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# Evaluating the Quality of Turkish-Language YouTube Videos on Sepsis: Insights into Reliability and Misinformation

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## Abstract

**Background:** Sepsis represents a severe clinical syndrome in which infection triggers a dysregulated host response, leading to life-threatening organ dysfunction and remaining among the leading causes of mortality worldwide. YouTube has emerged as a major source of health information, yet the quality of sepsis-related Turkish-language content has not been systematically examined. This study assessed the quality, reliability, and educational value of Turkish-language YouTube videos related to sepsis.

**Material and methods:** A cross-sectional content analysis was performed on the first 100 Turkish-language videos retrieved on 1 August 2025, using the keywords “sepsis türkçe” and “türkçe sepsis”. Non-medical, duplicate, and short-form videos were excluded. Video characteristics, engagement metrics, sources, target audience, and coverage of core sepsis topics were recorded. Two reviewers independently assessed videos using the Global Quality Score (GQS), JAMA Benchmark Criteria, and Modified DISCERN Score (MDS). Comparative analyses examined differences before and after 2020, and correlations were calculated between video features and quality scores.

**Results:** The mean video duration was 23.7 ± 37.1 minutes (range: 0.4–175.4). Overall quality was low-to-moderate (GQS 2.43 ± 1.37; JAMA 1.32 ± 1.20; MDS 2.42 ± 1.33). Hospitals (38%) and academic institutions (27%) were the main content producers, and 65% targeted the general public. Strong correlations were found between GQS and MDS ($r = 0.71$) and between JAMA and MDS ($r = 0.80$). Post-2020 videos were longer, better structured, and had higher quality scores, yet only 18% cited peer-reviewed sources or guidelines.

**Conclusion:** Turkish-language YouTube videos on sepsis demonstrate considerable variability, yet their overall quality remains suboptimal. Although certain improvements have been observed since 2020, the majority of videos continue to lack transparency and evidence-based referencing. Collaboration between healthcare professionals and digital platforms, adherence to established benchmarks, and technological solutions are needed to strengthen online health communication.

**Keywords:** Education, Health Communication, Sepsis, Social Media, YouTube.



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## Introduction

Sepsis is defined as a life-threatening organ dysfunction resulting from a dysregulated host response to infection and constitutes a major global health burden. The World Health Organization (WHO) estimates that sepsis affects approximately 49 million people worldwide each year and is responsible for 11 million deaths, many of which could be avoided through timely diagnosis and evidence-based treatment approaches [1]. In resource-limited settings, including middle- and low-income countries such as Türkiye, sepsis outcomes are worsened by delayed recognition, inadequate community-level awareness, and insufficient adherence to standardized clinical protocols [2].

With the rapid expansion of digital media, YouTube has emerged as one of the most widely used sources of health information, attracting billions of viewers each day. Owing to its open-access structure, the platform hosts a wide array of content ranging from medically sound expert contributions to unregulated user-generated material. While this accessibility broadens patient engagement, it simultaneously poses risks by undermining content accuracy, reliability, and educational quality [3].

Recent studies evaluating the quality of YouTube videos on various health-related topics, including myocardial infarction, diabetes, and COVID-19, have consistently revealed a concerning trend: despite their popularity, many of these videos lack scientific rigor and are prone to disseminating misinformation [4-6]. However, video resources on sepsis have received limited scholarly attention, particularly in non-English contexts, and Turkish, a language spoken by over 85 million people worldwide, represents a notable gap in the literature.

In Türkiye, limited sepsis awareness and variable health literacy make YouTube a potentially crucial channel for life-saving education. Nevertheless, the absence of regulatory oversight poses a risk that patients and caregivers seeking knowledge on sepsis may encounter misleading or incomplete content. This issue is especially concerning given that both early recognition of sepsis symptoms and the timely initiation of treatment are crucial determinants of survival.

To address this gap, the present study systematically evaluates the quality, reliability, and accuracy of Turkish-language YouTube videos on sepsis. Validated assessment tools—including the Global Quality Score (GQS), JAMA Benchmark Criteria, and the Modified DISCERN Score (MDS)—are employed to determine whether such videos provide credible public health information or contribute to the spread of misinformation. These findings are expected to yield valuable insights for healthcare professionals, policymakers and content creators, thereby supporting efforts to enhance the quality of online health communication in Türkiye.

