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CLINICAL STUDY

A COMPARATIVE ANALYSIS OF TURKISH YOUTUBE VIDEOS ON 'COCHLEAR IMPLANT' AND 'BIONIC EAR

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SUMMARY

Objective: This study aimed to compare the quality and reliability of videos uploaded to YouTube with the terms "bionic ear," which is more commonly used by the general population, and "cochlear implant," which is more widely used by medical professionals.

Methods: The first 50 Turkish-language videos were included in the study when the terms "cochlear implant" and "bionic ear" were put into the YouTube search tab at a particular location and time. Two authors independently assessed videos for duration, time since upload, views, likes, and dislikes. The DISCERN and Global Quality Scale were used to assess information quality.

Results: The median DISCERN score was 39 in the "bionic ear" group and 65.75 in the "cochlear implant" group. "Cochlear implant" videos were statistically higher in terms of DISCERN score (Z=-6.442, p<0.001). The median GQS score was 2.5 in the "bionic ear" group and 3.5 in the "cochlear implant" group. "Cochlear implant" videos were statistically higher in terms of GQS score (Z=-2.023, p=0.043).

Conclusion: For patients and families seeking information on cochlear implants, YouTube videos must be reliable. High-quality health information helps patients to understand their disease, treatment options, risks, and outcomes with accurate and complete information. Therefore, improving the quality of information videos uploaded to online platforms is important for patients to access accurate information.

Keywords: Cochlear implant; online information; quality; video; YouTube

'KOKLEAR İMPLANT' VE 'BİYONİK KULAK' KONULU TÜRKÇE YOUTUBE VİDEOLARININ KARŞILAŞTIRMALI ANALİZİ

ÖZET

Amaç: Bu çalışmanın amacı, genel popülasyon tarafından daha yaygın olarak kullanılan "biyonik kulak" ve tıp uzmanları tarafından daha yaygın olarak kullanılan "koklear implant" terimleriyle YouTube'a yüklenen videoların kalitesini ve güvenilirliğini karşılaştırmaktır.

Yöntem ve Gereçler: YouTube arama sekmesine "koklear implant" ve "biyonik kulak" terimleri girildiğinde son yüklenen 50 Türkçe video çalışmaya dahil edildi. İki yazar bağımsız olarak videoları süre, yüklemeden bu yana geçen süre, görüntülenme, beğenme ve beğenmeme açısından değerlendirdi. Bilgi kalitesini değerlendirmek için DISCERN ve Global Kalite Ölçeği (GQS) kullanıldı.

Bulgular: "Biyonik kulak" grubunda ortanca DISCERN skoru 39, "koklear implant" grubunda ise 65,75 olarak bulunmuştur. "Koklear implant" grubundaki videolar, DISCERN skoru açısından istatistiksel olarak anlamlı derecede daha yüksek puana sahiptir (Z = -6.442, p < 0.001). "Biyonik kulak" grubunda ortanca GQS puanı 2,5 iken, "koklear implant" grubunda 3,5 olarak bulunmuştur. "Koklear implant" grubundaki videolar, GQS puanı açısından da istatistiksel olarak anlamlı derecede daha yüksek puana sahiptir (Z = -2.023, p = 0.043).

Sonuç: Koklear implantlar hakkında bilgi arayan hastalar ve aileler için YouTube videoları güvenilir olmalıdır. Yüksek kaliteli sağlık bilgileri, hastaların hastalıklarını, tedavi seçeneklerini, risklerini ve sonuçlarını doğru ve eksiksiz bilgilerle anlamalarına yardımcı olur. Bu nedenle online platformlara yüklenen bilgilendirme videolarının kalitesinin arttırılması, hastaların doğru bilgilere ulaşması açısından önemlidir.

Anahtar Sözcükler: Koklear implant; çevrimiçi bilgi; kalite; video; YouTube

INTRODUCTION

The cochlear implant, also referred to as the "bionic ear", is employed for those with profound hearing impairment who no longer derive any advantage from conventional hearing aids. YouTube is becoming increasingly popular as a platform for accessing health-related information. YouTube, the leading platform for sharing videos, is used by both amateurs and experts to upload healthcare content for diverse audiences. The platform offers easily understandable and visually appealing medical information that can help patients understand their medical condition and select treatment options[1,2].

Patients and families who seek information about cochlear implants or bionic ears generally have multiple pressing requirements. They must understand the eligibility requirements for age, specific conditions, and types of hearing loss that may benefit from implants. Patients require information regarding the procedure, including preoperative preparation, surgical procedure steps, and aftercare and follow-up[3].

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It is also critical to listen to the personal experiences of other patients, especially the emotionaland psychological aspects of implants, and to learn about support groups and community services. YouTube can provide useful information; however, the quality and range of such content can vary. YouTube provides extensive information about cochlear implants and bionic ears, but the quality and breadth of such information vary. Many instructional videos provided by credible sources, such as hospitals, universities, and healthcare organizations, can provide reliable and extensive information regarding cochlear implants. Videos can successfully explain complex operations using visual aids and animations[3,4,5].

However, there are some limitations. Because not all videos are produced by specialists, and some may contain inaccurate information or be overly simplistic, the information's credibility varies widely. Videos provide basic information but may not address individual concerns. Certain videos may be more promotional or commercial than educational. Watching surgical videos on YouTube may have both positive and negative consequences for patients and their families[3,4,6].

