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

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Abstract

Background: During the COVID-19 pandemic there was a significant increase in online webinars, which were universally available and advertised via Social Media, eliminating geographic restrictions thereby achieving a broader audience.

Objective: The primary outcome of our survey was to see how virtual meetings would fare vis a vis face-to-face meeting, and if there would any future role of a "hybrid" meeting concept. The secondary outcome was to find out the best webinar/ virtual meeting settings.

Design, setting, and participants: An online global survey was done between 6th June, 2020 to 5th July 2020 via <https://www.surveymonkey.com/r/K26B5RQ>. Using Delphi method, the survey questions were designed regarding webinars, face to face meetings and hybrid meetings, and circulated.

Outcome measurements and statistical analysis: Categorical data were presented with counts and percentages, and comparison was done using Chi-square test and answers to Likert-like scale questions using the Mann-Whitney U test.

Results and limitations: A total of N=526 urologists from 56 countries responded to the survey, of which N=386(73.38%) completed the questionnaire. The overall experience of participants was better in the face-to-face meeting followed by a hybrid meeting and webinar. After the COVID-19 pandemic, the preference for the type of conference was that of a hybrid meeting N=199(51%) than the webinar N=95(25%), using Zoom platform N= 283(73%) on laptop/desktop as the device of choice N=267(69%) and believed that a 1-hour webinar N=196(51%) was ideal at evening time N=277(72%) with 3-5 speakers N=242(62%) for each meeting. Although urology residents rated face-to-face meetings to have better cost-effectiveness when compared to consultants.

Conclusions: The current pandemic has shown a trend towards online webinars; however, they are not a substitution to face-to-face meetings. Our survey shows an increased preference towards a hybrid meeting in the coming future which would be ideal for global participation, adding value to money and time.

1. Introduction

Continuous 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 forms of CME after board certification. CME credits are usually achieved by participation in Conferences, Seminars, and Webinars accredited for such purpose. During the COVID-19 pandemic, the major urological conferences, such as the American Urological Association (AUA) and the European Urology Association (EAU) annual congress, were deleted. The gap created in traditional education during the COVID-19 pandemic had to be quickly filled by innovative solutions to provide urologists CME, network, and collaborative research. To provide medical education compliant with social distancing, not only

medical associations but also scientific journals and medical industries increased the use of online education.

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[1]. 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[2,3]. Several studies recommend the use of new teaching technologies for the new generations[3–5]. 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. Besides, attention is required to be compliant with the Health Insurance Portability and Accountability Act when online content is offered that can be easily accessed.

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. Urologists are now facing challenges on how to best utilize these opportunities and how to select which webinars to attend. The objective of our study was to conduct an online survey to investigate and compare the utility of webinars and face-to-face conferences. The primary outcome was to assess if webinars would change the format that urology forums are currently conducted, or these are just a temporary format of virtual interaction during the COVID-19 pandemic. The secondary outcomes were to evaluate how virtual meetings would fare vis a vis face-to-face meeting and if there would take any future role of a “hybrid” meeting in the future.

2. Materials And Methods

2.1 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[6,7]. The survey content was initially drafted by the steering committee (ZH, VG, JYCT, BS), circulated, and reviewed by the UroSoMe and iTRUE working group. 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.

2.2 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).

2.3 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 one IP address could only complete the survey once. All data were collected within the SurveyMonkey system, and only the study investigators could access these data.

2.4 Survey dissemination

The survey was disseminated primarily via mailing lists and the Twitter 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 one reminder was sent out.

2.5 Endpoints

The primary outcome was to understand the expectations in face-to-face meetings and webinars. The secondary outcomes were to see if the “hybrid” meeting has any role in the new normal post-COVID-19 era.

2.6 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 (RII) 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.

3. Results

The survey was carried out between June 06, 2020, to July 06, 2020. A total of 526 people responded to the survey questionnaire. 386 (73.38%) responders from 56 different countries (Table 1 and 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 was 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 (Table1). 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 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%).

In 2019, 319 (82%) responders attended at least one face-to-face meeting per year (Figure 2). During the COVID-19 pandemic, 371 (96%) reported attending an average of 10 webinars up to survey completion (Figure 3). Respondents' preferences for hybrid meetings (face-to-face plus webinar) were also evaluated (Figure 4).

