

# The Evaluation of YouTube™ Videos' Quality About Pediatric Urological Diseases

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## ABSTRACT

**Purpose:** To evaluate the quality and reliability of YouTube™ videos on pediatric urological diseases (PUD).

**Methods:** This study was performed between 1 August - 7 August 2023. Turkish YouTube™ videos related to 'paediatric urology', 'circumcision', 'undescended testis', 'phimosis', 'hypospadias', 'vesicoureteral reflux', 'nocturnal enuresis' and 'testicular torsion' were evaluated. The videos were divided into professional (doctor, nurse, hospital, etc.) and non-professional (patient, patient relatives, news, etc.) according to the uploading source. Video characteristics (number of views, video length, likes, dislikes and comments) were compared between the groups. Video quality was assessed with DISCERN and Global Quality Score (GQS).

**Results:** A total of 498 videos, 312 professional videos and 186 non-professional videos, were included in the study. The number of views and likes were statistically significantly higher in the professional video group than in the non-professional video group ( $p=0.001$  for both parameters). Mean DISCERN score and GQS score were significantly higher in the professional group than in the non-professional group ( $p=0.001$ , and  $p=0.001$ ; respectively).

**Conclusion:** Professional videos about PUD had significantly higher quality and reliability according to DISCERN score and GQS. Moreover, YouTube™ videos uploaded by professional health care providers had significantly higher 'view' number, and 'like' number.

**Keywords:** DISCERN score, GQS score, Pediatric urological diseases, YouTube™

## Pediyatrik Ürolojik Hastalıklar İle İlgili YouTube™ Videolarının Kalitesinin Değerlendirilmesi

### ÖZET

**Amaç:** Pediyatrik ürolojik hastalıklar (PÜH) ile ilgili YouTube™ videolarının kalitesini ve güvenilirliğini değerlendirmek.

**Yöntemler:** Bu çalışma 1 Ağustos - 7 Ağustos 2023 tarihleri arasında gerçekleştirilmiştir. 'Pediyatrik üroloji', 'sünnet', 'inmemiş testis', 'fimosiz', 'hipospadias', 'vezikoureteral reflü', 'enürezis nokturna' ve 'testiküler torsiyon' ile ilgili Türkçe YouTube™ videoları değerlendirildi. Videolar yüklemeye kaynağına göre profesyonel (doktor, hemşire, hastane vb.) ve profesyonel olmayan (hasta, hasta yakınları, haberler vb.) olarak ayrılmıştır. Video özellikleri (görüntüleme sayısı, video uzunluğu, beğenme, beğenmeme ve yorumlar) gruplar arasında karşılaştırılmıştır. Video kalitesi DISCERN ve Global Kalite Puanı (GQS) ile değerlendirilmiştir.

**Bulgular:** Çalışmaya 312 profesyonel video ve 186 profesyonel olmayan video olmak üzere toplam 498 video dahil edilmiştir. Görüntüleme ve beğeni sayısı profesyonel video grubunda profesyonel olmayan video grubuna göre istatistiksel olarak anlamlı derecede yüksekti (her iki parametre için  $p=0.001$ ). Ortalama DISCERN puanı ve GQS puanı profesyonel grupta profesyonel olmayan gruba göre anlamlı derecede daha yüksekti (sırasıyla  $p=0.001$  ve  $p=0.001$ ).

**Sonuç:** PÜH hakkındaki profesyonel videolar DISCERN skoru ve GQS'e göre anlamlı derecede daha yüksek kalite ve güvenilirliğe sahiptir. Ayrıca, profesyonel sağlık hizmeti sağlayıcıları tarafından yüklenen YouTube™ videolarının 'görüntülenme' sayısı ve 'beğenme' sayısı önemli ölçüde daha yüksektir.

**Anahtar Kelimeler:** DISCERN skoru, GQS skoru, Pediyatrik ürolojik hastalıklar, YouTube™

**P**ediatric urological diseases (PUD) are diagnosed with increased frequency due to easier access to the health system, increased awareness of families about pediatric diseases and advanced diagnostic methods of PUD. Miller and colleagues investigated the demographic burden of PUD, and authors concluded that prevalence of PUD including hypospadias, undescended testis, and vesicoureteral reflux was significantly increased in last 50 years (1). On the other hand, many PUD require surgical intervention and long-term follow-up, and can place stress and anxiety on both the patient and their parents. Therefore, numerous parents aim to obtain more information about PUD from other professional health centers, similar case' experience, and social media applications (2).

