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ORIGINAL RESEARCH

Online Synchronous Clinical Communication Training During the Covid-19 Pandemic

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Purpose: As the COVID-19 pandemic outbreak occurred, most structured clinical communication training were transformed from in-person to remote seminars. The aim of our study was to evaluate the usefulness and feasibility of online synchronous clinical communication training from both students' and tutors' perspectives.

Patients and Methods: We conducted a cross-sectional study. Geneva Faculty of Medicine' 3rd year medical students and tutors involved in clinical communication were asked to respond to an online survey.

Results: Eighty-five of 149 students and 15/16 tutors responded. Students highly valued both online seminars and reported little technical difficulty. They felt that tutors were well prepared and actively involved them in experiential learning. Tutors globally reported little technical difficulty and felt rather well prepared to do so online. Although both students and tutors preferred the in-person format, half of them could still consider using an online format in the future outside the pandemic but mentioned it required specific rules.

Conclusion: Our results suggest that clinical communication can be taught and practiced online and that tutors can quickly adapt to such changes.

Keywords: clinical communication, online, synchronous, training, teaching

Introduction

Traditionally, structured clinical communication training activities in undergraduate education include in-person small group discussions, video observations, and role plays (with or without simulated patients).[1] In the workplace setting, optimal methods of teaching and learning communication skills are direct observations of the student's performance or videotaped clinical interaction, followed by feedback from an experienced tutor and role modeling preceded by observation tasks.[2]

Online learning, often called internet-based learning, has increased in medical education. It encompasses a wide variety of technological forms such as simulation, digital teaching aid, online teaching, serious games, massive open online courses, and augmented reality (virtual reality/patients and/or learning environments), hosted or not by learning management systems.[3,4] The advantages of online learning are irrelevance of physical distance, cost savings once online tutorials have been developed, flexibility in time of participation, and individualizing learning through self-adjustment or automated adaptation.[5] Disadvantages include costs related to the development of online learning, technical difficulties, and sense of isolation.[5] A systematic review showed that online learning works as well as offline learning, but the conditions under which it can be used must be further clarified.[6] Blended learning, the combination of

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both online and offline teaching methods, is presented as the best option in medical education.[5]

Regarding clinical skills, online education is considered to offer an attractive alternative because it is self-directed, flexible, and offers opportunities to simulate and rehearse different clinical situations.[7] Online teaching of communication skills usually supplements learning in the workplace and is often part of blended learning programs in the context of continuous professional education.[7,8] The online part of the courses usually emphasizes theoretical knowledge, video, and exercises/quizzes. It is recognized as an effective way to enhance and individualize self-directed learning while in-person learning aligns with collaborative and socialization goals. However, its impact on patient outcomes has not been well assessed,[8] and further research is still needed to identify what makes virtual teaching of communication skills effective.[7]

As the COVID pandemic outbreak occurred, most medical schools were not equipped with effective online digital education regarding clinical communication training. Training activities were either suppressed or quickly converted from in-person to remote learning activities such as remote formative OSCEs or remote seminars via a videoconference platform. The challenge was to effectively teach and practice communication skills during synchronous online seminars and train available tutors to use new IT tools in a very short timeframe. Little is known about how such changes occurred and what lessons can be learned from such a shift in teaching practices.[9,10]

As in many countries, our medical school closed its doors mid-March 2020. Forty-eight hours later, all tutors involved in clinical communication small group training attended an online training session on how to effectively use a videoconference platform, to facilitate interactive seminars using virtual white board, videos, role play, and rooms for small group discussions. We relied on the online manual instruction developed by the University IT pedagogical team.[11] The following week, all clinical communication seminars were converted from in-person to remote seminars, which took place during the following 4 weeks, with 3rd year medical students in groups of 8–14 students. These seminars included small group discussions, observation of videos, and role plays with the tutor (playing the role of a patient or a supervisor).

The aim of the study was to explore students' and tutors' perceptions regarding the feasibility, usefulness, and advantages/disadvantages of online synchronous clinical communication training activities.

