TEACHING AN INTENSIVE CORE COURSE FOR MEDICAL STUDENTS IN THE ERA OF COVID-19: MINDFUL MEDICAL PRACTICE ON ZOOM

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ABSTRACT

Background: The COVID-19 pandemic brought many challenges, including delivering interactive courses such as the Mindful Medical Practice (MMP) program to medical students. It also provided opportunities to trial online teaching of the program using technologies such as Zoom.

Approach: Medical educators from McGill University in Montreal and The Rural Clinical School of Western Australia in Busselton collaborated via Zoom to adapt the MMP program to an online format. This involved weekly meetings to adapt each class and debrief following its delivery. A number of adaptations were required which were implemented with ease while maintaining the program’s integrity.
Evaluation: The facilitator found the course relatively straightforward to teach with Zoom. In their essays at the end of the course the students reported that the MMP program was a valuable experience that they found to be “enjoyable”, “positive”, “interesting”, “beneficial” and “refreshing”. They reported that the online experience offered benefits over face-to-face delivery and was particularly helpful during the COVID-19 pandemic.

Reflection: There were a number of potential limitations: this was a relatively small group of students; the students were already well acquainted with the facilitator; the students and the facilitator were experienced in using Zoom for teaching and the qualitative analysis was opportunistic rather than formalised. The major strength was a clear demonstration of the feasibility of delivering the entire program online that is particularly relevant during this time of stress and uncertainty and also expands the potential to provide this teaching to students and universities across the world.

KEYWORDS: Mindful medical practice, Interactive online teaching, Teaching during COVID, COVID opportunities

BACKGROUND

Description of problem and generalizability

With the advent of social distancing to address the COVID-19 pandemic we and other medical educators were faced with the challenge of how to continue to train medical students in the skills, attitudes and ways of being that would prepare them for their clinical work with patients [1]. We could see how formal lectures imparting knowledge could be delivered online [1] but we were uncertain how very interactive teaching could be taught without in-person participation by students and faculty. The particular course that presented the most challenge to us was taught to groups of 20 students in 7 sessions of 2 hours focussing on mindful clinical congruence (moment to moment non-judgemental awareness and presence to self, the patient, and the clinical context) immediately prior to clerkship [2,3]. The purpose of the course, which is described in detail elsewhere [2,3], is to give students the skills and ways of being to deal with the often overwhelming clinical experience of clerkship, and to blunt the declines in empathy and ethical reasoning that have been observed at this stage in their training.

Although brief mindfulness courses have been delivered online in recent years [4] we could not initially see how the very intense in-person engagement between tutor and students, and between students, in this
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experiential course [2] could be created without students and faculty being physically present in the same room – not possible because of the pandemic.

The array of potential solutions

The course is taught to all students (180 per year) in a large North American Medical School with a 4-year curriculum in which the MMP course is delivered at the end of second year in the 6 months immediately prior to clerkship. The course instructors felt that it would be difficult to switch this teaching to an online format and made plans to teach the course (or a shortened version of the course) at a later time when we hoped that the social distancing related to the pandemic would have eased allowing students to return to class. It was also suggested to teach a modified version of the course that relied on giving students reading and reflective writing assignments followed by brief discussions online. Although these are feasible approaches, some of which may be implemented, we believed that we would be missing an opportunity to use the crisis of the pandemic [5] to enlarge the scope and impact [6] of our teaching if we did not also explore whether and how the course could be taught effectively using technology (e.g. Zoom) to connect students and faculty in a live recreation of the in-person course. We were encouraged in this approach by the personal experience of one of us (SM) and that of others who have taught mindfulness [7,8] and other content requiring a very interactive engagement online [9].

APPROACH

Why a particular solution was chosen

The first author (SM) attended a 2-week sabbatical at McGill University Programs in Whole Person Care in October 2019 where she was introduced to the Mindful Medical Practice (MMP) program by the second author (TAH) and by the co-author of the MMP book [2]. SM had experience teaching mindfulness to medical students [7] and was interested in implementing the MMP program at her home university, The Rural Clinical School of Western Australia (RCSWA). The initial intention was to deliver the program face-to-face, however when the COVID-19 pandemic arose, it became apparent that this would not be possible. SM and TAH met online to discuss the potential for adapting MMP to a virtual format in March 2020. SM felt confident with her skills teaching via Zoom and TAH believed that it was feasible to deliver the MMP program using the Zoom platform, so together they agreed to pilot the program with a group of 10 RCSWA students in April and May 2020.
Context

The RCSWA delivers a 12-month longitudinal clinical program to medical students across fifteen rural towns in Western Australia [10]. Students undertake clinical clerkships and small group teaching within their site, but also participate in inter-site and whole of school teaching via videoconference throughout the year-long program. Zoom is the videoconference platform used by the RCSWA and students and teachers have become confident and competent using this technology over the past 5 years. SM is the lead Medical Coordinator at the Busselton site where she provides teaching, clinical supervision and personal support to the ten students at her site. In this role, she develops relationships with each of the students that are both professional and personal due to the nature of the small group teaching environment.