The potential risk of spreading false and large volumes of information of varying quality and reliability may pose a significant challenge in providing optimal healthcare given that not only patients but also physicians and researchers have found YouTube to be a useful tool for healthcare communication in the past few years. However, to the best of our knowledge, the quality of internet video content in the Turkish language related to "cochlear implant" or "bionic ear" has not yet been examined, nor have the results of these two keyword phrases been compared.

The aim of this study is to compare the quality and reliability of videos on YouTube using the keywords "bionic ear", which is more commonly used by the general public, and "cochlear implant", which is preferred by medical professionals. The study aims to evaluate the information quality of videos uploaded in Turkish language and analyze the impact of these two different keywords on the quality of video content. To this end, DISCERN and GQS are used to assess the compliance of videos searched with both keywords with information quality standards. This aim is important both to ensure that the public has access to reliable information and to guide health professionals to develop more effective strategies for online information sharing.

MATERIAL and METHODS

This is a cross-sectional research with videos analyzed at specific time points. On April 5, 2024, a search was made on YouTube (http://www.youtube.com) using the search terms "cochlear implant" and "bionic ear". The first 50 videos that appeared in each search were analyzed. In this study, YouTube videos were gathered on a single day and from the same geographical location. This method guaranteed consistency by preventing fluctuations in video results that could happen as a result of changes in search engine algorithms at different times, dates, or locations.

Videos in the Turkish language with information about indications, surgical technique, candidacy criteria, complications, and rehabilitation were included. Videos with no sound, videos not in Turkish, low-resolution, and duplicated or overlapped videos were eliminated from the analysis. Each video was assessed by two independent observers who placed the data into a Microsoft Excel® template. The inter-rater reliability of each instrument. In addition to qualitative assessment, video metrics were obtained. This included the number of views, view rate (views/day), total video duration, total number of "likes" and "dislikes", time since upload. YouTube has decided to hide the number of dislikes on the platform in 2021. For these reasons, chrome extension was used to see the number of "dislikes" of videos. To evaluate the popularity of videos, the like rate was computed as like/(like+dislike), the view rate as (number of views/day), and the video power index (VPI) as (like rate*view rate/100).

This study did not involve any human or animal subjects. This study evaluated publicly available YouTube videos without using human or animal participants. As consequence, it did not require ethical approval in accordance with institutional and national guidelines.

Video Quality Assessment

DISCERN

The DISCERN tool is a standardized tool for assessing the quality of written health information modified for use with video content. The DISCERN scale was established to help patients and information providers assess the quality of information as;

• Section 1 (Questions 1-8): Assessing publication reliability.

• Section 2 (Questions 9-15) focuses on the quality of information about treatment alternatives.

• Section 3 (Question 16): Overall quality rating.

Each question was rated on a 5-point Likert scale. A score of 5 was assigned if the quality requirement was completely met, and a score of 1 was assigned if the quality requirement was not met at all. If a criterion was partially met, it was graded between 2 and 4 based on the examiners' judgment. The total DISCERN score was calculated by adding the first 15 questions. It can be classified as excellent (63-75), good (51-62), fair (39-50), bad (27-38), or very poor (< 27)[10,11].

GQS

The global quality scale GQS scoring provides an opportunity to interpret videos in general and evaluate the overall quality of videos. We used GQS to assess the overall quality of the videos. The GQS is a five-point Likert scale based on information quality, online flow, and simplicity of use, with 1 point for extremely poor quality, 2 points for poor quality, 3 points for fair quality, 4 points for good quality, and 5 points for excellent quality[12].

Statistical Analysis

The R studio package was used for the analyses and graphics. The Shapiro-Wilk and Andersen Darling tests were used to determine a normal distribution. Descriptive statistics for continuous variables were expressed as mean and standard deviation (SD) or median and minimum-maximum values. The Mann-Whitney U test was used to compare continuous variables between the cochlear implant and bionic ear groups. Interrater reliability was assessed using the intraclass correlation coefficient (ICC) and correlation coefficient (r) to measure the consistency of DISCERN and GQS scores between raters. These methods are ideal for continuous or ordinal data, ensuring robust evaluation of agreement across multiple evaluators. The interrater reliability of the DISCERN and GQS scores was assessed by calculating the interrater correlation coefficient (r), which measures the degree of agreement between different raters. This involves comparing the scores given by multiple independent raters to evaluate consistency. In this study, values of $r \geq 0.75$ were considered to indicate satisfactory reliability, reflecting strong agreement between raters. The Spearman correlation test was used for the analysis. Spearman's rho value of 0.8 or above was considered as "very strong", $0.5 \leq rho < 0.8$ as "moderate", $0.3 \leq rho < 0.5$ as fair, and below 0.3 as "poor" correlation[13]. The statistical significance level was taken $p<0.05$.

RESULTS

Interrater reliability tests showed very good concordance between the two observers (Table 1). The median duration of the "Bionic ear" videos was 3,34 minutes, while the median duration of the "Cochlear implant" videos was 2 minutes. When "Bionic ear" and "Cochlear Implant" videos were compared, it was observed that the video duration of the bionic ear videos was statistically significantly longer (Z=-3.162, p=0.002). While the median number of likes for "Bionic ear" videos was 3, the median number of likes for "Cochlear implant" videos was 15.

