Cerrahpaşa Med J 2023; 47(2): 202-205 ORIGINAL ARTICLE

Teaching Exchange: Medical Students' Experience with a Pre-recorded Seminar on Multimorbidity During Coronavirus Disease 2019 Pandemic

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Cite this article as: Prazeres F. Teaching exchange: Medical students' experience with a pre-recorded seminar on multimorbidity during coronavirus disease 2019 pandemic. *Cerrahpaşa Med J.* 2023;47(2):202-205.

Abstract

Objective: The aim of this report is to describe lessons learned with a distance learning activity in substitution for in-class study on the management of multimorbidity.

Methods: A total of 140 fifth-year medical students received a pre-recorded slide show with narration and were asked to return by e-mail 3 take-home messages of what they had learned about multimorbidity. Students' learning is presented by means of a mind map.

Results: Correct take-home messages were returned in 95.2% of the cases. This distance learning activity increased students' knowledge regarding the topic multimorbidity.

Conclusion: A pre-recorded slide show with the narration was a valid substitute for the in-class multimorbidity seminar in a context where person-to-person contact was prohibited in the first wave of the coronavirus disease 2019 pandemic.

Keywords: Multimorbidity, medical school, distance education, COVID-19, pandemic

Introduction

The coexistence of 2 or more chronic health problems within a patient, defined as multimorbidity, is more prevalent as people age and turns out to be the norm in medical care settings.[1] There is an undisputable need to improve the knowledge, skills, and attitudes of doctors managing multimorbid patients since multimorbidity poses a major challenge to healthcare systems worldwide[2] and education is a key factor for this improvement.[3] The American Geriatrics Society (AGS) has previously developed the Guiding Principles for the Care of Older Adults with Multimorbidity.[4] The AGS suggested lecturers to use these guiding principles along with AGS slides to supplement lecturers' own teaching materials for a 1-hour lecture regarding multimorbidity. Till recently, these suggestions were followed by our medical school to teach multimorbidity to fifth-year medical students in an in-class seminar (i.e., a course with different speakers in each class).

Coronavirus disease 2019 (COVID-19), a respiratory disease of infectious origin caused by a new coronavirus detected in late December in Wuhan, China, rapidly achieved pandemic status in the community setting. Globally, 550 million people were infected, and 6.3 million people died from COVID-19.[5] With increasing preventive actions regarding the epidemiological outbreak of COVID-19, classroom teaching activities were suspended in several higher education institutions worldwide.[6] More than half of the world's students were affected.[7] This was also the option taken by Portuguese universities. The University of Beira Interior (UBI) adjourned classroom activities from mid-March 2020 onward.[8] At the time, March 16, 2020, in Portugal, 331 people were confirmed as infected,[9] and as of September of 2022, 24 149 people out of 5 171 236 confirmed as infected died.[5]

During the interruption of in-class teaching, and to minimize the educational impact of the suspension, university teachers were requested to use online tools to do their work.[8] A previous review of the literature found high variability in learners' engagement and participation in online courses, but when the course addresses a relevant need and provides time to complete course activities, the chances of success increase.[10]

Coronavirus had universities to rapidly move courses online; the Portuguese government plans to invest 400 million euros to support digital lessons,[11] but there is still no agreement on the ideal teaching methods in the current pandemic context; nor is there one for teaching how to manage multimorbidity.[2]

The most obvious advantage of distance learning during a pandemic is that keeping students apart (in their homes) is much safer.[12] But this fact is not the only advantage. In a recent study about medical students' perceptions in Poland during the COVID-19 pandemic, the authors found that online learning had the advantage of allowing students to have continuous access to learning materials and to allow them to learn at their own pace in a comfortable environment.[13]

Even so, the challenges of maintaining not only the continuity of medical teaching but also its quality are massive under pandemic conditions,[14] and so it is of utmost importance to exchange teachings regarding medical schools' distance learning processes.

Received: September 30, 2022 **Accepted:** December 20, 2022
Publication Date: August 22, 2023
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DOI: 10.5152/cjm.2023.22092

The purpose of this report is to describe lessons learned regarding the practicality and merit of a pre-recorded slide show with narration in substitution of in-class study on the management of multimorbidity at the Faculty of Health Sciences of the UBI, Portugal.

