remains suboptimal. To improve the availability of high-quality information, healthcare professionals, particularly physicians, should actively contribute to producing reliable and educational content on platforms like YouTube.

Keywords: YouTube, thoracic outlet syndrome, video quality, reliability, online health information

Thoracic outlet syndrome (TOS) encompasses a spectrum of disorders caused by the compression of the neurovascular bundle within the thoracic outlet, located above the first rib and posterior to the clavicle [1]. This compression may result from various etiologies, including traumatic injuries, repetitive motion, or congenital anomalies such as cervical ribs or scalene muscle hypertrophy. Based on the

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affected structure, TOS is classified into three subtypes: neurogenic (nTOS), venous (vTOS), and arterial (aTOS). Neurogenic TOS is the most prevalent, accounting for over 95% of cases, while venous and arterial forms represent approximately 3% and 1%, respectively [2, 3].

Neurogenic TOS arises primarily from the compression of the brachial plexus. Patients with nTOS commonly report symptoms such as pain, paresthesia, and muscle weakness in the upper extremity, often exacerbated by certain positions or activities. In severe cases, chronic nerve compression may lead to muscle atrophy, particularly in the thenar eminence [4]. Diagnosis can be challenging due to symptom overlap with other conditions, such as cervical radiculopathy or carpal tunnel syndrome, necessitating a combination of clinical evaluation, imaging, and electrodiagnostic studies [5].

Treatment of TOS varies according to its subtype. For neurogenic TOS, conservative management remains the mainstay, including physical therapy aimed at postural correction, stretching exercises, and symptomatic relief through anti-inflammatory medications. Surgical intervention is reserved for refractory cases, particularly those involving structural anomalies or significant neurological compromise [4].

In today's digital age, patients frequently turn to online platforms to gather health-related information, with YouTube emerging as a prominent resource [6]. Despite its accessibility and wide reach, YouTube lacks rigorous mechanisms to ensure the accuracy and reliability of its content [7, 8]. This raises concerns regarding the quality of medical information disseminated to the public. Previous studies investigating YouTube as a source of health information for various conditions, such as meralgia paresthetica (MP) and carpal tunnel syndrome have revealed a predominance of low-quality content [9, 10].

Due to the complexity of TOS and the absence of clear expert consensus, many individuals are turning to online resources for information and guidance. To date, no study has specifically evaluated the quality and reliability of YouTube videos on TOS. The present study aims to address this gap by analyzing the most-viewed YouTube videos on TOS, assessing their quality, reliability, and content to provide actionable insights for both healthcare professionals and content creators.

METHODS

YouTube Search Strategy

We conducted a systematic search on YouTube (www.youtube.com) on October 14, 2024, using four pre-determined keywords: "thoracic outlet syndrome," "TOS," "thoracic outlet syndrome management," and "thoracic outlet syndrome physical therapy." These keywords were selected based on similar studies in the literature [9-11]. To minimize bias from previous searches, the browser history was cleared before initiating the search. In line with many studies in the literature, the first 50 most-viewed videos for each keyword were identified [12, 13]. Thus, an initial pool of 200 videos was obtained. Non-English videos, duplicate videos, videos with a duration of less than one minute, off-topic videos, and videos without audio were excluded. All included videos were evaluated by two independent physiatrists. If there was a difference between the scores, the physiatrists reevaluated the video together and reached a consensus.

Video Characteristics

The selected videos were analyzed for various characteristics to better understand their content and sources. Attributes such as video duration, the time elapsed since upload, uploader country, and audience engagement metrics including the number of views, likes, and comments were documented. Additionally, view ratio (=number of views/days), like ratio (=(number of likes/number of views) x100), and Video Power Index (VPI) (=like ratio x view ratio/100) were calculated to assess the rate of engagement over time [14]. Videos were categorized by their content into five groups: disease-specific information, patient experience, conservative management, surgical techniques, and exercises. Furthermore, video sources were classified into three main groups based on their origin: physicians, non-physician health workers, and independent users.