Implementation of the solution

TAH and SM met via Zoom each week prior to the teaching session to review the session content and identify any parts of the session that would require adaptation for the online format. After the first session, the meetings also included an opportunity to debrief on the previous class, including what worked well and any challenges that arose during the session.

There were several adaptations that were required in order to deliver the program via the online Zoom platform. These included using breakout rooms for sharing in dyads; sharing images and videos using the “share screen” function; using the “whiteboard” function to write lists and notes; and acting out and role playing the Satir stances. We also removed the “4 Minutes of Red Exercise” as it was not possible to integrate this task via the online platform. The duration of each class was 90 minutes, similar to face to face classes.

For Class Four, some preparation was required prior to the class before attempting the “Embodying the Clinical Stances” role play. SM emailed six students two days prior to the class and invited them to role play. SM then emailed the students the information about their role. As the facilitator, SM introduced the patient role player to the group, then invited each doctor role player to speak to the patient, Karen. On completion of the exercise, SM asked the patient role player to share how she felt about each of the doctor’s stances. Students then were divided into breakout rooms to debrief in dyads, then returned to the whole group to debrief together.

For more detailed information regarding alterations for each class, please refer to the supplement.
EVALUATION

SM’s evaluation

SM enjoyed delivering the MMP program for the first time via Zoom. The MMP book [2] provided all of the information and resources required to deliver the program as a novice facilitator. For some of the activities the online format seemed superior to face-to-face. Specifically, the dyads exercises using the breakout rooms provided the students with the safety and privacy to share intimate experiences. Further to this, sharing images and videos using the “share screen” function was simple and removed the need for extra equipment or technology that might be required in the face-to-face classroom setting.

By the final session, SM felt deeply connected to the students and experienced a sense of joy having facilitated such a unique and valuable program to them. The experience of revising these timeless lessons was as valuable to her as a teacher as it was to the students. It was rewarding to observe the students understanding the concepts and sharing their insights, particularly in Class 7 when they completed the Iceberg Metaphor and shared their “one word” that summed up their experience of the program.

Informal student feedback

Almost every student sent the course facilitator an email on completion of the program thanking her for the opportunity to participate in the course. One student commented in an email that she was going to miss the weekly classes. Another student provided verbal feedback that she had been sharing her experience of the program with one of her clinical placement supervisors because she believed it was such a valuable educational opportunity.

Student essays

On completion of the 7-week program, participating students were invited to write an essay reflecting on their experience of the MMP program and the learnings that they will take forward into their clinical practice. SM read each of the student essays and provided written feedback within 3 weeks of completing the program. Although the students were not specifically asked to reflect on delivery of the program via Zoom or the impact the program had on their experience of the COVID-19 pandemic, many of the students chose to comment on these issues in their essays. The essays provided useful insights into what the students learned, what worked well and the challenges they experienced during the program. A sample of quotes from the essays that exemplify the students’ reflections are given in Table 1.
<table>
<thead>
<tr>
<th>Reflective interactions and themes</th>
<th>Quotes from essays</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual reflection</td>
<td>Having a dedicated time period during my week to reflect and complete two meditation exercises was a very helpful tool to relax. It also gave my mind a chance to refresh and reflect on the previous week and the week ahead.</td>
</tr>
<tr>
<td>Communication in dyads using breakout rooms</td>
<td>While I usually shy away from interactive classes, I really liked the use of the breakout rooms with just 1 other student – I found it easier to open up and to commit to the activities, probably more than I would have done if we had had the class in person.</td>
</tr>
<tr>
<td>Group discussion</td>
<td>I found the group discussion invaluable as I learnt a lot from hearing others’ personal difficulties with mindfulness and it was comforting to know that we all shared some similar frustrations and all faced challenges when trying to be mindful.</td>
</tr>
<tr>
<td>Role modelling</td>
<td>One of the things I found really engaging about the course was the leadership by the instructor. She was able to create a safe, judgement free environment that let us sit with our thoughts, which I think is very important in this process.</td>
</tr>
<tr>
<td>Meditation practice and reflection</td>
<td>I enjoy meditation but make excuses not to do it, so having this structured in the week – especially near the end of the week – was really lovely. I particularly appreciate the chance to be reflective of practice rather than just “doing” all of the time.</td>
</tr>
<tr>
<td>Implementing mindfulness into daily practice</td>
<td>Overall the course introduced me to so many new techniques that I look forward to implementing in the future and staying mindful in my medical practice.</td>
</tr>
<tr>
<td>Mindful congruent practice</td>
<td>The course has educated me how important it is to try and consider or at least be aware of the patient, myself and the scenario in a non-judgemental way, to not criticize or make assumptions about these aspects but just to simply be aware that they exist.</td>
</tr>
</tbody>
</table>
Role playing the stances