Methods

As a consequence of the first wave of the COVID-19 pandemic, in March 2020, in substitution for the planned in-class seminar about the management of multimorbidity, an asynchronous class was presented. All fifth-year medical students (n = 140) at the Faculty of Health Sciences, UBI, Covilhã, Portugal, received a video with a pre-recorded slide show with narration (with the same seminar objectives as the planned in-class seminar), supplemented with both the AGS Guiding Principles for the Care of Older Adults With Multimorbidity[4] and the AGS slides; students also received the conventional slide show without sound recording for later study. Following, students were divided into 5-7 small groups, based on students' preferences, to facilitate group work at distance[15] (n = 21 groups), and each group was asked after consideration on the topic to return by e-mail 3 take-home messages of what they have learned regarding multimorbidity, in about 1

Figure 1. Themes from the take-home messages reported by the fifth-year medical students.

week. This information had to be presented as a bullet list and each bullet point had to be under 83 characters including spaces, as commonly presented in scientific journals (e.g., *Family Practice*, Oxford Academic).

Take-home messages sent by the students were rated by the lecturer according to the seminar objectives for students' full credit.

For the purpose of displaying the information provided by the students and to determine how reliable they were at gauging the management of multimorbidity, the lecturer, an MD PhD, trained in qualitative research and, with a publication track in international peer-reviewed journals, organized the information in a mind map. The main idea was placed in the center and then by using lines, speech bubbles, and branches, the main idea was connected to other ideas/topics.[16] These topics resulted from inductive thematic content analysis, following the methodology of Braun and Clarke,[17] with any discrepancies resolved by consensus of the lecturer and an independent researcher. The free online tool MINDMUP, developed by Sauf Pompiers Ltd. (https://www.mindmup.com/), was used to build the mind map.

No formal ethical review is required for teaching activities since this is not an interventional study but rather a report in the form of a teaching exchange. Nonetheless, student representatives were informed, consented, and contributed to the decision of the format of the presented online learning method.

Results

All student groups returned valid data (100% response rate). Results are presented graphically as a mind map in Figure 1.

Figure 1 presents topics generated through content analysis. Twenty of the 21 student groups returned scientifically correct take-home messages in line with the literature (95.2% success rate).

Students mentioned 5 broad themes that emerged from the analysis: (i) the definition and (ii) the prevalence of multimorbidity, (iii) the multiple challenges in managing patients with multimorbidity (e.g., single-disease guidelines and polypharmacy), (iv) the 5 domains of the AGS approach to evaluation and management of multimorbidity, and (v) the stakeholders involved in this approach with emphasis to family physicians.

Discussion

The current activity was undertaken to introduce a distance learning seminar at the time of COVID-19. It describes the practicality and merit of a pre-recorded slide show with narration in substitution of an in-class study on the management of multimorbidity in the Faculty of Health Sciences for fifth-year medical students. The results from this report reveal that this educational activity increased students' knowledge regarding the topic under study—multimorbidity, with the mind map reflecting the findings of a great number of previous works on multimorbidity (e.g., [18]). Also, some interesting lessons for medical health teachers in the world can be achieved. The first lesson identified was that fifth-year medical students easily accept online studying despite the lack of face-to-face interaction with teachers and classmates. The second lesson was that studying online using a pre-recorded slide show with narration in substitution of an in-class seminar is practical and has merit for students to learn multimorbidity. As mentioned in the literature review,[13] there are several possible explanations for this result. Learning online may have offered students more flexibility since they could have watched the presentation at a more convenient time and could study at their own pace without losing time traveling to the medical school; moreover, the group work of students in the distance learning process might have had a positive effect on the high learning achieved.[19]

The current report has several limitations. First, only a limited number of students were studied. The current sample is representative of fifth-year medical students from only 1 medical school; thus, caution is warranted when generalizing the current results to other medical courses and schools. Second, Cohen's kappa coefficient was not assessed to measure inter-rater reliability. Third, possible disadvantages of online learning were not analyzed (i.e., concerning increasing medical students' skills and social competences; problems with Information Technology equipment[13]). Fourth, the degree of involvement of each student in the group is not known and, consequently, the individual learning cannot be measured. Finally, it is not possible to identify that if the students were not facing the present pandemic situation, the success of this online class would be similar.

Conclusion

This report showed that a pre-recorded slide show with the narration was a valid substitute for the in-class multimorbidity seminar, in a context where person-to-person contact was prohibited in the first wave of the COVID-19 pandemic. In the future, online teaching may have an even more important role in medical schools, but until then, pre-recorded classes may be a good option for universities facing the need of social distancing, and also in countries where medical teachers are lacking. Furthermore, studies designed to compare in-class to online multimorbidity teachings are needed after the COVID-19 pandemic.

Ethics Committee Approval: No formal ethical review is required for teaching activities since this is not an interventional study but rather a report in the form of a teaching exchange.

Informed Consent: Student representatives were informed, consented, and contributed to the decision of the format of the presented online learning method.

Peer-review: Externally peer-reviewed.

Declaration of Interests: The author has no conflict of interest to declare.

Funding: The author declared that this reporthas received no financial support.

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