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Use of YouTube™ as a self-directed learning resource in oral surgery among undergraduate dental students: a cross-sectional descriptive study

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Abstract

This cross-sectional descriptive study was done to assess the use and effectiveness of YouTube™ as a learning resource for oral surgery by fourth and final-year dental students at a single university. A study-specific survey was distributed to fourth (n = 83) and final-year (n = 86) dental students during a six-week period. In total, 122 (72%) responded. Most (n = 82, 67%) used YouTube™ as study material, and 50 (41%) stated that the videos had influenced their practice. Generally, the quality was rated as good, and YouTube™ was a popular and influential learning resource. However, the material was not always consistent with that of the curriculum, and students should use it with caution as there is no quality assurance with respect to educational content or learning outcomes. Institutions should provide recorded learning material and teach students skills in the critical appraisal of contemporary teaching materials such as open-resource videos.

Keywords: Surgery; Oral; Education; Undergraduate

Introduction

YouTube™ is one of the most popular media services and is available to anyone with access to the Internet.[1–4] The option to watch educational videos at any time allows undergraduates to spend more time on clinical work, which is restricted to specific times of the day,[5,6] and can support independent learning.[7]

Critics of internet-based learning argue that uploaded content is not regulated, and can result in unsubstantiated, unscientific, or even incorrect opinions being conveyed to viewers.[8] More importantly, as many videos do not comply with local guidelines, they could have unintended negative consequences.[9]

YouTube™ videos on oral surgery vary in their credibility and informational value.[10] Some are excellent in terms of content and presentation, but others do not meet the standards expected in the UK. Analysis of the top 97 YouTube™ videos on oral implantology showed that many were commercially biased and had limited educational value, despite the inclusion of high-quality footage.[11] Most had been uploaded by individual dentists and implant manufacturers rather than by educational institutions.[11]

In this study we have explored the use of YouTube™ as an online, self-directed learning resource for oral surgery by undergraduate dental students at a single university.

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Table 1
Comparison between students' responses to received teaching and self-directed learning about oral surgery. Data are number.

	Year of study	
	Fourth, n	Final, n
Have you received teaching on the subject of Oral Surgery?		
Yes	65	49
No	4	4
Not sure/cannot remember	0	0
Have you undertaken any self-directed learning on the subject of Oral Surgery?		
Yes	66	53
No	3	0
Not sure/cannot remember	0	0

Table 2
Students' responses to the question: "How do you rate the quality of the recorded material (videos) provided by the school of dentistry?". Data are number.

		Content of the video			
		Excellent, n	Good, n	Acceptable, n	Poor, n
Presentation of the video	Excellent	8	0	0	0
	Good	0	9	0	0
	Acceptable	0	0	1	0
	Poor	0	0	0	2

Table 3
Students' responses to the question: "How do you rate the quality of the YouTube™ videos you viewed?". Data are number.

		Content of the video			
		Excellent, n	Good, n	Acceptable, n	Poor, n
Presentation of the video	Excellent	13	0	0	0
	Good	0	30	3	0
	Acceptable	0	17	18	0
	Poor	0	0	0	1

Material and methods

We used a university-approved web-based survey tool to design an online questionnaire (16 questions) to explore fourth and final-year undergraduate dental students' perceptions of the teaching they were given on oral surgery and their use of YouTube™ to learn about it. The researchers emailed the course coordinator who forwarded it with a link and an information sheet to the students, inviting them to participate.

Results

Surveys were sent to 169 dental students (83 in the fourth, and 86 in the final year). Of them, 122 completed the survey (72%): 69 (83%) in the fourth and 53 (62%) in the final year. Most (n = 114, 93%) had had lessons about some form of oral surgery, and the responses of both groups were similar. Responses to questions about self-directed learning in oral surgery were also similar. A total of 79 (65%) found practical sessions beneficial (Table 1).

Most students (n = 83, 68%) had not been given any videos on oral surgery by the faculty, and a similar proportion (n = 82, 67%) had studied oral surgery procedures on YouTube™. A total of 110 (90%) thought that videos were beneficial. Responses regarding the quality of those provided by the university (when available) and those on YouTube™ are summarised in Tables 2 and 3.

Most students (43/82) had found videos on only a few of the procedures they had searched for, 27/82 had found most, and 12/82 had found them all. Administration of local anaesthetic was searched for most often, followed by intra-alveolar exodontia (Table 4).