In class 4, “Clinical Congruence”, we were given the opportunity to role play using the different stances. I think this was a beneficial exercise; bringing the stances alive gave them more meaning in the clinical context and made each one memorable (will be easier to spot in the future).

Responding to suffering

The “Just Like Me” exercise we participated in towards the end of the class was the most useful part of the whole course, in my opinion…. Having this knowledge behind me allows me to step back during these situations and ensure I do not bring preconceived ideas to consultations.

Iceberg metaphor

In class 7, we were introduced to the Iceberg metaphor. This is one of the activities that I think back to and applying my life now, which I think is testament to how useful the model is! I see it as a “structured approach to understanding myself.” I feel as though the increased understanding has also fostered a great level of self-compassion. For these reasons, this will absolutely be an approach I utilise in my future clinical practice.

Table 1 Essay quotes exemplifying the reflective interactions and themes from the online MMP program

Overall, the students reported that the MMP program was a valuable experience that they found to be “enjoyable”, “positive”, “interesting”, “beneficial” and “refreshing”. A few students came to the program with assumptions about the program, based on previous mindfulness training they had undertaken in medical school or concerns about the usefulness of formalised mindfulness training. Others had no previous experiences of mindfulness and were curious to learn more about how this could be a useful skill to them as medical students. All of the students reflected that the program taught them skills that would be helpful to them in their future clinical practice. The final two classes “Responding to Suffering” and “Mindful Congruent Practice” were particularly impactful. Almost all students commented on the practicality of the “awareness of time” exercise, describing how this task deepened their empathy and compassion for others who are suffering, especially at the end of life. Almost all students mentioned the value of the “Iceberg Metaphor” for exploring their understanding of their thoughts, feelings and behaviours in difficult situations. With regards to the online format, some students noted that they found it difficult to share personal stories over videoconference, while others commented that they preferred using the breakout rooms as it felt “less intimidating” and found it “easier to open up and to commit to the activities, probably more than I would
have if we had had the class in person.” Some students reflected that it was challenging doing the role-play session over Zoom, while others found that bringing the stances alive was beneficial and “gave them more meaning in the clinical context and made each one more memorable”. One student commented that she felt face-to-face delivery of the program would have been more ideal, as it “may have allowed me to commit to the exercise to a greater extent and engage in emotional topics more”. Another student commented that online delivery was “really nice…as I could sit on my deck in the sun at the same time”.

In relation to the COVID-19 pandemic, a number of students reflected on the value of completing the program during at time of stress and uncertainly. One student shared that:

“Not only did these sessions feel like they were gently teaching us important lesson about how to be mindful, they were a lovely moment of calm! Particularly during COVID times, it was a nice opportunity to step back and reflect, be grateful and just live in the moment. That alone serves to highlight how these skills will have utility in a massive variety of situation in the future, medicine related or not.”

REFLECTION

Limitations

There were only 10 student participants in this program, which is half of the usual 20 students who participate in face-to-face classes. The authors remain unsure of the feasibility of delivering the course to larger classes via Zoom. Further, the facilitator and students were acquainted with one another prior to participating in the program, which may have led to a more positive and meaningful experience than if they had not known one another. Finally, the facilitator and students were all familiar with using Zoom for small-group teaching purposes prior to participating in this program and consequently this may have reduced the likelihood of experiencing technical difficulties.