Videos uploaded with the keyword "Cochlear Implant" received statistically more "likes" (Z=-4.202, p<0.001). The mean number of dislikes for "Bionic ear" videos was 0.14, the mean number of dislikes for "Cochlear implant" videos was 1.28. Videos uploaded with the keyword "Cochlear Implant" received statistically more "dislikes" (Z=-2,272, p=0.023). The median broadcast duration was 16.5 months in the "bionic ear" group and 48 months in the "cochlear implant" group. When compared in terms of broadcast duration, it was observed that the broadcast duration of the "cochlear implant" videos was statistically longer (Z=-6.619, p<0.001). The median number of views was 229 in the "bionic ear" group and 2873.5 in the "cochlear implant" group. When compared in terms of the number of views, the number of views of "cochlear implant" videos was

statistically higher (Z=-6.222, p<0.001). The interaction index median value was 0.23 in the "bionic ear" group and 0.35 in the "cochlear implant" group. "Cochlear implant" videos were statistically higher in terms of Interaction index (Z=-2,089, p=0.037). The median value of the viewing rate was 17.33 in the "bionic ear" group and 68.23 in the "cochlear implant" group. "Cochlear implant" videos were statistically higher in terms of viewing rate (Z=-4.378, p<0.001). The median DISCERN score was 39 in the "bionic ear" group and 65.75 in the "cochlear implant" group. "Cochlear implant" videos were statistically higher in terms of DISCERN score (Z=-6.442, p<0.001). The median GQS score was 2.5 in the "bionic ear" group and 3.5 in the "cochlear implant" group. "Cochlear implant" videos were statistically higher in terms of GQS score (Z=-2.023, p=0.043). Comparison of DISCERN and GQS scores in "cochlear implant" and "bionic ear" groups are shown in Figure 1 and Table 2.

The correlations between DISCERN and GQS scores of the videos in the cochlear implant (CI) and bionic ear (BE) groups and the view rate, interaction index, airtime and video duration were analyzed.

In the CI group, a significant positive correlation was found between DISCERN score and view rate (ρ=0.436, p=0.002), engagement index (ρ=0.469, p=0.001) and duration of broadcast (ρ=0.403, p=0.004). No significant correlation was found between video duration and DISCERN score (p=0.11). In the CI group, a weak positive correlation was observed between GQS score and interaction index (ρ=0.289, p=0.042) and a moderate positive correlation with video duration (ρ=0.367, p=0.009). However, no significant correlation was found between GQS score and viewership rate and airtime (p=0.052 and p=0.412, respectively).

In the BE group, a significant positive correlation was found between DISCERN score and video duration only (ρ=0.333, p=0.018). No significant correlation was found between DISCERN score and view rate, engagement index and airtime (p=0.64, p=0.115 and p=0.664, respectively).

In the BE group, a weak negative correlation was observed between GQS score and interaction index (ρ=-0.303, p=0.032) and a moderate positive correlation with video duration (ρ=0.458, p<0.001). However, no significant correlation was found between GQS score and viewing rate and airtime (p=0.302 and p=0.597, respectively).

These findings suggest that the quality of videos uploaded with the keyword CI is higher and that the quality is in line with the engagement with these videos. In contrast, the quality of videos found with the keyword BE is generally lower and shows an inverse trend with engagement.

The detailed correlation results are presented in Table 3. Scatter plots for the 'bionic ear' group are shown in Figure 2, while scatter plots for the 'cochlear implant' group are illustrated in Figure 3.

Table 1: Interrater Reliability of DISCERN and GQS Scores

	ICC	CI	r
DISCERN	0.970	0.952-0.981	0.916
GQS	0.902	0.860-0.903	0.910

ICC: interclass correlation, CI: confidence interval, r: correlation coeficcient

Table 2: Comparison of Video Metrics and Quality Scores Between "Bionic Ear" and "Cochlear Implant" Groups

	Bionic Ear		**Cochlear Implant**			
	Mean±SD	Median (min-max)	Mean±SD	Median (min-max)	Test Stats.*	p
Video Duration	8,56±15,83	3,34 (1-74,35)	3,61±5,24	2 (0-29)	-3,162	**0,002**
Likes	13,24±35,35	3 (0-241)	43,32±59,95	15 (0-241)	-4,202	**0,000**
Dislikes	0,14±0,756	0 (0-5)	1,28±3,597	0 (0-19)	-2,272	**0,023**
Broadcast Duration(months)	17,76±10,08	16,5 (2-36,3)	53,76±29,87	48 (1-116)	-6,619	**0,000**
Number of Views	904,7±1735,41	229 (5-9473)	8339,72±10831,02	2873,5 (72-40538)	-6,222	**0,000**
Interaction index	0,724±1,85	0,23 (0-12,58)	1,204±2,78	0,35 (0-15)	-2,089	**0,037**
Viewing rate	46,99±73,75	17,33 (0,64-350,02)	182,13±268,51	68,23 (1,71-1572)	-4,378	**0,000**
DISCERN	39,63±19,58	39 (17-66)	64,19±5,98	65,75 (48,5-73,5)	-6,442	**0,000**
GQS	3±1,34	2,5 (1-5)	3,53±0,81	3,5 (2-5)	-2,023	**0,043**

*Mann-Whitney U Test, SD: Standard deviation, min: Minimum, max: Maximum

Table 3: Correlations Between Video Metrics (Viewing Rate, Interaction Index, Broadcast Duration, Video Duration) and Quality Scores (DISCERN and GQS) in 'Cochlear Implant' and 'Bionic Ear' Videos