Participants and Methods

Setting

We conducted a cross-sectional study at the Geneva Faculty of Medicine, Switzerland. We invited all 3rd year students and tutors involved in one or both of two clinical communication skills training/teaching sessions during March and April 2020 to respond to an online survey on the usefulness, feasibility, and advantages/disadvantages of online CS training seminars. Sixty-one of 117 students attended seminar 1 (S1 "how to prescribe a medication" in order to optimize patient compliance) and 100/149 students attended seminar 2 (S2 "how to present a clinical case"). The difference in the total number of students expected to attend S1 and S2 is explained by the fact the the Geneva Faculty of medicine allows medical students to unregister from one unit out of six during their 3rd year. Several students grasped this opportunity during the 4th unit, during which S1 is given, while S2 is given during the fifth unit. The low rate of attendance is explained under the result section. All 16 tutors answered the call to teach these seminars. These two seminars end the structured experiential communication skills training (8x2 hour seminars and five formative OSCEs) given during years 2 and 3. Table 1 describes the chronological sequences of both seminars.

Questionnaire

We developed a 15-item online questionnaire using Qualtrics software.[12] It was based on questionnaires used in our Faculty of medicine to evaluate participants' satisfaction regarding experiential training activities, as well as dimensions we wanted to specifically explore (feasibility, technical difficulty, advantages/disadvantages of online vs in presence experiential teaching/training) since the literature is scarce on online synchronous experiential learning. This questionnaire was however not formally validated. Because of time constraints, we did not conduct any pilot testing of the survey. Students' and tutors' perspectives were explored using a Likert scale (1–5, 1=totally disagree to 5=totally agree) and three open-ended questions. The link to the online questionnaire was sent by email to all 3rd year medical students (n=149) and involved tutors (n=16) on April 25, 2020 and two reminders were sent 1 and 2 weeks later.

The study was granted a waiver from approval by the Ethical Committee of Geneva since it did not fall under the scope of the Swiss Evaluation of Human Research Act (no

Table 1 Short Description of the Different Phases of the Seminars

Seminar 1: How to Prescribe a Medication	Seminar 2: How to Present a Case to a Supervisor
2–3 Quiz questions on patient compliance rate	
Brainstorming on how to prescribe (link with a preceding seminar on how to explain in year 3) • *Use of the electronic whiteboard*	Brainstorm on the importance of a good case presentation • *Use of the electronic whiteboard*
Elaboration of the main steps of a medication prescription • *Display steps on shared screen (word document)*	Observation of a simulated encounter between a student and the patient • *Screen share of the video* • Observation tasks: write down and organize the information given by the patient in order to be able to present the case to the supervisor
Recall on how to end a clinical encounter (preceding seminar in year 2) • *Group brainstorming with the use of the electronic white board*	Presentation of a study reporting supervisors' expectations regarding case presentations
Observation of a videotaped simulated clinical encounter focusing on a medication prescription • *Screen share of the video*	Brainstorming on the different steps of a case presentation (based on the video and prior exercises in years 2–3 on how to write a consultation summary) • *Use of the electronic whiteboard*
Practical exercise on how to write a medication prescription (using a blank sheet) • *2 examples shown on the screen* • *Practice two by two using breakout rooms* • Debriefing in large group and comments on difficulties	Display of two different ways of presenting the initial complaint (1 poor and 1 good example): ask the students to identify differences • *Powerpoint document shared on the screen* • Group discussion
Role play using the same clinical situation displayed in the videotaped clinical encounter and the written prescription • *2–3 students in turn and the tutor playing the role of the patient* • *Other students observing with specific tasks (on mute, no image)* • Debriefing in large group	Presentation of the steps of the clinical reasoning process (analytical). Discussion of the links between the clinical reasoning process and the steps of the case presentation Presentation of the SNAPPS model • *Powerpoint document shared on the screen*
Observation of a videotaped interaction between the patient and the pharmacist in a pharmacy • *Screen share of the video* • Observation tasks: dimensions of the pharmacist work (security, efficacy, economicity) • Discussion in large group	Role plays using three different written vignettes • *Preparation of the case presentation using breakout-rooms* • *Role plays 3 students in turn for each vignette and the tutor playing the role of the supervisor* • *Other students observing with specific tasks (on mute, no image)* • *Debriefing in large group*

Notes: Italic indicates technical steps for the tutor.

patients included).[13] However, in the introduction of the survey, participants were informed about the goals of the study and that by answering the survey, they gave their consent to publish anonymized responses.