Evaluation of Video Quality and Reliability

The reliability of the videos was evaluated using the modified DISCERN (mDISCERN) scale, which is an adaptation of the DISCERN criteria for assessing the quality of health-related information [12]. This tool comprises five yes/no questions, with each "Yes" answer scoring one point and each "No" answer scoring

zero. The total score ranges from 0 to 5, with higher scores reflecting greater reliability. Video quality was assessed using two additional tools: the Journal of the American Medical Association (JAMA) benchmark criteria and the Global Quality Scale (GQS). The JAMA criteria evaluate four key aspects: authorship, attribution, disclosure, and currency. Each criterion met contributes one point, with a maximum possible score of 4, indicating the highest quality [13]. The GQS assesses the overall quality and usefulness of video content using a 5-point scale. Scores of 4 or 5 indicate high quality, a score of 3 represents medium quality, and scores of 1 or 2 denote low-quality content [14].

Statistical Analysis

Data were analyzed using IBM SPSS version 22.0 (IBM Corp., Armonk, NY, USA). Normality was assessed using the Kolmogorov-Smirnov test. Since the normality assumption did not hold, continuous variables were reported as medians with ranges, while categorical variables were expressed as frequencies and percentages. Non-parametric tests, including the Mann-Whitney U and Kruskal-Wallis tests, were used for continuous variables not conforming to normal distribution. Categorical variables were analyzed using the Chi-square and Fisher's exact tests. Correlations between numerical variables were assessed with Spearman's correlation. A P-value of <0.05 was considered statistically significant.

RESULTS

Out of the initial 200 videos selected for review, 125 were excluded for various reasons: 77 were duplicates, 32 were off-topic, 10 were non-English, 5 were under one minute in duration, and 1 lacked audio. Consequently, a total of 75 YouTube videos were included in the analysis (Fig.1).

The general characteristics of the included videos are summarized in Table 1. Among these, 46.7% (n=35) were uploaded by non-physician health workers, 40% (n=30) by physicians, and 13.3% (n=10) by independent users. Regarding content, 50.7% of the

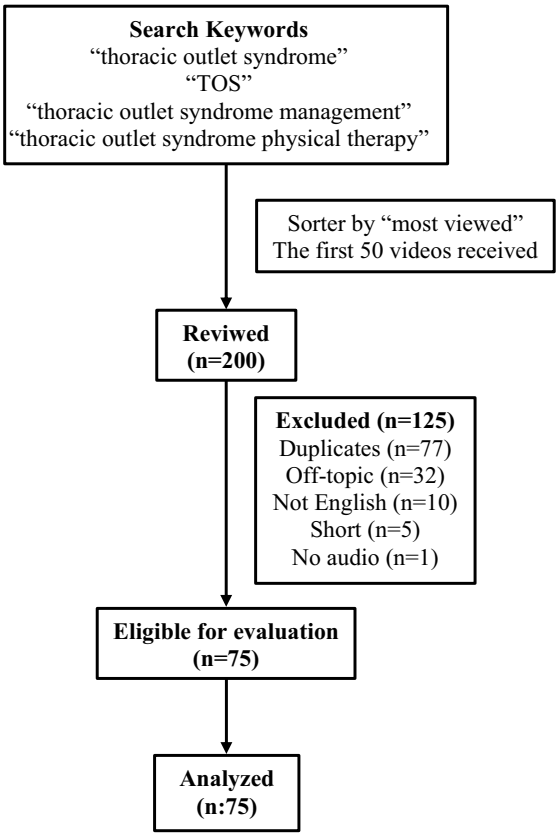

Fig. 1. Flow chart of the study.

