JETR

JOURNAL OF
EXERCISE THERAPY
AND REHABILITATION

Journal of Exercise Therapy and Rehabilitation. 2025;12(2):109-119. DOI: 10.15437/jetr.1652052

ORIGINAL ARTICLE

# Reliability, comprehensiveness, and quality of YouTube videos on conservative treatment of congenital muscular torticollis

*Konjenital musküler tortikolisin konservatif tedavisine yönelik YouTube videolarının güvenilirliği, kapsamlılığı ve kalitesi*

Ahmet ÜŞEN[1], Ahmet AKYOL[2], Orhan GÜNEY[1], Yiğit Emre ÇETİN[1]

Abstract

**Purpose:** This study aimed to evaluate the comprehensiveness, reliability, and quality of YouTube videos related to the conservative treatment of congenital muscular torticollis (CMT) and to compare videos uploaded by healthcare professionals with those by other creators in terms of quality, reliability, and popularity.

**Methods:** This cross-sectional study analyzed 50 YouTube videos recorded through specific keyword searches. The videos were evaluated for their characteristic features such as duration, views, and likes, as well as for comprehensiveness (scored 0–5), reliability using the Modified DISCERN tool (scored 0–5), and overall quality using the Global Quality Scale (GQS) (scored 1–5). They were then classified according to the type of individual or institution that uploaded them, and a comparative analysis was performed.

**Results:** Of the 50 videos evaluated, 86% were classified as useful and 14% as misleading. While most of the useful videos (62.79%) were uploaded by therapists, 57.14% of the misleading videos originated from non-professional sources. The comprehensiveness, DISCERN, and GQS scores of useful videos were significantly higher than those of misleading ones ($p < 0.05$). High-quality videos had a greater number of daily views and likes compared to low- and medium-quality videos. Videos uploaded by healthcare professionals were found to be more reliable and of higher quality.

**Conclusion:** Although most CMT-related videos on YouTube were uploaded by healthcare professionals, misleading content remains present. Video popularity does not guarantee quality. Therefore, videos used for patient education should be carefully evaluated in terms of accuracy and comprehensiveness.

**Keywords:** Torticollis, Health education, Conservative treatment, Digital health.

Öz

***Amaç:*** *Bu çalışma, konjenital musküler tortikolisin (KMT) konservatif tedavisine yönelik YouTube videolarının kapsamlılık, güvenilirlik ve video kalitesini değerlendirmeyi ve sağlık profesyonelleri ile diğer içerik üreticileri tarafından yüklenen videoları kalite, güvenilirlik ve popülerlik açısından karşılaştırmayı amaçladı.*

***Yöntem:*** *Bu kesitsel çalışmada, belirli anahtar kelime aramaları yoluyla kaydedilen 50 YouTube videosu analiz edildi. Videolar; süresi, izlenme sayısı ve beğeni sayısı gibi karakteristik özelliklerinin yanı sıra, kapsamlılık (0–5 puan), Modifiye DISCERN aracıyla güvenilirlik (0–5 puan) ve Global Kalite Skalası (GKS) ile genel kalite (1–5 puan) açısından değerlendirildi. Ardından, videoları yükleyen kişi ya da kurumların türüne göre sınıflandırılmış ve karşılaştırmalı analiz gerçekleştirildi.*

***Bulgular:*** *Değerlendirilen 50 videonun %86'sı yararlı, %14'ü ise yanıltıcı olarak sınıflandırıldı. Yararlı videoların çoğu (%63) terapistler tarafından yüklenmişken, yanıltıcı videoların %57'si profesyonel olmayan kaynaklardan gelmişti. Yararlı videoların kapsamlılık, DISCERN ve GKS skorları, yanıltıcı videolara göre anlamlı derecede daha yüksekti ($p<0.05$). Yüksek kaliteli videolar, düşük ve orta kaliteli videolardan daha fazla günlük izlenme ve beğeni sayısına sahipti. Sağlık profesyonelleri tarafından yüklenen videoların daha güvenilir ve daha yüksek kalitede olduğu bulundu.*

***Sonuç:*** *YouTube'daki KMT ile ilgili videoların çoğu sağlık profesyonelleri tarafından yüklenmiş olsa da, yanıltıcı içeriklere hâlâ rastlanmaktadır. Video popülerliği, kaliteyi garanti etmemektedir. Bu nedenle, hasta eğitimi amacıyla kullanılan videolar doğruluk ve kapsamlılık açısından dikkatle değerlendirilmelidir.*

***Anahtar kelimeler:*** *Tortikolis, Sağlık eğitimi, Konservatif tedavi, Dijital sağlık.*

1: Istanbul Medipol University, Faculty of Medicine, Department of Physical Medicine and Rehabilitation, Istanbul, Türkiye.
2: Gaziantep Islam Science and Technology University, Faculty of Medicine, Department of Physical Medicine and Rehabilitation, Gaziantep, Türkiye.
Corresponding Author: Ahmet Üşen: ahmetusen1@hotmail.com
ORCID IDs (order of authors): 0000-0002-2754-1232; 0000-0002-8953-5196; 0009-0004-5213-6935; 0009-0000-9162-1504
Received: April 9, 2025. Accepted: July 15, 2025.

