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Quality Analysis of Penis Enlargement Videos on YouTube: Qualitative Research

YouTube'daki Penis Büyütme Videolarının Kalite Analizi: Nitel Araştırma

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ABSTRACT Objective: The aim of this study was to assess the content, reliability and quality of YouTube videos about penis enlargement procedures and products. **Material and Methods:** The YouTube videos were searched using the keyword "penis enlargement, penis augmentation, penis enhancement". The videos were sorted according to their relevance, and the upload date and number of views were recorded. The first 184 videos were included in the study. The quality, reliability and accuracy of the information were evaluated by two independent urologists using the Journal of American Medical Association score, the 5-point modified DISCERN tool and the Global Quality Score. **Results:** Video quality was analyzed under 2 headings according to the upload source and video contents. The number of analysed videos was 150. It was noted that only 6 video's source were academic (author/authors are/are affiliated with a university). The 64.6% of the total videos were uploaded by physicians (author/authors who are not affiliated with a university). All 47 videos uploaded by medical advertisement/profit organizations and individual users/patients received low scores according to modified DISCERN tool. **Conclusion:** This study revealed that the quality, content, and reliability of existing videos on penis enlargement are very low. YouTube is insufficient as a source of information on penis enlargement.

Keywords: Penile diseases; internet; YouTube; social media

ÖZET Amaç: Bu çalışmanın amacı, penis büyütme cerrahisi ve diğer tıbbi uygulamalar ile ilgili YouTube videolarının içerik, güvenilirlik ve kalitesinin değerlendirilmesidir. **Gereç ve Yöntemler:** YouTube videoları İngilizce olarak "penis enlargement, penis augmentation, penis enhancement" anahtar kelimesi kullanılarak tarandı. Videolar alaka düzeyine göre sıralandıktan sonra yükleme tarihi ve izlenme sayısı kaydedildi. Kriterlere uyan 184 video incelendi. Bilgilerin kalitesi, güvenilirliği ve doğruluğu iki bağımsız ürolog tarafından "Journal of American Medical Association" skoru, modifiye DISCERN ölçeği ve Global Kalite Skoru kullanılarak değerlendirildi. **Bulgular:** Video kalitesi, yükleme kaynağı ve video içeriğine göre iki başlık altında incelendi. Yüz elli video çalışmaya dâhil edildi. Sadece 6 videonun kaynağının akademik (üniversiteye bağlı yazar/yazarlar) olduğu kaydedildi. Toplam videoların %64,6'sı doktorlar (üniversiteye bağlı olmayan yazar veya yazarlar) tarafından yüklendiği görüldü. Tıbbi reklam/kâr amaçlı kuruluşlar ve bireysel kullanıcılar/hastalar tarafından yüklenen 47 videonun tümü, modifiye DISCERN aracına göre düşük puanlar aldığı tespit edildi. **Sonuç:** Bu çalışma, penis büyütme ile ilgili mevcut videoların kalitesinin, içeriğinin ve güvenilirliğinin çok düşük olduğunu ortaya koymuştur. YouTube, penis büyütme konusunda bilgi kaynağı olarak yetersizdir.

Anahtar Kelimeler: Penil hastalıklar; internet; Youtube; sosyal medya

In different cultures, penis size can be a cause of anxiety and insecurity among male individuals. Normal penis size and the relationship between penis size, sexual function, and sexual prowess have been the subject of social debate in some cultures.[1] A small penis can kindle the idea that one may have poor sexual performance, which leads to loss of self-esteem and aesthetic concerns in men.[2] Such concerns are not new and there are examples in history of penis enlargement. Some tribes in India and Peru traditionally use weight to increase penis length. Application of exogenous substances to the penile skin continues to be a common practice in many cultures.[1,2]

Complaint of penis size is a common cause of referral to urologists and psychotherapists, but these patients usually have a normal penis and their part-

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ners have no complaints. Penis enlargement procedures are still a controversial and much debated topic in the field of andrology. The main indication of these procedures is sexual dysfunction caused by anatomical reasons. Some men may have small penis anxiety, described as dissatisfaction or excessive worry about the size of external genital organs which are in the normal range.[3]

The influence of social media on sexuality has brought attention to penis enlargement procedures. The need for medical treatment and surgery for penis enlargement is still medically controversial, and the results of surgical procedures are still unpredictable. The internet provides a wide source of information with various alternatives and is becoming a reference source for those seeking penis enlargement.[4,5]