Social media application turned into indispensable information sources for patients and patient' relatives in last 20 years due to their free use, and easy access (3). Moreover, different and unlimited resources makes social media applications more attractive. Additionally, study by Freeman et al., found that public interest was significantly higher for visual contents than only verbal and only written sources (4). Some authors previously focused on the importance of YouTube™ videos for patients and patients' relatives while getting information about symptoms, diagnosis, and treatment about diseases. Kumar et al. analyzed YouTube™ video about hypertension, but author concluded that many videos had misleading information (5). In another study which investigating quality of YouTube™ videos about uterine leiomyoma found that YouTube™ videos about uterine leiomyoma had poor quality (6).

Although, many studies evaluated quality and reliability of YouTube™ videos in many disorders, to our knowledge no study analyzed YouTube™ video quality about PUD. In present study, we purposed to determine the quality and reliability of YouTube™ videos about PUD.

## Materials and Methods

This study was conducted between 1 August and 7 August 2023. The terms 'pediatric urology', 'circumcision', 'undescended testis', 'phimosis', 'hypospadias', 'vesicoureteral reflux', 'nocturnal enuresis' and 'testicular torsion' were searched separately on YouTube™. Only Turkish-language videos were evaluated and the videos were analyzed in order of relevance. Two urologists experienced in pediatric urology watched the videos. Reposted videos, videos in other languages, silent videos, advertisement videos, and videos related to adult diseases were not included

in the study. Videos with a video duration between 1-30 minutes were evaluated. Since no patient data were used in the study, ethics committee approval was not required.

Videos were divided into two groups according to the upload source. Videos prepared by doctors or other healthcare professionals and hospital resources were included in the professional videos group. Non-professional videos were defined as videos prepared by patients, patients' relatives or news videos. Video characteristics (number of views, video length, likes, dislikes, and comments) were noted. The target audiences of the videos were divided into two groups as patients and healthcare professionals. The evaluation forms related to video quality were filled in by two urologists without each other's knowledge. Average scores were recorded for videos with different values.

### *Modified DISCERN Score, and Global Quality Score (GQS)*

The modified DISCERN scale is used to assess the reliability of videos (7). DISCERN is a short questionnaire with 5 questions that indicate the quality of a written or visual source about a medical condition. Each question is answered yes (1 point) and no (0 points). These questions are:

1. Is the video clear, concise, and understandable?
2. Are valid sources cited? (from valid studies, physiatrists or rheumatologists)
3. Is the information provided balanced and unbiased?
4. Are additional sources of information listed for patient reference?
5. Does the video address areas of controversy/uncertainty?

GQS is another scale for evaluating the flow, quality and usefulness of videos (8). With this scale developed by Bernard et al. the quality of videos is rated between 1-5.

1. Poor quality, poor flow of the site, most information missing, not at all useful for patients
2. Generally poor quality and poor flow, some information listed but many important topics missing, of very limited use to patients

3. Moderate quality, suboptimal flow, some important information is adequately discussed but others poorly discussed, somewhat useful for patients
4. Good quality and generally good flow, most of the relevant information is listed, but some topics not covered, useful for patients
5. Excellent quality and excellent flow, very useful for patients

### Statistically Analysis

All analyses were performed with Statistical Package for the Social Sciences version 27 (SPSS IBM Corp., Armonk, NY, USA). The normality of the distribution of variables was checked by Kolmogorov Smirnov test. Normally distributed data were compared with Independent Student's t-test, and non-normally distributed data were compared with Mann Whitney u test. Categorical variables were compared using the  $\chi^2$  test. Data were analyzed at 95% confidence level and a P value less than 0.05 was considered statistically significant.

### Results

The videos included in the study are shown as a flowchart in Figure 1. The number of videos evaluated was 617 and 119 videos did not meet the inclusion criteria. A total of 498 videos, 312 professional videos and 186 nonprofessional videos, were included in the study. The 3 most common topics were circumcision (n = 92), undescended testis (n = 89), and nocturnal enuresis (n = 70).

