ORIGINAL RESEARCH ORİJİNAL ARAŞTIRMA

A Review of YouTube Videos in the Turkish Language About Ankylosing Spondylitis

Ankilozan Spondilit ile İlgili Türkçe YouTube Videolarının İncelenmesi

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ABSTRACT Objective: The reliability and quality of YouTube videos were evaluated for some diseases, focusing on English videos. However, to the best of our knowledge, there is no existing study that has analysed the reliability and quality of Turkish YouTube videos about ankylosing spondylitis (AS). Therefore, the aim of this study is to analyse the reliability and quality of Turkish YouTube videos about AS. **Material and Methods:** The first 145 videos were selected for further examination. Following the exclusion of advertisements, duplicate, non Turkish videos and videos without audio, a total of 101 videos were included in the study. We recorded the type of video, length, upload date, views, daily views, likes, daily likes and comments modified DISCERN (mDISCERN), global quality score and Journal of the American Medical Association (JAMA) criteria were used to evaluate the videos. **Results:** Of the 101 videos analysed, most of the videos (77.2%) were uploaded by healthcare professionals (physician, 54.7%). The two groups had similar audience interaction parameters, except for the number of comments. 52.5% of the videos in our study were of high quality, while 25.7% were of low quality. Most of the videos uploaded by healthcare professionals were high quality (64.2%), while most others were low quality (52.1%). As quality increased, JAMA and mDISCERN scores increased. **Conclusion:** Our study found that most of the videos about AS were uploaded by health professionals and contained accurate information. Patients should be advised to check the source of information on YouTube to avoid misleading content.

Keywords: Ankylosing spondylitis; patient education;
quality; reliability; YouTube

ÖZET Amaç: YouTube videolarının güvenilirliği ve kalitesi bazı hastalıklar için İngilizce videolara odaklanılarak değerlendirildi. Ancak, bildiğimiz kadarıyla, ankilozan spondilit (AS) hakkında Türkçe YouTube videolarının güvenilirliğini ve kalitesini analiz eden mevcut bir çalışma bulunmamaktadır. Bu nedenle, bu çalışmanın amacı AS hakkında Türkçe YouTube videolarının güvenilirliğini ve kalitesini analiz etmektir. **Gereç ve Yöntemler:** İlk 145 video daha ileri inceleme için seçildi. Reklamlar, tekrarlanan videolar, Türkçe dışındaki dillerdeki videolar ve ses içermeyen videolar hariç tutulduktan sonra toplam 101 video çalışmaya dâhil edildi. Video türü (gerçek veya animasyon), video uzunluğu (dk), yüklenmesinden bu yana geçen gün sayısı, görüntülenme sayısı, günlük görüntülenme sayısı, beğeni sayısı, günlük beğeni sayısı ve yorum sayısı kaydedildi. Videoları değerlendirmek için modifiye "DISCERN (mDISCERN), global kalite skoru ve Journal of the American Medical Association (JAMA)" kriterleri kullanıldı. **Bulgular:** Analiz edilen 101 videonun çoğu (%77,2) sağlık çalışanları tarafından yüklendi (hekim, %54,7). İki grup, yorum sayısı dışında benzer izleyici etkileşim parametrelerine sahipti. Çalışmamızdaki videoların %52,5'i yüksek kalitedeyken, %25,7'si düşük kalitedeydi. Sağlık profesyonelleri tarafından yüklenen videoların çoğu yüksek kalitedeydi (%64,2), diğerlerinin çoğu ise düşük kalitedeydi (%52,1). Kalite arttıkça JAMA ve mDISCERN puanları arttı. **Sonuç:** Çalışmamız AS ile ilgili videoların çoğunun sağlık profesyonelleri tarafından yüklendiğini ve doğru bilgiler içerdiğini buldu. Hastalara yanıltıcı içeriklerden kaçınmak için YouTube'daki bilgi kaynağını kontrol etmeleri önerilmelidir.