In particular, video-sharing sites such as YouTube (Google LLC®, USA), together with websites that share written documents, offer educational tools and information sources on health care to help the decision-making process and allow industrial firms to promote themselves.[6] YouTube is a platform where content of any subject can be uploaded without controls. As a result, there has been concern in health institutions regarding the caliber and standard of information on YouTube.[7,8]

Users favor YouTube as a primary source of video-based information, particularly when it comes to medical subjects and surgical procedures. Therefore, an increasing number of studies have evaluated YouTube videos about various diseases in terms of quality and content.[8-11] The common finding of these studies is that YouTube contains high quality and informative content along with biased content and misinformation.[9,12] Currently, there is a lack of studies in the literature that assess YouTube videos on penis enlargement procedures and products. Since there is no evidence-based research on this subject, it is highly questionable whether this patient group can properly evaluate accurate information and treatment options on the internet.

The objective of this study is to examine the caliber and dependability of YouTube videos on penis enlargement procedures and products.

MATERIAL AND METHODS

The execution of this study adhered to the principles outlined in the Declaration of Helsinki. We searched YouTube (http://www.youtube.com) videos on January 8, 2022 using the keywords of "penis enlargement, penis augmentation, penis enhancement". YouTube arranges videos based on their relevance, upload date, view count, and rating. The top 184 videos ranked according to "relevance" were reviewed in this study. In the study non-English videos, duplicate videos, advertisements, and videos without audio were eliminated, leaving a total of 150 videos that were subjected to evaluation. The number of dislikes could not be evaluated since YouTube has recently made the decision to hide the number of dislikes.

VIDEO QUALITY AND RELIABILITY ANALYSIS

Two urologists independently assessed the videos. The duration, upload date, count of comments, count of views, and count of likes for all videos were documented. Based on the sources of upload, the videos were analyzed under 4 headings: academic (videos uploaded by authors affiliated with a university), physician (videos uploaded by authors not affiliated with a university), medical advertisements/for-profit organizations, and individual users/patients. In addition, according to their contents, they were divided into 5 groups as surgical technique, advertisement, anatomy/basic information, information about the disease and treatment and patient/personal experience.

For the analysis of quality, the Global Quality Scale (GQS) was employed. The GQS is a 5-point scale (ranging from 1 to 5) utilized to assess the quality, coherence, and usefulness of the videos. A rating of 4 or 5 indicates high quality, a rating of 3 suggests medium quality, while a rating of 1 or 2 signifies low quality.[13] Videos with a score of 1 are characterized by poor quality, inadequate flow, incomplete information, and are not helpful for patients. Videos with a score of 2 have overall poor quality, limited information available to patients, and limited usefulness. Score 3 videos exhibit moderate quality with some important information adequately discussed. Score 4

videos demonstrate good quality, smooth flow, comprehensive coverage of relevant information, and are considered useful for patients. Score 5 videos represent excellent quality and flow, being highly valuable for patients.

The reliability of the videos was assessed using the modified DISCERN score, which is a 5-point tool specifically adapted for this evaluation. The original DISCERN scoring, which comprises 15 questions, was employed to evaluate the quality of health information presented to patients.[14] In this study, a modified 5-point DISCERN scoring tool, consisting of 5 questions answered as "yes" or "no", with 1 point for each "yes" answer, was used. As a result, the maximum achievable score is 5. The questions for evaluation include the following: 1) Does the video exhibit clarity, brevity, and comprehensibility? 2) Are reliable sources referenced and cited in the video? 3) Does the information presented demonstrate balance and impartiality? 4) Are supplementary sources of information provided for patients to consult? 5) Does the video adequately tackle areas of discussion or ambiguity?[14,15] According to the DISCERN scoring, videos with a score higher than 3 are classified as high-quality videos, indicating the presence of valuable information for patients. Videos with a score of 3 are considered medium quality and may benefit from supplementary sources of information. On the other hand, videos with a score lower than 3 should be regarded as poor quality and should not be relied upon by patients.

The evaluation of information quality from health-related internet sites is conducted using the Journal of American Medical Association (JAMA) scoring system. This system consists of 4 criteria: currency, attribution, authorship, and disclosure. Each criterion can receive a maximum of 1 point, resulting in a total possible score of 4 points. The higher the score, the higher the correlation with information quality.[16]

STATISTICAL ANALYSIS

Data analysis was conducted using Microsoft Excel 2016 (Microsoft®, USA), Google Spreadsheets (Google LLC®, USA), and SPSS 22.0 (IBM, Chicago, IL, USA). Descriptive methods such as mean, median, minimum, maximum, standard deviation, percentage, and frequency were employed. The Shapiro-Wilk test was utilized to assess the normality of the data distribution. The chi-square test was applied for comparing categorical data. Spearman's rank-order correlation test was conducted for correlation analysis, with a statistical significance level set at $p<0.01$.