## INTRODUCTION

Congenital muscular torticollis (CMT) is a postural deformity characterized by unilateral shortening of the sternocleidomastoid muscle, typically emerging shortly after birth. The incidence of CMT in newborns ranges from 3.9% to 16%.[1-3] Early diagnosis and timely initiation of physiotherapy can shorten treatment duration, yield more favorable outcomes, and reduce the need for surgical intervention in infants with CMT.[4] Although the best treatment outcomes are achieved when physiotherapy is initiated within the first month, most infants are referred for treatment between the ages of 3 and 6 months.[5] Moreover, children with CMT who do not receive physiotherapy have been reported to have a higher risk of neurodevelopmental delay, underscoring the importance of early intervention in supporting motor development.[6] Therefore, early diagnosis and access to physiotherapy are crucial for preventing secondary complications.

Physiotherapy is considered the primary treatment approach in the management of CMT.[7] A comprehensive physiotherapy program is recommended, which includes cervical passive range of motion exercises, active neck and trunk movements, symmetrical movement training, environmental adaptations, and parental education.[7] Parental participation in physiotherapy is regarded as a critical factor in treatment effectiveness. The literature indicates that parents often struggle to consistently perform at-home exercises learned during physiotherapy sessions, and that infants may resist some movements by becoming irritable.[4] Educational programs aimed at informing and guiding parents play a vital role in overcoming these challenges. Studies have shown that parental education not only improves adherence to physiotherapy but also contributes to the prevention of positional deformities such as plagiocephaly. Implementing structured educational programs for parents early on can play a key role in enhancing children's motor development.[8] Among the various educational options available, there is a growing need for digital content in addition to traditional patient education materials such as brochures and guidebooks to improve feasibility at home. With the widespread availability of digital health content, video-based educational materials have been shown to be a more effective learning tool for parents and have emerged as an important method for improving adherence to physiotherapy.[4]

YouTube is a widely used video-sharing platform for accessing health-related information and is utilized by both patients and healthcare professionals.[9] However, the popularity of content on YouTube does not guarantee its scientific accuracy. Studies have demonstrated that a significant portion of medical videos on YouTube may contain incomplete or non-scientific information.[10] To date, no study in the literature has systematically examined the content scope, scientific reliability, and educational quality of YouTube videos specifically focusing on the conservative treatment of CMT. This study aims to analyze the most viewed YouTube videos related to the conservative treatment of CMT in terms of content scope, scientific reliability, and educational quality, and to compare the content quality, reliability, and popularity metrics of videos uploaded by healthcare professionals versus other content creators. This study is expected to both facilitate access to accurate and reliable resources for parents and caregivers, and raise awareness among healthcare professionals about online educational materials.

## METHODS

### Study design

This study is a cross-sectional investigation evaluating the usefulness, reliability, and quality of YouTube videos related to the conservative treatment of CMT. The study was conducted in accordance with the STROBE guidelines for observational studies. The study protocol was approved by the Ethics Committee of Istanbul Medipol University on March 24, 2025 (E-10840098-202.3.02-2214).

### Video selection

To identify videos related to the conservative treatment of CMT on YouTube, a comprehensive search was conducted using the keywords 'Conservative treatment for congenital muscular torticollis', 'Physiotherapy for congenital muscular torticollis', and 'Exercise for congenital muscular torticollis'.

These keywords were selected based on commonly used clinical terminology and previous literature on conservative management strategies for CMT. The search was performed using YouTube's default algorithm, with the most viewed videos listed first. To avoid bias from previous searches, browser history, cache, and cookies were cleared, and no user account was logged into YouTube during the search. Each of the three keywords was entered separately into the YouTube search bar. The results were pooled, and the 50 most-viewed videos meeting the inclusion criteria were selected. As all searches were performed under the same conditions, the order of entry had no influence on video selection. The search was conducted on April 1, 2025, and data collection took place between April 1-5, 2025.

Initially, 67 videos were identified and screened. Exclusion criteria were applied to ensure content relevance: 7 videos were excluded for not being directly related to the conservative treatment of CMT, 5 videos were excluded for not being in English, and 5 were excluded due to the absence of voiceover, which could limit educational value. After exclusions, 50 videos meeting the inclusion criteria were analyzed. The videos were not downloaded or stored; all evaluations were conducted directly on the YouTube platform using the saved video links. Inclusion criteria were defined as English-language videos that provided information on the conservative treatment and rehabilitation of CMT, contained voiceover or commentary, and did not require adult age verification for access. *Video selection based on inclusion and exclusion criteria was performed collaboratively by the two researchers.*

Due to the observational nature of the study, no formal sample size calculation was conducted. Instead, 50 of the most accessed and most viewed videos that met the inclusion criteria were analyzed to represent a current and broad sample of relevant content.

**Data collection**

For each video, the following data were recorded: total number of views, publication date, time elapsed since upload (in days), number of channel subscribers, number of likes, video duration (in seconds), video popularity (daily views), and the like-to-view ratio. Video uploaders were categorized as academic/professional organizations, doctors, physiotherapists, and non-professional health media accounts. Like counts were not visible for some videos. No imputation methods were used for missing data; only complete data were included in statistical calculations.