Anahtar Kelimeler: Ankilozan spondilit; hasta eğitimi;
kalite; güvenilirlik; YouTube

Spondyloarthritis (SpA) is a group of diseases with common clinical and genetic features. The most well-known form of this group is ankylosing spondylitis (AS). SpA can involve the spine (axial) and sometimes cause arthritis, dactylitis, and enthesitis in peripheral joints. In some cases, anterior uveitis, psoriasis, and inflammatory bowel disease may accompany the disease.[1] SpA is divided into two groups, axial and peripheral SpA, according to the severity of regional involvement. Within the axial SpA group, patients with significant sacroiliitis according to the modified New York criteria are called AS.[2] AS is a chronic rheumatic disease that causes significant impairment in the patient's daily activities. Early diagnosis allows for prompt treatment to begin, thereby preventing potential disabilities. It is therefore crucial for both patients and physicians to be aware of this disease.

In recent years, the internet has become an important source of health-related information for the general public. In particular, patients with chronic diseases use social media platforms to manage their conditions.[3] Among these platforms, YouTube (Google, USA) is one of the most widely used video sharing sites. Millions of videos are uploaded every day, some of which are health-related. Health-related videos can be uploaded by anyone. Because videos are not reviewed by health professionals at the time of upload, they may contain misleading information.[4]

Up until now, the reliability and quality of YouTube videos have been evaluated for a number of diseases, with a particular focus on English-language videos.[5-7] However, to the best of our knowledge, there is no existing study that has analysed the reliability and quality of Turkish YouTube videos about AS. Therefore, the aim of this study is to analyse the reliability and quality of Turkish YouTube videos about AS.

MATERIAL AND METHODS

A search of the video-sharing platform YouTube (http://www.youtube.com) was conducted on 24 June 2024 using the keyword "ankilozan spondilit". The search results were sorted by relevance within the YouTube video list, and the first 145 videos were se-lected for further examination. Following the exclusion of advertisements, duplicate videos, videos in languages other than Turkish and videos without audio identified during the YouTube search, a total of 101 videos were included in the study.

Two rheumatologists (RKU and EKE) undertook the analysis of all the videos. Any discrepancies between the authors were resolved through a process of re-evaluation and consensus. For each video, the following data were recorded: type of video (real or animation), video length (minutes), number of days since upload, number of views, number of daily views (calculated as the number of views per day since upload), number of likes, number of daily likes (calculated as the number of likes per day since upload) and number of comments. The video sources were divided into two groups, namely healthcare professionals (physicians, non-physician health personnel, professional organisations, health-related sites) and non-healthcare professionals (patients, independent users), in accordance with the classification employed in previous studies.[7]

Modified DISCERN (mDISCERN), global quality score (GQS) and Journal of the American Medical Association (JAMA) criteria were used to evaluate the videos.

The videos were evaluated for reliability with the mDISCERN scale developed by Charnock et al. and adapted to YouTube videos by Singh et al.[8,9] The mDISCERN tool comprises five questions designed to assess the clarity, reliability, and potential bias of information sources, as well as the listing of additional resources for patient reference and the addressing of controversial areas. Each question is answered with a simple "yes" or "no" response. A "yes" answer is assigned a value of one point, with a maximum score of five points indicating the highest quality.

The GQS is a scale that assesses the quality of usefulness, employing a 5-point Likert structure according to the quality, flow and information provided by the videos examined.[10] In accordance with the methodology employed in analogous studies within the GQS, scores of 1-2 were deemed to represent a low quality of information (inadequate in terms of pa-

tient data, containing incomplete information), 3 signified a medium quality (video flow is weak, some information is available but some crucial issues are not addressed), and 4-5 were classified as high quality (containing sufficient, useful and beneficial information for patients).[11]

The JAMA criteria assess the reliability of video sources based on four criteria: authorship, bibliography, patent rights and timeliness. Each criterion is assigned a score of 1, with a score of 4 indicating the highest level of reliability.[12]

As the study was based on publicly accessible videos on YouTube and did not involve any human or animal subjects, ethical approval was not required as in similar studies.[7]

The data were analysed using the SPSS (version 22.0, IBM Corp., Armonk, NY, USA) program. The normality of the continuous variables was assessed using the Shapiro-Wilk test. In descriptive statistics, data are expressed as a median (minimum-maximum or interquartile range) for continuous variables and as a frequency and percentage (%), due to the non-normal distribution of the data for nominal variables. The Mann-Whitney U test was employed to ascertain the disparity between the video source groups. A statistically significant distinction was drawn between the quality (low-medium-high) subgroups through the utilisation of the Kruskal-Wallis test. The significance of the difference for nominal variables was evaluated through Fisher's exact test. Values of p<0.05 were regarded as statistically significant.

