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## ORIGINAL ARTICLE

# Attendee Survey and Practical Appraisal of a Telegram<sup>®</sup>-Based Dermatology Congress During the COVID-19 Confinement<sup>☆</sup>



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### KEYWORDS

Congresses as topic;  
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Disruptive technology;  
Diffusion of innovation

### Abstract

**Introduction:** The COVID-19 pandemic outbreak introduced dramatic changes in all our lives, daily practice, and medical conferences. In search of a tool to spread dermatologic knowledge during confinement, an online medical meeting was held on April 25th to 26th, 2020. In this study, we aimed to assess the characteristics, opinion and satisfaction of the attendees to a free-of-charge online congress. Secondly, we intended to explain how this meeting was prepared.

**Material and Methods:** Online survey administered to the attendees to an online congress organised via the Telegram<sup>®</sup> Messenger App. Its organisation and planning, which needed no financial support and was done by volunteer organisers, moderators and speakers, is described step by step.

**Results:** The satisfaction of both speakers and attendees was very high. All participants considered that this format had a great present and future, and most of them rated it as superior to regular face-to-face meetings. Female gender and predominantly private practice favoured this opinion.

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**PALABRAS CLAVE**

Congresos como tema;  
Redes sociales en línea;  
Educación a distancia;  
Intervención basada en Internet;  
Tecnología disruptiva;  
Difusión de la innovación

*Discussion:* The COVID-19 pandemic has forced the cancellation of most scientific gatherings. This has been seen by some authors as an excellent opportunity, encouraging medical societies and organisations to lead the change to virtual meetings. Although confinement did not allow real contact, our online meeting showed it was possible to ensure interaction and participation between attendees, moderators and speakers. Dermatologists enjoyed some dermatologic science, even despite the extraordinary circumstances disrupting their daily clinical practice. Most of them felt they were participating in something new and compelling that many felt superior to traditional meetings.

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### Congreso virtual de dermatología realizado a través de Telegram® durante el confinamiento de la COVID-19: organización y evaluación

**Resumen**

*Introducción:* La pandemia de COVID-19 introdujo cambios dramáticos en nuestras vidas. Tratando de encontrar una herramienta adecuada para la formación y el debate dermatológico durante el confinamiento, se celebró un congreso médico “on-line” realizado entre los días 25 y 26 de abril del 2020. El objetivo del presente estudio fue evaluar las características, la opinión y el grado de satisfacción de los asistentes a dicho congreso. En segundo lugar, se buscó explicar cómo se organizó este formato de reunión.

*Material y métodos:* Se entregó un cuestionario a los asistentes a un congreso “on-line” realizado a través de la aplicación Telegram® Messenger App. Se describió paso a paso su organización y planificación. No se necesitó apoyo financiero ya que fue realizado de manera voluntaria.

*Resultados:* El grado de satisfacción tanto de los ponentes como la de los asistentes fue muy elevada. Todos los participantes consideraron que este formato tenía un gran presente y futuro. La mayoría lo calificó como superior a las reuniones presenciales tradicionales. El ser de género femenino y tener una práctica clínica predominantemente privada favorecieron esta opinión.

*Discusión:* La pandemia obligó a cancelar la mayoría de las reuniones científicas presenciales. Esto fue visto por algunos autores como una excelente oportunidad para mejorar y liderar el cambio a las reuniones virtuales. Aunque el confinamiento no permitió un contacto real, nuestra reunión demostró que era posible asegurar la interacción entre los participantes. Los dermatólogos pudieron participar en una actividad formativa a pesar de que debido a las circunstancias se interrumpiera su actividad práctica diaria. La mayoría de los asistentes tuvieron la sensación de que esta era en una actividad nueva y atractiva, que superaba incluso a las reuniones presenciales tradicionales.

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**Introduction**

The COVID-19 pandemic outbreak introduced dramatic changes in all our lives, daily practice, and medical conferences. Dermatology meetings were delayed or cancelled. Most medical centres and dermatologists focused on tele dermatology<sup>1</sup>, urgent care or joined the workforce that was needed to attend SARS-CoV-2-affected patients. In search of a tool to spread dermatologic knowledge during confinement, share experiences in this dystopian time, and instil positive energy to our colleague dermatologists, an online medical meeting was held on April 25<sup>th</sup> to 26<sup>th</sup>, 2020.