**Evaluation of video content**

The comprehensiveness of video content was evaluated based on current clinical guidelines for CMT. The Comprehensiveness Evaluation Criteria were determined in accordance with a systematic review by Castilla et al. and the 2024 Evidence-Based Clinical Practice Guideline published by the American Academy of Pediatric Physical Therapy.[4,7] These criteria were developed to assess the extent to which YouTube videos include scientifically validated core physiotherapy practices in the treatment of CMT. Although the relative importance of each category may vary clinically, equal weighting was applied to facilitate standardized comparison of content coverage across videos.

Accordingly, the videos were analyzed for their coverage of recommended physiotherapy interventions for the conservative management of CMT. First, the accuracy of passive stretching techniques for neck rotation and lateral flexion shown in the videos was assessed in terms of passive range of motion exercises. It was evaluated whether the exercises were performed gently and in a controlled manner, consistent with physiotherapy protocols.

In addition, the presentation of active neck and trunk exercises in the videos was analyzed. Special attention was given to whether activities that encourage active neck movement-such as toy tracking-were explained, and whether postural control exercises supporting trunk muscles were included.

Regarding symmetrical movement development, the videos were evaluated for whether equal movement development on both sides was encouraged. Furthermore, the inclusion of positioning strategies recommended for correcting head tilt was also analyzed.

The comprehensiveness of information related to environmental adaptations and family education was also considered. In this context, the presence of guidance on appropriate sleeping positions, carrying techniques, and recommended postural adjustments during playtime was evaluated. Additionally, whether

families and caregivers received guidance on how to apply the exercises was examined.

Lastly, the scope of information provided on home exercise programs and follow-up recommendations was analyzed. This included whether the videos offered families a daily exercise schedule, provided information on how to monitor the infant's progress, and included guidance on when to seek professional physiotherapy.

Based on these criteria, the videos were scored across five main intervention categories. Each category was assigned 1 point, resulting in a total comprehensiveness score ranging from 0 to 5 (Table 1).

Table 1. Assessment tools for the comprehensiveness, reliability, and quality of YouTube videos on the conservative management of congenital muscular torticollis.

| Comprehensiveness Evaluation Criteria |
|---|
| - Passive Range of Motion Exercises |
| - Active Neck and Trunk Movement Exercises |
| - Exercises for the Development of Symmetrical Movements |
| - Environmental Adaptations and Family Education |
| - Home Program and Follow-up Recommendations |
| **Modified DISCERN Tool** |
| - Is the purpose of the video clear, and are the objectives achieved? |
| - Are reliable sources of information used? |
| - Is the information presented balanced and unbiased? |
| - Are additional information sources provided for patient reference? |
| - Does the video address controversial or uncertain topics? |
| **Global Quality Scale** |
| 1: Very poor quality, poor flow of presentation, most information missing, not useful for patients. |
| 2: Poor quality, some information provided but incomplete and insufficient. |
| 3: Moderate quality, some topics adequately explained but others are lacking. |
| 4: Good quality, most important information covered but some topics are missing. |
| 5: Excellent quality, provides complete information, highly useful for patients. |

### Assessment of video quality and reliability

Video reliability was assessed using the Modified DISCERN tool, developed for evaluating online health content.[11] The tool scores five criteria-clarity of purpose, reliability of sources, balance and objectivity of content, availability of additional sources, and discussion of controversial topics-on a scale of 0 to 5. (Table 1)

Overall video quality was assessed using the Global Quality Scale (GQS), a subjective tool that scores content accuracy and presentation quality from 1 (very poor quality) to 5 (excellent quality).[12] This scale evaluates the coherence of narration, comprehensiveness of content, and usefulness for patients (Table 1).

### Classification of videos as useful or misleading

Based on comprehensiveness, quality, and reliability scores, videos were classified into two categories: useful or misleading. Useful videos were defined as those presenting scientifically accurate information and actionable exercise guidance. Misleading videos included those presenting unverified information, incorrect exercise practices, or inadequate explanations. Videos containing both useful and incorrect information were also classified as misleading.

### Data collection and evaluation process

Two independent and experienced physiatrists (AU and AA) evaluated the content and quality of the videos independently. The inter-rater agreement was calculated using the Kappa statistic, yielding an agreement rate of 85%, indicating high consistency. In cases of disagreement, a third independent reviewer assessed the video, and the final classification was determined through consensus among the three reviewers.

### Statistical analysis

Statistical analyses were performed using IBM SPSS Statistics 29.0 (Armonk, NY, USA). The normality of continuous variables was assessed using the Shapiro-Wilk test. Since the data were not normally distributed, group comparisons were conducted using the Kruskal-Wallis test. Categorical variables were analyzed using Fisher's Exact Test. Inter-rater agreement was assessed using the Kappa statistic. Statistical significance was set at $p<0.05$ for all analyses.

