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Original Article / Özgün Araştırma

Evaluation of the approach of General Surgery Specialists in Turkey to surgical videos published on YouTube

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Abstract

Objective: YouTube is an extremely popular social media platform used to watch, upload and share videos. YouTube contains many surgical videos intended for educational or marketing purposes. This article primarily aims to reveal Turkish general surgeons' approach to and interest in social media, with a special focus on YouTube, and to discuss the pros and cons of YouTube as an educational source.

Methods: An online survey of general surgery residents and attending physicians was conducted between April 2021 and May 2021 using a 16-item questionnaire. Participants were first asked to provide consent and provide demographic data such as age, sex and medical title, and then to answer questions about the use of social media, particularly YouTube, viewing surgical videos on YouTube, the ethical aspect of posting surgical videos on social media and whether or not they use it for educational purposes. Statistical analysis was conducted using descriptive statistics, ratios and frequencies.

Results: The survey was completed by 46 general surgeons with various medical titles from different healthcare institutions. Most participants reported using YouTube to watch videos (95.7%). Almost a quarter (28.3%) reported frequently using YouTube to view surgery videos. Furthermore, most participants (87%) found the surgery videos on YouTube educational (91.3%). One of the striking results was that 52.2% of the participants reported that they had a friend who performed a first-time surgical procedure after watching it on YouTube. In addition, most surgeons considered it ethically appropriate to use surgical videos from YouTube as an educational source (76.10%).

Conclusion: YouTube draws great interest from general surgeons as well as other members of society. General surgeons watch surgical videos on YouTube for educational purposes and find it ethical to post such videos. However, more extensive studies are needed to clarify further the role of increasingly used video-sharing platforms in education.

Key words: YouTube, general surgery, social media

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Türkiye'deki Genel Cerrahi Uzmanlarının YouTube'da yayınlanan cerrahi videolara yaklaşımının değerlendirilmesi

Öz

Amaç: Sosyal medya ortamlarından olan Youtube, kullanıcıların video izlemek, yüklemek ve paylaşmak üzere tercih ettiği, son derece yaygın kullanılan internet uygulamalarındandır. Eğitim ya da reklam amacıyla Youtube'a yüklenmiş pek çok ameliyat videosu bulunmaktadır. Amacımız ülkemizde genel cerrahların Youtube özelinde sosyal medyaya yaklaşımlarını, ilgilerini ortaya koymak ikincil olarak ise Youtube'un bir eğitim materyali olarak avantaj ve sakıncaları tartışmaktır.

Yöntemler: Nisan 2021 ve Mayıs 2021 tarihleri arasında genel cerrahi asistanları ve uzmanlarını kapsayan internet ortamında anket düzenlendi. Toplan 16 sorudan oluşan ankette katılımcıların onamı alınarak yaş, cinsiyet, unvan gibi genel bilgilerin ardından Youtube özelinde sosyal medyayı kullanımları, Youtube'ta ameliyat videolarını izleyip izlemedikleri, ameliyat videolarının sosyal medyada yayınlanmasının etik yönü, eğitim amacıyla kullanıp kullanmadıkları hakkında soruları yanıtlamaları istendi. İstatistiksel çalışmalarda tanımlayıcı istatistikler, oranlar ve frekanslar kullanıldı.

Bulgular: Anketimize çeşitli sağlık kuruluşlarından, farklı ünvanda 46 (n) Genel Cerrahi hekimi katıldı. Katılımcıların çoğu video izlemek için Youtube'u kullanmaktaydı (%95,7). Neredeyse dörtte biri (%28,3) Youtube'u ameliyat videolarını izlemek için sıklıkla kullandıklarını bildirdi. Çoğu katılımcı (%87) Youtube'daki ameliyat videolarını eğitici buldu (%91,3). Dikkat çeken sonuçlardan biri, katılımcılardan %52,2'si daha önce yapmadıkları bir ameliyatı Youtube' tan izledikten sonra yapan bir arkadaşının olduğunu bildirmesi idi. Çoğu cerrah, Youtube'daki cerrahi videoların eğitim materyali olarak kullanılmasını etik olarak uygun gördü (%76,10).

Sonuç: Youtube toplumun diğer bireylerinde olduğu gibi genel cerrahi hekimlerince de yoğun bir ilgi görmektedir. Genel cerrahi hekimleri Youtube'tan ameliyat videolarını eğitim amacıyla izlemekte ve videoların yayınlanmasını etik bulmaktadır. Geniş katılımlı çalışmalar giderek artan oranda kullanılan video paylaşım platformlarının eğitimdeki yerini daha net ortaya koyabilecektir.