## Material and methods

### *Study Design and Data Collection*

This cross-sectional content analysis was conducted to evaluate the quality and reliability of Turkish-language YouTube videos related to sepsis. A systematic search was performed on 1 August 2025 using the keywords "sepsis türkçe" and "türkçe sepsis," after clearing prior search and subscription history to minimize algorithm-related bias. To approximate typical user behavior, the search results were sorted by relevance without applying additional filters.

Clear inclusion and exclusion criteria were applied during screening. Only videos in the Turkish language, accessible to the public without restrictions, and containing content related to sepsis were considered eligible. Videos were excluded if they were duplicates, non-medical in nature (e.g., entertainment or unrelated content), or presented in languages other than Turkish. Short-form clips without substantive educational content were also excluded.

In total, 1,500 videos were initially identified. Of these, 170 duplicates and 1,230 non-Turkish videos were excluded, leaving 100 eligible videos for final analysis. Consequently, 100 videos were included in the study, consistent with the methodologies used in similar studies [7, 8].

***Data Extraction Parameters***

The following variables were extracted for each video: publication date, duration (minutes), number of views, likes, comments, and channel subscribers; video source (hospital, academic institution, individual, or media outlet); intended audience (general public vs. healthcare professionals); and inclusion of core sepsis-related content (definition, symptoms, diagnosis, treatment, references). Data collection and quality scoring were conducted independently by two reviewers, with disagreements resolved by consensus or adjudication by a third reviewer.

***Video Quality Assessment Tools***

Each video was evaluated using the following standardized scoring systems:

*1. Global Quality Score*

The GQS is a 5-point Likert-type scale designed to subjectively assess video quality, coherence, and educational value for patients. A rating of 1 corresponds to very poor quality, whereas a rating of 5 corresponds to excellent quality. (Table 1) [9].

*2. JAMA Benchmark Criteria*

The JAMA Benchmark Criteria assess the credibility of online videos using four domains: authorship, attribution, currency, and disclosure. Each domain contributes one point, resulting in a total score ranging from 0 to 4 (Table 2) [10].

*3. Modified DISCERN Score*

The MDS, adapted from the validated DISCERN questionnaire, applies a 5-point scale to appraise the reliability and comprehensibility of consumer health information about treatment options (Table 3) [11].

***Statistical Analysis***

Data were analyzed using Microsoft Excel and IBM SPSS Statistics (version 24). Descriptive statistics were presented as mean ± standard deviation, median, and interquartile range (IQR), while categorical variables were expressed as frequencies and percentages. To evaluate temporal trends, comparative analyses were carried out between videos uploaded before 2020 and those published thereafter. Continuous variables were analyzed using independent-samples t-tests or

**Table 1. Global Quality Score**

| Score | Explanation |
|---|---|
| **1** | Poor quality, poor flow, most information missing, not useful for patients |
| **2** | Generally poor, some information listed but of limited use to patients |
| **3** | Moderate quality, some important information is adequately discussed |
| **4** | Good quality and flow, most relevant information is covered, useful for patients |
| **5** | Excellent quality and flow, comprehensive, very useful for patients |

**Table 2. JAMA Benchmark Score**

| Score | Explanation |
|---|---|
| **0** | None of the criteria met |
| **1** | One criteria met (e.g., authorship, attribution, disclosure, currency). |
| **2** | Two criteria met |
| **3** | Three criteria met |
| **4** | All four criteria met |

**Table 3. Modified DISCERN Score**

| Score | Explanation |
|---|---|
| **0** | Not reliable, no quality information provided |
| **1** | Very poor reliability, major flaws present |
| **2** | Poor reliability, some important aspects is lacking |
| **3** | Moderate reliability, some key areas well-covered |
| **4** | Good reliability with minor flaws |
| **5** | Excellent reliability, clear, balanced, and evidence-based |

Mann–Whitney U tests, depending on distributional assumptions, whereas categorical variables were compared using chi-square tests. Correlations between continuous variables (e.g., quality scores, video length, engagement metrics) were assessed using Pearson's correlation coefficient. A two-tailed p-value of $< 0.05$ was considered statistically significant.

## Results

### *Video Characteristics*

A total of 100 Turkish-language YouTube videos related to sepsis were systematically analyzed. The videos demonstrated substantial variability in duration, viewership, target audience, content quality, and educational scope. The mean duration was 23.69 ± 37.09 minutes, ranging from 0.4 to 175.37 minutes, reflecting considerable heterogeneity in content presentation.