Table 1. General features of videos

Parameters		Data
Number of views		94,658 (1,1051-1,021,000)
Number of likes		1,000 (81-28,000)
Number of comments		78 (0-1177)
Number of days since upload		2,154 (231-5,695)
View ratio		46.35 (6.62-3,751.61)
Like ratio		1.0 (0.1-4.7)
Video duration (second)		288 (64-1,738)
VPI		0.49 (0.02-29.87)
Country	USA	52 (69.3)
	UK	6 (8)
	Netherland	10 (13.3)
	Others	7 (9.4)
JAMA score		2.0 (0-4)
mDISCERN score		3.0 (1-5)
	<3	27 (36)
	>3	48 (64)
GQS score		3.0 (1-5)
	Low quality	29 (38.7)
	Medium quality	24 (32)
	High quality	22 (29.3)
Video content	Disease specific information	38 (50.7)
	Patient experience	6 (8)
	Conservative management	13 (17.3)
	Surgical technique	3 (4)
	Exercises	15 (20)
Source of upload	Physician	30 (40)
	Non-physician health worker	35 (46.7)
	Independent user	10 (13.3)

Data are shown as median (min-max) or number (%). VPI=Video Power Index, GQS=Global Quality Scale, JAMA=Journal of the American Medical Association, mDISCERN=Modified DISCERN tool.

videos provided disease-specific information, followed by 20% focusing on exercises, 17.3% on conservative management, 8% on patient experiences, and 4% on surgical techniques. In terms of geographical distribution, 69.3% (n=52) originated from the United States, 13.3% (n=10) from the Netherlands, 8% (n=6) from the United Kingdom, and 9.4% (n=7) from other countries. The median mDISCERN score was 3.0, while the median GQS and JAMA scores were 3.0 and 2.0, respectively. Of the analyzed videos, 29.3% (n=22) were categorized as high-quality, 32% (n=24) as medium-quality, and 38.7% (n=29) as low-quality.

Comparisons of video characteristics based on video sources revealed a statistically significant difference in the number of likes among groups (P=0.026; Table 2). Post-hoc analysis showed that the number of likes for videos uploaded by non-physician health workers was significantly higher than the num-

Table 2. Comparison of video features and quality by source

Source	Physician	Non-physician health worker	Independent users	P value
Number of views	88,334 (19,000-1,021,000)	13,3000 (11,051-866,621)	76,329 (34,401-227,432)	0.282
Number of likes	656.5 (81-28,000)	1,800 (142-16,000)	1,050 (246-1,700)	**0.026**
Number of comments	77 (0-862)	86 (0-1,177)	56.5 (9-3,014)	0.255
Number of days since upload	2,742.5 (300-5075)	1,825 (231-5,695)	3,718.5 (673-4,824)	0.144
View ratio	41.7 (8.9 -558.8)	61.7 (6.6-3,751.6)	33.9 (7.3-84.6)	0.412
Like ratio	0.8 (0.1-2.9)	1.2 (0.1- 4.7)	0.8 (0.2-2.9)	0.060
Video duration (second)	361.5 (64-1208)	265 (81-1,738)	271.5 (82-1,280)	0.969
VPI	0.35 (0.02-15.33	0.87 (0.04-29.87)	0.34 (0.05-2.53)	0.269
Video content		15 (43)	4 (40)	0.168
Disease-specific information	19 (63.3)	0 (0)	4 (40)	
Patient experience	2 (6.7)	9 (26%)	1 (10)	
Conservative management	3 (10)	1 (3)	0 (0)	
Surgical technique	2 (6.7)	10 (28)	1 (10)	
Exercises	4 (13,3)			
JAMA score	3.0 (1-4)	2.0 (0-4)	1.5 (0-4)	0.185
mDISCERN score				0.092
<3	7 (23.3)	14 (40)	6 (60)	
≥3	23 (76.7)	21 (60)	4 (40)	
GQS				0.053
Low quality	7 (23.3)	14 (40)	8 (80)	
Medium quality	13 (43.3)	11 (31.4)	0 (0)	
High quality	10 (33.4)	10 (28.6)	2 (20)	

Data are shown as median (min-max) or number (%). VPI=Video Power Index, GQS=Global Quality Scale, JAMA=Journal of the American Medical Association, mDISCERN=Modified DISCERN tool. Bold P values indicate statistically significant differences.