Analysis

SPSS software version was used for the analysis. Participants' responses were analyzed descriptively using percentages, median, interquartile range, means and standard deviations. Responses to open-ended questions (advantages, disadvantages, suggestions) were analyzed thematically by four investigators. They first read all the written comments and identified themes that were compared and discussed. Once a consensus was achieved, themes were combined into main categories (Table 4).[14]

Results

Eighty-five students (50 attended S1 and 80 attended S2: 49 attended both) and 15/16 tutors (five facilitated both) responded. The main reasons reported by students for not attending the seminars were overseeing the email invitation or being involved as volunteers in the COVID crisis management.

Table 2 Students' Perceptions Regarding Online Synchronous Clinical Communication Training

Students	S1: How to Prescribe N=50 (Likert Scale 1–5)*		S2: How to Present a Case N=80 (Likert Scale 1–5)*	
	Median (IQR)	Mean (SD)	Median (IQR)	Mean (SD)
The seminar was useful for my training	5.00 (0)	4.78 (0.42)	5.00 (0)	4.78 (0.45)
The topic was relevant for future practice	5.00 (0)	4.82 (0.63)	5.00 (0)	4.90 (0.30)
I had technical difficulties to attend the online seminar	1.00 (0)	1.34 (0.77)	1.00 (1.00)	1.76 (1.23)
I actively participated to the seminar	5.00 (1.00)	4.64 (0.56)	5.00 (1.00)	4.38 (0.83)
I could practice my communication skills	4.00 (1.00)	4.26 (0.80)	4.00 (1.00)	4.33 (0.81)
The tutor was well trained to deliver the seminar content	5.00 (0)	4.88 (0.33)	5.00 (0)	4.84 (0.41)
The tutor was comfortable in using the online platform	5.00 (1.00)	4.60 (0.50)	5.00 (1.00)	4.42 (0.76)
I was not disturbed by the fact that the seminar was given online	4.50 (1.00)	4.26 (0.96)	5.00 (1.00)	4.16 (1.08)
I prefer when these seminars are given in person and not online	4.00 (1.00)		3.73 (1.14)	
I appreciated that the tutors used the new IT to maintain training activities during the pandemic	5.00 (1.00)		4.68 (0.59)	
The fact that the seminars were maintained during the pandemic helped me feel less isolated in my training	5.00 (1.00)		4.41 (0.88)	
The fact that the seminar were maintained helped me keep links with my peers	4.00 (2.00)		3.86 (1.03)	
	N (%)			
I would be interested in facilitating such online seminars outside the pandemic	47 (60)			

Note: *1=totally disagree to 5=totally agree.

Table 2 shows that students highly valued both online seminars in terms of usefulness and relevance to their practice and did not make a distinction between patient communication (S1) and professional communication (S2). They reported little technical difficulty. They felt that tutors were well trained, comfortable while using the online platform (median 5 (IQR=0 and 1)), and actively involved them in experiential learning (median=4–5 (IQR=1)). They highly valued the fact that these training activities were maintained during the pandemic (median=5 (IQR=1)). Tutors globally reported little technical difficulty in facilitating the seminar and felt rather well prepared to do so online (median=4 (IQR=1) for S1 and median=4 (IQR=1.5) for S2) (Table 3). However, their self-perceptions were less positive than students' perceptions regarding tutors' degree of comfort and preparedness. Although both students and tutors preferred the in-person format, half of them could still consider using such an online format in the future outside the pandemic (60% and 53%).