Anahtar kelimeler: Youtube, genel cerrahi, sosyal medya.

INTRODUCTION

Social media has become an indispensable part of everyday life around the world. A glance at people on the road, in cafes or simply around people in our homes shows that most people are busy with their mobile devices, the Internet and social media applications. Access to the Internet has become extremely easy, and mobile devices allow easy access to social media applications. Kennedy et al. reported that students spend most of their time on the Internet watching videos and listening to music[1].

A significant number of people share and watch videos on social media. YouTube, one of the most widely used video-sharing platforms[2], was established in 2005 and acquired by Google in 2006. It allows users to upload, watch and share videos and communicate with other users through comments and messages[3]. YouTube is available in a total of 80 languages[4].

Video is an effective tool for capturing the audience's attention, providing information on a topic, simplifying complex concepts and demonstrating dynamic and interrelated concepts. The combination of visual and verbal information can increase the quality and level of comprehension, facilitate the integration of new information into existing cognitive structures and improve information processing[5]. Social media platforms, including YouTube, are also used for educational purposes. A meta-analysis showed that 70%–80% of medical students use social media, and 20% use it to share academic and educational information[6].

When it comes to using the Internet and social media, physicians and general surgeons are no different from the general population. A survey by the American College of Surgeons showed that 82% of participants viewed videos on YouTube for personal use[6]. The American Society of Colon and Rectal Surgeons has an official Twitter account with 13,600 followers[7]. The Turkish Surgical Association has official Twitter and Instagram accounts on social media[8]. Unfortunately, Turkey has no data about general surgeons' opinions about and use of YouTube. This article primarily aims to reveal Turkish general surgeons' approach to and interest in social media, with a special focus on YouTube, and to discuss the pros and cons of YouTube as an educational source.

METHODS

Study design and samples

The present study was approved by the local ethical committee in session 10/06/2020 with the protocol number 192. The study was conducted in accordance with the principles of the Declaration of Helsinki. A survey was designed to inquire general surgeons in Turkey about using social media and the posting of surgical videos on platforms such as YouTube. The survey was held between April and May 2021.

Participants of the study were active general surgeons and surgery residents. Turkey was expected to employ 3,800 general surgeons by 2020, and 1,005 general surgery residents received training in 2009[9]. The total number of residents and general surgeons could increase to 5,000. Participation was voluntary, and we assured respondents of confidentiality. Questionnaires were sent to participants via the Turkish General Surgeon's two WhatsApp Groups, which have 80 and 230 members. Informed consent was obtained within the survey.

The 16-item questionnaire was designed to provide detailed information about the opinions of surgeons on YouTube surgery videos. The questions intended to clarify the current situation and predict surgery videos on YouTube on surgery education. Gender, hospital types, and professional status of the respondents were also collected.

The study is an online survey, and its small sample size is a limitation.

Statistical Methods

Descriptive statistics and frequencies were used for statistical comparisons. The Pearson Chi-square test, Fisher's exact test, and One-way analysis of variance (ANOVA) followed by Tukey's test was used where appropriate. We performed data analysis using the SPSS statistical package for Windows, (version 23, IBM SPSS Statistics for Windows; IBM Corp., Armonk, NY, USA). A probability level of <0.05 was considered statistically significant.

RESULTS

Forty-six general surgeons (42 males and four females) responded to the questionnaire. These surgeons represent nearly 0.95% of all surgeons in Turkey. Frequency distributions of the respondents' institutions were as follows: 39.1% (n=18) University Hospital, 39.1% (n=18) Training and Research (Tertiary) Hospital, and 21.7% (n=10) the State Hospital. Approximately 28.3% (n=13) of the survey respondents were residents, 45.7% (n=21) were specialists, 26.1% (n=12) were assistant professors, associate professors or professors. Therefore, the survey is slightly weighted toward surgeon specialists, who responded at a somewhat higher rate than others.

We summarized the responses to the survey on surgical videos on YouTube as an educational resource in Table 1. Most of the surgeons used YouTube to watch videos (95.7%). Almost one-quarter of surgeons (28.3%) indicated they used YouTube frequently to watch surgery

videos, most of them used it sometimes (65.2%), and few did not use YouTube for such a purpose (6.5%). Interestingly, while most participant surgeons (87%) had not uploaded any surgery videos to YouTube, they found the surgery videos on YouTube educational (91.3%). All YouTube surgery video uploaders were male and over 43 years old (13%, n=6). None of the residents uploaded videos. There was no significant difference between institutions and academic ranks regarding the frequency of watching surgical videos (Table 2) and finding surgery videos educational (Table 3).