RESULTS

The number of analysed videos was 150. The videos (64.6%) were uploaded by physicians, which is higher than other groups (Figure 1). It was also noted that only 6 videos were shared by the academic (author/authors are/are affiliated with a university). Disease and treatment information constituted the majority of the video content, accounting for 50.6% of the total (Figure 2).

Significantly higher GQS scores, modified DISCERN scores, and JAMA scores were observed in

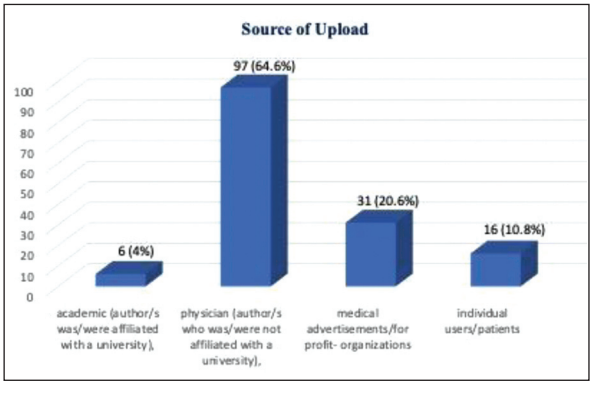

FIGURE 1: Video sources number and rates with graphics.

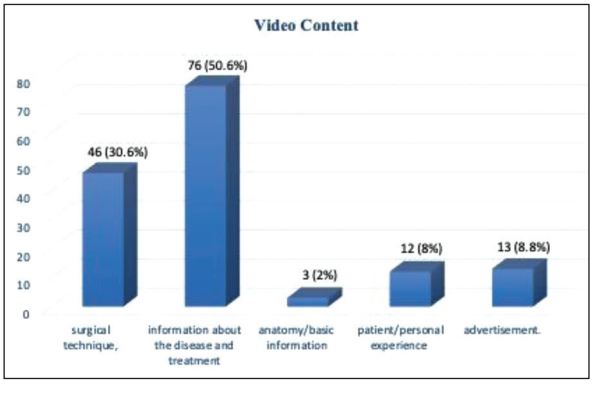

FIGURE 2: Video contents number and ratios with graphics.

the videos uploaded by physicians. The Bonferroni adjustment revealed that the modified DISCERN and JAMA scores of the physician-uploaded videos were notably higher compared to the other groups. The GQS scores of videos shared by individual users and patients were considerably lower than those posted by physicians (Table 1).

The features of the shares were displayed in Table 2 based on the modified DISCERN classification. Based on the modified DISCERN classification, all 47 videos uploaded by medical advertisements/profit organizations and individual users/patients were rated as "poor". The most of the good videos' source was belonged to physicians (Table 2).

As a result of the analysis, the median modified DISCERN score was 1 (0-5), and the median JAMA score was 2 (1-4). According to the modified DISCERN classification, 79.4% of the videos were "poor", 14.6% were "fair" and 6% were "good". For the JAMA score, only 5% of the videos were reported as good quality when the cutoff was set to ≥3 (Table 2).

The 3 scoring systems were correlated with each other. No correlation was found for the scoring systems in terms of views, likes and comments (p>0.05). The correlation analyzes of the scoring groups are shown in Table 3.

Video contents were also evaluated according to penis enlargement surgical procedures and products. If more than one surgical procedure or product was mentioned in a video, it was added to each group as separate data. The most common content related to the surgical procedure were suspensory ligament dissection (n=55) and fat injection (n=53). Ten video sources related to pills and lotions were determined (Figure 3).

TABLE 1: Video quality assessments according to the source of the video.

	Academic (author/s was/were affiliated with a university)	Physician (author/s who was/were not affiliated with a university)	Industry, advertisements, for profit-organizations	Individual users, patients	p*
JAMA	2 (1-4)	2 (1-4)	1 (1-2)	1 (1-1)	<0.001
GQS	2 (1-5)	3 (1-5)	1 (1-3)	1 (1-2)	<0.001
Modified DISCERN	1 (0-5)	2 (0-5)	1 (0-2)	0.5 (0-1)	<0.001

Results are presented as median (minimum-maximum); *Kruskal-Wallis test; GQS: Global Quality Scale; JAMA: Journal of the American Medical Association.