Analysis of participants' answers to open-ended questions indicated that students particularly enjoyed keeping contact with peers and tutors when most learning activities were cancelled. In this context, online seminars also boosted their motivation to learn and decreased their sense of isolation. Several tutors felt that the students were more engaged, motivated, and attentive, and that it helped them and the students to be more focused than during in-person seminars. Students valued the interactive techniques used by tutors such as the electronic white board and the breakout rooms. Both tutors and students valued not needing to travel. For tutors, this new format mirrored the needed skills for telemedicine, while students considered on-line role play to be a first experience for their future practice in telemedicine. Some students felt less inhibited during on-line seminars, while others considered that shy students tended to hide behind the screen. Disadvantages included loss of social and human contact with both peers and tutors. Communication was perceived as less

Table 3 Tutors' Perceptions Regarding Online Synchronous Clinical Communication Training

Tutors	S1: How to Prescribe N=7 (Likert Scale 1–5)*		S2: How to Present a Case N=8 (Likert Scale 1–5)*	
	Median (IQR)	Mean (SD)	Median (IQR)	Mean (SD)
I had technical difficulties in facilitating the seminar	2.00 (1.00)	1.71(0.76)	2.50 (2.75)	2.38 (1.30)
I could actively involve the students in the seminar	4.00 (1.00)	3.71 (0.95)	4.00 (2.00)	3.88 (1.13)
The students could practice their communication skills	4.00 (1.00)	3.57 (0.54)	4.00 (1.00)	3.50 (1.20)
I was well prepared to deliver the seminar content	5.00 (1.00)	4.57 (0.53)	4,00 (1.75)	3.88 (1.36)
I was well prepared to use the online platform	4.00 (1.00)	3.71 (0.49)	4.00 (1.50)	3.88 (1.00)
I was not disturbed by the fact that the seminar was given online	4.00 (2.00)	3.86 (1.07)	3.50 (2.50)	3.50 (1.20)
I prefer when these seminars are given in person and not online	4.00 (2.00)		4.00 (1.00)	
It was important to show students that training activities could be maintained during the pandemic	5.00 (1.00)		4.36 (1.21)	
	N (%)			
I would be interested in facilitating such online seminars outside the pandemic	8 (53)			

Note: *1=totally disagree to 5=totally agree.

natural and spontaneous than in in presence seminars. Tutors found it difficult to perceive and react to students' non-verbal cues. Technical problems such as connection disturbances were reported by both tutors and students, while students mentioned the difficulty to remain concentrating during online seminars in a sometimes noisy home environment (Table 3). Suggestions included limiting the group size (6–7), use of rules for speaking, compulsory activation of the camera option on the internet platform in order to stimulate interactivity with all students, and prior planning of group subdivision in breakout rooms. Both tutors and students supported further tutors' training in facilitation of online experiential sessions.

Discussion

The results of the survey show several interesting findings: online synchronous clinical communication training allows active involvement if tutors and students respect a set of specific rules. The practice of communication skills is feasible and acceptable online.

Synchronous communication through videoconferencing has been shown to positively influence group discussion and participation for supervision at a distance.[15] Since the pandemic outbreak, several organisations have made accessible several practical guides on how to address the challenges and potential adaptations for online communication skills teaching.[16,17] This may further enrich teachers' repertoires on how to stimulate interactivity at a distance. Use of online role plays offers an interesting way to expose students to telemedicine and tele-supervision which are rarely addressed during undergraduate training.[18]

Tutors quickly adapted to such changes, although they reported facing more technical difficulties than students in using new IT tools. This may be related to tutors having to perform substantially more handling of technical aspects (sharing a video, use of whiteboard, etc.) than students. Negative attitude in engaging with new technologies and tools has often been reported as a barrier to the development and implementation of online learning.[19] As experienced and described by several authors, the COVID-19 pandemic seems to have acted as a catalyzer to develop innovative online teaching activities and enhance teachers' digital literacy.[20,21]

Maintaining learning activities during the COVID-19 pandemic contributed to an increased sense of belonging to a community of learners/teachers. Integration into a learning and teaching community of practice is important for both the learning process and the development of medical students' professional identity.[22] Role

Table 4 Students' and Tutors' Comments Regarding Advantages, Disadvantages, and Suggestions Regarding Online Synchronous Clinical Communication Training/Teaching