Table I: Distributions of the answers to survey questions

Survey Item	***Responses***	***n***	***%***
YouTube usage	No	2	4.30
	Yes	44	95.70
Watching surgery videos on YouTube	Never	3	6.50
	Sometimes	30	65.20
	Often	13	28.30
Uploading surgery videos to YouTube	Never	40	87.00
	1-5 times	6	13.00
Finding surgery videos educational	No	4	8.70
	Yes	42	91.30
Surgery videos contrary to current scientific knowledge	No	28	60.90
	Yes	18	39.10
Surgery videos compatible with current scientific information	No	4	8.70
	Yes	42	91.30
Performing first-time surgery after watching on YouTube	Yes	24	52.20
	No	18	39.10
	Don't want to answer	4	8.70
Encountering complications (Performing first-time surgery after watching on YouTube)	Yes	1	2.20
	No	30	65.20
	Don't want to answer	4	8.70
	Not answered	11	23.90
Is it ethical to publish surgery videos on Yuotube	No	10	21.70
	Yes	35	76.90
	Not answered	1	2.20

Table II: Comparison of institutions and academic status in watching surgery videos on YouTube

		No		**Sometimes**		**Yes**		**χ^2; p**
		n	%	n	%	n	%	
Hospital Type	University Hospital	0	0	13	28.3	5	27.8	3.87; 0.43
	Training and Research Hospital	1	2.2	12	26.1	5	10.9	
	State Hospital	2	4.3	5	10.9	3	10.9	
Academic status	Residents	0	0	11	23.9	2	4.3	4.62; 0.29
	Specialists	3	6.5	11	23.9	7	15.2	
	Assistant/Associate/Professors	0	0	8	17.4	4	8.7	

χ^2: Fisher's exact test

Table III: Comparison of institutions and academic status in finding educational surgery videos on YouTube

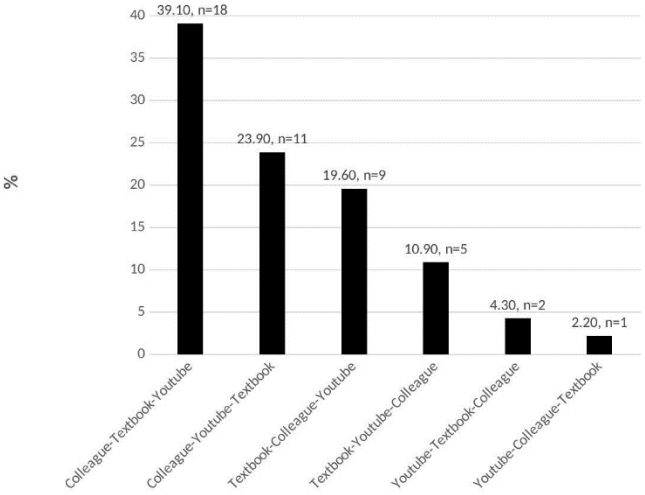
		Finding YouTube Videos				
		No		**Yes**		**χ^2; Fisher's exact test; p**
		n	%	n	%	
Hospital Type	University Hospital	1	2.2	17	37	0.70; 1.00
	Training and Research Hospital	2	4.3	16	34.8	
	State Hospital	1	2.2	9	19.6	
Academic status	Residents	1	2.2	12	26.1	1.62; 0.57
	Specialists	3	6.5	18	39.1	
	Assistant/Associate/Professors	0	0	12	26.1	

χ^2: Fisher's exact test

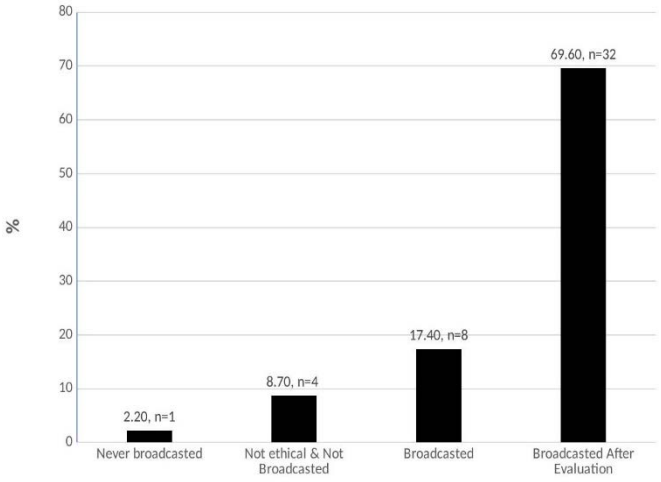
It is noteworthy that the rate of encountering videos that were suitable or not compatible with current scientific knowledge among the respondents was relatively high (91.30 and 39.1%, respectively). One of the exciting results was that the proportions of performing first-time surgical procedures after watching the surgical videos on YouTube was high (52.20%). Participants also stated that the rate of encountering complications in the surgeries they performed after watching videos on YouTube was quite low (2.20%). Most surgeons consider it ethical to use surgical videos on YouTube as educational material (76.10%). Nearly half of the specialists (10 of 21) and only one of the twelve faculty members think negatively about ethics.