In this study, we aimed to assess the characteristics, opinion and satisfaction of the attendees to a free-of-charge (both for organisation and attendees) online congress. Secondly, we intended to explain how this meeting was prepared.

**Materials and Methods**

An online survey (using Google® Drive forms online tool) was administered to the attendees to an online congress that took place between April 25<sup>th</sup> to 26<sup>th</sup>, 2020. The items of this questionnaire (Table 1) were prepared right after the meeting, were ready by April 28<sup>th</sup>, and the results were collected from April 28<sup>th</sup> to 30<sup>th</sup>. The differences between the distributions of each variable were evaluated using Pearson's chi-square and Fisher's exact tests. Statistical significance was established for p-value <0.05. All the statistical analyses were performed using the SPSS statistical package for Windows, version 20.0.

The organisation of the *II Dermachat Congress* (Fig. 1) is depicted in the following paragraphs. It was the second edition (a first meeting was held on the September 14<sup>th</sup>, 2019, using the same system)<sup>2</sup>.

**Table 1** Items of the survey (translated from the original questionnaire in Spanish).

## Demographics and professional affiliation data

- Age (in years)
- Sex
- Country in which you work
- In what type of municipality do you carry out most of your work?
  - a) Very large city of more than 1 million inhabitants
  - b) City of between 300,000 and 1 million inhabitants
  - c) City of between 100,000 and 300,000 inhabitants
  - d) City of between 20,000 and 100,000 inhabitants
  - e) Municipality of less than 20,000 inhabitants
- Do you currently carry out health care activity?
  - a) Yes
  - b) No, I'm retired
  - c) No, just research and/or teaching
  - d) No, I work in the pharmaceutical industry
- If you answered yes to the previous question, how would you describe your usual health care activity?
  - a) I carry it out only in a private setting
  - b) Private mainly, public in smaller measure
  - c) Public primarily, private in smaller measure
  - d) Public only
- If you do private practice, at what kind of private practice do you work? (Check the option that is most representative of your activity)
  - a) Own / another dermatologist's clinic (up to 4 doctors in the team)
  - b) Own / another dermatologist's clinic (>4 doctors)
  - c) Medical Center, Polyclinic of various specialities
  - d) Large private hospital/clinic
  - e) I don't do private assistance
- If you're on public assistance, at what kind of centre do you work? (Mark the option that is most representative of your activity)
  - a) Tertiary hospital
  - b) County Hospital
  - c) Speciality Center
  - d) Monographic hospital (for example, cancer hospital)
  - e) Monographic centre (for example, STI centre)
  - f) I don't carry out public assistance
- When did you join Dermachat?
  - a) I joined for the congress
  - b) Less than one year ago
  - c) More than one year ago

## Attendance to the Congress

- Where have you followed the conference? (You can choose more than one option if you have done so in a combination of the following)
  - a) On a mobile phone
  - b) On a tablet
  - c) On a laptop
  - d) On a desktop computer
  - e) Other (any other compatible device)
- Do you think that this format of congress has a future even without the extraordinary situation of confinement due to the COVID-19 pandemic?
  - a) Yes, as a substitute for the traditional congresses
  - b) Yes, coexisting with face-to-face congresses
  - c) No. If there hadn't been confinement, I would not have attended to the congress
- If you have answered yes to the previous question, how do you consider the interest and quality of this congress format with respect to the traditional face-to-face ones?
  - 1) Inferior
  - 2) Equivalent
  - 3) Superior

## Opinion and future perspectives

Table 1 (Continued)