We did not use a formal qualitative analysis of the student essays. Our evaluation was an opportunistic assessment of the experience of small-group teaching adapted to an online format. Our findings are in keeping with the existing research into similar mindfulness training programs delivered to undergraduate medical students. Dobkin and Hutchinson [11] have previously evaluated mindfulness training programs delivered in a number of medical schools around the world and confirmed a number of effects that were also noted in the students’ essays. These include the effect of group dynamics and sharing of experiences with others in a similar situation; the experiential aspects of the course, including exercises in communication, role-plays and mind-body connection; the effect of developing a meditation practice; and the impact of role-modelling by instructors.
Strengths

This is the first time that the MMP program has been delivered to medical students using an online platform. All ten students at the Busselton RCSWA site participated in the program – not a select group of volunteers. None of the students refused to participate. The program was delivered almost in its entirety using an online platform, with only one exercise being removed from the first class due to the inability to deliver it via Zoom. The students reported that the MMP was particularly valuable during the time of COVID-19 for providing a weekly opportunity to relax and reflect. The arrangement between the facilitator and mentor to meet regularly via Zoom was also beneficial and contributed to the smooth running of the program. The success of delivering the MMP program via Zoom vastly expands the opportunities for delivering this teaching to students and universities across the world.

Conclusions

We believe that our experience is not just relevant to the teaching of the Mindful Medical Practice course but more widely to the teaching of reflective practice in medicine. We agree with Schei et al. that the goal of teaching reflection is to educate the enormous non-conscious capacity of the mind in order to create habits of self-correcting adaptive behaviours that are necessary to deal with the inherent complexities of medical practice [12]. To have this effect on students the teaching needs to be deeply experiential [12]. There are four main components necessary for effective experiential teaching: Surprise, Engagement, Emotional involvement, and Stories [13]. Our experience suggests that these four components can be implemented with online teaching. Surprise is necessary to capture students’ full attention and to get them out of a “business as usual” mode. This does require some attention and creativity on the part of the instructor and course designers but is not more challenging online than in person. Engagement means that the students are fully involved and are working harder than the instructor. This can be a challenge online particularly if students have their video function turned off and are thus not visible to the instructor or other students. We believe the answer is to insist, when possible, that students have their videos on, that the group remain relatively small so the instructor can stay aware of all the students, and that students are given tasks (like sharing with a colleague) early and often during each session. Emotional involvement depends on a sense of safety (not more difficult and sometimes easier to achieve online since students are in their own environment) and normally follows once engagement is achieved. Stories, which are easily employed in online teaching, are the final element necessary to produce Surprise, Engagement, and Emotional involvement and to ensure that the teaching does not stay at a purely cognitive level but touches students deeply as whole persons, the main requirement for impactful experiential learning [13] and the teaching of deep reflective practice [12]. We trust that our experience will encourage others to explore the possibilities provided by the adaptability of online platforms to teach even the most deeply human aspects of becoming a medical professional to a potentially much wider and far flung audience.
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REFERENCES


SUPPLEMENT

Adaptions to Mindful Medical Practice program for delivery via Zoom

Class 1: Attention and Awareness
1. **Introducing the MMP Class** – same;
2. **Guided Awareness Practice (GAP)** – same;
3. **Change Blindness Video** – “share screen” function on Zoom worked well.
4. **Four Minutes of Red Exercise** – removed “4 min of red exercise” as unable to incorporate using online platform.
5. **“Something Missed” Narrative Exercise** – dyads were allocated to breakout rooms using Zoom, then breakout rooms closed by facilitator and all students returned to main room for whole group sharing.
6. **Review Course Expectations and Evaluation** – same, although not as strict with “missed class” rule and “no laptops” as they were on their laptop to use Zoom.
7. **Cellphone Exercise in Dyads** – dyads in breakout rooms then returned to main room for sharing.
8. **Brief GAP** – same.

Class 2: Congruent Communication
1. **One Word that Describes the Purpose of this Course** – same;
2. **Guided Awareness Practice** – same;
3. **Reacting Versus Responding** – “share screen” to show images rather than using whiteboard, easy and efficient.
   Facilitator shared a personal experience of reacting first then students shared in pairs. Sharing in pairs using breakout rooms to recall episode where they reacted then returned to whole group.
4. **Satir Stances** – “share screen” to show images of stances and physical postures.
   Students acting out stances in dyads using breakout rooms.
5. **Mindfulness and Congruence** – same;
   Breathe meditation – same, sharing in pairs using breakout rooms after the meditation.

*Titles and numbers correspond to the ones used in the teaching templates for each class published in Liben S, Hutchinson TA. MD Aware: A Mindful Medical Practice Course Guide. Cham, Switzerland: Springer Nature; 2019.
Class 3: Awareness and Decision-Making

1. Guided Awareness Practice – same;
2. Check In – same;
3. Awareness and Medical Errors – described Iowa Gambling Experiment and shared screen of image of 4 decks of cards.
4. Narrative Exercise – writing for 6 mins, then divided into pairs in breakout rooms for dyad discussions, then returned to group for debrief. A couple of students were happy to share their narratives with the group.
5. Medical Error Video – watched Medical Error video on YouTube – shared screen;
   Following video, a number of students shared their experiences.

