

# Are Video Surgery Platforms Adequate and Useful to Urologists?

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education; YouTube.

## ABSTRACT

**Objective:** The aim of this study was to determine the video surgery platforms most frequently used by urologists and to evaluate the content.

**Methods:** Urologists working in various cities in Turkey were surveyed regarding viewing of urology videos online, the specific resources used, the quality of the websites and videos, and how they felt these videos contributed to their surgical knowledge.

**Results:** A total of 133 urologists completed the survey. Of the respondents, 87.2% reported watching videos of surgery, and 51.7% of the video watchers spent more than 1 hour per month watching these videos. Seventy-three percent of participants rated the contribution of videos to surgical know-how as “very” or “extremely” valuable. The most commonly watched platform was YouTube (84.5%), followed by websites of urological associations (Uresource, Uropedia, etc.) (64.7%), Medscape (21%), and WebSurg (3.4%). Of the respondents, 74.4% expressed great interest in more professional and reliable video websites.

**Conclusion:** Videos can provide noticeable benefits in the preparation phase of surgical procedures, and there is a clear interest in this format. Currently, YouTube is the most commonly used platform; however, it would be valuable if health professionals provided websites with a more systematic approach and reliable video content.

## INTRODUCTION

The widespread use of the Internet, technological advances, and easy access to multimedia have led to important changes and innovations in surgical training. The enhancement of surgical knowledge and experience has not only moved beyond the limits of operating rooms, but has now become even more accessible due to augmented reality simulators, multimedia-based training, and surgical training images available on the web.<sup>[1]</sup>

One advantage of the Internet is the simultaneous use of several media components. Examples include text, graphics, sound, animation, and video.<sup>[2]</sup> A multimedia approach to learning using a combination of visual and auditory data has been shown to have significant benefits to long-term memory.<sup>[3]</sup> Multimedia-based learning has become an important step in surgical training, and the number of Internet-based platforms continues to grow. These platforms offer access to many videos of various surgical procedures.<sup>[4]</sup> Studies have demonstrated that the use of such videos can be valuable in understanding complicated 3-dimensional anatomy as well as complex temporal and spatial events.<sup>[5,6]</sup>

In the literature, studies of various surgical branches have demonstrated the beneficial influence that multimed-

a-based learning methods available on the web have had on the surgical performance and skills of surgeons and medical students.<sup>[2,5-12]</sup> In a review assessing 81 articles on surgery videos, it was determined that more than 50% of the studies were carried out within the last 3 years and the growing interest on this topic was highlighted.<sup>[4]</sup> Surgical procedure videos are most commonly used in the preparation phase of surgical procedures. To the best of our knowledge, no studies exist specific to the field of urology regarding which platforms are used, how often, for which surgical procedures, and whether or not the resources available are adequate and reliable. Thus, the aim of this research was to investigate the use of and value to urology specialists of surgical videos on web platforms.

## MATERIAL AND METHODS

A questionnaire consisting of 13 items was created in Turkish to determine demographic data, the urological specialties of interest to the respondent, the frequency of video utilization, the specific video resources used, an evaluation of the quality of the videos, how much these videos have contributed to the respondent's surgical knowledge and skills, and the participants' interest in ad-

ditional video resources (Appendix). The question types were forced choice, scaled response, and open-ended. The survey was pilot-tested with 2 authors and revised before distribution via e-mail to more than 500 urology residents and specialists in different cities in Turkey through social networks focused on urology and digital platforms of medical associations. The survey was accessible for 1 month via SurveyMonkey. All of the participants were asked to fill out the survey completely; incomplete surveys were excluded from the study.

The data from the surveys were recorded and reviewed using IBM SPSS Statistics for Windows, Version 22.0 (IBM Corp., Armonk, NY, USA). The data were analyzed using descriptive statistics, as well as exploratory statistical analyses.

## RESULTS

A total of 133 urologists (16 residents and 117 specialists) completed the survey. The mean age of the respondents was  $42 \pm 11.4$  years. The mean length of professional experience was  $16.4 \pm 11.3$  years. Sixty-five of the participants (48.9%) were from either university or training and research hospitals, and 68 (51.1%) worked in state hospitals or private hospitals. The participants were most often interested in the subspecialties of endourology and urooncology (Fig. 1).