## RESULTS

A total of 50 videos were analyzed, of which 43 were classified as useful and 7 as misleading (Figure 1). Inter- rater agreement was

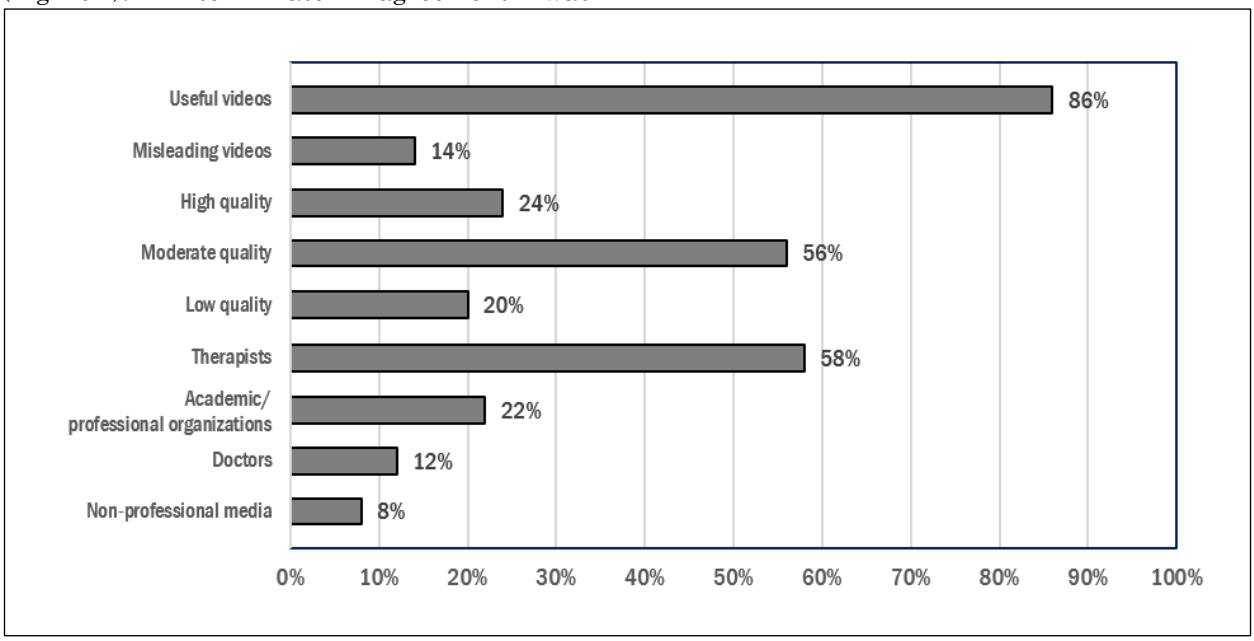


**Figure 1. The distribution of YouTube videos related to the conservative treatment of Congenital Muscular Torticollis.**
***In the chart, the distribution of CMT-related videos on YouTube is presented: at the top by channel ownership, in the middle by video quality, and at the bottom by the level of usefulness.**

substantial, with a kappa value of 0.85. The majority of useful videos (62.79%) were uploaded by therapists, whereas 57.14% of misleading videos were uploaded by non-professional health media accounts. No statistically significant difference was observed between useful and misleading videos in terms of video count, total views, publication duration, subscriber count, number of likes, video duration, daily view count, or like-to-view ratio. However, the Modified DISCERN score was significantly higher in useful videos than in misleading ones ($p<0.001$). Similarly, the GQS score was significantly higher in useful videos compared to misleading ones ($p=0.001$). The comprehensiveness score was also significantly higher in useful videos than in misleading ones ($p=0.003$). (Table 2) These results indicate that useful videos generally offer higher-quality, more comprehensive, and reliable information than misleading ones.

Based on GQS scores, 20% of the YouTube videos were classified as low quality, 56% as moderate quality, and 24% as high quality (Figure 1). When comparing by quality level, high-quality videos had significantly higher total views than moderate-quality videos ($p<0.001$). Similarly, high-quality videos had significantly more likes than moderate-quality ones ($p=0.001$). In terms of duration, moderate-quality videos were significantly shorter than both high-quality ($p<0.001$) and low-quality videos ($p=0.014$). High-quality videos had significantly higher daily views than moderate ($p<0.001$) and low-quality videos ($p=0.007$). The Modified DISCERN score was significantly higher in high-quality videos than in moderate ($p=0.005$) and low-quality videos ($p=0.001$). Moderate-quality videos also had significantly higher scores than low-quality ones ($p=0.005$). Similarly, the comprehensiveness score was significantly higher in high-quality videos than in moderate ($p<0.001$) and low-quality videos ($p<0.001$). Moderate-quality videos also scored significantly higher than low-quality ones ($p=0.011$). (Table 3) Overall, high-quality videos tend to perform better in terms of user engagement and information quality,

suggesting a positive trend where better content receives greater attention.