Class 4: Clinical Congruence

1. “Change Where You Sit in the Room” – couldn’t change where students sit due to being on Zoom.
2. Clinical Context – students were able to write a list; students then shared their lists and I wrote on shared whiteboard for all to see. Together students identified the stressful environments and I ticked them on the Zoom whiteboard.
3. Bringing Together Satir Stances and Healing/Curing – shared images via Zoom for students to see.
4. Review the Stances – shared the image via Zoom and discussed with the students. Students were able to provide detailed examples of stressful clinical situations where they had observed their supervisors in the different stances and reflect on what they had left out and how they themselves could find themselves in these situations in the future.
5. Awareness of “Soles of the Feet” Practice – same;
6. Embodying the Clinical Stances – this required some preparation prior to the class. Facilitator emailed 6 students 2 days prior to the class and invited them to role play. They all accepted, although one did pull out on the day so had to invite another student one hour prior to the class, she accepted. I emailed the students the information about their role. The facilitator introduced the patient role player to the group, then invited each doctor role player to speak to the patient, Karen. I set the timer for 2 mins and let the consultation unfold. After each doctor finished their consultation, I thanked them, then reminded them to step out of their role. On completion of the exercise, I asked the patient role player to share how she felt about each of the doctor’s stances. Students then were divided into breakout rooms to debrief in dyads, then returned to the whole group to debrief together.
7. **Introduce the Three A’s: Awareness, Acceptance, and Action** – shared the image via share screen.
8. **Sitting GAP** – same.

**Class 5: Building Resilience**

1. **Listening Meditation** – played piece of music on laptop then students shared their experiences.
2. **Triangle of Attention** – shared image via share screen and explained.
3. **Define Mindfulness** – same;
4. **Burnout** – typed definition on whiteboard. Students called out causes and I typed onto whiteboard. Ticked off the causes that we can control. New whiteboard and typed 8 characteristics of a good medical student then students called out the extreme versions then I typed on to whiteboard.
6. **S.T.O.P. Exercise** – same;
7. **Deep Listening Dyad Exercise** – explained exercise, divided into pairs in breakout rooms. Returned to whole group and used S.T.O.P. exercise after 5 mins between sharing. Returned to whole group and asked students to share what they noticed as the listener and the speaker.

**Class 6: Responding to Suffering**

1. **Guided Awareness Practice** – same;
2. **Pain and Suffering** – students provided their own definitions. Read out Eric Cassell’s definition and shared on whiteboard “suffering = pain x resistance”.
3. **Helpful Versus Unhelpful Responses to Suffering** – divided students into two groups in breakout rooms, one group wrote list of helpful responses and other group wrote list of unhelpful responses. Then returned to whole group and I wrote both lists on shared whiteboard. Then asked students to identify responses that appear on both lists. Also discussed how they relate to Satir stances.
4. **Awareness of Time Exercise** – students asked to write their list of goals/dreams then allocated to breakout rooms in pairs to share their lists. Returned to whole group and informed of change in situation, then returned to breakout rooms. On completion of the exercise, returned to whole group to share their experience.
5. **Terror Management Theory and Mortality Salience** – same.
6. **“Just Like Me” Guided Visualization Exercise** – same.

**Class 7: Mindful Congruent Practice in Clerkship and Beyond**

1. **Seated Guided Awareness Practice** – same;
2. **“What Has Come Up Since Class 6 (Responding to Suffering)?”** – same;
3. **The Iceberg Metaphor** – facilitator emailed the handout to all of the students 2 days prior to class and asked them to print it off in preparation for the exercise. Some students didn’t have a printer so just hand drew their iceberg. The facilitator provided an example of a personal experience and took them through each level, describing my longings, etc. Students then considered a significant situation in their lives to reflect upon. Facilitator guided them through each level, asking them to consider their longings, etc. Students were then divided into pairs in breakout rooms and given 5 mins each to discuss what came up. Then returned to the whole group and shared what came up.


5. **The Four Levels of Knowing** – same;

6. **Discuss the Essay Assignment** – same;

7. **Closing Exercise** – facilitator explained the process of this ritual. Students were asked to use the “raise hand” function on Zoom and wait to be invited one by one to share their word. Words included gratitude, acceptance, content, growth, inspired, prepared, better, optimistic and awareness.