

Will “Hybrid” Meetings Replace Face-To-Face Meetings Post COVID-19 Era? Perceptions and Views From The Urological Community



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OBJECTIVE	To understand the preference and role of ‘hybrid’ urological meetings compared to face-to-face and online meetings during and after COVID-19 pandemic. The secondary outcome was finding out the most preferable webinar setting.
METHODS	An online global survey was done between June 06 and July 05, 2020, using SurveyMonkey. The target participants were urology healthcare providers. The survey was disseminated via mailing lists and the Twitter platform.
RESULTS	A total of 526 urology providers from 56 countries responded to the survey and it was completed by 73.3%. Participants’ overall experience was better in a face-to-face meeting, followed by a hybrid and webinar only meeting. While opportunities for networking was identified as high in face-to-face meeting, online webinars were more cost effective, and learning opportunity and reach of audience was higher for hybrid meetings. For online webinar format, Zoom platform was used by 73% and majority (69%) saw it on their laptop or desktop. The preference was for a 1-hour webinar in the evenings with 3-5 speakers. Urology residents rated face-to-face meetings to have better cost-effectiveness when compared to consultants. Post COVID-19, more than half of all respondents would prefer hybrid meetings compared to the other formats.
CONCLUSION	While there will be a place for face-to-face meetings, COVID-19 situation has led to a preference towards hybrid meetings which is ideal for a global reach in the future. It is plausible that most urological associations will move towards a hybrid model for their meetings. UROLOGY 156: 52–57, 2021. © 2021 Elsevier Inc.

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Continuing Medical Education (CME) is an essential method for physicians to keep up-to-date with new pertinent information to their practices. Most medical organizations require their members to obtain some form of CME after board certification. CME credits are usually achieved by participation in conferences, seminars, and online meetings (webinars) accredited for such purpose. During the COVID-19 pandemic the 2020 European Urology Association (EAU) Annual Congress held virtually. The 2020 in-person American Urological Association (AUA) meeting was also cancelled and a substantial portion of the meeting, courses and workshops were converted to an online, web-based format. The gap created in traditional education during the COVID-19 pandemic had to be quickly filled by innovative solutions to provide urologists opportunities for CME, networking, and collaborative research. To provide medical

education compliant with social distancing, not only medical associations but also scientific journals increased the use of online education in form of webinars.¹

Online platforms have been increasingly adopted for medical education because it can provide high educational value and, at the same time, eliminate geographic restrictions and achieve a higher audience.² Online platforms were previously recognized as an effective teaching method for medical students and residents, providing medical education in a more accessible format, and facilitated feedback.^{3,4} Several studies recommend the use of new teaching technologies for the new generations.^{4,6} The combination of clinical cases, explanation of content, and interactivity allow students to use previous knowledge, receive immediate formative feedback, and reflect on their mistakes. On the other hand, webinars and other online platforms can be available to the public without proper vetting of the scientific content, without appropriate disclosure of conflicts of interests, and adequate format for learning.

During the COVID-19 pandemic, there was a significant increase in online webinars, lectures, and other online learning opportunities been broadly available and advertised in Social Media and via urological associations and societies. Given the choices with face-to-face and online formats, there is a dilemma for the urologists about the format that works best for them. We wanted to understand the preference and role of 'hybrid' urological meetings/conferences compared to face-to-face and online (webinar) format during and after COVID-19 pandemic. The secondary outcome was finding the most suitable webinar setting.

METHODS

Survey Overview and Content

A structured online survey to investigate and compare the utility of webinars and face-to-face conferences was developed using a modified Delphi method, which had been widely used in previous surveys^{7,8}. The survey content was initially drafted by the steering committee (ZH, VG, JYCT, BS), circulated, and reviewed by the Urology and Social Media (UroSoMe) and International Training and Research in Uro-Oncology and Endourology (iTRUE) working groups. The survey was then finalized, covering the following sections: (1) Demographics, (2) Face-to-face conferences, (3) Online webinars, (4) Hybrid conferences, and (5) Features of an optimal webinar. The study was approved by the Survey and Behavioral Research Ethics Committee of the Chinese University of Hong Kong (Reference: SBRE-19-731). The complete set of the questionnaire can be found in the Appendix.