- Scoring from 1 to 10, what overall impression did you get of the congress?
- Scoring from 1 to 10, what is your assessment of the fact that attendance at the congress was free of charge?
- Scoring from 1 to 10, how do you rate the speakers globally?
- In this congress, it has been the speakers themselves, volunteers, who have chosen the topics. Do you think that the variety of contents has been adequate?
  - a) Yes, it's been enough
  - b) Yes, although I have missed some areas of our speciality
  - c) No, there are many areas of our speciality that have not been sufficiently covered
- Scoring from 1 to 10, evaluate the moderators in general (adjustment to talk times, discussion of questions. . .)
- Have you identified any bias or conflict of interest in any of the presentations?  
Yes / No
- Do you think the industry could be enriched and would have something to contribute to this format?
  - a) Yes, very much so.
  - b) Yes, a little.
  - c) No, nothing.
- If you answered yes to the above question, what content did you miss? (You can check more than one answer.)
  - a) Symposiums
  - b) Commercial exhibition/stands
  - c) Interactions with the commercial visitors
  - d) Other initiatives
- You may reflect below any comments, criticisms or suggestions for improvement for future editions that you consider appropriate



Figure 1 Congress logo.

The free tool that was chosen to broadcast the meeting was the Telegram® Messenger App (instead of using the new emerging platforms and apps for virtual meetings, such as Zoom® GoToMeeting®, Microsoft Teams®, etc.). The reason of choosing this platform was the previous existence of an ongoing professional Spanish Dermatology chat (*Dermachat*), active in Telegram since 2014. *Dermachat* is composed mainly by Spanish dermatologists and some European and Latin-American colleagues. It is free, with no financial support, and open to any dermatologist under some basic rules.

These rules are easy: It is a friendly professional environment in which only Dermatology-related topics can be discussed (difficult cases, interesting clinical findings, surgical advice, etc.) and General Data Protection Regulation and ethical consideration of *Lex Artis* must be observed. As of April 15<sup>th</sup>, 2020, there were 500 dermatologist members. Following the invitation to attend the meeting, many colleagues joined the chat that nearly reached one thousand members by April 25<sup>th</sup>, 2020.

Six weeks before the date of the meeting, an announcement was made in *Dermachat* asking for volunteers to act as speakers, choosing a topic of their expertise. Thirty-eight women and men attended this announcement. A taskforce chat was created in the same App to serve as the meeting's organising committee.

Speakers recorded a video presentation with a maximum duration of 10 minutes (in *.mp4*, *.m4v* or *.mov* formats, and with a maximum size of 100 megabytes per file). Topics included many Dermatology & Venereology expertise areas (Table 2). All the 37 presentations were in Spanish, but four of them were also programmed in English and one in Portuguese (Fig. 2). These were uploaded in advance and were programmed to be sent at a scheduled time using a Telegram tool. Therefore, videos were automatically downloaded to smartphones, laptops, tablets or even smart TV screens according to programme. The active presence of the authors at the chat was not even essential during their presentations.

The central part of the event was held on April 25<sup>th</sup> 2020, from 9:30 to 20:30, divided into four distinct sections (with coffee-breaks and time for lunch (Table 2)). No delay between presentations was possible, as they were pre-programmed. Some real-time online interaction at the chat was allowed during the few minutes between presentations, mainly to congratulate the speakers. Questions were channelled through each of the moderators to the speak-

**Table 2** Meeting programme.

## II Dermachat Congress Final Programme

**1st day: Saturday, April 25th, 2020**

8.30 Pre-congress animation.

9:30 Greeting from the President of the Meeting, Mario Linares.

9.35 Address from the Secretary of the Meeting Francisco Russo.

**FIRST TABLE (Moderator: Mario Linares)**

9.40 Ignacio García Doval. COVID-19, have we met before?

9.52 Antonio Tejera. Estimation of the effect of quarantine on the prognosis of skin cancer. (Spanish &amp; English versions).

10.04 Onofre Sanmartín: Which epidermoid carcinoma needs more attention? In search of the real high-risk epidermoid carcinoma.

10.16 Óscar Muñoz Moreno-Arrones. Immunotherapy for dummies; what any dermatologist should know.