A total of 33 students thought that the YouTube™ videos were not consistent with the teaching they had been given. Fifty responded that the videos had, to some extent, influenced their practice.

Discussion

Oral surgery primarily involves practical procedures and skills, which are difficult to learn from written materials alone. Students thought that videos were helpful, and that practical sessions were the best way in which to learn, but also thought that the school of dentistry had not addressed the need for them. Previous studies that reported that most dental students used the Internet for personal use only may have been conducted before it was well established.[12–14]

No students reported that videos formed part of their lessons, despite an indication that they were provided by the university. A study of 221 faculty members from five North American dental schools found that only 21.4% of faculties incorporated YouTube™ videos into their lectures, and that one-third did not think that contemporary media websites had any educational benefit.[15]

Many students thought that the videos on YouTube™ were not consistent with the content of their lessons. Reviews of the educational content of such material across a diverse range of subjects have shown similar results and most have deemed it to be of substandard quality and potentially misleading.[16–19]

YouTube™ and other websites used for self-directed learning are open resources that have no quality assurance. There is no correlation between the quality of a video and its position on the list of search results and, as viewers tend to choose from the first page of their searches it is logical to conclude that the quality is likely to be inferior.[19] This is potentially worrying when most students indicated that YouTube™ videos had influenced their practice. Other authors have suggested use of an "educational" filter,[10,19] but currently, such material is not monitored and videos are not peer-reviewed. While at dental school, experienced tutors supervise the students, demonstrate the procedures, and correct any unorthodox clinical habits, but once students graduate and practise independently, this would be difficult to address.

Some of the differences between the procedures viewed and those that were taught could be explained by the fact that practices that are standard in some parts of the world may not be so in the UK. The students, however, were not asked to report on the sources of the videos they viewed. They were also not asked to specify the time at which the videos were viewed, so differences could also be the result of recall bias. Videos might have been watched a long time before participation in the survey, and some could have been seen before there had been any formal teaching on the subject. Also, students attend oral surgery lectures in rotations, so their exposure to and retention of existing teaching material may have fluctuated when they watched them. Students might also have viewed videos from online platforms other than YouTube™, so their answers might have inadvertently related to other sites.

One might expect students to search for procedures that were not sufficiently covered during their practical teaching sessions, but the most popular searches were for basic techniques. This could be because they wished to become more competent, to improve on the basics before embarking on more advanced procedures, or find an alternative approach. On the other hand, they could be compensating for a lack of experience.

The inclusion in libraries of recordings that comply with the standards outlined by the General Dental Council (UK) would probably improve learning and provide the students with standard lessons on the basics of oral surgery. One option would be to develop a collaborative library that could be shared by all the dental schools in the UK, as the production of high-quality educational videos requires substantial time and investment. This would not be a replacement for practical experience (which is invaluable) but would help to address the circumstantial limitations of real-time teaching that has to rely on the availability of patients. YouTube™ could still be used, as it increases choice and the ease with which students can navigate their online studies.

At this stage in their training, students should be able to recognise and avoid material that does not comply with standard practice in the UK. The skills needed, which are similar to those used for the critical review of academic publications, are already being taught to undergraduates. Two previous cross-sectional studies showed that most students did not have the confidence to appraise the accuracy of online information,[12,13] although it did not seem to deter them from using the Internet.[12] Both, however, were conducted more than 10 years ago before critical appraisal formed part of the curriculum.

Our study has several limitations. It included students at only one university, and the survey was based on a non-validated, self-designed questionnaire. Measurement of the videos' quality was based on the students' ability to judge the material, and rubrics were not provided to aid evaluation. We also did not ask staff in the dental faculty about the use of videos in the lessons, and did not investigate the use of YouTube™ by men and women. Future studies could address all these points.

In conclusion, teaching methods evolve over time. YouTube™ could have a complementary role in oral surgery curricula, but should not be used without validated instructional material. To prevent the propagation of bad practice, universities should provide recorded material of their own, and teach students to review videos critically.

Conflict of interest

We have no conflicts of interest.

Ethics statement/confirmation of patients' permission

Ethics approval was obtained from the University of Manchester Research Ethics Committee (reference number: 15521). Patients' permission not required.

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