Study Population

The target study population were nurses (urology nurse specialists and advanced practice providers), residents (Urology Trainees, Registrars, and Fellows), and urologists (consultants and practicing urologists).

Survey Platform and Data Collection

The survey can be accessed at <https://www.surveymonkey.com/r/K26B5RQ>. Implied consent was assumed when the respondent proceeded to registration and completion of the survey. Answers

to all questions were mandatory; otherwise, the survey could not have proceeded. The survey was anonymous. IP restrictions were implemented, so 1 IP address could only complete the survey once. All data were collected within the SurveyMonkey (San Mateo, CA) system, and only the study investigators could access these data. All IP addresses and responses were removed from publicly available data.

Survey Dissemination

The survey was disseminated primarily via mailing lists and the Twitter (San Francisco, CA) platforms of iTRUE Group and UroSoMe, Urology Society of India, Society of Urological Surgeons in Turkey, and Societe Internationale d'Urologie. The first invitation to participate in the study was sent out on June 06, 2020. At least 1 reminder was sent out thereafter.

Endpoints

The primary outcome was to understand the expectations, preference and role of hybrid meetings compared to face-to-face meetings or webinars only meeting. The secondary outcomes were to see the most preferable webinar setting.

Statistics

Heat maps of countries and continents in the world-scale were created to show the respondents' geographical location. Categorical data were presented with counts and percentages. The normality assumption of the continuous data was verified with the Shapiro-Wilk test. Both continuous data and Likert-like scale questions were analyzed with non-parametric methods. Missing answers were counted as "no answer" in the related item. The Relative Importance Index was calculated for the questions that could clarify the factors affecting the choices for meeting types, and the ranking of each question was made accordingly. A comparison of categorical data was performed using the Chi-square test. A comparison of answers to Likert-like scale questions was performed using the Mann-Whitney *U* test. A multivariate logistic regression analysis was performed to elucidate the factors in preferring a face-to-face meeting or webinar. Data are freely available at Mendeley Data (<https://data.mendeley.com/datasets/22f44cv5s9/1>).⁹

RESULTS

The survey was carried out between June 06, 2020, to July 05, 2020. A total of 526 people responded to the survey questionnaire. 386 (73.38%) responders from 56 different countries (Table 1 and Supplementary Figure 1) completed all the questions. Among them *n* = 283 (73.3%) were practicing urologists or consultants, *n* = 95 (24.6%) registrars/trainees and 8 (2.1%) were advanced practice/nursing providers. 350 (91%) respondents were males. A little above quarter were aged more than 50 years of age, followed by ages between 30-39 years (36%), 40-49 (31%), and the remaining were below 30 years (Table 1). Nearly half of the participants were located in Asia (*n* = 172, 44%), followed by Europe (*n* = 121, 31%), South-America (*n* = 59, 15%), North-America (*n* = 27, 7%) and Africa (*n* = 7, 2%) (Table 1 and Supplementary Figure 1). Almost half of them had more than 10 years of experience in the field of urology (11-15 years; *n* = 109, 28%, 16-20 years; *n* = 41, 10%, more than 20 years; *n* = 92, 24%) than the others (6-10 years; *n* = 77, 20%, less than 5 years; *n* = 109, 28%).