Comparison of video characteristics between groups is shown in Table 1. The number of views, and likes were statistically significantly higher in the professional video group than in the nonprofessional video group (p=0.001 for both parameters). There was no statistical difference between the groups in terms of video length, number of dislikes, comments, and duration on YouTube™ (p=0.621, p=0.620, p=0.119, and p=0.455; respectively). While 74.4% of professional videos were directed towards patients, this rate was 88.7% in nonprofessional videos (p=0.001).

The mean DISCERN score was 3.6±1.1 in the professional group and 2.5±1.0 in the nonprofessional group (p=0.001). Similarly, the GQS score was significantly higher in the professional video group than in the nonprofessional video group (3.4±1.1 vs 2.4±1.0, p=0.001) (Figure 2).

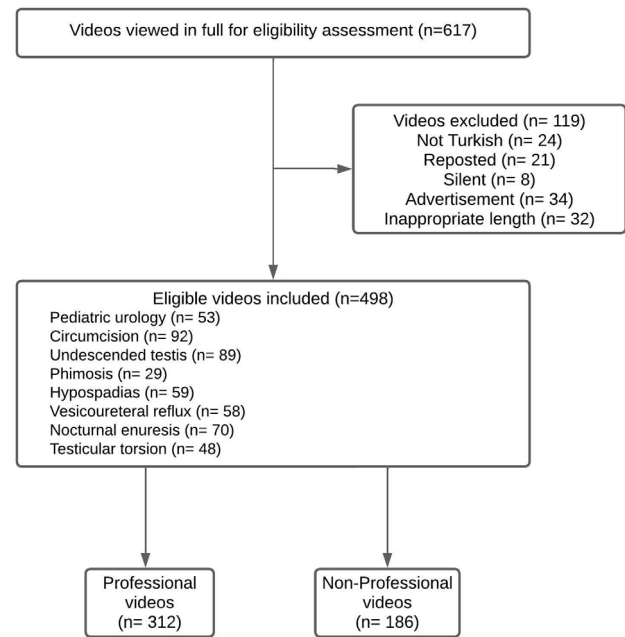
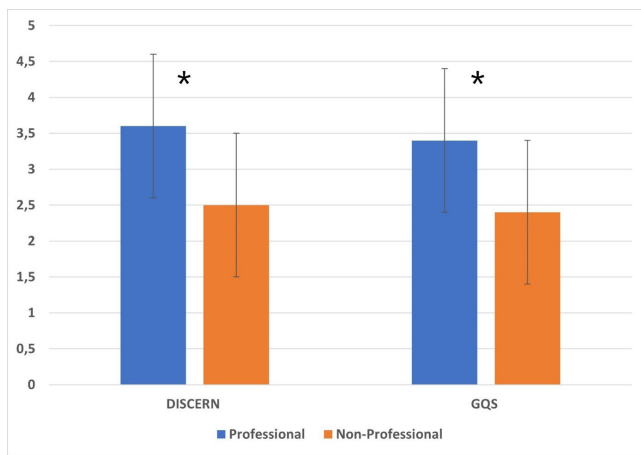


Figure 1. Flowchart of the evaluated videos

| Table 1. Comparison of video features by categories |                       |                       |              |
|---|-----------------------|-----------------------|--------------|
|   | Professional          | Non-professional      | p value      |
| Number of videos                                    | 312                   | 186                   |              |
| Video parameters*                                   |                       |                       |              |
| Number of views                                     | 3362<br>(1969 - 4528) | 2243<br>(1157 - 3078) | <b>0.001</b> |
| Video length (min)                                  | 7 (3 - 10)            | 7 (4 - 10)            | 0.621        |
| Likes   | 100 (66 - 142)        | 53 (25 - 75)          | <b>0.001</b> |
| Dislike   | 10 (4 - 15)           | 9 (4 - 14)            | 0.620        |
| Comment   | 18 (8 - 31)           | 18 (9 - 24)           | 0.119        |
| Duration on YouTube™ (days)                         | 310 (102 - 510)       | 280 (99 - 422)        | 0.455        |
| Target audience, n (%)                              |                       |                       |              |
| Doctors or health workers                           | 80 (25.6%)            | 21 (11.3%)            | <b>0.001</b> |
| Patients  | 232 (74.4%)           | 165 (88.7%)           |              |