Analysis based on YouTube channel ownership revealed that 58.0% of the videos were uploaded by therapists (29 videos), 22.0% by academic/professional organizations (11 videos), 12.0% by physicians (6 videos), and 8.0% by non-professional health media accounts (4 videos) (Figure 1). Total view counts were significantly higher in videos from academic/professional organizations than those from non-professional accounts (p=0.009). Videos uploaded by physicians had significantly more views than those uploaded by therapists (p=0.029) and non-professional accounts (p=0.011). The publication duration was significantly shorter for videos by therapists compared to academic/professional organizations (p=0.007). In terms of subscribers, therapists' videos had significantly more subscribers than those of physicians (p=0.009). Videos by physicians received significantly more likes than those by academic/professional organizations (p=0.027) and therapists (p=0.046). They also had more likes than those from non-professional accounts (p=0.011). Academic/professional organization videos had significantly higher daily views than non-professional accounts (p=0.026). Videos by physicians had significantly more daily views than those by therapists (p=0.037) and non-professional accounts (p=0.032). The like-to-view ratio was significantly higher for therapists' videos than for those by academic/professional organizations (p<0.001). The Modified DISCERN score was significantly higher in academic/professional videos than in non-professional accounts (p=0.038), and also higher in therapists' videos (p=0.037). Similarly, the GQS score was higher for academic/professional organizations and therapists than for non-professional accounts (p=0.036 and p=0.008, respectively). Finally, comprehensiveness scores were significantly higher in videos from academic/professional organizations and therapists than in non-professional accounts (p=0.038 and p=0.008, respectively). (Table 4) These findings emphasize that videos uploaded by healthcare professionals and institutions are more reliable and informative, while non-professional sources tend to provide lower-quality content.

## DISCUSSION

In this study, the comprehensiveness, reliability, and quality of YouTube videos related to conservative treatment for CMT were systematically evaluated. Our findings reveal that YouTube is a widely used source of information on conservative treatment for CMT; however, the scientific accuracy and quality of the videos vary significantly. The study demonstrated that videos prepared by healthcare professionals generally provided higher quality and more reliable content, while those uploaded by non-professional sources tended to have lower scientific accuracy and were more likely to contain misleading information.

Although YouTube is commonly used for patient education, its content displays considerable variation in terms of scientific reliability and comprehensiveness.[13,14] This discrepancy arises from YouTube's algorithmic structure, which promotes viewer engagement while placing virtually no restrictions on the quality of uploaded content.[15] The literature includes numerous studies evaluating YouTube videos addressing various medical conditions. For example, a study on rheumatoid arthritis exercise videos found that 94% were considered useful, yet there were significant differences in quality and reliability.[16] Similarly, in our study, 86% of the 50 analyzed videos were classified as useful and 14% as misleading. The majority of the useful videos (62.79%) were uploaded by physiotherapists, while 57.14% of the misleading videos came from non-professional health media accounts. Nonetheless, no significant difference was found between useful and misleading videos regarding popularity indicators such as views, likes, and subscriber counts. A study on ankylosing spondylitis exercise videos also reported no significant correlation between popularity and scientific quality.[9] On the other hand, useful videos had significantly higher Modified DISCERN, GQS, and comprehensiveness scores compared to misleading videos. These results highlight the necessity of evaluating video reliability based not solely on popularity indicators but through systematic analysis of scientific accuracy. Exercise-based rehabilitation videos should not be limited to demonstrating movements; they

should also include essential components such as exercise duration, frequency, patient education, and follow-up recommendations.

Health education videos on YouTube also exhibit heterogeneity in content quality, with many lacking presentation coherence, source transparency, and adequate educational value.[13] The platform hosts a considerable amount of low-quality and misleading content, and its algorithm-favoring popularity over quality-allows such videos to gain visibility on par with high-quality ones.[17,18] A study evaluating YouTube videos related to meniscus tear rehabilitation reported a low proportion of high-quality content and a high risk of patients encountering inaccurate or incomplete information.[19] In contrast, another study on pelvic floor muscle exercises found that high-quality videos were typically longer and received more views and likes.[20] In our study, 20% of the CMT-related videos were classified as low quality, 56% as moderate quality, and 24% as high quality. High-quality videos had significantly higher view and like counts, as well as significantly higher Modified DISCERN, GQS, and comprehensiveness scores. These

Table 2. Comparison of video characteristics between useful and misleading videos.

| | Useful videos | Misleading videos | |
|---|---|---|---|
| | X±SD | X±SD | p |
| Total number of views | 62585±106557.00 | 23439±26003.38 | 0.235 |
| Exposure period (days) | 1266±557 | 1862±1347 | 0.502 |
| Number of subscribers | 87376±185578 | 22111±28533 | 0.200 |
| Number of likes | 431±583 | 272±419 | 0.301 |
| Video duration (sec) | 252±285 | 188±183 | 0.511 |
| Views per day | 50±83 | 22±34 | 0.105 |
| Likes per view ratio | 0.01070±0.01909 | 0.00943±0.00509 | 0.474 |
| Modified DISCERN Score | 3.35±0.97 | 1.71±0.76 | <0.001 |
| Global Quality Scale | 3.26±0.79 | 2.00±0.82 | 0.001* |
| Comprehensiveness Score | 1.93±0.83 | 0.86±0.69 | 0.003* |
| Ownership of the YouTube channel accounts | | | |
| Academic/professional organizations | 11 (25%) | 0 | |
| Doctors | 5 (12%) | 1 (14.29%) | |
| Therapists | 27 (63%) | 2 (28.57%) | |
| Non-professional Health Media | - | 4 (57.14%) | |

* p<0.05.