Table 1. Demographics of respondents

Demographic information	Percent (%)	Frequency (n = 386)
Gender		
Male	90.7	350
Female	9.3	36
Age (years)		
<30	6.5	25
30-39 years	37.6	145
40-49 years	30.6	118
50-59 years	17.1	66
60 years and above	8.3	32
Work experience (Years)		
< 5 years	28.2	109
6-10 years	19.9	77
11-15 years	17.4	67
16-20 years	10.6	41
>20 years	23.8	92
Type of professional title		
Consultant	73.3	283
Resident	24.6	95
Urology Nurse	2.1	8
Sub-specialty		
General Urology	65.0	251
Stones	53.4	206
BPH	46.1	178
Oncology	45.6	176
Infertility Sexual Medicine	20.5	79
Female Functional Urology	18.1	70
Pediatric Urology	12.2	47
Renal Transplantation	10.1	39
Reconstructive Urology	3.4	13
Minimal Invasive Urologic Surgery	1.0	4
AV Fistula Surgery	0.3	1

In 2019, 319 (82%) responders attended at least 1 face-to-face meeting per year (Fig. 1). During the COVID-19 pandemic, 371 (96%) reported attending an average of 10 webinars up to survey completion (Fig. 1). Respondents' preferences for hybrid meetings (face-to-face plus webinar) were also evaluated (Fig. 1).

When asked about details comparing the different aspects of the face-to-face, webinars, and hybrid meetings, the results obtained were as follows; almost 90% of the participants found the webinar as cost-effective followed by hybrid method and face-to-face meetings. Additionally, most of the participants found learning opportunities better in hybrid meetings and webinars than face-to-face format. However, the opportunities for social networking were identified as high in the face-to-face setup, more than hybrid and webinar only format. Also, the reach of the audience was found higher in hybrid and face-to-face conference than webinars. The overall experience of participants was better in the face-to-face conference followed by hybrid conference and webinar (Fig. 1).

The participants had a variety of concerns while attending conferences. For face-to-face conferences and hybrid meetings, the quality of the speaker, up-to-date information, and scientific values was important in descending order. In contrast, for the

webinars, the cost-effectiveness, patient privacy, and quality of speakers were the more important factors (Table 2).

Moreover, after the COVID-19 pandemic, the conference format of choice was a hybrid conference (n = 199, 51%) followed by webinar only format (n = 95, 25%). Zoom was the most preferred online platform (n = 283, 73%), and laptop/desktop (n = 267, 69%) were the most preferred devices for connecting to the webinars. Almost half of the participants believed (n = 196, 51%) that a 1-hour webinar was ideal and preferably held in the evening time (n = 277, 72%). English, the most preferred language for the webinar (n = 352, 91%), and 3-5 speakers (n = 242, 62%) were mentioned as appropriate for each meeting. Live webinars were better than pre-recorded ones for 246 (63%) responders (Table 2).

Logistic regression analysis of the 5-point Likert scale rating factors that may influence the preferences revealed that only the "overall experience" question domain to have an impact on preferring face-to-face meetings over webinars (P-value <.001, OR 5.7 95% CI 2.7-12.0).

