

YouTube is the Most Frequently Used Educational Video Source for Surgical Preparation

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OBJECTIVE: The purpose of this study was to evaluate surgical preparation methods of medical students, residents, and faculty with special attention to video usage.

DESIGN: Following Institutional Review Board approval, anonymous surveys were distributed to participants. Information collected included demographics and surgical preparation methods, focusing on video usage. Participants were questioned regarding frequency and helpfulness of videos, video sources used, and preferred methods between videos, reading, and peer consultation. Statistical analysis was performed using SAS.

SETTING: Surveys were distributed to participants in the Department of Surgery at the University of Iowa Hospitals and Clinics, a tertiary care center in Iowa City, Iowa.

PARTICIPANTS: Survey participants included fourth-year medical students pursuing general surgery, general surgery residents, and faculty surgeons in the Department of Surgery. A total of 86 surveys were distributed, and 78 surveys were completed. This included 42 learners (33 residents, 9 fourth-year medical students) and 36 faculty.

RESULTS: The overall response rate was 91%; 90% of respondents reported using videos for surgical preparation (learners = 95%, faculty = 83%, $p = \text{NS}$). Regarding surgical preparation methods overall, most learners and faculty selected reading (90% versus 78%, $p = \text{NS}$), and fewer respondents reported preferring videos (64% versus 44%, $p = \text{NS}$). Faculty more often use peer consultation (31% versus 50%, $p < 0.02$).

Among respondents who use videos ($N = 70$), the most used source was YouTube (86%). Learners and faculty use different video sources. Learners use YouTube and Surgical

Council on Resident Education (SCORE) Portal more than faculty (YouTube: 95% versus 73%, $p < 0.02$; SCORE: 25% versus 7%, $p < 0.05$). Faculty more often use society web pages and commercial videos (society: 67% versus 38%, $p < 0.03$; commercial: 27% versus 5%, $p < 0.02$).

CONCLUSIONS: Most respondents reported using videos to prepare for surgery. YouTube was the preferred source. Posting surgical videos to YouTube may allow for maximal access to learners who are preparing for surgical cases. (J Surg Ed ■■■■■. © 2016 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

KEY WORDS: surgical education, surgical preparation, YouTube, video

COMPETENCIES: Patient Care, Medical Knowledge, Interpersonal and Communication Skills, Professionalism, Practice-Based Learning and Improvement, Systems-Based Practice

INTRODUCTION

Medical professionals today have access to a multitude of training tools. As Internet access is now commonplace and portable electronic devices are always within reach, the use of online resources is part of the educational armamentarium. Surgical education, in particular, has been drastically changed by the availability and vast capabilities of the Internet.¹ Videos are one such online tool used in the medical field for preparing for medical procedures, particularly by surgical residents.²

Videos are an example of multimedia learning—the incorporation of both pictures and words that may be presented in various forms to facilitate learning. Studies have shown the benefits of multimedia in the learning process, specifically in converting cognitive input into

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long-term memory, indicative of learning.³ Many surgical procedure videos are available, and benefits of using these videos in the surgical field have been shown, providing further support to multimedia in learning, and understanding complex 3-dimensional surgical procedures.⁴⁻⁶

Considering the benefits of videos and their convenience, it seems evident that surgeons would use videos while preparing for surgical procedures. However, it has yet to be explored what specific video sources surgeons are using. Additionally, it is unknown how commonly videos are used when compared with other preparation methods, such as reading text or consulting with others. The purpose of this study was to determine how surgical faculty, residents, and medical students prepare for surgical procedures, specifically focusing on video usage.

MATERIAL AND METHODS

Surveys were created and distributed to general surgery faculty and residents, and fourth-year medical students pursuing general surgery. The survey contained questions regarding demographics, frequency of video usage, sources of videos,

procedure type prepared for using videos, helpfulness of videos, and preference in method(s) of surgical preparation. Question types included forced choice, scaled response, and open-ended. Each version contained the same 12 questions regarding surgical preparation, but demographic questions slightly differed for each group (Fig. 1). The survey was pilot-tested with two of the authors and then revised before distribution.

This study received exempt status from the institutional review board. Surveys were distributed to the three target groups at a single academic medical center during faculty meetings, resident meetings, and in person. Participation was voluntary and all responses were anonymous.

The SAS System (v9.3) was used to perform Chi-square and Fisher exact tests. Responses were compared between “learners” (residents and medical students) and faculty. Statistical significance was defined as a 2-sided $p < 0.05$.

RESULTS

A total of 78 surveys were completed. The overall response rate for the surveys was 91%. This included 42 learners (33

1. Have you ever used videos to prepare for surgery? Yes No
 If yes, continue to question 2.
 If no, why not? _____
 If no, would you be interested in using videos to prepare for surgery? Yes No
 If no, how do you otherwise prepare? (circle all that apply) Reading Consult with Peers Other: _____
2. From what sources have you utilized videos? (circle all that apply)
 YouTube Society webpages (SAGES, etc.) SCORE portal Commercially available videos (purchased)
 ORLive Access Surgery Procedures Consult MedClip MedlinePlus Other: _____
3. Which source do you use most often? _____
4. For what type of cases have you prepared using videos? (circle all that apply)
 Endoscopic procedures Laparoscopic or thoroscopic procedures Open procedures Robotic
5. For what types of cases have you prepared using videos? (circle all that apply)
 Minimally Invasive Burn Breast Colorectal Hepatobiliary Plastics Thoracic
 Trauma/Emergency Surgery Critical Care Endocrine Vascular Other: _____
6. How often do you use videos to prepare for surgical cases?
 Less than once per month Once/twice per month Once per week Several times per week
7. When you prepare for surgical cases, what percentage of preparation time is spent watching videos?
 0-25% 25-50% 50-75% 75-100%
8. When preparing for surgical cases, which do you prefer? (circle all that apply)
 Watching videos Reading Consult with Peers Other: _____
9. How helpful are videos for preparing for surgical cases? (1 is not helpful, 5 is very helpful)
 1 2 3 4 5
10. In what ways do you find videos to be helpful? _____
11. Are there any limitations to using videos to prepare? _____
12. Additional Comments: _____

FIGURE 1. Survey content questions were identical for medical students, residents, and faculty. Demographic questions differed slightly for each group and are not shown.

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