Table 3. Comparison of video characteristics based on global quality scale categories.

| | GQS Low Quality | GQS Moderate Quality | GQS High Quality | |
|---|---|---|---|---|
| | X±SD | X±SD | X±SD | p |
| Number of videos (n) | 10 (20%) | 28 (56%) | 12 (24%) | |
| Total number of views | 37031±28535 | 35751±74887 | 123656±154176 | c |
| Exposure period (days) | 2051±1190 | 1217±460 | 1074±344 | a,b |
| Number of subscribers | 162020±375795 | 49689±37340 | 75036±82681 | a |
| Number of likes | 312±341 | 251±390 | 857±806 | b,c |
| Video duration (s) | 305±238 | 126±82 | 464±420 | a,c |
| Views per day | 26±28 | 27±51 | 110±121 | b,c |
| Likes per view ratio | 0.0082±0.0053 | 0.0087±0.0041 | 0.0068±0.0042 | |
| Modified DISCERN Score | 2.1±1.0 | 3.1±0.9 | 4.0±1.0 | a,b,c |

| | | | | |
|---|---|---|---|---|
| Comprehensiveness Score | 1.0±0.7 | 1.6±0.6 | 2.8±0.9 | a,b,c |

Videos were classified according to the Global Quality Scale (GQS) as Low Quality (1–2 points), Moderate Quality (3 points), and High Quality (4–5 points).
Pairwise comparisons: a= p<0.05, Low vs. Moderate. b= p<0.05, Low vs. High. c= p<0.05, Moderate vs. High.

Table 4. Descriptive characteristics and comparisons of videos based on YouTube channel ownership.

| | Group 1 | Group 2 | Group 3 | Group 4 | |
|---|---|---|---|---|---|
| | X±SD | X±SD | X±SD | X±SD | |
| Total number of views | 82741±156325 | 90302±95504 | 46673±79076 | 12437±6359 | c,d |
| Exposure period (days) | 1555±519 | 1415±1122 | 1097±303 | 2519±1497 | b |
| Number of subscribers | 36080±79081 | 4296±5678 | 52411±37561 | 7400±3793 | d |
| Number of likes | 328±567 | 884±865 | 384±489 | 94±56 | a,d,e |
| Video duration (s) | 215±213 | 453±595 | 207±185 | 265±216 | |
| Views per day | 67±128 | 84±81 | 36±53 | 8±8 | c,d,e |
| Likes per view ratio | 0.0037±0.0016 | 0.0083±0.0057 | 0.0139±0.0225 | 0.0077±0.0059 | b |
| Modified DISCERN Score | 3.1±0.8 | 3.3±1.2 | 3.2±1.2 | 2.0±0.8 | c,e |
| Global Quality Scale | 3.1±0.7 | 3.7±1.4 | 3.10±0.8 | 2.0±0.8 | c,e |
| Low quality video (n) | 2 (18%) | 2 (33%) | 3 (10%) | 3 (75%) | |
| Moderate quality video (n) | 6 (55%) | - | 21 (73%) | 1 (25%) | |
| High quality video (n) | 3 (27%) | 4 (67%) | 5 (17%) | - | |
| Comprehensiveness Score | 1.7±0.8 | 2.2±1.3 | 1.9±0.8 | 0.8±0.5 | c,e |
| Useful- Misleading videos | | | | | |
| Useful (n) | 11 (100%) | 5 (83%) | 27 (93%) | - | |
| Misleading (n) | - | 1 (17%) | 2 (7%) | 4 (100%) | |

Descriptive characteristics of videos classified by YouTube channel ownership: Group 1: Academic/professional organizations, Group 2: Doctors, Group 3: Therapists, Group 4: Non-professional health media.
Pairwise comparisons: a= p<0.05, Group 1 vs. Group 2. b= p<0.05, Group 1 vs. Group 3. c= p<0.05, Group 1 vs. Group 3. d= p<0.05, Group 2 vs. Group 3. e= p<0.05, Group 2 vs. Group 4. f= p<0.05, Group 3 vs. Group 4.

findings emphasize that videos used for patient education on YouTube should be evaluated not only for visual appeal and popularity but also in terms of scientific accuracy, source credibility, and content scope.

The reliability of health education videos is strongly associated with the identity of the content uploader. Previous studies have shown that videos created by healthcare professionals tend to be of higher scientific quality, while those uploaded by individual content creators or independent health websites are more likely to contain misleading information. For instance, a study on exercise videos for post-mastectomy patients found that most useful videos were uploaded by universities, professional organizations, doctors, and physiotherapists, while misleading ones came mostly from independent websites.[21] Similarly, in a study evaluating scoliosis exercise videos, content created by physicians received higher DISCERN scores, although popular videos did not always reflect scientific accuracy.[22] While many consulting agencies assist content creators in increasing their channel visibility, there is no specialized mechanism to verify medical information, leaving this responsibility entirely to the uploader.[23-25] This poses a serious reliability concern, especially for users seeking accurate medical information. In our study, the vast majority of videos related to conservative treatment for CMT were uploaded by healthcare professionals: 58% by therapists, 22% by academic/professional organizations, and 12% by doctors. Only 8% were uploaded by non-professional health media accounts. Consistent with previous studies, our findings support the higher scientific accuracy of videos produced by healthcare professionals.