		DISCERN		GQS	
		ρ	p	ρ	p
CI	Viewing rate	0,436	**0,002**	0,277	0,052
	İnteraction index	0,469	**0,001**	0,289	**0,042**
	Broadcast Duration	0,403	**0,004**	0,119	0,412
	Video Duration	0,229	0,11	0,367	**0,009**
BE	Viewing rate	-0,068	0,64	-0,149	0,302
	İnteraction index	-0,226	0,115	-0,303	**0,032**
	Broadcast Duration	-0,063	0,664	-0,077	0,597
	Video Duration	0,333	**0,018**	0,458	**<0,001**

ρ: Spearman's rho

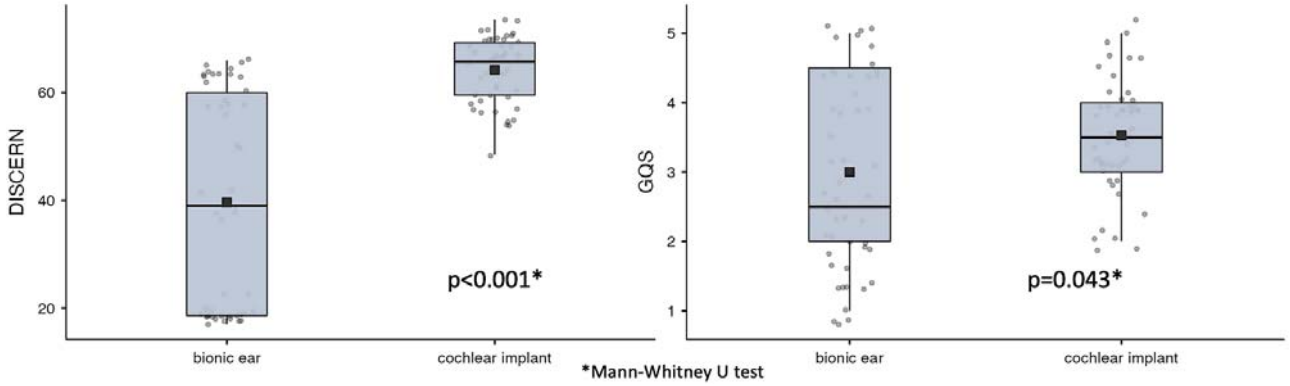

Figure 1: *Comparison of DISCERN and GQS scores in "cochlear implant" and "bionic ear" groups. The horizontal line in each box indicates the median, and the boxes represent the first and third quartiles. A black square in the boxes indicates mean values. Whisker caps show minimum and maximum values.*

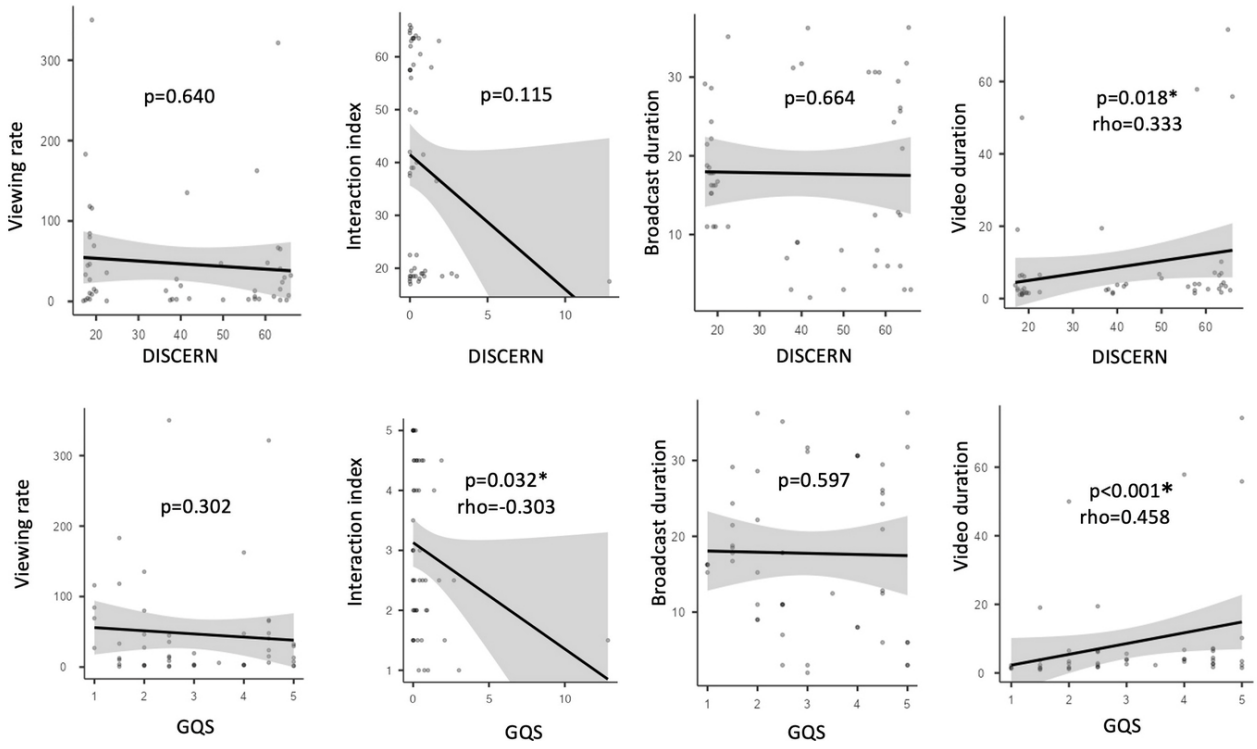

Figure 2: *Scatter plots of DISCERN and GQS scores, viewing rate, interaction index, broadcast duration, and video duration when searching with the "bionic ear" term.*
** statistically significant correlation, rho: Spearman correlation coefficient*
Abbreviations: GQS, Global Quality Scale