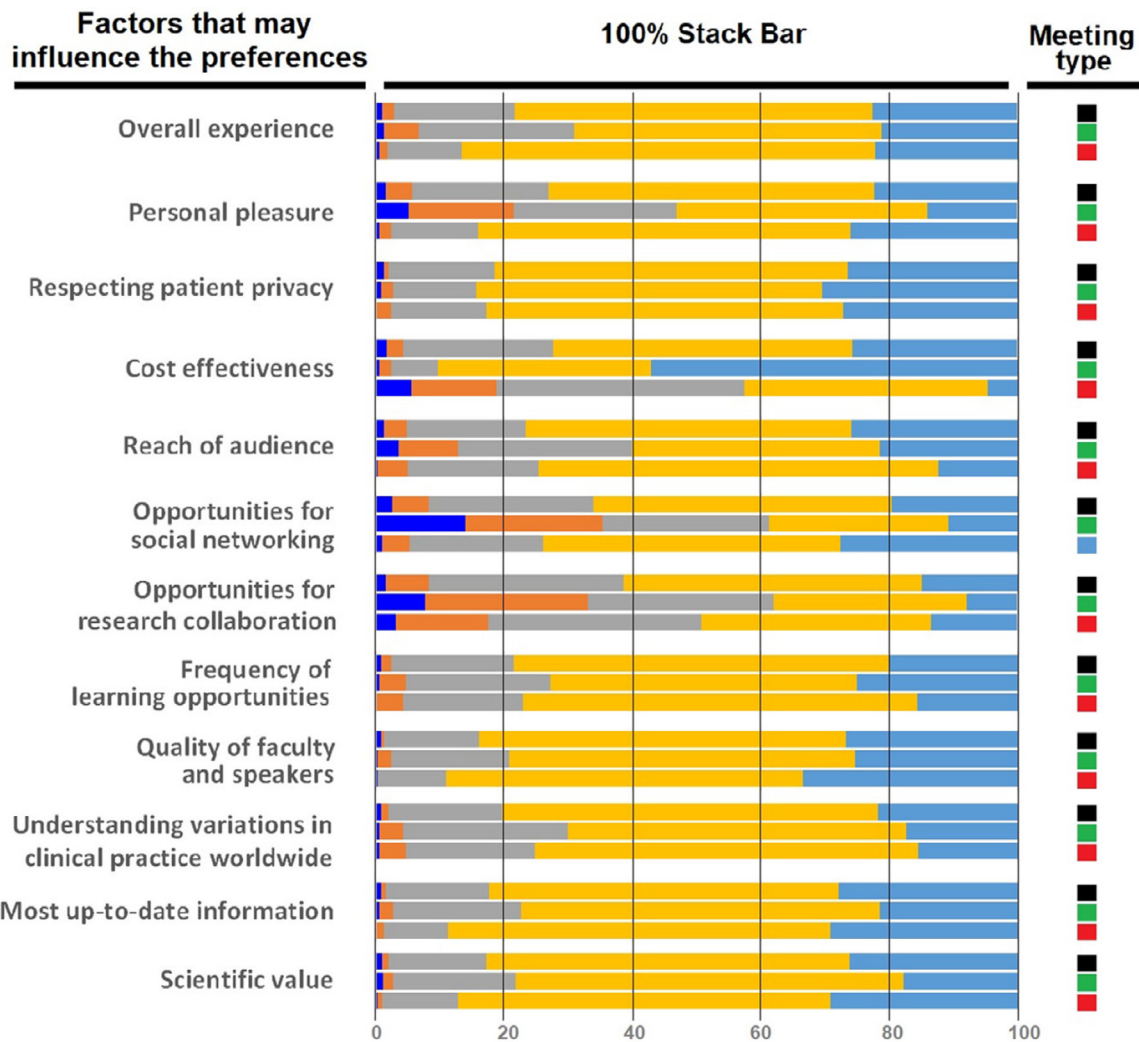
Compared to consultants, urology residents/registrars/fellows rated face-to-face meetings to have better cost-effectiveness (P: .048; median (IQR)). On the other hand, urology residents/registrars/fellows rated both the opportunities for social networking (P: .004; median (IQR)) and the personal pleasure (P: .02; median (IQR)) to be better in the webinars and the rest of the domains as similar (Supplementary Figure 2)

Respondents that preferred face-to-face meetings over a webinar were found to have a significantly different perception for all assessment questions for different meeting types (Supplementary Figure 3). When asked if there would be a switch in preferences following the COVID-19 era, 49.5% of the respondents that preferred face-to-face meetings, and 54.3% of the respondents that preferred webinars told that they would prefer hybrid meetings instead. Interestingly, 9.9% of the respondents that preferred face-to-face meeting and 1.2% of the respondents that preferred webinars said that they would switch to other meeting types (P: <.001) (Supplementary Figure 4).