*Kruskal-Wallis test for numeric data

ber of likes for videos uploaded by independent users (P=0.006). However, no significant differences were observed in other metrics such as like ratio, view ratio or VPI (P>0.05). It was determined that the most shared video content by all sources was disease-specific information. While there was no statistically significant difference in content type across video sources, most exercise- and conservative management-related videos were uploaded by non-physician health workers (Fig. 2).

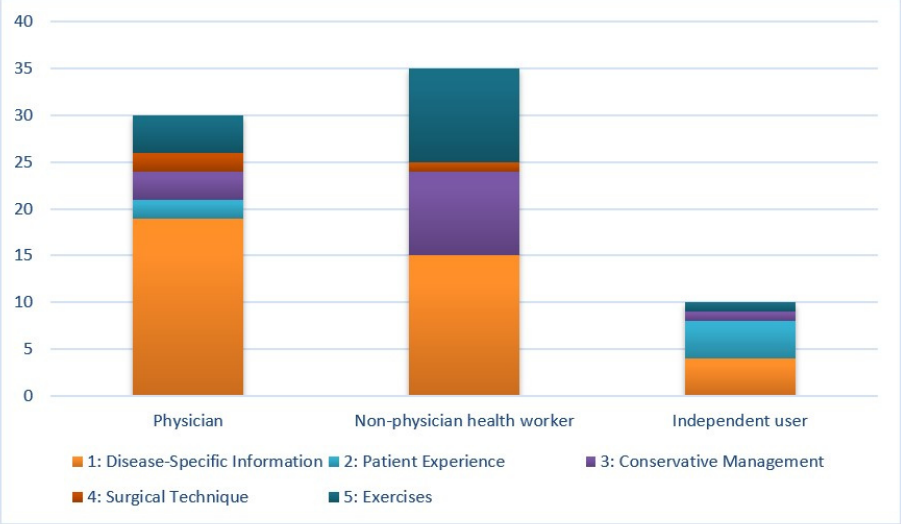

Fig. 2. Content distribution of YouTube videos on TOS by source.

Further analysis of video quality groups (low, medium, and high) demonstrated significant differences in JAMA scores (P=0.000), mDISCERN scores (P<0.001), and video duration (P=0.041) (Table 3). Post-hoc analysis revealed that JAMA scores were significantly higher in the high-quality group compared to the low- and medium-quality groups (P<0.01 and P<0.01, respectively), with no significant difference between the low- and medium-quality groups (P=0.232). Similarly, in post hoc analysis, mDISCERN scores were significantly higher in high-quality videos compared to medium- and low-quality ones (P=0.032 and P<0.001, respectively), and medium-quality videos had higher mDISCERN scores than low-quality videos (P=0.001). Notably, all high-quality videos achieved an mDISCERN score >3, whereas 75% of medium-quality videos and only 27.6% of low-quality videos met this threshold (Table 3). Video duration also differed significantly between quality groups. Post hoc analysis indicated that high-quality videos were significantly shorter in duration compared to low-quality videos (P=0.035). However, no other video characteristics showed significant differences among quality groups.

Spearman correlation analysis revealed positive significant correlations between mDISCERN and GQS scores (r=0.630, P<0.001), mDISCERN and JAMA scores (r=0.545, P<0.001), and JAMA and GQS scores (r=0.616, P=0.001) (Table 4). No significant correlations were identified between other parameters.

DISCUSSION

YouTube has become one of the most widely accessed online platforms for patients seeking information about their medical conditions [15]. Although it offers free and easily accessible video content, the platform lacks mechanisms to regulate the quality and accuracy of the information provided. TOS is a complex condition with a wide range of etiologies and symptoms, compounded by the absence of a unified expert consensus on diagnostic and management strategies [16]. This complexity makes it likely that both healthcare professionals and independent users frequently turn to YouTube for information on TOS. Therefore, ensuring the availability of accurate and reliable information on this platform is of paramount importance.