Scientific reliability of health education videos can also vary across platforms.[26] A study on rehabilitation and return-to-sport following anterior cruciate ligament (ACL) reconstruction found that most YouTube videos were of low

information quality, reliability, and accuracy. However, those uploaded by healthcare professionals had significantly higher informational value than commercial or personal experience content.[27] Conversely, another study analyzing ACL rehabilitation exercises on TikTok reported that educational value was generally low for videos uploaded by both professionals and lay users.[28] These findings demonstrate the presence of significant quality disparities across platforms and underscore the need to evaluate health content individually for each platform. This inter-platform variability also highlights the necessity for healthcare professionals to enhance their digital health literacy and guide patients to credible sources.

Popularity indicators of health education videos may not reflect scientific accuracy. A study on piriformis syndrome exercise videos reported that videos uploaded by healthcare professionals had higher GQS and DISCERN scores, while those uploaded by individual creators received more views and likes.[29] Similarly, our study found that videos from academic/professional organizations had higher total views than those from non-professional accounts, whereas videos uploaded by therapists had a higher like-to-view ratio compared to academic sources. A comparable trend was noted in a study on carpometacarpal osteoarthritis exercise videos, where most content had low educational value, and only a small portion provided high-quality information.[30] These findings suggest that health education content should not be judged solely by popularity, but rather through critical evaluation of its scientific accuracy and comprehensiveness. While non-professional content may garner higher engagement, it often relies on personal experience, which may lack professional and scientific validity. Nonetheless, such content may still hold value in terms of patient motivation and peer support.

### Limitations

This study has several limitations. First, only English-language videos were included in the analysis; therefore, generalization to videos in other languages is not possible. This language limitation may overlook culturally specific content and health communication styles, which could affect the applicability of findings in non-English-speaking populations. Second, due to YouTube's dynamic algorithm, video rankings may change over time, potentially affecting the study's findings. Third, although validated assessment tools were used, the evaluation may still involve subjective interpretation. Finally, the study was limited to the YouTube platform; similar evaluations are needed for other social media platforms (e.g., TikTok, Instagram, Facebook). Future research should include videos in different languages, track long-term quality changes, and provide comparative analyses of health information across various digital platforms.

### Conclusion

This study assessed the comprehensiveness, reliability, and quality of YouTube videos related to the conservative treatment of CMT. Our results show that videos uploaded by healthcare professionals demonstrate higher scientific accuracy and quality, while a substantial proportion of misleading content is also present on the platform. Moreover, no direct correlation was found between video popularity and scientific quality. These findings underscore the need to evaluate YouTube videos used for patient education based on more than just views or likes. Particularly in clinically sensitive fields such as pediatric rehabilitation, misleading or incomplete information may lead parents to adopt inappropriate treatment practices.

Healthcare professionals should increase the availability of scientifically sound content on digital platforms to ensure that patients have access to reliable and comprehensive information. Additionally, platform providers should develop mechanisms to filter and verify health-related content based on quality standards, thereby facilitating access to accurate information for patients and caregivers. These findings may inform health policy by emphasizing the need for content verification mechanisms and professional oversight in digital patient education platforms. Future studies should explore the long-term effects of health videos on YouTube and focus on developing strategies to enhance the reliability of online patient education.

**Acknowledgement:** *None*

**Authors' Contributions:** AÜ: Literature review, idea

development and concept generation, study design and project management, video evaluations, review and interpretation of analyses, and writing evaluation and critical review reports. **AA**: Video evaluation, review and interpretation of analyses. **OG**: Video selection, data collection, content analysis, data processing. **YEÇ**: Video selection, data collection, content analysis, data processing.

**Funding:** *None*

**Conflicts of Interest:** *None*

**Ethical Approval:** The study protocol was approved by the Istanbul Medipol University Ethics Committee (issue: E-10840098-202.3.02-2214, date: 24.03.2025).