The videos accumulated between 26 and 66,945 views (mean 3,559.14 ± 9,818.96; median 401). The large discrepancy between mean and median highlights a right-skewed distribution, with a minority of videos accounting for the majority of views. The average number of likes was 62.13 ± 192.58 (range: 0–1,500). Notably, 62% of videos contained no comments, and only 16% had more than five comments, underscoring the generally limited bidirectional engagement between viewers and content providers (Table 4).

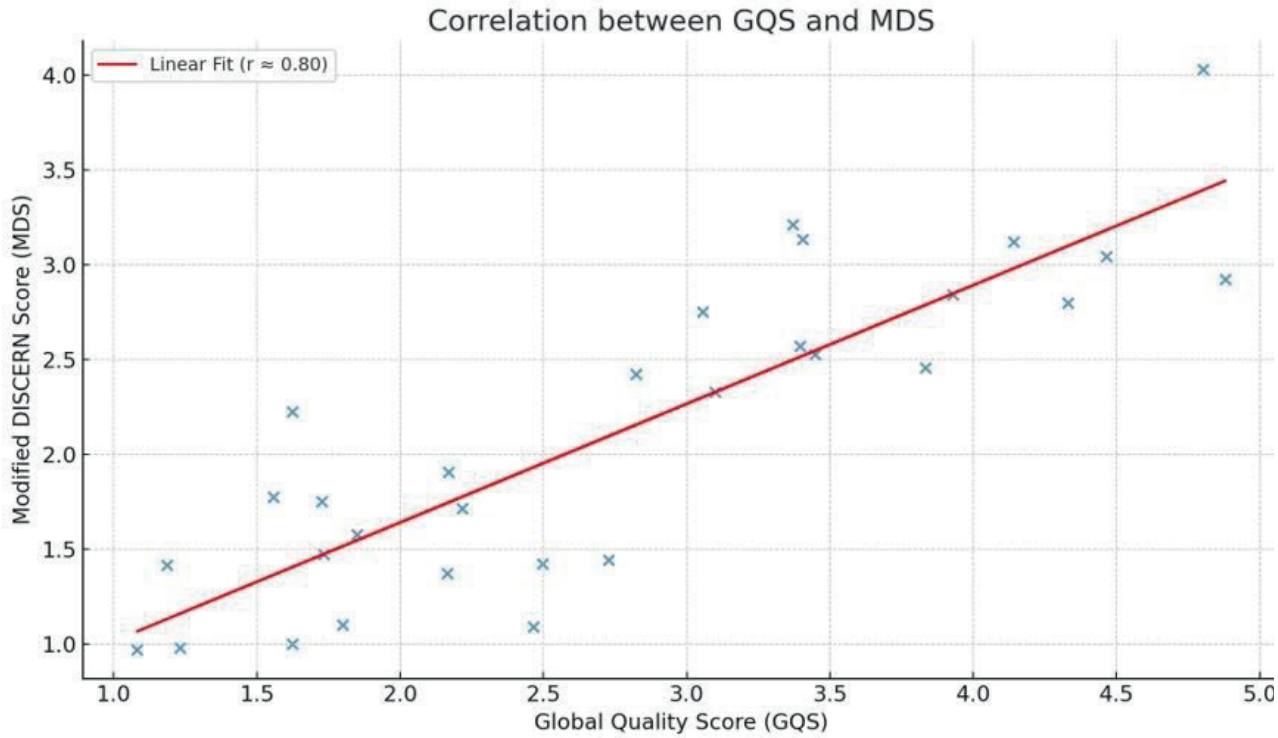


**Figure 1:** Scatter plot showing correlation between GQS and MDS

### *Source and Target Group Distribution*

Analysis of content sources revealed that 38% of videos originated from hospitals, 27% from academic institutions or university-affiliated experts, 20% from individual healthcare professionals, and 15% from media outlets or patient testimonials. Audience analysis demonstrated that the majority 65% were aimed at laypersons, whereas only 35% were directed toward healthcare professionals, including physicians, nurses, and medical trainees.

### *Content Evaluation and Educational Quality*

The educational quality of the videos was assessed using three validated scoring systems. GQS yielded a mean of 2.43 ± 1.37, indicating overall moderate quality. The JAMA Benchmark Score, which evaluates credibility and transparency, averaged 1.32 ± 1.20, reflecting low levels of source attribution, authorship clarity, and content disclosure. The MDS, designed to assess the reliability and quality of health information, produced a mean of 2.42 ± 1.33, further demonstrating that many videos lacked comprehensive, balanced, and evidence-based content.