RESULTS

Of the 101 videos analysed, 77.2% (n=78) were uploaded by healthcare professionals. The largest proportion was made up of doctors (54.7%). The majority of the images (n=98, 97%) were real images. The characteristics of the videos are presented in detail in Table 1.

Videos were classified by who uploaded them: healthcare professionals (77.2%) and non-health professionals (22.8%). Table 2 presents a comparison of the videometric, reliability, and quality features of the videos according to the groups. The video lengths, number of views, and number of likes were similar

TABLE 1: Video characteristics.

Characteristic	
Sources of the videos, n (%)	
Physician	58 (57.4)
Nonphysician health personnel	14 (13.8)
Health-related website	4 (4)
Professional organizations	2 (2)
Patient	19 (18.8)
Independent user	4 (4)
Type of video, n (%)	
Real	98 (97)
Animation	3 (3)
Video length (min)	5 (0.8-115)
Duration on YouTube (days)	1925 (345-4724)
Number of views	19270 (7384-937868)
View ratio (views/d)	11 (1-698)
Number of likes	112 (0-1400)
Daily likes (likes/d)	0.07 (0-1.3)
Number of comments	8 (0-452)
JAMA score	3 (1-4)
mDISCERN score	3 (1-5)
GQS	4 (1-5)

Variables: Median (range); GQS: Global quality score; JAMA: Journal of the American Medical Association.

TABLE 2: Comparison of videometric, reliability and quality features according to video source.

	Health professionals n=78	Non-health professionals n=23	p value
Type of video, n (%)			
Real	76 (97.4)	22 (95.7)	1
Animation	2 (2.6)	1 (4.3)	
Video length (min)	5.2 (0.8-115)	7.8 (1-23)	0.789
Number of views	19950 (7384-937868)	18817 (7814-164995)	0.674
View ratio (views/d)	10.5 (1-698)	13 (3-226)	0.439
Number of likes	114 (0-1400)	112 (0-835)	0.846
Daily likes (likes/d)	0.07 (0-1.3)	0.06 (0-0.6)	0.54
Number of comments	2 (0-452)	20 (0-355)	**0.009**
JAMA score	3 (1-4)	2 (1-3)	**<0.001**
mDISCERN	3 (1-5)	2 (1-4)	**<0.001**
GQS	4 (1-5)	2 (1-4)	**<0.001**

Variables: Median (range); the bold values are statistically significant; GQS: Global quality score; JAMA: Journal of the American Medical Association.

in both groups. However, the number of comments was significantly higher in non-health professionals (p=0.009) (Figure 1). When compared in terms of reliability and quality, the videos created by health professionals were significantly superior (p<0.001).

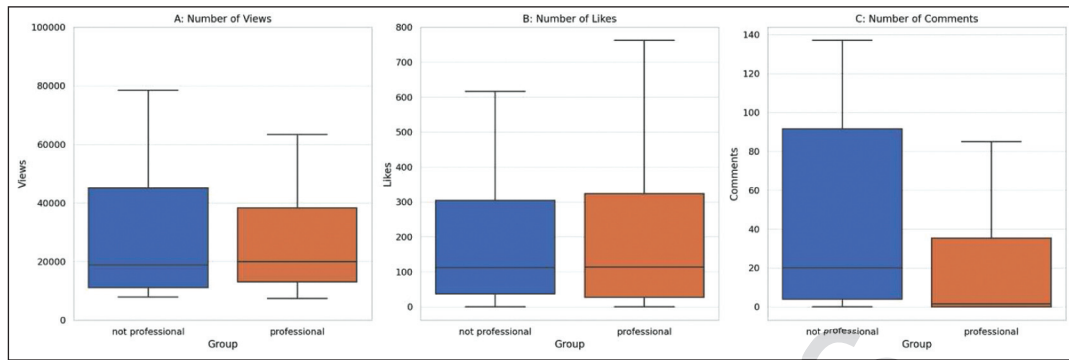**FIGURE 1:** Videometric features by video source.