DISCUSSION

Medicine is continually being renewed and refined. Physicians depend on CME to develop, maintain, and increase knowledge and to ensure competent practice. Traditionally, CME is mostly achieved through face-to-face meetings. According to our survey, urologists attend a median of 1 international face-to-face events per year, but 1 may be present in more than 2 congresses if we consider the national society meetings and local reunions or meetings.

AUA and EAU conferences attendance may reach more than 15,000 people from more than 100 countries. As one could expect, in-person meetings are considered good or very good scientific value by the vast majority of the respondents (89%). However, AUA and EAU meetings last 4-5 days, and one may need to dedicate almost a full working week to attend these conferences. A significant part of the attendees come from low- and mid-income countries, and the individual financial costs in a face-to-face meeting can be considerable. The 35th EAU annual congress was held virtually on 17-19 July 2020. It was a huge scientific success with 51,000 attendant views, 7500 delegates, and 341 presenting faculty from 130



Five point Likert scale rating Very poor Poor Fair Good Very good

The meeting types

Regarding the conferences that the respondents attended in 2019 (n=319)
 Regarding the webinars that the respondents attended in 2020 (n=371)
 Regarding the respondents' perception to hybrid meetings (n=386)

Figure 1. The 5-point Likert scale rating of the factors that may influence the preferences towards conferences, webinars and hybrid meetings in 2019. (Color version available online.)

Table 2. Relative importance index and rank of each perception question is provided for each meeting type

Questions	RII, (Rank)		
	Face-to-Face Meetings (n = 319)	Webinars (n = 371)	Hybrid Meetings (n = 368)
Quality of faculty and speakers	0.646 (1)	0.605 (3)	0.622 (1)
Most up-to-date information	0.633 (2)	0.595 (4)	0.621 (2)
Scientific value	0.632 (3)	0.591 (5)	0.618 (3)
Personal pleasure	0.618 (4)	0.507 (9)	0.585 (9)
Respecting patient privacy	0.615 (5)	0.628 (2)	0.617 (4)
Opportunities for social networking	0.596 (6)	0.466 (10)	0.564 (10)
Frequency of learning opportunities	0.577 (7)	0.588 (6)	0.596 (7)
Understanding variations in clinical practice worldwide	0.575 (8)	0.568 (7)	0.603 (5)
Reach of audience	0.565 (9)	0.550 (8)	0.601 (6)
Opportunities for research collaboration	0.500 (10)	0.444 (11)	0.542 (11)
Cost effectiveness	0.472 (11)	0.693 (1)	0.594 (8)

countries, even if the 2019 EAU congress had a larger number of delegates (10,879 participants).^{10,11} However, the 2020 virtual format helped the EAU to reach new audience, especially attendees from some countries (ie, India and China) that usually were not seen at the same numbers in the past regular congresses.¹¹ Furthermore, EAU faculty felt that 2020 virtual meeting was able to offer the same state-of-the-art education and science as regular congresses.¹¹

One clear advantage of face-to-face meetings is that it allows the participant the benefit of listening to information while observing the speaker's body language, facial expressions, and gestures as often these visual cues improve the ability of people to communicate effectively.¹² Similarly, they give the opportunity to ask questions, interact and network with other colleagues and specialists. Maybe, this is why 80% of the respondents think that face-to-face meetings are a good learning opportunity. Furthermore, due to the staggering number of webinars and virtual conferences, a "digital burnout" syndrome may affect physicians, and a face-to-face meeting that enables personal interactions may relieve these symptoms.¹³ Both professional opportunities for research collaboration and personal gatherings are expected during a main event, and social interactions that occur during the meetings lead to important social behavior trends. These features mentioned above will always remain as a face-to-face meeting characteristic.

