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Online Teaching vs. Face-to-Face Teaching: Which Is Better? Outcomes of A Survey of Medicine Trainees at Mid Yorkshire Hospitals NHS Trust

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Abstract

Objectives: To investigate the perceptions and preferences of medical trainees on the choice of formal learning modalities during the COVID pandemic in a district general hospital.

Methods: We performed a retrospective analysis in the form of a cross-sectional survey sent out to trainees of all grades working at Mid Yorkshire NHS Trust, United Kingdom in January 2022. The survey was carried out virtually using an online platform. Participants were given the option to rate each question regarding both learning modalities using a 5-point Likert scale (1=strongly disagree to 5=strongly agree).

Results: A total of 42 responses were included. Twenty-seven (64.3%) trainees preferred face-to-face teaching over online teaching. Thirty-two (76.2%) trainees felt motivated to attend face-to-face teaching, whilst only 26 (61.9%) trainees agreed same for online teaching. Almost double number of trainees (33; 78.6%) believed that face-to-face teaching is often stimulating, satisfying and enjoyable compared to online teaching.

Conclusion: This survey confirmed that face-to-face teaching emerged as the preferred choice of formal learning modality in our hospital. A hybrid model of teaching for postgraduate doctors would be ideal.

Key Words

Postgraduate; Doctors; Face-to-Face; Online; Teaching

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Introduction:

The COVID-19 pandemic has had a drastic influence on medical education with more emphasis on online education.¹ Online platforms such as Microsoft Teams and Zoom have replaced face-to-face teaching as formal learning modalities.

Ongoing regular teaching is vital for doctors in training continued professional development promotes high quality, evidence-based patient care and is an important feature of the GMC's Good Medical Practice.² During the pandemic there was a need for ongoing medical education as new treatments emerged for the SARS-CoV-2 virus and new guidelines were formulated. This was on top of their regular education and training requirements. However, due to social distancing and other preventive measures, classroom-style face-to-face teaching was disrupted³ and was replaced by online teaching for the safety of trainee doctors throughout the NHS. There is data available on efficiency of online teaching at undergraduate level during the pandemic,^{1,4} but that at postgraduate level for doctors is still emerging.

The purpose of this study was to establish the perceptions of doctors in training about their preferences between online and face-to-face teaching and a comparison of various aspects of both modalities from a trainee standpoint.

Material and Methods

This was a retrospective analysis in the form of an online cross-sectional survey sent out to trainees of all grades working at Mid Yorkshire Hospitals NHS Trust, United Kingdom in January 2022. The survey was carried out virtually using an online platform called Survey Planet. The survey was sent to trainee doctors via email and WhatsApp. Microsoft Excel 2016 was used to formulate tables and graphs.

The questionnaire had 19 items. DREEM⁵ questionnaire was used to formulate some questions whereas in other questions participants were given the option to rate each question/statement regarding both learning modalities using a scale of 1 to 5 (1=strongly disagree to 5=strongly agree).

The questions of motivation, stimulation, opportunities to ask questions, concentration and tendency to remember learning points were asked separately for each learning modality for comparison purposes.

Results

The inclusion criteria were trainees of all grades of internal medicine and its subspecialties. These trainees had experienced disruptions caused by the COVID-19 pandemic to their postgraduate education. The trainees of specialties other than medicine and its subspecialties were excluded from the survey.

The online survey was sent to a total of 60 doctors (see Figure 1) out of which 42 responded (response rate 70%). Out of the 42 responses, most were from the group of internal medicine trainees (n=13; 31%). Trust grade doctors and foundation trainees had similar numbers (n=11; 26%) and least responses were from higher specialty group (n=7; 17%).

Overall, a majority of the trainees favoured face-to-face teaching (see Figure 4) as a better teaching modality (n=27; 64.3%). However, an overwhelming majority favoured online teaching (see Figure 2.5) as an easier modality to attend (n=35; 83.33%).