Previous studies have evaluated the reliability and quality of YouTube videos across various medical topics, including carpal tunnel syndrome, fibromyalgia, and MP [9, 17, 18]. However, to the best of our knowledge, this is the first study to specifically examine YouTube videos on TOS.

YouTube platform has been considered as a mixed pool of low-, medium- and high- quality videos [19]. For instance, a study on oropharyngeal dysphagia exercises found relatively high-quality videos, whereas Tarihci *et al*. and Ertem *et al*. observed that most videos on MP and piriformis syndrome, respectively, were of low quality [9, 20, 21]. In our analysis, most TOS-related videos were of medium or low quality,

Table 3. Comparison of video sources and features according to quality classification

	Low quality	Medium quality	High quality	P value*
Number of views	56,982 (11,051-866,621)	166,289 (34,414-1,021,000)	96,464 (19,000-681,232)	0.146
Number of likes	828 (107-6,900)	1,950 (81-28,000)	707.5 (107-8,200)	0.074
Number of comments	61 (0-483)	122.5 (1-1,177)	48 (0-577)	0.064
Number of days since upload	2154 (231-5,695)	2,122.5 (636-5,487)	2,934 (300-4,038)	0.910
View ratio	35.94 (6.62-3,751.61)	78.99 (10.38-55,884)	51.98 (8.52-198.03)	0.702
Like ratio	1.28 (0.08-4.72)	1.36 (0.09-4.37)	0.81 (0.40-2.38)	0.111
Video duration (second)	429 (64-1,738)	326 (104-1,097)	197.5 (64-1,208)	**0.041**
VPI	0.38 (0.04-29.87)	1.28 (0.02-15.33)	0.39 (0.04-2.82)	0.180
Video Source				0.072
Physician	7 (24.1)	13 (54.2)	10 (45.5)	
Non-physician health workers	14 (48.3)	11 (45.8)	10 (45.5)	
Independent	8 (27.6)	0 (0)	2 (9.0)	
Video content				0.346
Disease-specific information	14 (48.3)	10 (41.7)	14 (63.6)	
Patient experience	2 (6.9)	1 (4.2)	3 (13.6)	
Conservative management	7 (24.1)	6 (25.0)	0 (0)	
Surgical technique	0 (0)	2 (8.3)	1 (4.5)	
Exercises	6 (20.7)	5 (20.8)	4 (4.3)	
JAMA	2.0 (0-3)	2.0 (1-4)	4.0 (2-4)	**<0.001**
mDISCERN				**<0.001**
<3	21 (72.4)	6 (25)	0 (0)	
≥3	8 (27.6)	18 (75)	22 (100)	

Data are shown as median (min-max) or number (%). VPI=Video Power Index, GQS=Global Quality Scale, JAMA=Journal of the American Medical Association, mDISCERN=Modified DISCERN tool. Bold P values indicate statistically significant differences.

*Kruskal-Wallis test for numeric data

with only 29.3% meeting high-quality standards. Methodological differences could explain these discrepancies across studies, such as the diseases studied, video sources, or the number of videos analyzed.

In the current study, when videos were categorized as low, medium, or high quality based on GQS, significant differences emerged in mDISCERN score, JAMA score and video duration. As expected, high-quality videos had significantly higher scores in both mDISCERN and JAMA scores, compared to medium-

Table 4. Evaluation of correlations between JAMA, GQS, mDISCERN, and video characteristics