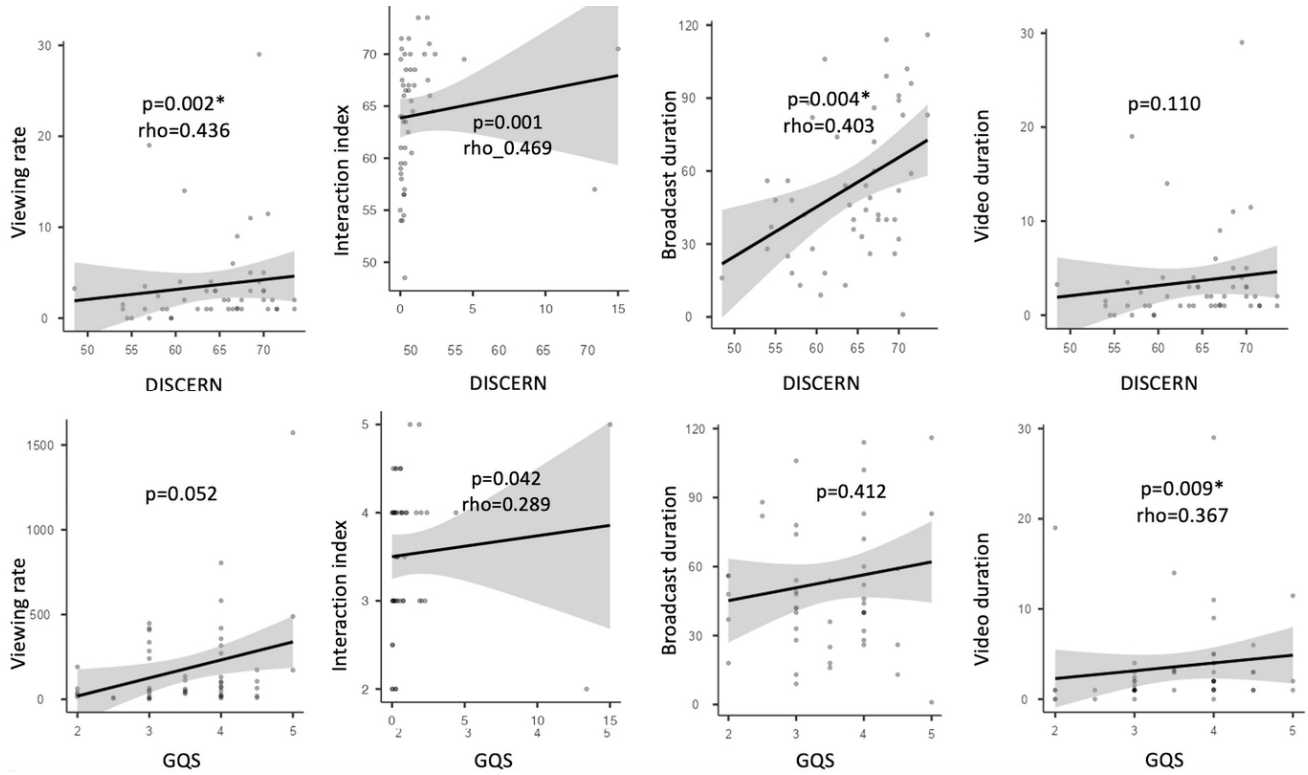

Figure 3: *Scatter plots of DISCERN and GQS scores, viewing rate, interaction index, broadcast duration, and video duration when searching with the "cochlear implant" term.*
** statistically significant correlation, rho: Spearman correlation coefficient*
Abbreviations: GQS, Global Quality Scale

DISCUSSION

Today, the internet is the easiest way to access information. The vast majority of people use online resources to obtain information before medical admissions and in other areas.YouTube (www.youtube.com), which provides free video sharing over the Internet, is the leading platform for information sharing. The videos allow difficult concepts to be demonstrated using simulations, diagrams, dynamic drawings, and real patients.

The claim that YouTube serves as a primary source of medical information for many individuals is well supported by several studies. YouTube has become a leading medium for information sharing, especially as a platform that patients frequently turn to in their efforts to learn about health-related issues. For example, a study by Starks et al. highlights the increasing tendency for patients to use YouTube to understand new surgical techniques and shows that this platform is increasingly preferred for medical education[7]. This trend is also confirmed by Jaffar's study. Jaffar states that most (98%) of medical students use YouTube to obtain medical information, emphasizing its importance as an educational tool[8].

Today, the accuracy and reliability of the information that is presented on YouTube is a major challenge. Studies indicate that YouTube is a prevalent source for medical information; however, the quality of the content varies considerably. Şan observes that insufficient regulatory oversight on YouTube undermines the accuracy and reliability of the medical information presented[9]. A systematic review conducted by Madathil et al. revealed that numerous YouTube videos disseminated misleading or inaccurate information, which could adversely affect patients' comprehension and decision-making[10]. It is particularly concerning that patients depend on these videos for treatment information, as biased or inaccurate content can erode trust between patients and healthcare providers[7,9].