Experiences of both modalities that were assessed

in a Likert-scale from 1 to 5 (1 strongly disagree, 5 strongly agree) included motivation to attendance, stimulation, getting opportunities to ask questions, tendency to remember learning points in relevant clinical scenarios at work and concentration (see Tables 1 and 2).

Thirty-two (76.2%) trainees felt motivated to attend face-to-face teaching whilst only 26 (61.9%) trainees agreed the same for online teaching. Almost double the number of trainees (33; 78.6%) believed that face-to-face teaching is often stimulating compared to online teaching. The number of trainees who thought it was easier to ask questions in online teaching was higher (n=35; 83%) compared to face-to-face teaching. Almost similar number of trainees thought that in both online and face-to-face teaching they tend to remember learning points relevant to clinical scenarios (n=31 face-to-face; n=28 online). Similarly, when assessed for better concentration there was no clear preference with 30 trainees favouring online teaching and 27 favouring face-to-face teaching (see Figure 2).

One Likert-scale statement particular to online teaching assessed IT connectivity issues to which 16 trainees (38%) marked that they have had connectivity issues. The commonest online platform used was Microsoft Teams (see Figure 3) and use of multiple devices (n=24; 57%) for online access was the commonest amongst trainees.

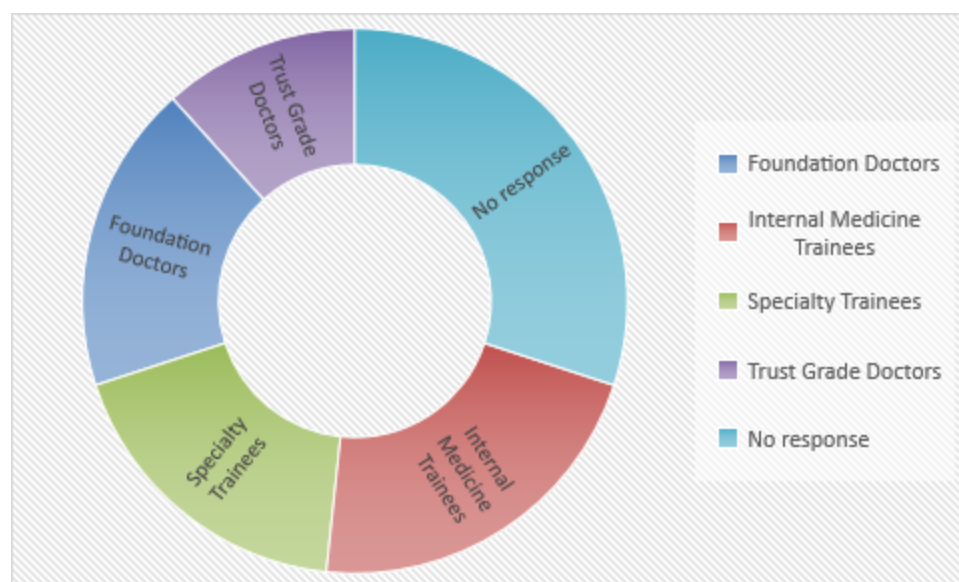


Figure 1 Various training grades of survey responders

Table 1: Trainees' views towards online learning

	Strongly disagree	Disagree	Neither	Agree	Strongly Agree
Motivation	1	5	10	20	6
Stimulating	0	5	20	14	3
Effective	4	4	9	27	1
Questions	1	2	4	29	6
Remember learning points	1	4	9	27	1

Table 2: Trainees' views towards face-to-face learning

	Strongly disagree	Disagree	Neither	Agree	Strongly Agree
Motivation	1	3	4	24	8
Stimulating	2	2	6	19	14
Effective	0	1	9	21	11
Questions	0	8	9	17	8
Remember learning points	0	1	9	21	11