10.28 Iván Cervigón. Old drugs still in the spotlight.

10.40 Antonio Macaya. What is the use of campaigns to prevent sexually transmitted infections and unwanted pregnancy?

10.52 Alicia Comunión/Alejandro Martin-Gorgojo. STI screening in people with penis and people with vulva.

11.06 Almudena Monteagudo. Teledermatology from home. What can you give me?

11.20 Coffee break. Amenization.

**SECOND TABLE (Moderator: Elena Vargas)**

12.00 Ángel Fernández-Flores. What can the stratum corneum of the biopsy tell the dermatologist (Spanish &amp; English versions).

12.21 Mar Llamas. Neutrophilic panniculitis.

12.32 José Ignacio Galvañ. Practical management of ulcers (Spanish &amp; English versions).

12.55 Álvaro González-Cantero. Psoriasis and comorbidities: industry or reality? Role of the dermatologist.

13.09 Rosa Taberner. Dermatological photography. What does the law say?

13.19 Juan José Andrés Lencina. Essential Health Law. How to understand the laws.

13.32 Pedro Mercader. The importance of assessing relevance in epicutaneous patch tests. Practical examples.

13.41 Felipe Heras. Relevant new allergens in contact dermatitis.

13.53 Carolina Ortuño. My personal life experience as a dermatologist.

14.10 Confined meeting lunch.

**THIRD TABLE (Moderator: Francisco Russo)**

16.00 José Manuel Azaña. Infantile hemangioma: clinical diagnosis, complementary studies?

16.11 Benigno Monteagudo. Transient benign skin lesions of the newborn.

16.25 José Bernabeu-Wittel. Epigenetics and skin.

16.38 María Eugenia Iglesias. The radiologist in the next room.

16.50 Sandra Mateo. Urgent appointments for private dermatology: What do they bring and how to organise them?

17.00 Juan Gavín. My vision of private dermatology.

17.14 Anna Tuneu. Less stress, more health.

17.25 Kiril Magaletskyy. Dermatology and cinema.

17.35 Mario Linares. Dermachat.tv a project in search of leaders.

17.40 Covadonga Martínez. Dermatological short film to raise awareness of skin cancer.

17.50 Coffee break.

**FOURTH TABLE (Moderator: María-Eugenia Iglesias)**

18.20 Sergio Vañó. Five recent articles in Trichology with therapeutic implications.

18.33 David Saceda. Five novelties in frontal fibrosing alopecia.

18.46 Elena Vargas. Botulinum toxin infiltration in the lower third and neck (Spanish &amp; English versions).

18.57 Nerea Landa. CO2 laser for the treatment of vulvar lichen sclerosus.

19.10 Alberto Escudero. Therapeutic management of complex warts by cryotherapy and Alexandrite-755 Laser.

19.20 José Luis Martínez-Amo. Perioral Rejuvenation using CO2 laser.

19.35 Ricardo Vieira. Hidradenitis suppurativa: is surgery useful in the era of biologics? (Spanish &amp; Portuguese versions).

19.50. Francisco Russo. Researching new flaps in dermatologic surgery.

20.04. Emilio del Río. Other dermatological surgery is also possible.

20.15 Congress closure.

20.30 Post-congress cocktail via Zoom®.

**2nd day: Sunday, April 26th, 2020****Debate, Q&As, Comments**

10.30 Roundtable 1

11.15 Roundtable 2

12.00 Roundtable 3

12.45 Roundtable 4

# EFFECT OF LOCKDOWN BY COVID19 IN SKIN CANCER

## ESTIMATION OF PROGNOSTIC BASED IN A MATHEMATICAL MODEL.

Antonio Tejera Vaquerizo

II Virtual Congress Dermachat, 25 April 2020

**Figure 2** First slide of one of the presentations regarding the changes in tumour prognosis, particularly in the elderly, during the confinement. This presentation was done both in Spanish and English. It included the results of a study that had been accepted for publication only days before by Tejera A & Nagore E. (Reproduced with permission.)

ers the same day. On April 26<sup>th</sup>, 2020, from 10:30 to 13:30 and managed by the same four moderators, a directed discussion was made. Speakers could prepare in advance their answers, but real-time interaction was also possible. The speakers addressed the attendees mainly using  $\leq 60$ -second, fast Telegram-videos (Fig. 3).