Moreover, the potential for misinformation on YouTube is further highlighted by studies assessing the content quality of medical videos. For example, Wong et al. found that a significant percentage of YouTube videos on knee arthroplasty provided low-quality information on diagnosis and treatment[11]. This suggests that while YouTube can be a valuable educational resource, users should critically evaluate the quality of the information they encounter to avoid the pitfalls of biased or inaccurate content.

Evaluating YouTube videos as health information sources is becoming essential since so many patients turn to the platform for medical advice. Two key tools used to measure the quality and reliability of these videos are the DISCERN instrument and the Global Quality Score (GQS). These tools provide a clear, methodical approach to evaluate health-related video material, so facilitating the assessment of their dependability and accuracy.

One reliable approach for assessing the quality of written health information is the DISCERN instrument. Comprising sixteen questions with an emphasis on important elements including clarity, dependability, and whether the material is free of bias, it Researchers have lately modified this tool to evaluate YouTube videos, so enabling the measurement of information quality in a manner understandable for regular viewers. Studies reveal that videos produced by medical professionals routinely score more DISCERN than those produced by non-professionals. This emphasizes the obvious link between the source of the video and the correctness of its contents[12,13]. Cinar's research on scoliosis videos, for instance, showed that content created by professionals scored much higher, so underlining the need of professional opinion in enhancing the dependability of medical information on YouTube[12]. While our study did not analyze the origins of the uploaded videos, it indicated that the quality of videos uploaded with the medical term CI was superior to those uploaded with BE.

Likewise, the GQS acts as a complementary tool assessing the general quality of videos depending on criteria including the completeness of content and the presentation of information. Higher GQS rated videos have been

linked, according to research, with better educational value and dependability. Studies assessing movies on COVID-19 and pregnancy, for instance, found that those created by medical professionals not only had better DISCERN scores but also better GQS ratings, so underlining the need of professional involvement in content creation[14]. This trend is apparent across multiple medical subjects, where videos from reliable sources consistently surpass those from non-professional creators in both DISCERN and GQS assessments[15].

The combined use of DISCERN and GQS, as in our study, allows for a comprehensive evaluation of YouTube videos, providing a clearer picture of their educational value and reliability. A study analyzing videos on pediatric urological diseases utilized both scoring systems to evaluate quality, revealing that the majority of the videos were of average quality and a considerable percentage contained unreliable information[14]. This emphasizes the necessity for viewers to critically assess the sources of health information they access online, particularly due to the risk of misinformation on platforms like YouTube. In our study, the median DISCERN score was 65 for the CI videos, indicating that the videos were of excellent quality. For the BE group, the median value was 39, indicating moderate quality. The median GQS for BE videos was 2.5, indicating a quality level between poor and moderate. The median GQS for CI videos is 3.5, indicating a quality level between moderate and good.

Our study demonstrated a wide range of reliability and quality in YouTube videos concerning cochlear implants and bionic ears. Healthcare practitioners and cochlear implant surgeons should focus more on creating videos using keywords that are commonly used by the public. Videos made in everyday terms such as "bionic ear" were of lower quality. As a result, in addition to academic terminology, academics should include common phrases as keywords in their videos. This allows people to view high-quality videos. YouTube is now a site where patients can view preoperative surgeries. It is even incorporated into resident training in otolaryngology and other surgical specialties.

Oktay et al. analyzed the quality of health-related YouTube videos about first aid in snakebites. In this study, the authors reported that the quality of videos uploaded by doctors was high and that the use of social media platforms by doctors to inform the public could be very beneficial[16]. In our study, we found that most videos were insufficient in terms of medical accuracy and information quality. It was emphasized that videos that were not prepared by professional health institutions and experts could be misleading[17]. Therefore, it is important that social media platforms are used more frequently by health personnel to convey accurate information to the public.

Assessing the reliability and quality of YouTube videos in hearing health analyses is a new topic in the literature. The Manchaiah et al. examined the top 100 English-language hearing aid information videos. Videos from all sources had 74% understandability (sufficient) and 68% actionability (insufficient), which was insufficient. The inadequate actionability of these videos may cause consumer confusion. Professional help is needed to improve hearing aid YouTube videos" content and quality[18]. Thomas et al. searched YouTube for the term "cochlear implant" in the English language[19]. They found that the mean total DISCERN score was 36.8, similar to the score in our study was 39.63 with the keyword "bionic ear". With the keyword "cochlear implant" we found a much higher DISCERN score of 65.75.

Two independent reviewers reviewed the first 60 videos in the study. The modified Discern tool was used to assess the quality of each video. There was no association found between "likes" or views and the overall DISCERN score. Thomas et al. stated that the number of views and "likes" did not reflect the quality or dependability of the films. Given that study's findings, YouTube ranks videos based on the "relevancy" rather than quality[19]. Our study revealed a positive correlation between the viewing rate and interaction index with DISCERN in the CI group, as well as a positive correlation between GQS and the interaction index. This indicates that users searching with the term CI prioritize video quality. There exists a weak negative correlation between GQS and

viewing rate in the BE group. In this instance, it can be observed that individuals searching with the term BE tend to engage with the videos recommended by the algorithm rather than focusing on the quality of the videos.

Nix et al searched for "Cochlear implant" in four Internet search engines, and the top 200 English and Spanish websites were aggregated. The average DISCERN quality score for English websites was 41.7, while for Spanish websites it was 43.5, indicating serious concerns regarding quality. Patient-directed English and Spanish websites about cochlear implantation were written at reading levels significantly higher than the average education level of the American population. In addition, these websites have significant quality problems[20]. This indicates that DISCERN scores may differ in different languages. We could have added readability criteria like Nix et al., in our study; however, people's preferences are in favour of watching videos in our age, we preferred to evaluate only videos.

