

# Medical education in COVID-19 pandemic: medical students' point of view

Ensino médico na pandemia de COVID-19:  
ponto de vista de acadêmicos de medicina

Lucas Ricardo Benfatti Marsilli<sup>1</sup> , Fernanda Bombonato Smecellato<sup>1</sup> , Orlando de Castro e Silva Júnior<sup>2</sup> 

## ABSTRACT

**Introduction:** With the current reality that we are experiencing with the beginning of the new coronavirus (nCov) pandemic, everyone is dealing with new challenges. Among these, there are medical students, with their practical activities interrupted and many concerns. **Objective:** This article portrays the experience of medical students attending internship and the impact of the pandemic on medical education. **Discussion:** Among the multiple issues that students have been experiencing, there is a duality between the desire to engage in the fight against the pandemic and the fear of contamination of their friends and family. Furthermore, there is an increasing offer of online content, such as courses, congresses, and discoveries regarding COVID-19. With the massive adoption of Open and Distance Learning, the student faces the duality between traditional and active teaching methods, in addition to fear about the interruption of practical activities and the question of when they will be re-established. Finally, there are concerns about the students' future: when and how they will complete the medical course, and the preparation for Medical Residency Exams. **Conclusion:** It is clear that the pandemic is significantly affecting already concerned medical students, in multiple aspects of their lives, about their training and completion of the course.

**Keywords:** Medical Education; Pandemic; COVID-19.

## RESUMO

**Introdução:** Com a atual realidade que estamos vivenciando com o início da pandemia do Novo Coronavírus, todos têm enfrentado o desafio de lidar e se adaptar às novas dificuldades. Entre esses grupos sociais, estão os acadêmicos de Medicina, com suas atividades práticas interrompidas e muitas angústias e preocupações. **Objetivo:** Este artigo retrata a experiência vivenciada por acadêmicos de medicina cursando o internato sobre o impacto da pandemia na educação médica. **Discussão:** Dentre os múltiplos questionamentos que os acadêmicos têm vivenciado e as consequências que o isolamento tem trazido, observa-se a dualidade entre o desejo de participar da linha de frente no combate à pandemia e o medo acerca da contaminação de seus amigos e familiares. Ademais, observa-se uma grande oferta de conteúdos online, como cursos, congressos e descobertas a respeito do COVID-19, em contraponto ao reduzido tempo disponível para tal. Com a instituição do Ensino à Distância (EAD), o estudante depara-se, também, com a dualidade existente entre métodos tradicionais e ativos de aprendizagem. Soma-se a isso, o medo acerca da perda de atividades práticas importantes para sua formação e o questionamento sobre quando serão repostas de forma adequada. Por fim, observa-se o receio sobre o futuro do estudante: quando e como será a conclusão do curso de Medicina e o preparo para as sabidamente concorridas provas de Residência Médica. **Conclusão:** Percebe-se que a pandemia está afetando de forma significativa os já preocupados acadêmicos de Medicina, em múltiplos aspectos de suas vidas, acerca de sua formação e conclusão do curso.

**Palavras-chave:** Educação Médica, Pandemia, COVID-19.

<sup>1</sup> Acadêmico(a) de Medicina, Faculdade de Medicina de Marília (FAMEMA), Marília (SP), Brasil.

<sup>2</sup> Full professor of Department of Surgery and Anatomy of the Ribeirao Preto Medical School.

✉ Lucas Ricardo Benfatti Marsilli. Av. Monte Carmelo, 800. CEP 17519-030. Marília (SP), Brasil.

lucasmarsilli@famema.br | Recebido em: 28/08/2020 | Aprovado em: 07/10/2020



## INTRODUCTION

Since the beginning of the new coronavirus (nCoV) pandemic, people around the world have had to deal with a challenge little faced by humanity in the last century. This “lack of experience” of population and authorities, along with post-modern society, generates both commendable and questionable attitudes and measures about the pandemic, resulting in a disruption of the current status quo. Isolation, social distancing, fear, and doubts about the disease, public policies, and economic aspects are some issues that are in vogue in recent months<sup>1</sup>.

A question perhaps barely discussed in this scenario is medical education. The measures adopted in education to try to compensate for the lack of in-classroom activities have been debated in the last days, along with the shortness of human and material healthcare resources in Brazil. In this way, it is clear that medical education has been hit in two aspects: education and health. The present article reports the point of view of medical students attending the internship about the impact of the pandemic on medical education and its multiple aspects.