## REFERENCES


1. Aarnivala HE, Valkama AM, Pirttiniemi PM. Cranial shape, size and cervical motion in normal newborns. Early Hum Dev. 2014;90:425-430.
2. Chen MM, Chang HC, Hsieh CF, et al. Predictive model for congenital muscular torticollis: analysis of 1021 infants with sonography. Arch Phys Med Rehabil. 2005;86:2199-2203.
3. Stellwagen L, Hubbard E, Chambers C, et al. Torticollis, facial asymmetry and plagiocephaly in normal newborns. Arch Dis Child. 2008;93:827-831.
4. Castilla A, Gonzalez M, Kysh L, et al. Informing the Physical Therapy Management of Congenital Muscular Torticollis Clinical Practice Guideline: A Systematic Review. Pediatr Phys Ther. 2023;35:190-200.
5. O'Connell M. Descriptions of physical therapy management of infants with congenital muscular torticollis in the United States of America. Newark, NJ: School of Health Professions, Rutgers, The State University of New Jersey; 2016.
6. Kim OH, Lee SW, Ha EK, et al. Neurodevelopmental outcomes and comorbidities of children with congenital muscular torticollis: evaluation using the National Health Screening Program for Infants and Children database. Clin Exp Pediatr. 2022;65:312–319.
7. Sargent B, Coulter C, Cannoy J, et al. Physical therapy management of congenital muscular torticollis: A 2024 evidence-based clinical practice guideline from the American Physical Therapy Association Academy of Pediatric Physical Therapy. Pediatr Phys Ther. 2024;36:370-421.
8. Burmeister S, Kayne AN, Yazdanyar AR, et al. Plagiocephaly perception and prevention: a need to intervene early to educate parents. Open J Occup Ther. 2021;9:1-11.
9. Kocyigit BF, Nacitarhan V, Koca TT, et al. YouTube as a source of patient information for ankylosing spondylitis exercises. Clin Rheumatol. 2019;38:1747-1751.
10. Jeong KY, Lee HJ, Yim SY. The usefulness, reliability, and quality of YouTube video clips on congenital muscular torticollis: A STROBE compliant study. Medicine (Baltimore). 2022;101:e30502.
11. Charnock D, Shepperd S, Needham G, et al. DISCERN: an instrument for judging the quality of written consumer health information on treatment choices. J Epidemiol Community Health 1999;53(2):105-111.
12. Bernard A, Langille M, Hughes S, et al. A systematic review of patient inflammatory bowel disease information resources on the world wide web. Am J Gastroenterol. 2007;102:2070-2077.
13. Osman W, Mohamed F, Elhassan M et al. Is YouTube a reliable source of health-related information? A systematic review. BMC Med Educ. 2022;22:382.
14. Utkan Karasu A, Karataş L. Assessing YouTube videos on lymphedema for patient education: A comprehensive evaluation. J Phys Med Rehabil Sci. 2024;27:135-143.
15. Ataç Ö, Özalp YC, Kurnaz R, et al. YouTube as an Information Source During the Coronavirus Disease (COVID-19) Pandemic: Evaluation of the Turkish and English Content. Cureus. 2020;12:e10795.
16. Sari F, Bazancir Apaydin Z, Sari S. Assessment of reliability and quality of YouTube® exercise videos in people with rheumatoid arthritis. Physiother Theory Pract. 2025;41:362-369.
17. Elangovan S, Kwan YH, Fong W. The usefulness and validity of English-language videos on YouTube as an educational resource for spondyloarthritis. Clin Rheumatol. 2021;40:1567-1573.
18. Pandey A, Patni N, Singh M, et al. YouTube as a source of information on the H1N1 influenza pandemic. Am J Prev Med. 2010;38(3):e1-e3.
19. Abed V, Ray M, Smathers J, et al. Assessment of video quality and reliability of YouTube videos regarding meniscus tear rehabilitation. Cureus. 2023;15(3):e36299.
20. Culha Y, Seyhan Ak E, Merder E, et al. Analysis of the YouTube videos on pelvic floor muscle exercise training in terms of their reliability and quality. Int Urol Nephrol. 2021;53:1-6.
21. Güloğlu S, Can Ö, Çinar E, et al. YouTube English videos as a source of information on arm and shoulder exercise after breast cancer surgery. Eur J Cancer Care. 2022;31:e13685.

22. Ağır H, Tuna M. Evaluation of quality and reliability of YouTube videos on idiopathic adolescent scoliosis. J Phys Med Rehabil Sci. 2023;26:276-281.
23. Haslam K, Doucette H, Hachey S, et al. YouTube videos as health decision aids for the public: An integrative review. Can J Dent Hyg. 2019;53:53-66.
24. Mangan MS, Cakir A, Yurttaser Ocak S, et al. Analysis of the quality, reliability, and popularity of information on strabismus on YouTube. Strabismus. 2020;28:175-180.
25. Chen L, Zhou Y, Chiu DM. Analysis and detection of fake views in online video services. ACM Trans Multimedia Comput Commun Appl. 2015;11(2s):1-20.
26. Gurler D, Buyukceran I. Assessment of the medical reliability of videos on social media: detailed analysis of the quality and usability of four social media platforms (Facebook, Instagram, Twitter, and YouTube). Healthcare (Basel). 2022;10:1836.
27. Springer B, Bechler U, Koller U, et al. Online videos provide poor information quality, reliability, and accuracy regarding rehabilitation and return to sport after anterior cruciate ligament reconstruction. Arthroscopy. 2020;36:3037-3047.
28. Bethell MA, Anastasio AT, Adu-Kwarteng K, et al. Analyzing the quality, reliability, and educational value of ACL rehabilitation exercises on TikTok: A cross-sectional study. Orthop J Sports Med. 2023;11:1-7.
29. Ertem U, Özçakır S, İrdesel FJ, et al. YouTube as a source of information on piriformis syndrome exercises. Turk J Phys Med Rehabil. 2022;69:15-22.
Villafañe JH, Cantero-Tellez R, Valdes K, et al. Educational quality of YouTube videos in thumb exercises for carpometacarpal osteoarthritis: a search on current practice. Hand (N Y). 2018;13:715-719.