That said, webinars have recently been increasingly adopted for CME, not only because they can reach a wider audience easily via any devices and without restricting location but also because of their high education value.^{2,3} Furthermore, the Internet is widely accessible, proving equally useful as traditional face-to-face methods, with a high acceptance among learners and an adequate transfer of knowledge.¹⁴⁻¹⁷ Our study confirmed that a large majority of urology healthcare providers found webinars good (60.4%) or even very good (17.8%) for their scientific value. 78.4% of the responders found that webinars provided up-to-date information. 72.8% of responders felt that the frequency of webinars and learning opportunities were good or very good. Interestingly, the cost-effectiveness of webinars was considered of great value by most of the responders compared to face-to-face meetings (90.3% vs 42.6%, respectively). Indeed, 65.5% of responders said that webinars should be free-of-charge, and only 9.6% of responders would pay more than 50\$ per webinar.

Webinars can also be a useful platform for residents' clinical teaching, as highlighted by several studies.^{4,18,19} Martin-Smith et al. showed that trainees were "Very satisfied" (82%) or "Satisfied" (18%) with their online webinar teaching experience.³ Moreover, Mayorga et al. and Williams et al. demonstrated that online teaching allowed residents to address knowledge deficits and acquire knowledge more effectively through easier interaction and immediate feedback.^{4,19} Our results confirmed that webinars are also of great value for urology residents, who were 24.6% of our responders. 82% of residents found webinars scientific

value as good (64%) and very good (18%). 83% of them believed that attended webinars provided up-to-date information. Interestingly, 79% of residents found webinars good (52%) and very good (27%) learning opportunities. These results are in line with face-to-face meetings in terms of scientific value (89% good and very good) and learning opportunities (80% good and very good values)

Nevertheless, the main limitation of webinars is probably the lack of social interaction and a sense of detachment from reality. Furthermore, the speakers seem to be limited to the established physicians or their referrals. Hybrid meetings could be the next best alternative. In fact, with hybrid meetings, speakers can talk in a face-to-face format, providing a virtual platform for a simultaneous interaction for those unable to attend physically. It might not be surprising that virtual congress and mainly hybrid meetings may replace in the next future face-to-face congress as the preferred choice because of their easy interaction and convenience.²⁰ Our survey pointed out this hypothesis showing that half of the responders that preferred face-to-face congress or webinars would prefer hybrid meetings in the future.

We do recognize that our study has some limitations. First, it was purely a web-based survey without a definite way to verify if responders are indeed urology healthcare providers. Second, more than 50% of participants were from Asia and Europe, and the results could reflect more of a trend in these continents rather than the worldwide preference. Third, most of responders were males, although it reflects the female intake and presence in current urology practices worldwide. Fourth, we did not perform a sample size calculation.

CONCLUSION

COVID-19 pandemic increased the number of urology webinars that were cost-effective for most responders. However, our study showed that webinars were not yet a replacement for face-to-face meetings and the hybrid meetings should be further employed as an alternative format in the post-COVID-19 era.

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SUPPLEMENTARY MATERIALS

Supplementary material associated with this article can be found in the online version at <https://doi.org/10.1016/j.urology.2021.02.001>.

Reference

1. Bayne CE, Davies BJ. Don't be a luddite: urologists benefit from social media. *Eur Urol Focus*. 2020;6:430-431. <https://doi.org/10.1016/j.euf.2019.08.015>.
2. Nadama HH, Tennyson M, Khajuria A. Evaluating the usefulness and utility of a webinar as a platform to educate students on a UK

