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Quality Analysis of the Youtube Videos on Kidney Transplantation

Sedat Taştemur[1,a], Samet Şenel[1,b,*], Yusuf Kasap[1,c], Emre Uzun[1,d], Erkan Ölçücüoğlu[1,e]

[1]*Ankara City Hospital, Department of Urology, Ankara, Turkey*
**Corresponding author*

Research Article

History

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ABSTRACT

Objective: We aimed to evaluate the quality of video content related to kidney transplantation on YouTube as a source of information.
Method: 117 YouTube videos were included in this study. Utilization of Journal of the American Medical Association (JAMA) score, Global Quality Scale (GQS) and modified DISCERN score were approved for quality assessment.
Results: Stand-alone health information websites comprised 35.9% of all video resources. The quality of the videos from universities/professional organizations/nonprofit physicians/physicians was generally better than the videos from other sources (p<0.001). According to the modified DISCERN score, the quality level of 72.6% of the video contents classified as poor. A positive correlation drew attention between the scores and the duration of videos (p<0.001).
Conclusions: We think that the quality of the video content about kidney transplantation on YouTube is quite insufficient. The best quality of content was provided by universities/professional organisations/nonprofit physicians/physicians among all videos.

Keywords: Kidney transplantation, YouTube, quality

Böbrek Nakli İle İlgili Youtube Videolarının Kalite Analizi

ÖZ

Amaç: Bilgi kaynağı olan Youtube'da böbrek nakli ile ilgili video içeriklerinin kalitesini değerlendirmeyi amaçladık.
Yöntem: Bu çalışmaya 117 YouTube videosu dahil edildi. Journal of the American Medical Association (JAMA) , Global Quality Scale (GQS) ve Modifiye DİSCERN skor kullanımı, kalite değerlendirmesi için onaylanmıştır.
Bulgular: Bağımsız sağlık bilgileri web siteleri, tüm video kaynaklarının %35,9'unu oluşturuyordu. Üniversiteler/Meslek Kuruluşları/Kar amacı gütmeyen doktorlar/doktorlar' a ait videoların kalitesi, genellikle diğer kaynaklara ait videolardan daha iyiydi.
Modifiye DİSCERN skorlamasına göre video içeriklerinin %72,6'sının kalite seviyesi yetersiz olarak sınıflandırıldı. Video süreleri ile puanlar arasında pozitif korelasyon dikkati çekti.(p<0.001).
Sonuç: YouTube'da böbrek nakli ile ilgili video içeriklerinin kalitesinin oldukça yetersiz olduğunu düşünüyoruz. Tüm videolar arasında en iyi kalite Üniversiteler/Meslek Kuruluşları/Kar amacı gütmeyen doktorlar/Doktorlar tarafından sağlanan içeriklere aitti.

Süreç

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Anahtar sözcükler: Kidney transplantation, YouTube, quality

[a] *sedattastemur@yahoo.com* *https://orcid.org/0000-0003-0534-2520*
[b] *samet_senel_umt@hotmail.com* *https://orcid.org/0000-0003-2280-4192*
[c] *dryusuf85@hotmail.com* *https://orcid.org/0000-0001-5313-2611*
[d] *emreuzun.dr@gmail.com* *https://orcid.org/0000-0002-3005-2122*
[e] *erkanolcucuoglu@gmail.com* *https://orcid.org/0000-0002-9101-5253*

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Introduction

Patients suffering hemodialysis-dependent end-stage renal disease are increasing in number due to the increment in diseases such as hypertension, type 2 diabetes mellitus, and the rise in the elderly population. More than 600,000 patients in the United States receive hemodialysis treatment for end-stage renal disease [1]. The number of patients receiving renal replacement therapy worldwide was 2.618 million in 2010, and this number is estimated to be 4.439 million in 2030 [2]. It is still considered that kidney transplantation is the most valid and effective treatment method that improves survival and quality of life for patients with end-stage renal disease [3].

Nowadays, many patients' social media and online sources to access information play an increasingly important role in the healthcare system [4]. YouTube is one of the largest and best-known video-sharing sites that is chosen because easy to use and access in the world [5]. Therefore, patients are among those who prefer it as an information source, and the general population. This entity has led researchers to question the quality of the contents of medical videos on YouTube. For this purpose, numerous studies have been conducted to evaluate the quality of content related to various medical topics. However, there is a lack of studies assessing the quality of these videos as an information source for kidney transplantation. In this study, we aimed to evaluate the quality of the videos accessed by using the term "kidney transplantation" on YouTube as a source of information.