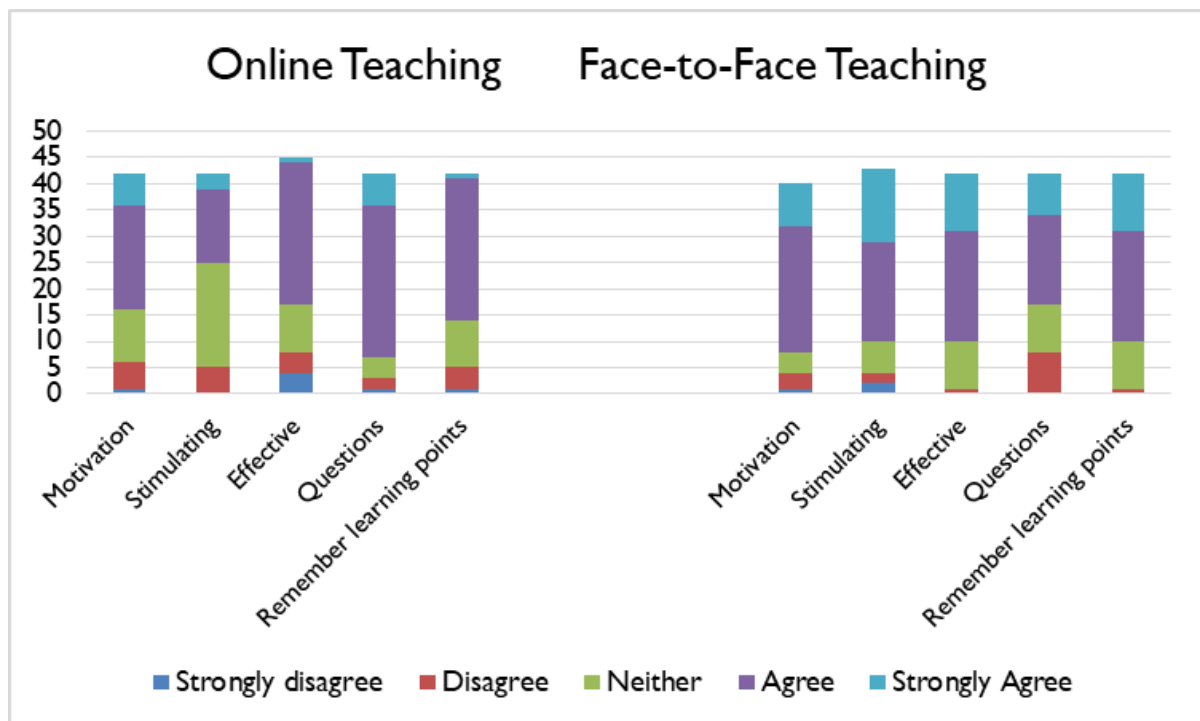


Figure 2: Comparison of views around online and in-person teaching

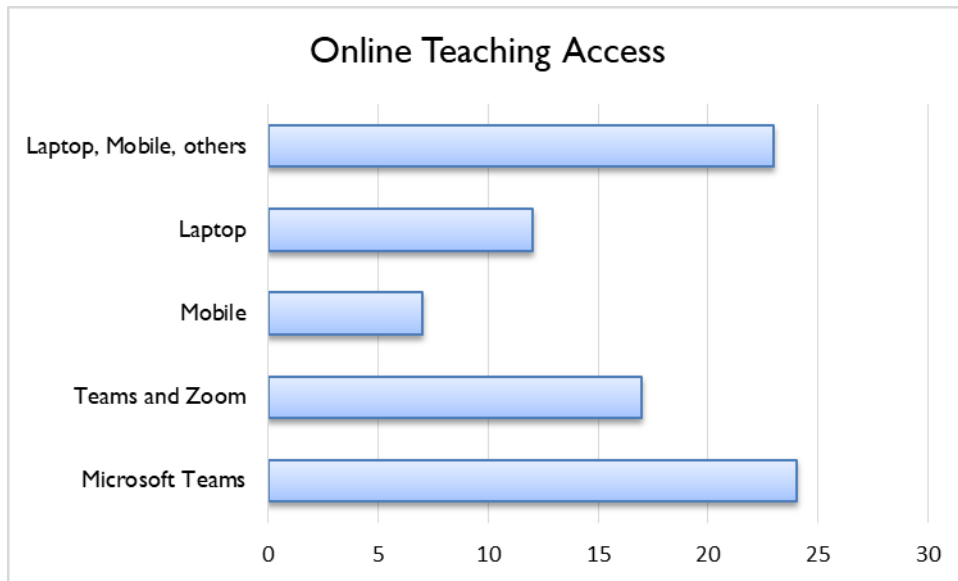


Figure 3: Devices and applications used for online learning

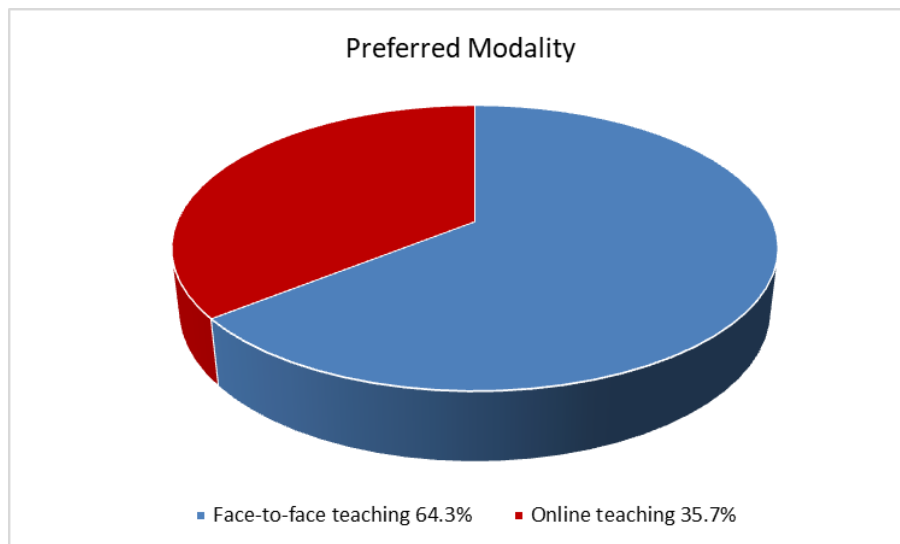


Figure 4: Preferred teaching modality as per survey results

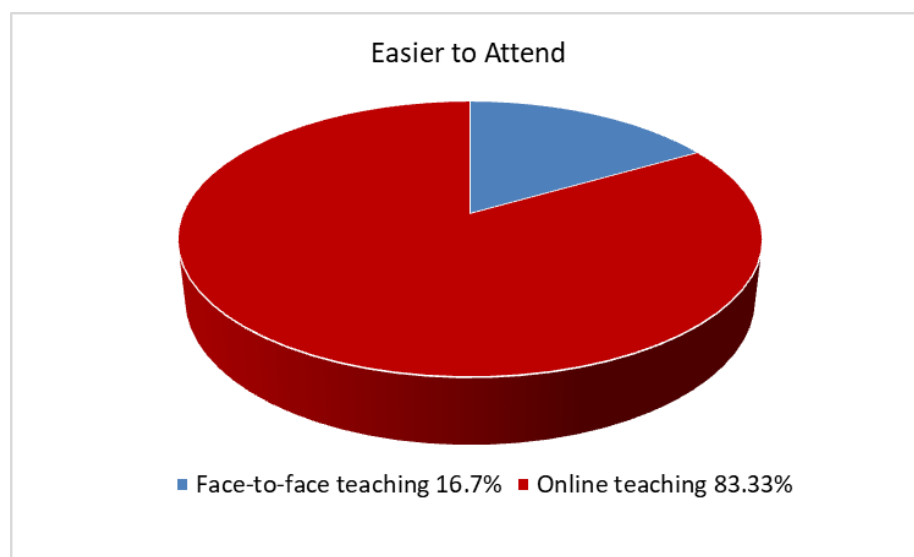


Figure 5: Easier to attend teaching modality as per survey results

Discussion

The COVID-19 pandemic has had a significant influence globally in many aspects of life. As of 8th December 2022, a total of 266,252,308 cases have been reported for the WHO European region, and 2,139,674 deaths have been recorded.⁶ Doctors in training played a crucial role in providing front line services during the pandemic. Rotas were re-designed,⁷ and many doctors, regardless of their specialties, were recruited to frontline fields, i.e. A&E, acute medicine and critical care². The bulk of postgraduate medical education was either halted or severely reduced, and there was less emphasis on fulfilling training needs due to the high burden of service provision.

Our survey revealed that face-to-face teaching was the preferred modality by trainees. They found it more stimulating and interactive than online teaching. Perhaps this is because of a greater level of interaction between the trainer and the trainee, whether in a class or at the bedside. This therefore demands online teaching to be more interactive⁸ as face-to-face teaching could not be implemented during the pandemic due to social distancing instructions.

Procedural learning is very hard to shift to online mode and this is particularly relevant to surgical specialties.⁹ Therefore, trainees who took part in this survey coming from the background of procedure-oriented specialties had the experience of the COVID-19 pandemic negatively influencing their procedural training.