- clinical academic programme. *J R Coll Physicians Edinb*. 2019; 49:317–322. <https://doi.org/10.4997/JRCPE.2019.415>.
3. Martin-Smith JD, McArdle A, Carroll SM, Kelly EJ. Webinar: a useful tool in plastic surgery specialty trainee education. *J Plast Reconstr Aesthet Surg*. 2015;68:1323–1324. <https://doi.org/10.1016/j.bjps.2015.05.034>.
 4. Mayorga EP, Bekerman JG, Palis AG. Webinar software: a tool for developing more effective lectures (online or in-person). *Middle East Afr J Ophthalmol*. 2014;21:123–127. <https://doi.org/10.4103/0974-9233.129756>.
 5. Weston M. Coaching generations in the workplace. *Nurs Adm Q*. 2001;25:11–21. <https://doi.org/10.1097/00006216-200101000-00005>.
 6. Elkind MS V. Teaching the next generation of neurologists. *Neurology*. 2009;72:657–663. <https://doi.org/10.1212/01.wnl.0000342516.08077.55>.
 7. Teoh JYC, Ong WLK, Gonzalez-Padilla D, et al. A Global Survey on the Impact of COVID-19 on Urological Services. *Eur Urol*. 2020;78:265–275. <https://doi.org/10.1016/j.eururo.2020.05.025>.
 8. Gudar K, Gonzalez Padilla DA, Castellani D, et al. A global knowledge, attitudes and practices survey on anatomical endoscopic enucleation of prostate for benign prostatic hyperplasia among urologists. *Andrologia*. Published online 2020: in press. doi:10.1111/and.13717.
 9. Castellani D, Hameed BZ, Tanidir Y. Online, face to face and hybrid meetings. What is the new normal in the COVID-19 era? A global collaborative survey by iTRUE group and UroSoMe working group. *Mendeley Data*. 2020;1. <https://doi.org/10.17632/22F44CV5S9.1>.
 10. European Association of Urology. An overview of 2019 EAU congress history. Accessed December 20, 2020. <http://eaucongresshistory.org/hyear/2019/>.
 11. Kaizer L. EUA 2020: Virtual out of necessity, but a scientific success nevertheless. *Eur Urol Today*. 2020;32:2–3. https://issuu.com/uroweb/docs/eut_aug-sept_2020. Accessed December 23, 2020.
 12. He Y, Luell S, Muralikrishnan R, Straube B, Nagels A. Gesture's body orientation modulates the N400 for visual sentences primed by gestures. *Hum Brain Mapp*. 2020. Published online. <https://doi.org/10.1002/hbm.25166>.
 13. Wroclawski M, Heldwein FL. Digital physician burnout in the “new normal” workplace. *J Endourol*. 2020. Published online. <https://doi.org/10.1089/end.2020.0631>.
 14. Harden RM. Trends and the future of postgraduate medical education. *Emerg Med J*. 2006;23:798–802. <https://doi.org/10.1136/emj.2005.033738>.
 15. Cook DA, Levinson AJ, Garside S, Dupras DM, Erwin PJ, Montori VM. Internet-based learning in the health professions: a meta-analysis. *JAMA*. 2008;300:1181–1196. <https://doi.org/10.1001/jama.300.10.1181>.
 16. Knipfer C, Wagner F, Knipfer K, et al. Learners' acceptance of a webinar for continuing medical education. *Int J Oral Maxillofac Surg*. 2019;48:841–846. <https://doi.org/10.1016/j.ijom.2018.11.010>.
 17. Alnabelsi T, Al-Hussaini A, Owens D. Comparison of traditional face-to-face teaching with synchronous e-learning in otolaryngology emergencies teaching to medical undergraduates: a randomised controlled trial. *Eur Arch oto-rhino-laryngology*. 2015;272:759–763. <https://doi.org/10.1007/s00405-014-3326-6>.
 18. Wagner F, Knipfer C, Holzinger D, Ploder O, Nkenke E. Webinars for continuing education in oral and maxillofacial surgery: the Austrian experience. *J Craniomaxillofac Surg*. 2019;47:537–541. <https://doi.org/10.1016/j.jcms.2019.01.009>.
 19. Williams JM, Poulsen R, Chaguturu V, Tobia A, Palmeri B. Evaluation of an online residency training in tobacco use disorder. *Am J Addict*. 2019;28:277–284. <https://doi.org/10.1111/ajad.12885>.
 20. Sá MJ, Ferreira CM, Serpa S. Virtual and face-to-face academic conferences: comparison and potentials. *J Educ Soc Res*. 2019;9:35–47.