		JAMA	mDISCERN	GQS
JAMA	r	1.000	.545**	.616**
	P value	**.**	**<0.001**	**<0.001**
mDISCERN	r	.545**	1.000	.630**
	P value	**<0.001**	**.**	**<0.001**
GQS	r	.616**	.630**	1.000
	P value	**<0.001**	**<0.001**	**.**
Number of views	r	-.133	.017	.138
	P value	0.257	0.887	0.238
Number of likes	r	-.057	.156	.030
	P value	0.627	0.182	0.798
Number of days since upload	r	-.215	-.209	.027
	P value	0.064	0.072	0.816
View ratio	r	.039	.176	.188
	P value	0.738	0.131	0,105
Like ratio	r	-.033	.123	-.212
	P value	0.776	0.295	0.068
Video duration	r	-.157	-.066	-.282*
	P value	0.178	0.573	**0.014**
Video content	r	-.135	-.220	-.097
	P value	0.247	0.058	0.406
Video source	r	-.138	-.250*	-.259*
	P value	0.237	**0.031**	**0.025**
Number of comment	r	-.223	-.032	-.104
	P value	0.054	0.785	0.375

GQS=Global Quality Scale, JAMA=Journal of the American Medical Association, mDISCERN=Modified DISCERN tool. Bold P values indicate statistically significant differences.

*Spearman's correlation is significant at the 0.01 level (2-tailed)

**Spearman's correlation is significant at the 0.05 level (2-tailed)

and low-quality videos. This is in good agreement with previous results [20-22]. In addition, high-quality videos were found to be shorter in duration than low-quality ones. Although some studies have suggested that longer videos may increase viewer engagement, they take a risk losing audience interest and may stray from the main topic, reducing their overall quality [17, 18]. Our findings also revealed positive correlations among mDISCERN, JAMA, and GQS scores, consistent with previous literature [9, 23]. This suggests that video quality and reliability are closely aligned and should be jointly considered when evaluating educational content on YouTube.

Additionally, in the current study, 64% of the analyzed videos achieved an mDISCERN score >3, indicating a moderate level of reliability. Moreover, most TOS videos were uploaded by physicians and non-physician health workers, with independent users contributing only 13.3% of the content. The dominance of healthcare professionals among the video sources likely contributes to the relatively higher reliability observed in this study. These findings align

with previous research, such as D'Souza *et al*. [24], who reported that medical-source videos on epidural analgesia for labor pain were more reliable than those from nonmedical sources. Similarly, Ertem *et al*. [21] highlighted that videos uploaded by healthcare professionals were generally more trustworthy than those shared by independent users.

Regarding content distribution, disease-specific information was the most common focus, featured in 50.7% of the videos. Exercise training was the second most frequent topic (20%), followed by conservative management (17.3%). While videos on exercises and other conservative treatment methods were primarily uploaded by non-physician health workers, we believe physicians, should take a more active role in creating such content. Their expertise ensures a comprehensive understanding of the disease, potentially enhancing the quality and reliability of these resources.

Existing literature has primarily focused on publications related to TOS. For example, Özyiğit *et al*. analyzed the bibliometric structure of TOS research over the past 50 years, identifying the United States, France, and the United Kingdom as the leading contributors to academic publications on this topic [25]. Similarly, our study found that the United States, United Kingdom, and the Netherlands were the top contributors to YouTube videos about TOS. However, our current study primarily included videos providing disease-specific information, whereas most of the publications examined in the study by Özyiğit *et al*. [25] concentrated on the surgical management, likely because most of the publications they analyzed were published in surgical journals. In addition, Clothier *et al*. [26] evaluated the quality and readability of online TOS resources by searching for "TOS" and "Thoracic Outlet Syndrome" on search engines such as Google© and Yahoo©. Their study revealed that although these resources were generally effective in explaining TOS, they lacked comprehensive discussions on treatment options. They also reported variable quality across web search results. Our results support these findings by highlighting that while YouTube offers a mix of high-, medium-, and low-quality content, its quality is inconsistent and warrants improvement.

Limitations

This study has certain limitations. First, it only included English-language videos, which may limit the generalizability of the findings. Second, as YouTube is a dynamic platform, video metrics and availability may change over time, potentially affecting the reproducibility of this study.