Danino et al. employed the DISCERN scale to assess the caliber of online material pertaining to otological problems. The results indicated that websites that concentrate on otological matters frequently offer material of substandard quality, underscoring the importance of guiding patients towards trustworthy sources[2].

Laplante-Levesque et al. investigated the readability and quality of YouTube videos containing information about cochlear implants. It was discovered that a substantial percentage of movies were difficult for the general audience to understand, particularly medical language and technicalities. It was also discovered that several videos lacked scientific accuracy and may mislead people[21].

A cochlear implant candidate and his or her family members are concerned about how the operation is conducted and the risks involved, the healing process, how much hearing quality will improve, the daily usage and care of the device, the impact on quality of life, cost, and insurance coverage. They also want to know about pre- and postoperative procedures, the device's technical specs, user experiences, hospital and doctor options, support groups, and financial aid. This information enables individuals to overcome their anxieties and make sound decisions[22]. According to Rembar et al., cochlear implants have an impact on both hearing loss and the psychosocial status of patients and their families.They found that cochlear implant recipients exhibited a psychological well-being comparable to that of the overall population[23]. This level of anxiety and stress can be reduced by providing patients with relevant information and by answering their concerns through appropriate illustrations and videos.

Guo et al investigated the impact of training videos on audience engagement and determined that videos lasting 6-9 minutes were the most effective[24]. Nikonova et al. investigated the modern communication technologies in education and concluded that the optimal duration of the video is crucial for enhancing viewer engagement and it shoud be no more than 3 minutes[25]. Visitors may become disengaged as videos become increasingly prolonged. The average duration of the videos was 3.61 minutes when the keyword "cochlear implant" was used in our study, and 8.56 minutes when the keyword "bionic ear" was used. Osman et al. emphasized that the significance of factors such as the content of the video, accuracy, citation of sources, and presentation quality should be considered when evaluating the quality of YouTube videos containing health information, as the number of views can be misleading[26]. The term "cochlear implant" is commonly referred to as the "bionic ear." "Bionic" refers to the use of electrical equipment to assist or simulate biological activities. "Cochlear implant" is more frequently used in academic papers, medical articles, and clinical trials. The term "bionic ear" is less typically used in academic settings. The word is widely used in popular scientific publications and patient education materials. The phrase "bionic ear" is better understood and accepted by the general population[27,28]. However, in our study, the average number of views of videos found in searches with the keyword "cochlear implant" was 2873.5, while the average number of views of videos found with the keyword "bionic ear" was 904.7. Although these numbers do not indicate the

quality of the videos, they may indicate that the public is familiar with the term. Therefore, a better approach would be to use the word "cochlear implant" when uploading a video aimed at informing the public. According to our study, there is a significant correlation between DISCERN and view rate, interaction index and broadcast duration in the cochlear implant group. The quality of the videos accessed and watched more when searched with cochlear implant keywords is high. Significant correlation was found between GQS score and video duration and interaction index. This situation is also pleasing. As the quality of the videos increases, the interaction rates also increase.

When searched with the words bionic ear, a positive correlation was observed between intearction index and GQS. As the video duration increases, GQS increases. According to these findings, we can interpret that the quality of videos below a certain duration is also low. This study assessed the quality of YouTube videos by applying internationally validated and reliable measures to videos containing specific key phrases. The Turkish language was utilized to search for videos related to the keywords "bionic ear" and "cochlear implant". These keywords are regularly used by the public and physicians respectively. The films were then analyzed to assess their quality and dependability. Consequently, we discovered that the movies we saw had superior quality when searched using the term "cochlear implant". Healthcare professionals who post content on social media sites should include commonly used medical terms in their keywords. Consequently, the accessibility of superior-quality videos to the general public would be enhanced.

Although YouTube provides useful information regarding cochlear implants and bionic ears, the content's quality and reliability vary. The use of GQS and DISCERN may help in the identification of high-quality and reliable videos. Healthcare practitioners should refer patients to trusted resources and encourage critical thinking regarding online health information.

The DISCERN scale has good academic validity and has been validated by substantial research. It conducts an objective and thorough evaluation of health information. The GQS gives a more user-friendly and quick assessment, but because it is subjective, the results may be more influenced by the assessor's opinions. DISCERN and GQS are two different scales for assessing health information, and each has advantages in its particular area of application[10,29]. Both tools play crucial roles in evaluating health information and, when combined, can provide a more comprehensive quality assessment. In our investigation, we tried to achieve more complementary outcomes by combining them.

The main limitation of this study is the selection of only the first 50 recordings for each search. This is a proper patient resource that matches the actual view characteristics. Likely, popular videos with a greater chance of being uploaded by nonexpert providers will be assessed.

CONCLUSION

In conclusion, while YouTube can be a valuable resource for patients and families seeking information about cochlear implants, it is important to critically assess the quality of the videos and supplement them with professional medical advice.