There is no actual congress without two important items: the welcome cocktail and the certificates of presentation for the speakers. A live online Zoom<sup>®</sup> cocktail was held on Saturday at 8:30 p.m. Furthermore, every speaker received a certificate of their presentation (the organising committee automatically delivered it to their Telegram inboxes).

## Results

From a total of 954 dermatologists who attended the congress, 349 of them (36.6%) completed the survey (Table 3). Their ages ranged from 25 to 78 years (mean: 45.2 years; standard deviation: 11.8). There was a female (62.2%) predominance. Most of the survey respondents (96.3%) lived and worked in Spain. Two were from Germany (1.1%), two from Portugal (1.1%), and nine from different Latin-American countries (2.6%). Most respondents had joined *Dermachat* more than one year ago (59.6%) and followed the congress via their laptops (29.8%), mobile phones (27.2%), or a combination of devices (22.9%).

The opinion and future perspectives of the attendees may also be found in Table 4. All considered that this format had a bright present and future, with 17.8% of the respondents thinking that it would become a suitable replacement for the face-to-face meetings. 61.6% of the participants considered this meeting format superior to regular meetings. The respondents showed high levels of satisfaction, giving high scores to the overall conference, the speakers, and the moderators. The highest score (mean: 9.8 over 10) was given to the fact that the congress was free-of-charge. Around one-third of the participants (34.1%) would have liked some additional areas of the speciality to be covered during the meeting. Finally, 14.9% of the respondents stated that they had missed some participation of the pharmaceutical industry during the conference.



**Figure 3** Chat screenshot during the debate on April 26<sup>th</sup>, 2020. The questions were formulated during the presentations the previous day, and the speakers sent their answers to the moderators beforehand, using  $\leq 1$ -minute videos that continued one to another in smooth and efficient transitions. (Reproduced with permission.)

Analyses of these opinions and their relationship with traits of the surveyed dermatologists yielded the following statistically significant results:

**Table 3** Demographics and professional practice of the survey participants. Characteristics of the attendance to the meeting and the general online forum.

Variable	Mean	sd	Range
<b>Age (in years)</b>	45.2	11.8	25-72
	N	%	
<b>Sex</b>			
Male	132	37.8	
Female	217	62.2	
<b>Continent</b>			
Europe	340	97.5	
America	9	2.5	
<b>Municipality in which the attendee works</b>			
Very large city of more than 1 million inhabitants	90	25.8	
City of 300,000-1 million inhabitants	86	24.6	
City of 100,000-300,000 inhabitants	110	31.5	
City/municipality of less than 100,000 inhabitants	63	18.1	
<b>Does the dermatologist perform health care activity currently?</b>			
Yes	347	99.5	
No	2	0.5	
<b>Usual health care activity carried out</b>			
Only in a public setting	83	23.8	
Primarily public; private in smaller measure	138	39.5	
Mainly private; public in smaller measure	22	6.3	
Only private	106	30.4	
<b>Main private practice setting (if applicable)</b>			
Own / another dermatologist's clinic ( $\leq 4$ doctors in the team)	96	27.6	
Own / another dermatologist's clinic ( $> 4$ doctors)	23	6.6	
Medical centre, polyclinic including various specialities	77	22.1	
Large private hospital/clinic	69	19.8	
No current involvement in private health care	83	23.9	
<b>Main public health care setting (if applicable)</b>			
Tertiary hospital	167	48.0	
County Hospital	55	15.8	
Specialty outpatient clinic, monographic hospital or monographic centre	22	6.3	
No current involvement in public health care	104	29.9	
<b>Time since the congress attendee joined Dermachat</b>			
Joined for the congress	86	24.6	
Less than 1 year ago	55	15.8	
More than 1 year ago	208	59.6	
<b>Device in which the attendee followed the congress</b>			
Mobile phone	95	27.2	
Tablet	40	11.5	
Laptop	104	29.8	
Desktop computer	30	8.6	
Combination of the latter	80	22.9	

\* sd: Standard deviation.