CONCLUSION

In conclusion, while YouTube provides a moderately reliable resource for TOS-related information, the overall quality of the videos remains suboptimal. Given the strong link between quality and video sources, physicians should be encouraged to produce more educational content, particularly on exercise and conservative treatment methods. By doing so, they can help ensure that patients receive accurate, reliable, and high-quality information to understand better and manage their condition.

Ethical Statement

As the study exclusively analyzed publicly accessible videos without involving human participants or animals, ethics committee approval was deemed unnecessary, in accordance with similar studies in the field.

Authors' Contribution

Study Conception: ZRYT, DF; Study Design: ZRYT, DF; Supervision: ZRYT; Funding: N/A; Materials: N/A; Data Collection and/or Processing: ZRYT, DF; Statistical Analysis and/or Data Interpretation: ZRYT, DF; Literature Review: ZRYT; Manuscript Preparation: ZRYT, DF; and Critical Review: ZRYT, DF.

Conflict of interest

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REFERENCES

1. Sanders RJ, Hammond SL, Rao NM. Diagnosis of thoracic outlet syndrome. J Vasc Surg. 2007;46(3):601-604. doi: 10.1016/j.jvs.2007.04.050.
2. Landry GJ, Moneta GL, Taylor LM Jr, Edwards JM, Porter JM. Long-term functional outcome of neurogenic thoracic outlet syndrome in surgically and conservatively treated patients. J Vasc Surg. 2001;33(2):312-317. doi: 10.1067/mva.2001.112950.
3. Masocatto NO, Da-Matta T, Prozzo TG, Couto WJ, Porfirio G. Thoracic outlet syndrome: a narrative review. Rev Col Bras Cir. 2019;46(5):e20192243. doi: 10.1590/0100-6991e-20192243.
4. Kuhn JE, Lebus V GF, Bible JE. Thoracic outlet syndrome. J Am Acad Orthop Surg. 2015;23(4):222-232. doi: 10.5435/JAAOS-D-13-00215.
5. Grunebach H, Arnold MW, Lum YW. Thoracic outlet syndrome. Vasc Med. 2015;20(5):493-495. doi: 10.1177/1358863X15598391.
6. Amante DJ, Hogan TP, Pagoto SL, English TM, Lapane KL. Access to care and use of the Internet to search for health information: results from the US National Health Interview Survey. J Med Internet Res. 2015;17(4):e106. doi: 10.2196/jmir.4126.
7. van Uden-Kraan CF, Drossaert CH, Taal E, et al. Health-related Internet use by patients with somatic diseases: frequency of use and characteristics of users. Inform Health Soc Care. 2009;34(1):18-29. doi: 10.1080/17538150902773272.
8. Kocyigit BF, Akaltun MS, Sahin AR. YouTube as a source of information on COVID-19 and rheumatic disease link. Clin Rheumatol 2020;39(7):2049-2054. doi: 10.1007/s10067-020-05176-3.
9. Tarihci Cakmak E, Celik S. Characteristics, reliability, and quality of YouTube videos on meralgia paresthetica: a descriptive cross-sectional study. Acta Neurol Belg. 2024;124(4):1343-1351. doi: 10.1007/s13760-024-02567-0.
10. Özbek EA, Armangil M, Karaca MO, Merter A, Dursun M, Kocaoğlu H. Evaluation of the Reliability and Quality of Information in Carpal Tunnel Syndrome Shared on YouTube. J Wrist Surg. 2021;11(4):295-301. doi: 10.1055/s-0041-1735231.