REFERENCES

1. Tassone P, Georgalas C, Patel NN, Appleby E, Kotecha B. Do otolaryngology out-patients use the internet prior to attending their appointment? J Laryngol Otol. 2004;118(1):34-38.
2. Danino J, Muzaffar J, Mitchell-Innes A, Howard J, Coulson C. Quality of Information Available Via the Internet for Patients with Otological Conditions. Otol Neurotol. 2016;37(8):1063-1065.
3. Feng SJ, Yu M, Leong S, Chern A. Exploration and Analysis of Cochlear Implant Content on Social Media. Cureus. Published online 2023.
4. Saxena RC, Lehmann AE, Ed Hight A, et al. Social media utilization in the cochlear implant community. J Am Acad Audiol. 2015;26(2):197-204.
5. Javidan A, Nelms MW, Li A, et al. Evaluating YouTube as a Source of Education for Patients Undergoing Surgery: A Systematic Review. Ann Surg. 2023;278(4):E712-E718.
6. Sorensen JA, Pusz MD, Brietzke SE. YouTube as an information source for pediatric adenotonsillectomy and ear tube surgery. Int J Pediatr Otorhinolaryngol. 2014;78(1):65-70.
7. Starks C, Akkera M, Shalaby M, Munshi R, Toraih E, Lee GS, Kandil E, Shama MA. Evaluation of YouTube videos as

a patient education source for novel surgical techniques in thyroid surgery. Gland Surg. 2021;10(2):697-705.

8. Jaffar AA. YouTube: An emerging tool in anatomy education. Anat Sci Educ. 2012;5(3):158-164.
9. Şan H. Use of YouTube as an Information Source for Radioactive Iodine Therapy: Do YouTube Videos Have High Quality? Mol Imaging Radionucl Ther. 2022;31(1):42-48.
10. Madathil KC, Rivera-Rodriguez AJ, Greenstein JS, Gramopadhye AK. Healthcare information on YouTube: A systematic review. Health Informatics J. 2015;21(3):173-194.
11. Wong M, Desai B, Bautista M, Kwon O, Kolodychuk N, Chimento G. YouTube is a poor source of patient information for knee arthroplasty and knee osteoarthritis. Arthroplast Today. 2019;5(1):78-82.
12. Çınar C. A Comparison of the Quality and Reliability of YouTube Videos Uploaded by Healthcare Professionals About Scoliosis in the Past Decade. Cureus. 2023;15(9):e44830.
13. Ergül A. Quality and Reliability of YouTube Videos on Surgical Treatment of Uterine Leiomyomas. Cureus. 2021;13(11):e20044.
14. Çakır H, Çağlar U. Evaluation of YouTube? Videos' Quality About Pediatric Urological Diseases. Acıbadem Univ Sağlık Bilim Derg. 2023;14(4):456-462. doi:10.31067/acusaglik.1342369.
15. Hepşenoğlu YE, Değirmencioğlu D, Topbaş C. Analyzing biomimetic dentistry YouTube videos' quality and content. Int Dent Res. 2023;13(S1):44-49. doi:10.5577/idr.2023.vol13.s1.7.
16. Oktay, M. M., Karaduman, M. E., Gümüşboğa, H., & Sabak, M. First aid in snakebites: an evaluation of the usefulness and quality of YouTube videos. Journal of Contemporary Medicine, 2023; 13(1), 140-145.
17. Göçer K. Evaluation of the quality and reliability of YouTube videos on premature ventricular contraction. J Contemp Med. 2023;13(5):1018-1023.
18. Manchaiah V, Bellon-Harn ML, Michaels M, Swarnalatha Nagaraj V, Beukes EW. A Content Analysis of YouTube Videos Related to Hearing Aids. J Am Acad Audiol. 2020;31(9):636-645.
19. Thomas C, Westwood J, Butt GF. Qualitative assessment of YouTube videos as a source of patient information for cochlear implant surgery. J Laryngol Otol. 2021;135(8):671-674.
20. Nix E, Willgruber A, Rawls C, et al. Readability and Quality of English and Spanish Online Health Information about Cochlear Implants. Otol Neurotol. 2023;44(3):223-228.
21. Laplante-Lévesque A, Thorén ES. Readability of internet information on hearing: Systematic literature review. Am J Audiol. 2015;24(3):284-288.
22. Zaidman-Zait A, Most T. Cochlear implants in children with hearing loss: Maternal expectations and impact on the family. Volta Rev. 2005;105(2):129-150.
23. Rembar SH, Lind O, Romundstad P, Helvik AS. Psychological well-being among cochlear implant users: A comparison with the general population. Cochlear Implants Int. 2012;13(1):41-49.
24. Guo PJ, Kim J, Rubin R. How video production affects student engagement: An empirical study of MOOC videos. In: L@S 2014 - Proceedings of the 1st ACM Conference on Learning at Scale. Association for Computing Machinery; 2014:41-50.
25. Nikonova NI, Zalutskaya SY. Modern communication technologies in education: book trailer. Rev Tempos e Espaços em Educ. 2021;14(33):e15256.
26. Osman W, Mohamed F, Elhassan M, Shoufan A. Is YouTube a reliable source of health-related information? A systematic review. BMC Med Educ. 2022;22(1):1-12.
27. Clark G. Cochlear implants: fundamentals and applications. Published online 2003. Accessed June 24, 2024. https://link.springer.com/chapter/10.1007/0-387-21550-6_2
28. Niparko J. Cochlear Implants: Principles & Practices.; Lippincott Williams & Wilkins; 2nd edition (2009)
29. Bernard A, Langille M, Hughes S, Rose C, Leddin D, Veldhuyzen Van Zanten S. A systematic review of patient inflammatory bowel disease information resources on the world wide web. Am J Gastroenterol. 2007;102(9):2070-2077.