TABLE 2: Distribution of modified DISCERN classification according to video source and features.

	Modified DISCERN classification			
	Poor	Fair	Good	
Source of the video (n)				
Academic (author/s was/were affiliated with a university)	4	1	1	
Physician (author/s who was/were not affiliated with a university)	68	21	8	
Medical advertisements/for profit- organizations	31	0	0	
Individual users/patients	16	0	0	
Grand total	119	22	9	
Video features				p value
#of views	2 (1-2)	2 (1-2)	3 (2-4)	0.025
#of likes	2 (1-4)	4 (3-5)	5 (4-5)	0.030
#of comments	1 (0-2)	3 (3-3)	5 (4-5)	0.874
Duration (sec)	257 (15-3624)	607.5 (85-5100)	525 (73-2210)	0.001
View per day	43.8 (0-3932.7)	3.55 (0.1-2254.6)	937.2 (0.2-50054.1)	0.044
Comment per day	0 (0-15.6)	0 (0-1.6)	0.5 (0-59)	0.982
#of views	2 (1-2)	2 (1-2)	3 (2-4)	0.025

Results are presented as median (minimum-maximum).

TABLE 3: Correlation analyzes for modified DISCERN scores, GQS score and JAMA score.

	JAMA		Modified DISCERN		GQS	
	r*	p value	r*	p value	r*	p value
JAMA	1,000	0.000	0.540	0.000	0.637	0.000
GQS	0.540	0.000	1.000	0.000	0.848	0.000
Modifiye DISCERN	0.637	0.000	0.848	0.000	1.000	0.000
Content	-0.338	0.000	-0.329	0.000	-0.270	0.001
Video source	-0.628	0.000	-0.557	0.000	-0.520	0.000
Days since upload date	-0.113	0.168	-0.242	0.003	-0.314	0.000
View per day	-0.019	0.813	0.043	0.603	-0.018	0.826
# of views	-0.043	0.604	-0.028	0.734	-0.107	0.192
# of likes	-0.045	0.587	-0.025	0.759	-0.067	0.413
Duration (second)	0.210	0.010	0.409	0.000	0.355	0.000

*Spearman p correlation coefficient; Correlation is significant at the 0.01 level (2-tailed); GQS: Global Quality Scale; JAMA: Journal of the American Medical Association.

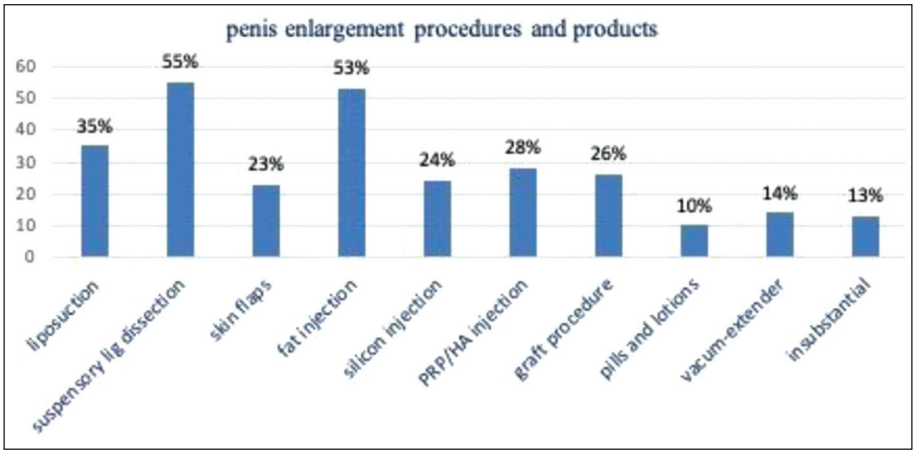

FIGURE 3: Video contents were classified according to penis enlargement surgical procedures and products.
PRP: Platelet-rich plasma; HA: Hyaluronic acid.

DISCUSSION

A significant number of videos about many diseases are shared on YouTube every day.[6] This study represents the first investigation in the literature that examines YouTube videos focusing on penis enlargement. Physicians and medical advertisements/for-profit organizations were the predominant sources of the videos. Since penis enlargement procedures are usually carried out by self-employed clinicians and supported by medical advertising companies, the results are not surprising. When the content of the videos uploaded by these groups was assessed, it was observed that the videos focused on surgical technique and information about the disease and treatment. This is due to the fact that penis enlargement procedures are predominantly surgical procedures.