|	Low quality n=26	Intermediate quality n=22	High quality n=53	p value
TABLE 3: The parameters of videos according to quality groups.				
Video source, n (%)				**0.001**
Health professionals	14 (17.9)	14 (17.9)	50 (64.2)	
Non-health professionals	12 (52.1)	8 (34.8)	3 (13.1)	
Type of video, n (%)				0.576
Real	26 (100)	21 (95.5)	51 (96.2)	
Animation	0 (0)	1 (4.5)	2 (3.8)	
Video length (min)	5.4 (5.4)	5.5 (11.7)	5.3 (10.5)	0.627
Number of views	20242 (31428)	28470 (35533)	15626 (23723)	0.364
View ratio (views/d)	19.5 (27)	16.5 (28.2)	9 (11)	**0.007**
Number of likes	158 (357)	79.5 (326)	111 (229)	0.352
Number of comments	21.5 (34)	26 (87)	0 (22)	**0.004**
JAMA score	1 (1)	2 (1)	3 (0)	**0.001**
mDISCERN	1 (1)	3 (1)	4 (0)	**0.001**

Variables: Median (IQR); the bold values are statistically significant; JAMA: Journal of the American Medical Association.

In this study, we examined the videos by grouping them according to quality and source status. According to the GQS, 52.5% (n=53) of the videos in our study were of high quality, while 25.7% (n=26) were of low quality and contained false and misleading information for patients. When the videometric, reliability and quality characteristics of the videos were compared according to the quality of the videos, video source, daily views, number of comments, JAMA and mDISCERN were significantly different between the 3 groups (p=0.001, p=0.007, p=0.004, p=0.001, p=0.001, p=0.001) (Table 3). The majority of videos uploaded by healthcare professionals were of high quality (64.2%). On the other hand, 52.1% of videos uploaded by non-healthcare professionals were of low quality and contained false and misleading information for patients. While the total number of views was similar between the 3 groups, the daily view rates were higher in the low and medium quality groups than in the high quality group. The number of comments was higher in the low and medium quality groups than in the high quality group. As quality increased, JAMA and mDISCERN scores increased (Figure 2).

DISCUSSION

In the current era of digital advancement and unprecedented internet usage, patients are increasingly utilising online platforms as a source of health-related information. A study conducted by Hay et al. re-
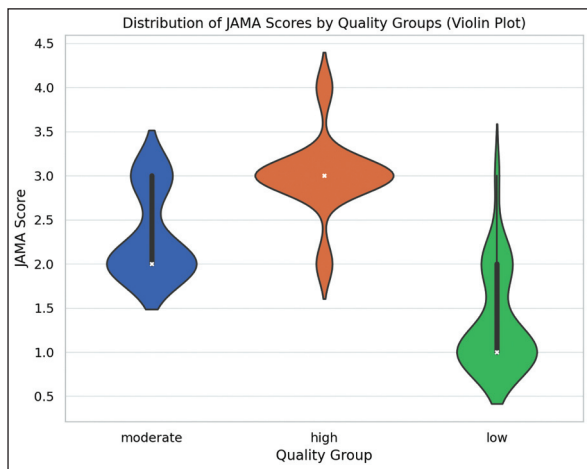
FIGURE 2: Distribution of JAMA scores according to quality groups. JAMA: Journal of the American Medical Association.

vealed that nearly 90% of patients employ the internet as a source of information prior to their initial rheumatology visit.[13] It is widely acknowledged that patient education is of paramount importance in achieving favourable outcomes in inflammatory rheumatic diseases, as is the case with all chronic illnesses. The information provided by patients via the internet serves a supplementary function in relation to expert opinion. However, it can also have an adverse effect as a result of incorrect information. Therefore, it is important to ensure the reliability and quality of information provided via the internet. Among the various platforms on the internet, YouTube is the most effective in spreading information. However, since uploaded videos can be uploaded by anyone without being peer reviewed, there is a suspicion of incorrect information being spread.[14]