Surgeons were categorized into three groups according to their first preferred method of updating information during the preoperative period as "Colleagues," "YouTube," or "Textbook" groups. The mean ages of the three groups included in the study were 47.50±2.68 years old in the Textbook-preferring group (n=14), 42.67±0.88 years old in the "YouTube" group (n=3), and 37.86±1.46 years old (n=29) in the "Colleagues" group. Although the Textbook group was more senior than others, there was no statistically significant difference between the three groups (one-way ANOVA, F=6.24, p=0.099). Also, the Textbook preferring group watched significantly less surgery videos (Fisher's exact test=14.13, p=0.002) and perceived it more unethical compared to others (Fisher's exact test=6.65, p=0.033). Young surgeons preferred to consult their colleagues more to update themselves during the perioperative period.

In this survey, we also created six preferences from "Colleagues," "YouTube," and "Textbook" to describe YouTube's role in surgery education precisely in the current situation. Surgeons chose YouTube as the last of all options. It is clear that a significant number of surgeons currently do not use YouTube as the primary educational resource to update themselves preoperatively (Graphic 1). Still, most of them strongly support the development of YouTube as an educational resource (Graphic 2). They approve the broadcasting of surgical videos on YouTube directly (17.40%) or after the approval of a scientific committee (69.69%) due to the higher rate of encountering surgery videos that are not compatible with current scientific criteria (Graphic 2). This finding shows that they feel optimistic about YouTube for the future of surgical training.



Graphic 1. The order of preference of the methods used by surgeons to update their preoperative information.



Graphic 2. Participant opinions on broadcasting surgery videos on YouTube as educational materials.

DISCUSSION

This study investigated interest in YouTube among general surgeons in Turkey and found that 95.7% of the participants watched YouTube, indicating quite a high level of interest. Only 6.5% of the participants reported that they did not use YouTube to watch surgical videos, meaning the remaining 93.5% used it. Moreover, 28.3% stated that they watched it frequently. Among the general surgeons who participated in the survey, 52.2% reported that having a friend who performed a first-time surgery after watching it on YouTube, and 2.2% reported complications. These rates are striking results that show the impact of surgical videos on social media.

What could be driving physicians' interest in YouTube? Physicians are no different from other community members of the community, and it is effortless for anyone to access YouTube from computers, tablets and smartphones wherever the Internet is available. Access to the Internet is omnipresent in Turkey, including during travel, at home, in cafes and hospitals. Search for keywords via the search tab allows surgical videos to be accessed in seconds. There are other reasons for the popularity of surgical videos on YouTube; they are free to watch and require no subscription. Also, reading a book on a surgical technique can take hours, while watching a video on a surgical procedure can be completed in minutes, especially if the videos are summarised. The user can pause, slow down and rewind the video. YouTube videos can also feature subtitles and explanatory texts. The ease of learning with visuals and the perception of time also make videos more appealing than textbooks.

However, when physicians were asked about their preference for textbooks, consulting colleagues and watching YouTube videos as sources of assistance, most mentioned textbooks as their primary source, despite the advantages of videos. This result may be related to reliability. When participants were asked to rate the surgical videos on YouTube regarding compliance with scientific data, 39.1% reported having encountered videos that were not in accordance with scientific data. A potential disadvantage of YouTube for viewers is misinformation, as most videos do not list references and are not peer reviewed[10].