Material and Methods

The local ethics committee approved this study (approval number: E2-21-812). In our study, the term "kidney transplantation" was written in the search bar of YouTube (http://www.youtube.com). The first 142 videos shown as a result of the unfiltered search were evaluated. Among these videos, those without sound, non-English and recurrent ones were excluded from the study. As a result, 117 videos were included in the study.

Two urologists evaluated all videos on 20 September 2021 with at least 10 years of experience in kidney transplantation. These two urologists were unaware of each other when interpreting video content if two urologists had further comments for the same video, a consensus was held by re-evaluating. Source of all videos (Universities/professional organizations/nonprofit physicians/ physicians, stand-alone health information websites, medical advertisements/for-profit organizations, individual users/patients, talk show programs/TV programs), duration (second), time since upload (day), number of views, number of likes, number of dislikes, number of comments and like ratio (number of likes/[number of likes + number of dislikes) data were recorded.

Journal of the American Medical Association (JAMA) score, Global Quality Scale (GQS) and modified DISCERN score were used for quality evaluation of videos [6-8]. JAMA evaluates the content of videos about health in terms of quality. The questions about attribution, authorship, currency and disclosure are used in scoring. Scoring is done on a scale of 1 to 4, with 1 point for each criterion. A higher score indicates better quality [6].

To assess video quality, the Global Quality Scale was developed by Bernard et al. in 2007. Video flow, quality of content and usefulness properties of videos are evaluated in this scoring system. According to this scoring system, videos are scored between 1-5 points. (Score 1: Poor quality, poor flow of the site, most information missing, not at all useful for patients. Score 2: Generally poor quality and poor flow, some information listed but many important topics missing, minimal use to patients. Score 3: Moderate quality, suboptimal flow, some critical information is adequately discussed but others poorly discussed, somewhat beneficial for patients. for patients. Score 5: Excellent quality and excellent flow, very useful for patients) [7].

The DISCERN scoring system that consists of 15 questions and evaluates the quality of information was developed in 1999 by Charnock et al [8]. In 2012, a modified form composed of 5 questions was used by Singh et al. These questions are: (a) Are the aims clear and achieved? (b) Are reliable sources of information used? (i.e., the publication cited) (c) Is the information presented balanced and unbiased? (d) Are additional sources of information listed for patient reference? (e) Are areas of uncertainty mentioned? Each question is scored between 1-5 points by giving a yes (1 point) or no (0 points) answer. A higher score means better quality. In addition, quality classification can be made according to the score as poor (1-2 points), fair (3 points) and good (4-5 points) [9].

Data coding and statistical analyzes were performed on the computer using the SPSS 22 software package program (IBM SPSS Statistics, IBM Corporation, Chicago, IL). The conformity of the variables to the normal distribution was examined using the Shapiro-Wilk test. The Kruskal-Wallis test was used to evaluate the difference between means and medians. In cases where more than two variables were compared, Bonferroni correction was used to determine which variable caused the difference. Correlation between variables was analyzed with Spearman's test. Cases with a p-value below 0.05 were considered statistically significant.

Results

A total of 117 videos were evaluated. The sources of 42 (35.9%) of the videos were stand-alone health information websites. The average number of views of the videos was 23347.5 ± 57375.2. The median JAMA score of the videos was 1 (0-3), the GQS score was 2 (1-4), and the Modified DISCERN score was 2 (1-4). Sources, features and quality scores of the videos are shown in Table 1.

The quality scores of the videos separated according to their sources were statistically significantly different from each other ($p<0.001$ for JAMA score and GQS score, $p=0.001$ for modified DISCERN score).

Table 1. Sources, features and quality scores of the videos

Sources of the videos	n	%
Universities/Professional organisations/nonprofit physicians/physicians	34	29.1
Stand-alone health information websites	42	35.9
Medical advertisements/for-profit organisations	22	18.8
Individual users/patients	7	6
Talk show programmes/TV programmes	17	10.2
Features of the videos	Mean ± SD	Min - Max
Duration (s)	1016.8 ± 1237.4	66-4470
Time since upload (d)	1316.7 ± 998.4	80-4533
Number of views	23347.5 ± 57375.2	134-357199
View ratio	0.2 ± 0.6	0-5.8
Number of comments	25.7 ± 87.6	0-844
Number of likes	212.6 ± 563.9	0-4900
Number of dislikes	10.1 ± 23.4	0-121
Like ratio	91.5 ± 19.8	0-100
Quality scores of the videos	Median	Min - Max
JAMA score	1	0-4
GQS score	2	1-5
Modified DISCERN score	2	0-4

s: second, d: day, JAMA: Journal of the American Medical Association, GQS: Global Quality Scale, SD: Standard Deviation, Min: Minimum, Max: Maximum