- Those with ages comprised in the upper quartile expressed more frequently (35.5%) that this format would be a suitable replacement of traditional meetings ( $p=0.001$ ). The desktop computer was more often used among those with ages in the two upper quartiles (representing 80% of individuals who referred to use only these devices to follow the meeting;  $p=0.002$ ). However, this was referred as the only device were used by merely 8.6% of the attendees and there were no evident differences in the overall use of the rest of devices.
- Women represented 76.7% of those who joined the forum directly to attend the congress and 65.4% of those who joined less than one year before ( $p=0.002$ ). We noted that women assigned generally higher scores to the overall meeting (Fisher's exact test,  $p=0.007$ ), to the fact that it was free of charge ( $p<0.001$ ), to speakers ( $p=0.005$ ) and to moderators ( $p<0.001$ ). They also stated more frequently that the online meeting was equivalent or superior than face-to-face traditional meetings ( $p=0.006$ ).
- Regarding the setting of the usual healthcare activity, those involved in private practice exclusively or predominantly over public healthcare settings represented 78.6% of those who stated that online formats such as

**Table 4** Opinion and future perspectives of the attendees

Variable	N	%	
<b>Is there any present and future for this type of meetings?</b>			
Yes, coexisting with face-to-face meetings	287	82.2	
Yes, as a substitute for traditional meetings	62	17.8	
No. No future, no interest	0	0	
<b>Interest and quality of this congress format with respect to the traditional face-to-face ones</b>			
Inferior	6	1.7	
Equivalent	128	36.7	
Superior	215	61.6	
	<b>Mean</b>	<b>sd</b>	<b>95% CI</b>
<b>Overall impression of the meeting (1-10 score)</b>	9.2	0.05	9.1-9.3
<b>Assessment of the fact that attendance at the congress was free of charge (1-10 score)</b>	9.8	0.04	9.7-9.8
<b>Overall speakers' score</b>	9.4	0.04	9.3-9.5
<b>Overall moderators' score</b>	9.4	0.04	9.4-9.5
	<b>N</b>	<b>%</b>	
<b>Assessment of the range of areas of the specialty covered during the meeting</b>			
Sufficient	230	65.9	
Relative underrepresentation of certain topics	111	31.8	
Great underrepresentation of certain topics	8	2.3	
<b>Subjective perception of the presence of any potential bias or conflict of interest in any of the presentations</b>			
Yes	4	1.1	
No	345	98.9	
<b>Perception of the non-participation of the pharmaceutical industry during the meeting</b>			
High	7	2.0	
Moderate-low	45	12.9	
NoneM	297	85.1	

the one described would be superior to traditional ones ( $p = 0.001$ ).

## Discussion

The satisfaction of the speakers and attendees was very high. All participants considered that this format had a great present and future, and most of them rated it as superior to regular meetings. These results were better to those described by Kim et al. after analysing the satisfaction of 1091 attendees to a medical conference at Las Vegas<sup>3</sup>, and similar to those obtained by the attendees to two *Workshops Without Walls* hosted by the NASA Astrobiology Institute in 2010<sup>4</sup>. It has been previously described that motivation plays a central role in the development of satisfaction<sup>5,6</sup>, and this has been identified as a mediating factor on the relationship between sense of community and future intentions<sup>3,7</sup>. *Dermachat* has a great sense of community that clearly influenced the results of the survey (the majority of respondents had been in the chat for more than one year ago).

The attendee's type of practice and gender have been shown to moderate the relationship between motivation to attend the meeting and perceived experience<sup>2</sup>. This agreed with the results of our survey. Women assigned generally higher scores to the overall meeting and most dermatologists involved in private practice exclusively or predominantly

over public healthcare settings stated that online formats would be superior to traditional ones.