\*: median (interquartile range)



**Figure 2.** Comparison of DISCERN and GQS scores between groups

## Discussion

Access to social media applications quickly and easily without paying has changed the patients' behavior during getting information about their diseases. Social media statistics revealed that YouTube™ is most preferred social media application and more than 95% of social media user watch YouTube™ videos (9). Thus, we purposed to define accuracy and quality of YouTube™ videos about PUD. In this study, we found that videos about PUD which shared by professional health care workers had significantly higher accuracy and quality in comparison of non-professional videos, according to DISCERN score and GQS. Moreover, our findings determined that YouTube™ videos uploaded by professional health care providers had significantly higher 'view' number, and 'like' number.

To objective analyze of visual contents' quality and reliability, DISCERN score and GQS were developed, and external validation of two scoring system was done by numerous studies. To evaluate the quality of YouTube™ videos about COVID-19 and pregnancy, Yuksel and Cakmak used DISCERN score, and authors concluded that YouTube™ videos about COVID-19 and pregnancy had poor quality and reliability (10). Furthermore, Ferhatoglu and colleagues analyzed the YouTube™ videos about obesity surgery by using DISCERN score, and authors stated that YouTube™ videos about obesity surgery which shared by professional health care providers had significantly better DISCERN score (11). In another study, Kilinc and Sayar defined the quality of YouTube™ videos about dental practice, and findings revealed that professional YouTube™ videos about dental surgery significantly better GQS in comparison of non-professional videos (12). In accordance

with literature, our finding demonstrated that YouTube™ videos about PUD which uploaded by professional health care providers had significantly higher accuracy and quality. We believe that encouraging professional healthcare professionals to share on the YouTube™ channel will enable the public to access more accurate information.

Number of 'view' and 'like' are important for videos in YouTube™ platform to get more interaction. Sevgili and Baytaoglu compared the 'like' number of professional YouTube™ videos and non-professional YouTube™ videos, and they did not find significant difference between groups in regards of 'like' number (13). In contrast, Kanber and Koseoglu which evaluated YouTube™ videos about pediatric cardiac surgery anesthesia demonstrated that professional YouTube™ had significantly higher like rate (14). However, 'view' number was not significantly different between professional YouTube™ videos and non-professional YouTube™ videos in Kanber and Koseoglu study. Conversely, Cetin et al. which analyzed the YouTube™ videos about coronary artery bypass grafting, showed that professional YouTube™ videos significantly higher 'view' number (15). In present study, we found that professional YouTube™ videos about PUD had a significantly higher 'like' number and 'view' number.

Present study has some limitations. First of all, we only focused on YouTube™ videos in Turkish language. We believe that analyzing YouTube™ videos in more than one language could be confusing, and we also believe that reporting outcomes could be difficult and incomprehensible. Additionally, we selected eight term to search videos in YouTube™, but we know that some uploaders shared YouTube™ videos about PUD without using these eight words. Thirdly, we did not scan the videos of common diseases in adults, such as urinary tract infection, stone disease etc. In last, since YouTube™ content is constantly updated, the data of our study covers only the scheduled time period.

In conclusion, our study showed that the YouTube™ videos about PUD are easily accessible and useful sources for public. Additionally, present study outcomes determined that professional videos about PUD had significantly higher quality and reliability according to DISCERN score and GQS. Moreover, YouTube™ videos uploaded by professional health care providers had significantly higher 'view' number, and 'like' number.

## Abbreviation

PUD: Pediatric urological diseases

GQS: Global Quality Score

## Declarations

### Funding

There is no funding in this study.

### Conflicts of interest/Competing interests

There is no conflicts of interest in this study for all authors.

### Ethics approval

Not required.

### Availability of data and material

Appropriate.

### Authors' contributions

Hakan Cakir: Substantial contributions to the conception or design of the work, analysis, interpretation of data for the work, drafting the work or revising it critically for important intellectual content.

Ufuk Caglar: Final approval of the version to be published, agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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