When asked about details comparing the different aspects of the face-to-face conferences, webinars, and hybrid conferences, the results obtained were as follows; almost 90% (good: 33%, very good: 57%) of the participants found the webinar as cost-effective, followed by hybrid method (good: 47%, very good: 26%) and face-to-face conference (good: 38%, very good: 5%). Additionally, most of the participants found learning opportunities better in hybrid conference (good: 58%, very good: 20%) and webinar (good: 48%, very good: 25%) than face-to-face conference (good: 61%, very good: 16%). However, the opportunities for social networking were identified as high in the face-to-face conference (good: 46%, very good: 28%), more than hybrid conference (good: 46%, very good: 20%) and webinar only (good: 28%, very good: 11%). Also, the reach of the audience was found higher in hybrid methods (good: 51%, very good: 26%) and face-to-face conference (good: 62%, very good: 13%) than webinar (good: 39%, very good: 22%). The overall experience of participants was better in the face-to-face conference (good: 64%, very good: 22%) followed by hybrid conference (good: 56%, very good: 23%) and webinar (good: 48%, very good: 21%) (Figure 2-4).

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 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 appropriate for each meeting. Live webinars were better than pre-recorded ones for 246 (63%) responders (Table 2).

Logistic regression analysis of the five-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 <0.001, 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: 0.048; median (IQR) and 95% CI for each is 4 (1) and 4-5 vs. 3 (1) and 3-4) and the rest of the domains as similar. On the other hand, urology residents/registrars/fellows rated both the opportunities for social networking (p: 0.004; median (IQR) and 95% CI for each is 4 (2) and 4-5 vs. 3 (2) and 3-4) and the personal pleasure (p: 0.02; median (IQR) and 95% CI for each is 4 (1) and 4-5 vs. 3 (2) and 3-4) to be better in the webinars and the rest of the domains as similar (Figure 5)

Respondents that prefer face-to-face meeting over a webinar were found to have a significantly different perception for all assessment questions for different meeting types (Figure 6).

When asked if there would be a switch in preferences following the COVID-19 era, 49.5% of the respondents that prefer face-to-face meetings, and 54.3% of the respondents that prefer webinars told that they would prefer hybrid meetings. 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: <0.001) (Figure 7).

4. Discussion

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

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 one week of working-days 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.

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](#)[8]. 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 presential meeting that enables personal interactions may relieve these symptoms[9]. 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[12]. These features mentioned above will remain as a presential 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[1,2]. 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[10–13]. 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 (55.8 % good and 21.6% very good) found webinars provide 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 in 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[3,14,15]. Martin-Smith et al. showed that trainees were "Very satisfied" (82%) or "Satisfied" (18%) with their online webinar teaching experience[2]. 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[3,15]. 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. Hybrid meetings could be the next best alternative. In fact, in hybrid meetings, speakers talk in a face-to-face way, 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[16]. 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. Finally, the same preferences may not reflect different medical specialties.

5. Conclusion

COVID-19 pandemic increased the number of urology webinars that were a valuable tool for CME and cost-effective for most responders. However, our study showed that they were not at the moment a replacement for face-to-face meetings. In the post-COVID-19 era, the hybrid meeting could be the best platform for CME.

Declarations

Acknowledgment: This survey was completed with the support and collaboration with iTRUE Group, UroSoMe group, Urology Society of India, Society of Urological Surgery in Turkey, and Societe Internationale d'Urologie.

Competing interests: The authors declare no competing interests.

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Tables

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

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)

Figures

Figure 1

Global heat map of number of respondents to the survey by country (number of respondents is shown with black-white scale) Note: The designations employed and the presentation of the material on this map do not imply the expression of any opinion whatsoever on the part of Research Square concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. This map has been provided by the authors.

Figure 2

Regarding the conferences that the respondents attended in 2019 (n=319), the five point Likert scale rating (very good, good, fair, poor, very poor) of the factors that may influence the preferences towards conferences is shown in 100% stacked bar graph

Figure 3

Regarding the webinars that the respondents attended in 2020 (n=371), the five point Likert scale rating (very good, good, fair, poor, very poor) of the factors that may influence the preferences towards webinars is shown in 100% stacked bar graph

Figure 4

Regarding the respondents perception to hybrid meetings (n=386), the five point Likert scale rating (very good, good, fair, poor, very poor) of the factors that may influence the preferences towards the hybrid meetings is shown in 100% stacked bar graph

Face – to – face meetings

Consultants, Practicing urologists (n=283)

Urology trainees, Registrars, Fellows (n=95)

Webinars

Figure 5

Comparison of responder answers as percentiles according to their positions (a) Consultants, Practicing urologists (b) Urology trainees, Registrars, Fellows

Figure 6

Comparison of responder answers for each meeting type according to their experience in preferred meeting type (a) Face to face meeting / Conferences (b) Webinars (c) Hybrid meetings

Figure 7

Change in preferences after COVID19 settlement according to previous personal experience (n=386)

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [Questionnaire.docx](#)