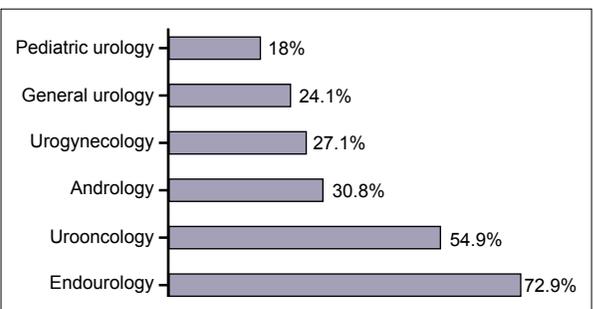
Of the total, 86 (64.7%) physicians indicated that they had actively participated in operations for more than 10 hours per week within the last year. In all, 47 (35.3%) replied that their surgical participation was less than 10 hours per week, 59 (44.3%) said between 10 and 20 hours, and 27 (20.3%) noted more than 20 hours per week. Of the 133 urology specialists who participated in the survey, 116 (87.2%) answered positively to the question, "Do you watch surgery videos on the Internet?" Table 1 illustrates the amount of time spent watching surgical videos among those who use the format (n=116) and the contribution of these videos to surgical knowledge and skills.

Data revealing the preferred web platforms among those who watch surgery videos (n=116) are provided in Figure 2. The most commonly watched web platform was YouTube, followed by the websites of professional urological associations (Urosource, Uropedia, etc.), and Medscape. WebSurg was mentioned by 3.4% of the respondents.

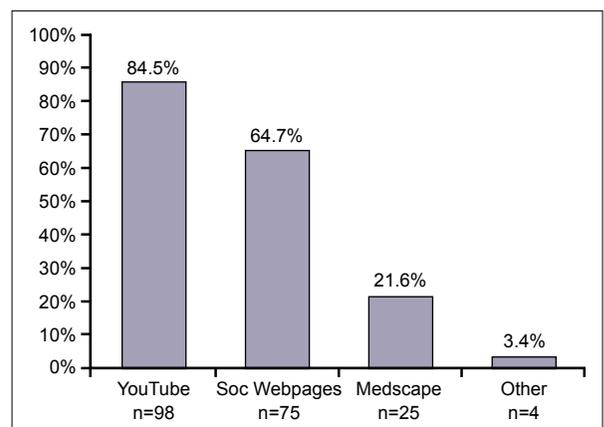
When asked if they would perform a surgical intervention they had no experience with based on watching videos, 13 of 116 doctors (11.2%) answered "no," 74 (63.8%) replied that it depends on the difficulty level of the intervention, and 29 (25%) stated that they would. There was significant interest in websites that are more professional in design and provide reliable content: 99 (74.4%) replied "extremely," 24 (18%) said "moderately," and only 10 (7.5%) of the participants answered "not at all." Table 2 shows

**Table 1.** Time spent watching surgery videos within one month and opinion of the contribution they offer to surgical knowledge and skills

	Video users (n=116)	
	n	%
Time spent watching surgery videos within 1 month		
0–1 hour	56	48.3
1–6 hours	57	49.1
>6 hours	3	2.6
Value of videos to respondent's surgical knowledge and skills		
None	0	0
Slight	1	0.9
Moderate	30	25.9
Very valuable	49	42.2
Extremely valuable	36	31



**Figure 1.** Distribution chart of a urological subdivisions of primary interest among participants.



**Figure 2.** Web platform rates used by specialists who watch surgical videos on the internet.

the response rates to a question about the quality of current websites with urological surgery videos. When asked if they thought it was valuable to include scientific video content in journals, 121 (91%) physicians agreed.