### *Correlation Analysis*

Several positive correlations were observed. Views and likes were strongly correlated (r = 0.65), indicating that videos with higher numbers of likes typically attracted more viewers. The GQS and the MDS demonstrated a strong correlation (Figure 1) (r = 0.71), suggesting that higher-quality videos were also more reliable and educational. The JAMA Benchmark and MDS demonstrated a strong positive correlation (r = 0.80), reflecting the interdependence of transparency, credibility, and educational value. Video duration was moderately correlated with the MDS (r = 0.47) and weakly with the JAMA Score (r = 0.31), suggesting that increased length contributes to improved comprehensiveness and structure.

### *Content Analysis on Sepsis-Related Topics*

Content analysis revealed that 84% of videos defined sepsis, 64% addressed symptomatology, 55% discussed diagnostic approaches, and 55% described treatment modalities. Notably, only 18% incorporated references to scientific literature or clinical guidelines, highlighting a pervasive lack of evidence-based support.

### *Temporal Comparison: Before vs. After 2020*

A temporal comparison was conducted between videos uploaded before 2020 (n = 34) and those published from 2020 onwards (n = 65). As demonstrated in Table 5 and illustrated in Figure 2, earlier videos tended to originate from channels with larger subscriber bases and, in some cases, accumulated higher view counts. However, these videos were generally shorter in duration and reflected

**Table 4. Descriptive Statistics of All Analyzed Videos Number of Views**

| Parameters | mean | SD* | minimum | 25% † | 50% ‡ | 75% § | maximum |
|---|---|---|---|---|---|---|---|
| **Video Duration (minutes)** | 23.92 | 37.21 | 0.4 | 2.0 | 5.5 | 28.5 | 175.37 |
| **Number of Subscribers** | 64961.77 | 192275.47 | 1.0 | 619.0 | 4170.0 | 13130.0 | 1070000.0 |
| **Number of Views** | 3576.58 | 9867.37 | 26.0 | 181.5 | 382.0 | 1847.5 | 66945.0 |
| **Number of Likes** | 62.62 | 193.5 | 0.0 | 2.0 | 6.0 | 22.5 | 1500.0 |
| **GQS** | 2.43 | 1.37 | 1.0 | 1.0 | 2.0 | 4.0 | 5.0 |
| **JAMA Benchmark Score** | 1.33 | 1.2 | 0.0 | 0.0 | 1.0 | 2.0 | 4.0 |
| **MDS** | 2.42 | 1.33 | 0.0 | 1.0 | 2.0 | 3.0 | 5.0 |

**SD=Standard Deviation. †25% = First Quartile (Q1), ‡50% = Median, §75% = Third Quartile (Q3).*

*GQS: Global Quality Score MDS: Modified DISCERN Score*

**Table 5. Comparison of Video Metrics by Publication Period**

| Publication Period | Mean Duration (minutes) | Mean Number of Subscribers | Mean Number of Views | Mean Number of Likes | Mean GQS* | Mean JAMA Score | Mean MDS† |
|---|---|---|---|---|---|---|---|
| **2020 and after (n = 65)** | 31.6 | 58658.37 | 3219.66 | 80.03 | 2.8 | 1.6 | 2.85 |
| **Before 2020 (n = 34)** | 9.24 | 77012.38 | 4258.91 | 29.32 | 1.74 | 0.82 | 1.62 |
| **GQS = Global Quality Score; †MDS = Modified DISCERN Score* | | | | | | | |

lower mean values in both quality and educational measures. By contrast, videos uploaded after 2020 were characterized by longer duration, improved structural organization, and higher levels of positive engagement, despite being produced by channels with comparatively smaller subscriber bases. Taken together, these observations illustrate a noticeable shift in the profile of sepsis-related video content on YouTube after 2020, with more recent videos displaying features that are more aligned with comprehensive and educationally valuable health communication.

## Discussion

By conducting a comprehensive review, this study demonstrates that Turkish-language YouTube videos on sepsis display marked variability in educational standards, reliability of information, and credibility of sources. The mean GQS of 2.43 ± 1.37, JAMA Benchmark Score of 1.32 ± 1.20, and MDS of 2.42 ± 1.33 suggest that most videos fall within the moderate-to-poor quality range (Table 4). These findings align with previous analyses of Turkish-language videos on other medical conditions, including cancer, cardiovascular


**Figure 2:** Comparison of mean quality scores (GQS, JAMA, MDS) before and after 2020
**GQS=Global Quality Score,†MDS=Modified DISCERN Score*

disease, and mental health, which similarly reported deficiencies in authorship, referencing, and scientific accuracy [12, 13].