	Examples of Students' Comments	Examples of Tutors' Comments
Advantages		
Facilitating timely access	- No need to travel, easy access for those furthest away from the medical school - I think that the rate of participation in these courses that tend to be deserted can be increased with this kind of software	- No need to travel to the classroom where the students are/easy to integrate into a community teacher's schedule
Maintaining the learning/teaching process	- It allows learning to continue while everything else is paused - It allows for guided teaching rather than having to do everything on one's own	- In times of pandemic, it is important to stay connected and maintain teaching activities
Keeping the link	- Keeping in touch with each other through these zooms makes me feel better - Continue to interact with our peers and teachers	
Students' attitude	- More attentive - One advantage is that shy people like me are less afraid to speak up	- The students seemed more relaxed and at the same time more eager for information and more involved than usual. - Students are more attentive … - No oral asides between participants.
Small group facilitation	- The possibility of dividing the class into small private groups to work independently - Facilitates interaction and note-taking - The fact that there is a zoom function so that the speaker is automatically put in full screen makes listening and conversations easier in my opinion	- To have their first name help make them participate - You can see all the students better and you realize faster if something goes wrong
Telemedicine skills	- In the future, as part of our activities, we may have to do teleconsulting or telephone consultations, which is close in format, so it's good to have practiced this	- Use by students of new technologies that could be useful to them in their medical practice in the future (eg, teleconsultation)
Disadvantages		
Technical and environmental barriers	- There may be computer or connection bugs and it is not always easy to find a quiet and isolated place - Risk of being disturbed by the family, noise in the house during the seminar	- High dependency on technical hazards - Technical problems, especially when the video is shared. It was is very badly received by students
Loss of human contact	- Distance with teachers and other students, you stay in the virtual world - Virtual communication can never completely replace face-to-face communication, the presence of actors in the same place makes the approach different - No socialization before and after classes	- Lack of direct contact - Loss of transmission quality and contact intensity
Concentration	- Students are less concentrated than in in-presence seminars	- It requires a great concentration to "hold" the students, to engage them. Exhausting
Small group facilitation	- More unequal student participation: normally the teacher gets everyone involved, here the shyer students are hidden by the screen - Speech distribution: only one person is heard at a time and it is more difficult for everyone to express themselves spontaneously - It's more complicated to ask questions, whether it's because of the connection or the fact that we are more interrupted or not heard	- Difficult to manage more than 8 at a time, the others "escape us" - Speaking turns not easy (often speaks at the same time), especially for large groups - More difficult to react quickly and spontaneously in role-plays - For the non-verbal, more difficult to feel what's going on in the group, if the messages are getting through or if there are misunderstandings, as for some, there was no image

(*Continued*)

Table 4 (Continued).

	Examples of Students' Comments	Examples of Tutors' Comments
Recommendations		
	- To define communication/work rules (all turn on the camera, etc.) - To favor small groups - To train tutors/practitioners with this method	- Think about ways to better practice communication skills, possibly by doing small group work - group sizes were larger for the second seminar and likely made communication practice more difficult to reach (fewer people who could actively practice). - It takes practice to develop these new pedagogical skills. Practice and training - Maybe better define the "rules of the game" at the beginning of the meeting, like: if you have any written comments to make, please share them with everyone

modeling is important to instill professional values, attitudes, and behaviors. Tutors' quick adaptation to IT tools and keeping in touch with students may have exemplified the challenges faced, the skills needed, and the attitude expected from clinical teachers to ensure learner centeredness in changing conditions.

There are several limitations. First, the fact that the survey took place in one university and included only 3rd year medical students limits the generalizability of our results. We collected only perceptions and did not assess the effectiveness of the online training on higher levels of educational impact according to the Kirkpatrick Model of Training Evaluation.[23] The context of the pandemic might have positively influenced the students' perceptions, since most other courses were cancelled due to lack of tutors' availability.

Conclusion

Based on these results, we conclude that clinical communication can be taught and practiced online and that tutors can quickly adapt to such changes. Although this format may model synchronous telemedicine skills, it does not replace in-person learning. It requires specific rules and conditions to stimulate interactivity.

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