**Table 2.** Evaluation of current urological surgery video websites

	Insufficient		Moderate		Sufficient		Total
	n	%	n	%	n	%	
Content	32	24	88	66.2	13	9.8	133
Variety	56	42.1	69	51.9	8	6	133

## DISCUSSION

Surgery is a complicated procedure that requires a good preparation, adequate exercise and a high degree of concentration. Surgical videos provide can significant benefits to surgeons in the preparation phase of surgical interventions. Our survey results indicated that these platforms were used by participants and that more than half of the respondents devoted more than 1 hour every month to watching these videos. The effect on surgeons is supported in the response of 88% who said they would perform an operation with which they were inexperienced after watching videos, or consider it, depending on the level of difficulty the procedure. The most frequently used source for videos in our study was YouTube. As YouTube is the second most visited site in the world, including significant viewing in Turkey,<sup>[13]</sup> it is not surprising that our survey participants use this source frequently. It obviously has the advantages of easy and free access to videos and extensive content.<sup>[14,15]</sup> However, while medical knowledge must be supported by data that are proven statistically in order to be included in medical literature, the reliability of these types of video websites is controversial in the absence of an editorial filter, reference sources, and certain quality standards. This is also supported by the fact that 74.4% of the participants indicated that there is a need for a video website with high-quality content that is prepared by expert surgeons and is evidence-based and reliable.

Some studies have assessed the adequacy of various surgical procedures presented in YouTube videos.<sup>[16–20]</sup> The common view suggests that while YouTube has a fairly extensive surgical video library, the video quality varies greatly, depending on the recording device used. The scoring system used here can also be used to help evaluate videos. A high point score and an upload by health professionals are rated as more reliable sources.

An article related to producing an ideal surgical video<sup>[21]</sup> pointed out the importance of high-definition camcorders, good lighting, and camera angle; however, our review found no studies in the literature on standardization for an optimal surgical video.

It is also possible to access surgical data in different media formats through several Internet platforms other than YouTube. The more systematic websites of urology associations with videos prepared for healthcare profes-

sionals are also being used by specialists (e.g., Uropedia, Urosource). Yet, June 2018 data from Urosource,<sup>[22]</sup> the educational video content website of the European Association of Urology, suggest that it is less frequently used despite rich content of 21438 webcasts and 691 surgical videos. This may be because Urosource is less well-known than YouTube, as well as requiring membership and payment. Similarly, Uropedia,<sup>[23]</sup> the educational video content website of the Association of Urological Surgery, is a local resource in the Turkish language used by the participants and contains 645 webcasts and 66 surgical videos according to June 2018 data. It also has an application for smartphones and tablets, which is advantageous for ease of access. A survey of general surgeons demonstrated that 90% of respondents used videos preoperatively. YouTube was the most frequent choice for 86%, followed by the websites of medical associations and the Surgical Council on Resident Education (SCORE) portal.<sup>[9]</sup> The SCORE portal prioritizes the education of associates, and offers substantial content on basic surgical procedures.<sup>[24]</sup> Among our survey participants, 21% reported using the Medscape database, which was established in 1995 and addresses all medical branches, contains mainly current medical news, expert opinions, and training videos.

Few of our respondents indicated that the available videos were sufficient in terms of variety and content. This suggests that it would be helpful for medical associations to improve their surgical video websites.

## CONCLUSION

The rate of video recording of surgical procedures and posting them on various web platforms is gradually increasing, due, in part to the growing use of endoscopic procedures, the impact of technological developments, and as a legal necessity in case of possible malpractice.<sup>[25]</sup> As digital platforms become more varied and specialized, we argue that the use of professional platforms may reduce the utilization of global websites such as YouTube and thereby prevent potential information pollution, provided that they become richer in content and variety while meeting certain video quality standards and observing evidence-based medicine principles with a proper editorial review and a separate section for the education of residents.

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### Ethics Committee Approval

This is a survey study conducted on physicians. Therefore, no ethics committee approval was obtained.

### Peer-review

Internally peer-reviewed.

### Authorship Contributions

Concept: U.C.; Design: U.C.; Data collection &/or pro-

cessing: U.C., F.N.; Analysis and/or interpretation: U.C., F.N.; Literature search: U.C.,F.N.; Writing: U.C.; Critical review: U.C., F.N.