The low JAMA and DISCERN scores underscore a systemic deficiency in transparency related to authorship, disclosure practices, and citation of authoritative sources. This gap is especially troubling in the context of sepsis, where delays in accurate diagnosis or omission of critical clinical data may have life-threatening consequences for patients.

The strong correlations observed between GQS and MDS (r = 0.71), and between JAMA and MDS (r = 0.80), underscore the interdependence of perceived video quality and actual reliability (Figure 1). In practical terms, videos that are better structured and more comprehensive are also more likely to provide accurate and trustworthy information—an important consideration for future content creators.

Such findings are consistent with prior research, as studies on Turkish-language videos addressing cardiovascular health and COVID-19 have likewise demonstrated low quality scores and underscored the susceptibility of digital platforms to the rapid dissemination of misinformation [14, 15].

A notable outcome of this study is the improvement in quality metrics observed among videos uploaded after 2020. As presented in Table 5, these videos were characterized by longer duration, improved structural organization, and more comprehensive explanations, which were associated with higher mean GQS and MDS values. As highlighted in Figure 2, this upward trend in quality coincides with the increased involvement of healthcare professionals during the COVID-19 era and a heightened public sensitivity to medical misinformation, suggesting that broader contextual factors likely contributed to the production of more reliable and educational content in the post-2020 period.

Even in the post-pandemic era, most sepsis-related videos failed to incorporate evidence-based referencing, with only a small subset citing peer-reviewed sources or established clinical guidelines (e.g., Surviving Sepsis Campaign). This persistent deficiency underscores the importance of instituting robust editorial frameworks and ensuring expert oversight to safeguard the quality of online medical content.

These findings are congruent with international evidence regarding YouTube's role in health communication. Toptan et al. highlighted similar limitations in neonatal sepsis videos, noting the superior reliability of physician-generated content compared to that of laypersons [8]. Further, global analyses of English-language videos related to myocardial infarction, diabetes, and pediatric diseases have consistently documented the substandard quality of content, particularly when produced without the oversight of medical experts [5-6].

These results suggest that inconsistencies in video quality are not confined to Turkish-language materials but rather reflect a broader systemic challenge inherent to the rapidly evolving domain of open-access digital health communication.

In light of these findings, the quality of sepsis-related content on YouTube could be enhanced through stronger involvement of healthcare professionals, closer adherence to established benchmarks such as the JAMA criteria, and the adoption of structured video formats of sufficient length. Furthermore, emerging automated approaches, particularly machine learning and natural language processing, show promise in identifying misinformation and promoting the dissemination of reliable health information [16, 17].

**Limitations and Future Research**

This study was limited to the top 100 YouTube search results in Turkish for the keyword 'sepsis,' which may not fully represent the breadth of available content. Furthermore, YouTube's dynamic algorithms and personalized recommendation systems affect video visibility, potentially introducing bias into the material most frequently encountered by users. Another limitation is that only surface-level engagement metrics (e.g., likes, views) were analyzed, without incorporating deeper audience insights such as watch time, retention, or comprehension.

Future research should focus on examining the impact of video content on viewer understanding and health-related behavior, investigating longitudinal changes in video quality and reliability over time, and developing real-time quality assessment tools specifically tailored for Turkish-language digital media.

**Conclusion**

While incremental progress has been noted since 2020, the reliability and scientific robustness of Turkish-language YouTube videos on sepsis remain inadequate. Sustainable improvement in digital health communication will require coordinated efforts between medical experts and online platforms. Closing these gaps is not only vital for combating misinformation but also for ensuring that patients and caregivers receive reliable, evidence-based knowledge to inform decision-making.

**Ethical Approval**

This study did not require approval from an ethics committee, as it was based exclusively on publicly accessible YouTube data. No personal identifiers or sensitive information were collected.

**Data Availability Statement**

The data underlying this study consist of publicly available YouTube videos, which can be accessed directly through the YouTube platform. No additional datasets were generated or analyzed.

**Disclosure**

The authors declare that there are no conflicts of interest regarding the conception, execution, or publication of this work.

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