In our study, 77.2% of the analysed videos were uploaded by healthcare professionals. In the study conducted by Elangovan et al., where English-language SpA videos on YouTube were analysed, 61% were uploaded by healthcare professionals.[5] The aforementioned rate was observed to be lower in studies evaluating videos on rheumatoid arthritis, Sjögren's syndrome and systemic lupus erythematosus, with respective values of 22%, 22% and 50%.[9,15,16]

The number of views and likes, which are parameters of audience interaction, did not differ between groups with and without health professionals as video sources. Rice's study demonstrated that the

majority of individuals seeking health information online did not verify the video source. This may account for the similarity in the number of views and likes among health professionals and non-health professionals.[17] The number of comments was markedly higher in the non-healthcare professional group. This may be attributed to the fact that the majority of videos uploaded by healthcare professionals are not open to comments. When the videos created by healthcare professionals were assessed in terms of reliability and quality, as in analogous studies, they were of a notably superior quality.[7,18]

In this study, we examined the videos by dividing them into 3 groups in terms of quality as well as source status. According to the GQS, 52.5% (n=53) of the videos in our study were of high quality. The rate of misleading videos in our study (25.7%) was higher than in other studies examining the usefulness of YouTube videos in SpA (14%), systemic lupus erythematosus (16%) and Sjögren syndrome (14%), but lower than in a study on rheumatoid arthritis (31%).[5,9,15,16]

The majority of videos uploaded by healthcare professionals were of high quality (64.2%). In contrast, 52.1% of videos uploaded by non-healthcare professionals were of low quality, containing false and misleading information and thus inadequate for patients. It is not surprising that professionals would produce higher quality videos. It was found that 53.8% of low-quality videos were uploaded by healthcare professionals. In the study conducted by Elangovan et al., this rate was found to be 18%.[5] As the majority of videos analysed in our study (77.2%) were uploaded by healthcare professionals, this may have contributed to the high rate observed. However, it still demonstrates the necessity for videos from healthcare professionals to be updated in a timely manner when new treatment developments emerge. It is further recommended that rheumatologists who utilise YouTube videos as an educational tool should view the videos and ascertain the veracity of the information presented.

Upon examination of the audience interaction parameters between the quality groups, no difference was observed in the number of views and likes. How-

ever, the number of comments and the daily viewing rate were found to be higher in the low and medium quality groups than in the high quality group. It was hypothesized that the reason for the low number of comments may be that the majority of videos in the high quality group were uploaded by healthcare professionals and comments were not allowed. A video that employs a simplified, accessible vocabulary to discuss the disease under investigation may be more comprehensible and engaging for a general audience. However, it is possible that viewers may not be able to discern the quality of videos with sufficient clarity, and thus, a definitive relationship between video quality and interaction parameters may not be evident.

In our study, it was seen that JAMA and mDIS-CERN scores increased as quality increased. A review of the literature reveals comparable findings regarding the reliability of high-quality videos.[5,7]

There were several limitations to our study. The initial limitation of the study was that only Turkish videos were analysed. Given the dynamic nature of YouTube, with new content being added on a daily basis, this study is a cross-sectional one, capturing only a snapshot of the data. Due to practical limitations, it was not feasible to sample all videos on YouTube with AS-related content, which may impact the representativeness of the sample. The video power index, a commonly used metric in recent YouTube-related studies to assess popularity, could not be evaluated due to the fact that the number of dislikes on YouTube is no longer visible to the audience.[19] Another limitation is that the study was carried out according to YouTube settings, which may vary depending on the user.

CONCLUSION

In the age of technology, it may be easier for patients to use a platform like YouTube that is accessible at any time compared to a face-to-face consultation with a doctor. Considering the limited consultation time, YouTube can be a source of information that will complement the doctor's recommendations. In our study, it is pleasing that the videos about AS were mostly uploaded by health professionals and that most of these videos consisted of quality and accurate information for patients. Patients should be advised to pay attention to the video source when obtaining information from YouTube. Otherwise, patients may be unduly influenced by videos containing misleading information, which could have adverse consequences.

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