#### Conflict of Interest

None declared.

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## Cerrahi Video İçerikli Platformlar Ürologlar İçin Kullanışlı ve Yeterli mi?

**Amaç:** Bu çalışmada ürologlar arasında en çok kullanılan ürolojik cerrahi video platformunu ve bunların içerik ve çeşit açısından yeterliliğini belirlemeyi amaçladık.

**Gereç ve Yöntem:** İlgilenilen ürolojik branş, video kullanım sıklığı, kullanılan video kaynakları, üroloji spesifik video bazlı İnternet sitelerinin yeterliliği ve videoların cerrahi bilgi ve birikime olan katkısını değerlendiren Türkçe dilinde bir anket oluşturuldu. Anket formu farklı illerde çalışan üroloji asistan ve uzman hekimlerine e-posta yoluyla dağıtıldı.

**Bulgular:** Toplamda 133 ürolog anketi tamamlandı. İnternet ortamında ameliyat videosu izlenme oranı %87.2 idi. Video izleyicileri arasında yapılan değerlendirmeye göre katılımcıların %51.7'si ayda bir saatten fazla süresini videolara ayırdığını belirtti. Katılımcıların %73'ü bu videoların cerrahi bilgi ve beceriye olan katkısının 'çok' ve 'ileri derecede' olduğunu bildirdi. En çok izlenen web platformu %84.5 ile YouTube iken, bunu %64.7 ile dernek siteleri (Urosource, Uropedia vs.), %21 ile Medscape ve %3.4 ile WebSurge takip etmekteydi. Katılımcılar %74 oranında daha sistematik ve güvenilir video sitelerine 'ileri derecede' ihtiyaç olduğunu düşünmekteydi.

**Sonuç:** Cerrahi prosedürlere hazırlık aşamasında da video kullanımının açık ve fark edilir faydaları olduğu bilinmekte ve hekimlerce sıklıkla kullanıldığı görülmektedir. YouTube en çok kullanılan platform olarak tespit edilse de sağlık profesyonelleri tarafından hazırlanmış, daha sistematik ve güvenilir İnternet sitelerinin daha popüler olması gerektiği düşüncesindeyiz.

**Anahtar Sözcükler:** Cerrahi video; multimedia; üroloji eğitimi; YouTube.

## APPENDIX\*

1. **Age** .....
2. **How many years of surgical experience do you have? Residency..... Speciality.....**
3. **Please indicate the type of hospital you currently work in.**  
 Training and research hospital    University hospital    Private hospital    Public hospital    Other (.....)
4. **Please indicate the urological subspecialties you are particularly interested in. (You may choose more than one.)**  
 Urooncology    Stones and Endourology    Urogynecology    Andrology    Pediatric urology    General urology
5. **In the last year, how often did you actively participate in surgery per week?**  
 <10 hour                      10–20 hour                      >20 hour
6. **Do you watch surgical videos on the Internet? (If no,continue to question 11.)**  
 Yes                      No
7. **On average, how much time do you spend watching surgical videos in 1 month?**  
 None    0–1 hour    1–6 hours    >6 hours
8. **Which web platforms do you prefer? (You may choose more than one.)**  
 None    YouTube    Medscape    Urological society webpages (Urosource, Uropedia etc.)    Other (.....)
9. **How valuable would you say the contribution of these videos was to your surgical knowledge and skills?**  
 Not at all              Slight              Moderate              Very              Extremely
10. **Would you perform a surgical operation you are inexperienced with based on watching videos?**  
 No              It depends on the difficulty level of the intervention              Yes
11. **Would you be interested in a video website that is evidence-based and prepared more systematically by expert surgeons?**  
 Not at all              Moderately              Extremely
12. **What do you think about the current websites with urological surgery videos?**  
 Video content              Insufficient              Moderate              Sufficient  
 Video variety              Insufficient              Moderate              Sufficient
13. **Do you think it is valuable to include scientific video content in journals?**  
 Yes                      No

\*This questionnaire was translated from Turkish.