The completely free-of-charge format obtained the highest satisfaction score. No financial support was needed, and all coordinators and speakers were volunteers. No pharmaceutical or aesthetical/cosmetic industry was present (14.9% of the respondents stated that they had missed some participation of the pharmaceutical industry during the meeting). There was no time spent on travelling, no money spent on hotel nights, no need to buy foods or drinks. It was also eco-friendly: no paper and no carbon-footprint were generated beyond some electric consumption. In 2008, Green estimated that the impact of travel to conferences would be 6 billion person air miles or 600.000 tonnes of carbon each year<sup>8</sup>.

Since all the videos remained uploaded at the scheduled time in the stream of the chat, they could be easily downloaded and re-watched later. We believe this allows to tailor the congress to the attendee's needs and supports family conciliation, with no fear of missing out (unlike webinars and videoconferences, that usually cannot be watched after the scheduled time)<sup>9,10</sup>.

The *COVID-19* pandemic has forced the cancellation of most scientific gatherings. Some authors have seen this as an excellent opportunity to change conferences for the better, encouraging medical societies and organisations to lead the change to virtual meetings<sup>11,12</sup>. However, one limitation



of virtual meetings is the lack of real contact. Education involves skills and attitudes, and we will not influence attitudes just by haranguing people through a video link<sup>8</sup>. Even though confinement did not allow real contact, our online meeting showed it was possible to ensure interaction and participation between attendees, moderators and speakers. Unlike e-mail, instant messaging could provide prompt feedback on essential issues during the discussion<sup>13</sup>.

The primary objective was largely achieved: Dermatologists enjoyed some dermatologic science during the COVID-19 pandemic, even despite the disruption of their daily clinical practice. Most of them felt they were participating in something new and compelling that many felt superior to traditional meetings.

## References

1. Mehrotra A, Ray K, Brockmeyer DM, Barnett ML, Bender JA. Rapidly converting to "virtual practices": outpatient care in the era of Covid-19. *NEJM Catal.* 2020;1–5.
2. Martin-Gorgojo A, Del Río-De la Torre E. Emerging formats of dermatological congresses and meetings. *Actas Dermatosifiliogr.* 2020;111:453–9.
3. Kim W, Malek K. Understanding the relationship among motivation to attend, satisfaction, and loyalty of medical convention attendees. *J Convention Event Tour.* 2017;18:282–300.
4. Dolci WW, Boldt MS, Dodson KE, Pilcher CB. Leading the charge to virtual meetings. *Science.* 2001;331:674.
5. Severt D, Wang Y, Chen PJ, Breiter D. Examining the motivation, perceived performance, and behavioural intentions of convention attendees: evidence from a regional conference. *Tour Manag.* 2007;28:399–408.
6. Tanford S, Montgomery R, Nelson KB. Factors that influence attendance, satisfaction, and loyalty for conventions. *J Convention Event Tour.* 2012;13:290–318.
7. Hahm J, Breiter D, Severt K, Wang Y, Fjelstul J. The relationship between sense of community and satisfaction on future intentions to attend an association's annual meeting. *Tour Manag.* 2016;52:151–60.
8. Green M, Drife JO. Are international medical conferences an outdated luxury the planet can't afford? *BMJ.* 2008;336:1466–7.
9. Zhou Z, Mims T, Dugan A, Trott T, Sanderson W, Bronner J. Randomized evaluation of videoconference meetings for medical students' mid-clerkship feedback sessions. *West J Emerg Med.* 2019;20:163–9.
10. Wilson N, Valencia V, Smith-Bindman R. Virtual meetings: Improving the impact and accessibility of CME. *J Am Coll Radiol.* 2014;11:231–2.
11. Bhargava S, Farabi B, Rathod D, Singh AK. The fate of major dermatology conferences and meetings of 2020: are e-conferences and digital learning the future? *Clin Exp Dermatol.* 2020;45:759–61.
12. Richards T [Accessed 9 June 2020]. Available from: <https://blogs.bmj.com/bmj/2020/06/05/tessa-richards-todays-rapidly-convened-virtual-events-are-pointing-the-way-to-a-greener-more-inclusive-future/>, 2020.
13. Fodor JT. Instant messaging: a potential for virtual meetings in the health field. *Promot Educ.* 2001;8:31.