Table 2. Quality assessment of the videos with different source

Sources of the videos, median (min – max)	Quality scores of the videos		
	JAMA score	GQS score	Modified DISCERN score
Universities/Professional organisations/nonprofit physicians/physicians	1 (0-4)	3 (1-5)	3 (1-4)
Stand-alone health information websites	1 (0-3)	2 (1-4)	2 (1-4)
Medical advertisements/for-profit organisations	0 (0-2)	1 (1-3)	1 (1-3)
Individual users/patients	0 (0-1)	1 (1-3)	1 (1-2)
Talk show programmes/TV programmes	1 (0-1)	1 (1-3)	2 (1-2)
p	<0.001	<0.001	0.001

JAMA: Journal of the American Medical Association, GQS: Global Quality Scale, SD: Standard Deviation

According to the result of Bonferroni correction, the JAMA scores (except for Talk show programs/TV programs) and GQS scores (stand-alone health information websites) of the videos whose source is universities/professional organizations/nonprofit physicians/physicians were higher than the videos from other sources ($p<0.05$). According to the modified DISCERN score, the scores of the videos uploaded by universities/professional organizations/ nonprofit physicians/physicians were higher than the videos from medical advertisements/for-profit organizations ($p<0.05$) (Table 2).

The quality level of 72.6% of the videos classified according to the modified DISCERN score was found to be poor. According to this classification, none of the videos from Medical advertisements/for-profit organizations, Individual users/patients and talk show programs/TV programs were of good quality. The rate of videos classified as the good quality was only 6.8% and most of them were sourced from universities/professional organizations/nonprofit physicians/physicians. According to this classification, it was observed that the videos with better quality had a longer average duration ($p<0.001$). According to this classification, no difference was found in terms of number of views, number of likes, number of dislikes, number of comments and like ratio (Table 3).

JAMA, GQS, and modified DISCERN scores were correlated with each other ($p<0.001$). Again, a positive correlation was found between all scoring systems and the duration of videos ($p<0.001$). No correlation was found between the number of likes, like ratio, and the number of comments by any scoring system (Table 4).

Discussion

Obtaining information through watching video has s become a preferred learning method in all areas of life these days. YouTube is one of the most popular videos-sharing platforms, with 300 hours of video content uploaded per minute and the number of daily views exceeding billions. In this regard, patients prefer YouTube to obtain information about health [10]. In our study, the quality of the content of kidney transplantation-related YouTube videos was analyzed as a source of information by using validated quality scoring systems. Hereby, these videos, despite reaching hundreds of thousands of views, are of very low quality. According to our literature review, this is the first study in which quality analysis of kidney transplantation-related YouTube videos using validated quality scoring systems was performed.

Table 3. Sources and features of the videos classified according to Modified DISCERN

	Classification of modified DISCERN			
	Poor	Fair	Good	
Sources of the videos (n)				
U/P/N/P	17	10	7	
Stand-alone health information websites	29	12	1	
M/PO	20	2	0	
Individual users/patients	7	0	0	
Talk show programmes/TV programmes	12	0	0	
Total	85	24	8	
Features of the videos (mean ± SD)				p
Duration (s)	703.8 ±998.8	1734.5 ± 1401.8	2189.1 ± 1555.9	<0.001
Number of views	18011 ± 37863.3	40773.4 ± 100388.5	27769.5 ± 53158.5	0.866
Number of likes	181.3 ± 542.4	319 ± 667.1	226.6 ± 476.2	0.571
Number of dislikes	8.2 ± 17.5	15.6 ± 36.4	14 ± 29.6	0.462
Number of comments	31.9 ± 101.6	11.2 ± 21.7	3 ± 5.9	0.408
Like ratio	91.2 ± 20.7	91.8 ± 19.9	93.5 ± 4.9	0.549

U/P/N/P: Universities/Professional organisations/nonprofit physicians/physicians; M/PO: Medical advertisements/for-profit organisations; s: second, JAMA: Journal of the American Medical Association, GQS: Global Quality Scale, SD: Standard Deviation

Table 4. Correlation analyses for JAMA scores, GQS and modified DISCERN of the videos