Can videos be assessed on YouTube? YouTube states that content that violates its community guidelines and policies is removed, restricted or blocked. YouTube also states that it prohibits content that defrauds, misleads, deceives or spams users, as well as content that contains violence, and that it has policies to protect children from sexuality, nudity and self-harm-related content. According to YouTube, it uses a combination of human employees and machine learning to identify potentially problematic content in order to swiftly remove videos that violate its policies, and it also leverages the YouTube community and experts in the Trusted Flagger programme to assist in identifying potentially problematic content through reporting[11]. Surgical videos can be evaluated for scientific accuracy based on user comments or user-indicated content appropriateness or for compliance with YouTube's policies. YouTube is no exception to the fact that social media is a potent medium for disseminating false information[12]. According to a study that analyzed 41 YouTube videos on prostate biopsies, the quality of the information was insufficient for patients to make informed decisions, and healthcare professionals should refer patients to the appropriate information sources[13].

As is known, ethics is a moral philosophy, and medical ethics examines the ethical aspects of the patient–physician relationship. The basic principles of medical ethics are based on justice, informed consent, beneficence, non-maleficence and respect for patient privacy. In the present survey, 35 (76%) respondents

reported they did not see any ethical problems with using surgical videos on social media. Social media platforms usually do not contain any videos that would allow identifying patients or blurring areas outside the surgery sites. However, even if the patient cannot be identified, there are frequent posts of surgical procedures involving intimate parts, which violate patient privacy. Perhaps most importantly, these shared videos contain no statement that patient consent has been obtained. Therefore, despite the results of the survey, the posting of surgical videos on YouTube is clearly a matter of ethical debate.

Among all participants, 69.6% reported that a qualified institution should assess videos before being posted and used as educational sources. As mentioned, these videos can be peer reviewed for ethical and scientific accuracy. Some universities in Turkey have official YouTube accounts. For instance, Ege University School of Medicine has a YouTube account (launched in 2018 with 205,190 views and 964 subscribers) that is mostly used for social events and promotion[14]. It is also observed that the Turkish Surgical Association has official Instagram, Twitter and Facebook accounts that are used for promotion and communication purposes[15].

YouTube is widely used to educate patient, the public and health professionals[16]. Medical students reported that they appreciated the conciseness, ease of access and use of educational videos and the ability to view them in various settings to support clinical experiences and reinforce learning[17]. Students and educators are increasingly using YouTube videos to complement other sources of medical education[18-20]. A recent survey of medical students, residents and general practitioners by the Canadian Medical Association found that respondents reported using an iPhone (53%), iPad (32%) or other smartphones or tablet devices (32%) for professional purposes[21]. A survey conducted by the Accreditation Council for Graduate Medical Education in the United States among faculty members, academics and resident physicians showed that 85% of respondents used smartphones, and more than half used these devices in clinical practice[22]. Educators and students widely use social media platforms for medical education. However, the presence of non-peer reviewed content on platforms such as YouTube is a disadvantage.

The COVID-19 pandemic led to several changes in education systems. In March 2020, the higher education institution in Turkey suspended education and switched from classroom education to online education based on the situation of the epidemic. Currently, a gradual transition to classroom education is underway[23]. During the pandemic, educators have utilized online learning and web-conferencing platforms such as Zoom, Google Hangouts and GoToMeeting while maintaining social distancing[24,25]. It has been observed that the use of the Internet and social platforms has increased, and education via social media can now be considered an alternative.

Finally, the age of technology has brought about many new ways to earn an income. Nowadays, it is possible to earn income on social media and networks using videos, photos and live broadcasts based on the number of views and subscribers[26]. Generating revenue from YouTube videos requires having a registered account, 4,000 hours of viewing time in the last 12 months and 1,000 subscribers, followed by specific review procedures by YouTube. Once people apply for and are accepted into the YouTube Partner Programme, they can start making money on YouTube[27]. The Turkish Employment Agency has recognized YouTubing (i.e., making money by producing content on YouTube) as a profession and started delivering training in cooperation with Google on 19th May 2017[28]. Based on an approximate number of 5,000 general surgeons in Turkey, it can be

assumed that these viewing numbers can be achieved and YouTubing can serve as a source of income for associations or content producers[9].

Our study is not without limitations. First, the small number of participating general surgeonscould limit the ability to generalize our findings. Second, it is possible that responses to the interview questions may include professional desirability and conformity bias, as surgeons may have been inclined to provide professionally acceptable responses.

In conclusion, the use of social media platforms such as YouTube has been increasing in all areas. The present study clearly showed that general surgeons are interested in watching surgical videos on YouTube and uploading them from time to time. These platforms can be accessed wherever the Internet is available, without any restrictions connected with space or time. However, surgical videos also have some disadvantages caused by a lack of peer review and ethical aspects.

Ethics Committee Approval: The present study was approved by the local ethical committee in session 10/06/2020 with the protocol number 192. The study was conducted in accordance with the principles of the Declaration of Helsinki.

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