11. Lama CJ, Hartnett DA, Donnelly JC, et al. YouTube as a Source of Patient Information for Cubital Tunnel Syndrome: An Analysis of Video Reliability, Quality, and Content. Hand (N Y). 2024;19(6):986-994. doi: 10.1177/15589447231151428.
12. Aydin MA, Akyol H. Quality of Information Available on YouTube Videos Pertaining to Thyroid Cancer. J Cancer Educ. 2020;35(3):599-605. doi: 10.1007/s13187-019-01502-9.
13. Langford B, Hooten WM, D'Souza S, Moeschler S, D'Souza RS. YouTube as a Source of Medical Information About Spinal Cord Stimulation. Neuromodulation. 2021;24(1):156-161. doi: 10.1111/ner.13303.
14. Kunze KN, Cohn MR, Wakefield C, et al. YouTube as a Source of Information About the Posterior Cruciate Ligament: A Content-Quality and Reliability Analysis. Arthrosc Sports Med Rehabil. 2019;1(2):e109-e114. doi: 10.1016/j.asmr.2019.09.003.
15. Kunze KN, Krivicich LM, Verma NN, Chahla J. Quality of Online Video Resources Concerning Patient Education for the Meniscus: A YouTube-Based Quality-Control Study. Arthroscopy. 2020;36(1):233-238. doi: 10.1016/j.arthro.2019.07.033.
16. Citisli V. Assessment of Diagnosis and Treatment of Thoracic Outlet Syndrome, An Important Reason of Pain in Upper Extremity, Based on Literature. J Pain Relief. 2015;4(2):173. doi: 10.4172/2167-0846.1000173.
17. Kwak D, Park JW, Won Y, Kwon Y, Lee JI. Quality and reliability evaluation of online videos on carpal tunnel syndrome: a YouTube video-based study. BMJ Open. 2022;12(4): e059239. doi: 10.1136/bmjopen-2021-059239.
18. Ozsoy Unubol T, Alanbay Yagci E. YouTube as a source of information on fibromyalgia. Int J Rheum Dis 2021;24(2):197-202. doi: 10.1111/1756-185X.14043.
19. Özcan F, Örücü Atar M. [Is YouTube a reliable and quality information source for plantar fasciitis?] J PMR Sci. 2022;25(3):355-361. doi: 10.31609/jpmrs.2022-91260. [Article in Turkish]
20. Alyanak B, Kablanoğlu S, Bağcıer S. YouTube as a Source of Information on Oropharyngeal Dysphagia Exercises: A Quality and Reliability Analysis. Turkiye Klinikleri Journal of Physical Medicine and Rehabilitation Sciences 2024;27(3):156-162. doi: 10.31609/jpmrs.2023-99955.
21. Ertem U, Özçakır S, İrdesel FJ, Günay SM. YouTube as a source of information on piriformis syndrome exercises. Turk J Phys Med Rehabil. 2022;69(1):15-22. doi: 10.5606/tftrd.2022.10459.
22. Chang MC, Park D. YouTube as a Source of Patient Information Regarding Exercises and Compensated Maneuvers for Dysphagia. Healthcare (Basel). 2021;9(8):1084. doi: 10.3390/healthcare9081084.
23. İşcan D, Aydın M. Quality and content analysis of tarsal tunnel syndrome videos on YouTube. J Health Sci Med 2024;7(4):477-481. doi: 10.32322/jhsm.1509313.
24. D'Souza RS, D'Souza S, Sharpe EE. YouTube as a source of medical information about epidural analgesia for labor pain. Int J Obstet Anesth. 2021;45:133-137. doi: 10.1016/j.ijoa.2020.11.005.
25. Özyiğit E, Zure M, Bağcıer F. A Comprehensive Review of the Last 50 Years of Research on Thoracic Outlet Syndrome: A Bibliometric Analysis. Comprehensive Medicine. 2024;16(4):226-231. doi: 10.14744/cm.2024.52207.
26. Clothier W, Treffalls JA, Tolbert PH, Harbin Z, Yan Q, Davies MG. Quality Assessment of Online Resources for Thoracic Outlet Syndrome Patients. Ann Vasc Surg. 2022;85:96-104. doi: 10.1016/j.avsg.2022.04.009.