	JAMA score		GQS score		Modified DISCERN score	
	r	p	r	p	r	p
JAMA score			0.751	<0.001	0.791	<0.001
GQS score	0.751	<0.001			0.795	<0.001
Modified DISCERN score	0.791	<0.001	0.795	<0.001		
Duration	0.632	<0.001	0.624	<0.001	0.526	<0.001
Number of likes	-0.066	0.48	0.063	0.497	-0.034	0.715
Like ratio	-0.06	0.52	-0.063	0.5	0.032	0.733
Number of comments	-0.046	0.625	-0.146	0.117	-0.07	0.452

JAMA: Journal of the American Medical Association, GQS: Global Quality Scale

There are various studies in the literature examining the quality of medical videos are evaluated according to their sources on YouTube. In a study assessing the quality of videos about hypospadias, 35.8% of video sources were from hospitals/practices [11]. In another study evaluating videos on clean intermittent catheterization, medical advertisement/for profit companies comprised 78% of video resources [12]. In the study of Duran et al. [13] which evaluated testicular cancer videos, 48.1% of the video sources were talk show programs/TV program, universities/professional organizations/nonprofit physicians/physicians**.** In our study, the sources that contributed the most to the production of videos about kidney transplantation were stand-alone health information websites with 35.9%. We think that the difference in resources is the effect of the difference in the sectors dealing with the video subject and the for-profit organizations.

In our study, the quality of the content of videos about kidney transplantation from universities/professional organizations/nonprofit physicians/physicians was generally sufficent. Despite a positive correlation between the video duration and its quality, no relationship was found between like ratio and quality. In the literature, there are conflicting results on this subject. Similarly, videos from universities/professional organizations/nonprofit physicians/physicians were found of better quality in a study. Again, the quality was better in those with long video duration [13]. In another study evaluating videos of pelvic floor muscle exercise training, videos from different sources were not superior to each other in terms of quality. In addition, it was concluded that the quality of videos with longer durations is higher [14]. On the other hand, in a study evaluating videos of botulinum toxin A for wrinkles, no relationship was found between video duration and quality, but a positive correlation was found between video quality and like ratio [15].

In our study, the source of 87.5% of videos consisted of universities/professional organizations/nonprofit physicians/physicians that is classified as good quality according to the Modified DISCERN score that is only 6.8% of all videos. In a study evaluating the content of fibromyalgia videos, 8.8% of the videos were rated as good quality, and the source of 77.8% was a physician accordingly [5]. In videos related to testicular cancer, the rate of good quality content was 9.8%. The source was universities/professional organizations/nonprofit physicians/physicians [13]. Based on the discussion, it can be uttered that videos from universities/professional organizations/nonprofit physicians/physicians are of better quality in content than videos from other precarius sources.

Concerning our result, we found no relationship between the number of views and the quality of the videos. There are compatible results with our findings in the current literature.

In another study, the number of views and number of likes of lower quality videos were found to be higher than high-quality videos, although not statistically significant [13]. In the study of Basch et al. [16] the average number of view, number of likes, and number of dislikes of videos from different sources and quality were similar.

There are some limitations of our study. First of all, although there are many video- sharing platforms, only YouTube videos are included in the study. Secondly, only videos in the English language were examined. In addition, although validated quality scoring systems were used and two experienced urologists independently evaluated the videos, there may be a risk of audience bias. Moreover, while the study was being designed, only the first 148 videos viewed by typing the term "kidney transplantation" in the YouTube search bar were examined. If one search with a different term intends a detailed search of the topic, dissimilar results may appear. Nevertheless, our study is the first to perform quality analysis of kidney transplantation-related YouTube videos with validated quality scoring systems.

Conclusion

The quality of the videos produced from different sources about kidney transplantation on YouTube is quite low, according to the results of our study. Among all these, the ones with the best quality are those whose sources are universities/professional organizations/nonprofit physicians/physicians. The quality level is better for long video durations. We think that our study will make people question the quality of the information they will encounter in YouTube searches about kidney transplantation and will contribute to the literature in this respect.

Ethics Statements

The local ethics committee approved this study (approval number: E2-21-812)

Availability of Data and Materials

The data associated with the paper are available in the Figshare Repository at https://figshare.com/s/424d7dac97593cbea298

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CRediT Authorship Contribution Statement

Sedat Tatemur: Conceptualization, Investigation, Methodology, Project administration, Resources, Writing - original draft, Writing - review & editing.

Samet Senel: Conceptualization, Investigation, Methodology, Supervision, Writing - review & editing.

Erkan Olcucuoglu: Conceptualization, Investigation, Writing - review & editing.

Yusuf Kasap: Conceptualization, Investigation, Writing - review & editing.

Emre Uzun: Conceptualization, Investigation, Methodology, Resources, Supervision, Writing - review & editing.

Declaration of Competing Interest

None.

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