According to another study that assessed YouTube videos on the surgical treatment of urinary stone, it was found that videos uploaded by healthcare professionals and related associations were of notably higher quality. Additionally, the videos shared by the European Urology Association (EAU) obtained the highest score among the evaluated videos.[17] This shows that it is crucial to recommend patient education materials provided by professional associations such as the EAU.

According to a study that examined 125 YouTube videos focusing on vesicoureteral reflux disease, it was determined that hospitals, clinicians, and medical practices were the most prevalent sources of these videos. It was determined that the proportion of videos categorized as high, medium, and poor quality was 41.6%, 19.2%, and 39.2%, respectively. The median quality score was 3 for JAMA and modified DISCERN. The video content included symptoms and diagnosis (25.6%), surgical procedure (16.8%), and anatomy/general information (11.2%).[18] In our study, the most prevalent content of the videos was disease and treatment information, accounting for 50%, followed by surgical procedure information, accounting for 30%. Although penis enlargement is a surgical procedure, the diagnosis, treatment and follow-up stages of vesicoureteral reflux are more prominent and it provides more equal distribution of the content.

According to a recent study that analyzed YouTube instructional videos on anakinra injection, it has been reported that there are numerous videos available on the platform that provide valuable information. These videos serve as a reliable source of guidance on the safe and accurate technique of administering daily anakinra self-injections for both adults and children. It has been also reported that patients cannot distinguish the video quality, but nearly half of the videos contain useful information.[10]

YouTube users prefer videos uploaded by hospitals and doctors for diseases with simple pathophysiology, while sources that describe the topic more superficially and offer alternative treatment options are preferred for more complicated diseases. In oncological diseases such as prostate cancer, the primary preference of patients has been consumer videos showing that these patients are searching for complementary treatment options in addition to their current treatment. It has been observed that the majority of YouTube videos related to prostate cancer are uploaded by consumers and experts. Videos uploaded by experts were shown to provide sufficient information.[19]

When analyzing 152 videos related to testicular cancer, it was determined that the primary source of the videos was talk shows/TV programs, while their content was more about symptoms and diagnosis. Although there is a large amount of data in social media in the field of urooncology, it has been reported that the content and quality are at poor levels.[20]

In order to better evaluate and discuss the results, we tried to further examine the diseases requiring surgical procedure. One such study evaluated videos on carpal tunnel syndrome. Similar to this study, the quality, reliability and content of the videos were scored by JAMA, DISCERN and GQS. The mean scores of the 50 videos analyzed in the study were determined to be inadequate in terms of both content and quality.[19] The common deficiencies identified in the videos evaluated in the present study include information and guidance that gives patients undue hope and promise absolute success for a health problem where studies in the literature find the use of cosmetic surgery for penis enlargement highly controversial, reported complications are quite high, and experts state that these procedures should be practiced for research purposes and patients should be guided away from these invasive treatments.[21,22]

In addition, the study was based on YouTube settings, which can vary considerably both geographically and periodically. The absence of the number of dislikes is another limitation.

CONCLUSION

High quality and reliable videos on social media are crucial for patients as they enable access to accurate information, raise awareness about diseases, and provide guidance on treatment options. There are websites on the internet that sell products ranging from pills allegedly enlarging the penis to penis extenders that are not supported by the scientific literature. The findings of the current study indicate that videos on YouTube concerning penis enlargement exhibit low levels of quality, content, and reliability. Videos about penis enlargement procedures and products are often viewed by patients on YouTube, an unreliable source of information for patients; therefore, it is important for experts to be familiar with the available content to guide patients to an appropriate source. In

addition, the relevant specialist physicians within the relevant associations and universities should produce and share evidence-based, informative educational material and videos that patients can understand, which will be useful in providing information and education about small penis and penis enlargement.

Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: *Mehmet Vehbi Kayra;* ***Design:*** *Serdar Toksöz;* ***Control/Supervision:*** *Serdar Toksöz;* ***Data Collection and/or Processing:*** *Mehmet Vehbi Kayra;* ***Analysis and/or Interpretation:*** *Mehmet Vehbi Kayra;* ***Literature Review:*** *Serdar Toksöz;* ***Writing the Article:*** *Mehmet Vehbi Kayra;* ***Critical Review:*** *Mehmet Vehbi Kayra;* ***References and Fundings:*** *Serdar Toksöz;* ***Materials:*** *Mehmet Vehbi Kayra.*

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