There are other areas where clinicians have been more inclined to in-person learning for enhancement of their skills. Out of many, management of complex clinical situations¹⁰ such as end of life care, limited computer literacy¹¹ and more personal interaction¹² were identified as more compelling reasons why clinicians prefer face-to-face teaching.

Face-to-face CME and routine training offer an opportunity to meet and socialise with other colleagues who can be of variable grades and a respite from service pressures¹³ and daily clinical routines.

The survey participants did view online teaching as a more flexible mode of learning. This is in line with the survey findings of other studies¹⁴. Learning at one's own pace at anytime,¹⁵ rewinding a missed topic and access to content at time more suitable are a few of many reasons which add appeal to online learning. This however requires facilities at institutions to make online learning a more useful experience, such as recording of lectures, availability of high-speed internet,¹⁶ availability of modern

laptops, desktops etc to have better quality access and so on.

Online learning is a more cost effective teaching modality.¹⁷ If trainees chose online teaching as their modality of choice for CME activities, this would save training boards and deaneries a substantial amount of money for reimbursement to trainees and speakers on expenses like travel, hotel stay, event fees etc. This money could then be spent on upgrading online training facilities.

The survey highlights the importance of incorporating the benefits of both teaching models and we suggest that a hybrid model of teaching for post graduate trainees and clinicians would be beneficial. Ideally this model will promote the positives in both face-to-face and online teaching and make attempts to overcome the challenges of both modalities.

This hybrid or blended model of learning utilizes various methods of both online and face-to-face which run hand in hand to provide quality learning to trainees. It encompasses teacher-led, simulation,¹⁸ social media,¹⁹ webinars,²⁰ and peer-to-peer techniques which offer flexibility and an enhanced professional development layout.

Mobile apps like Skype, Zoom²¹ and WebX provide easy access to trainees for accessing lectures and CME content. Face-to-face teaching and courses can be arranged for practical skills learning, simulation and a more personal approach. A structured hybrid model, as per the requirements of postgraduate trainees, would hence be the way forward for a more holistic approach to learning with minimal challenges and obstacles.

There were limitations to our study. It was a retrospective analysis of trainees' perceptions of multiple and differing teaching events over the course of the pandemic. Their perceptions may have been adversely affected by individual positive or negative events or teacher competence. The survey took place in only one centre. Also, there were limited number of participants.

Conclusion

The results of our study reveal face-to-face teaching as the preferred teaching modality of postgraduate trainees. However, they did appreciate the online method as a more flexible one and there was no difference in the ability to concentrate or retain learning. There is a need to develop a hybrid model composed of both face-to-face and online teaching modalities for competence and professional development of post graduate trainee doctors and clinicians in the future.

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