### Participation in direct care versus fear about contamination

It is likely that most medical students in the last years of medical school are experiencing a duality between the desire and, even, the self-imposed responsibility to actively engage in the confrontation of the pandemic since they are fulfilling the last stages of their medical training. At the same time, there is also the feeling of impotence generated by the interruption of their internship activities in teaching hospitals, where they play an important role in providing medical care<sup>1,2</sup>.

Besides, the students’ concern about returning to their normal activities and the possibility of contamination by the virus is present, along with the fear of experiencing severe clinical manifestations. It is also important to highlight the concern that students face when returning to the activities and contaminating their family members and friends who belong to the risk group, given the likelihood of severity that this group presents and,

consequently, the guilt that these students would carry if the situation becomes worse<sup>2</sup>.

When talking about engagement in direct patient care, we shall mention the polarized political debate that escalated during the pandemic, which distorts one’s impartial perception of reality, characteristic of science, both for students and the general population. The latter, mainly, is the biggest victim of this, and it ends up generating anguish in the student. Now, if the student is preparing to serve the population, and the population often sees the pandemic process almost exclusively from a political perspective, there is strong fear by the student that, by giving health counseling, this will be judged as a political rather than a scientific act.

### The “scientific trampling”

Although apparently, there is plenty of time to carry out various activities during the quarantine, this time is almost exclusively spent with activities related to student training, including mandatory curricular and extracurricular content for the training of general practitioners and not directly related to COVID-19. Thus, the time for a scientific update on therapeutic and preventive measures is often hindered. Furthermore, the scientific advancements on COVID-19 have reached an extremely high speed and perhaps never imagined by mankind. A clear example is the fast development of vaccines: something that took more than a year to start tests in humans, currently, in less than six months we already see it happening<sup>3</sup>.

There has also been a certain “flood” of online courses and congresses, and, of course, any medical student recognizes the importance of participating in these events for the construction of their curriculum. In view of this, the student experiences a kind of “scientific trampling” where he follows his training process (although impaired) and is unable to properly follow the scientific advances.

### The impossibility of in-person activities

Since students are unable to be present in classrooms and teaching hospitals, educational

institutions in Brazil started to use Open and Distance Learning (ODL) resources<sup>4</sup>. In the case of medical education, to better analyze the situation, we can divide the medical course into two stages: the first four years and the last two years, equivalent to the internship<sup>5</sup>.

In the first four years, basic and clinical areas are predominant, with many hours of theoretical content, with some practical activities such as pedagogical assistance. Thinking about the basic disciplines, for those that classically require laboratory activities, such as Anatomy, although possible, learning is greatly impaired, since the complexity of anatomical structures requires a considerable ability for abstraction since there are no physical models to support learning. The same happens with the discipline of Semiology: for the proper learning and training of semiotics, practical activities are necessary for specific laboratories where students can learn the techniques of physical examination.

At the internship, the situation is reversed: the workload is based mainly on practical activities with some supportive theoretical activities<sup>6</sup>. The activities that require direct patient care in the wards, outpatient clinics, emergency departments, and assistance with surgical and invasive procedures become impractical, keeping students with theoretical activities only<sup>7</sup>.

Therefore, we emphasize that ODL supplies only a part of the activities of the course, harming all stages of graduation, but mainly it affects the activities of the internship, which are certainly the most important for the training of medical professionals.

Not enough, in the background, there is a clash between the use of active and traditional teaching methods in universities. We have recently noticed an expansion in the use of active methods in medical schools where most of them have their curriculum fully structured on these methods. In this scenario, there are some challenges in ODL with active methodologies. The meetings for discussion in online platforms have many issues, like technical problems resulting from poor internet access and loss of non-verbal language, necessary for the effective communication between the individuals. Furthermore, access to some information sources is limited, once it is impossible to go to libraries. Obviously, we can easily obtain information on the internet, but the most trustworthy and richest sources of information for medical students are textbooks. So, the active

process of searching for information becomes hard in the pandemic, being, maybe, the few options available for the students to overcome this problem, the acquisition of new books. This is not always possible due to their high costs in Brazil, and in the last case, some appeal to piracy. In light of this, the University of São Paulo (USP) recently acquired an institution-wide license for a virtual library service, containing thousands of e-books on Medical Sciences<sup>8</sup>.

Let's look at this fact, applied to the traditional teaching method, and we still have a severe but less shocking loss. Although the method is based on lectures, it requires the use of sources for study after them, aiming at appropriate learning, since it is a mistake to assume that this method relies only on lectures. Therefore, the lack of access to the libraries also seriously harms learning. In another way, the lectures partially compensate for the lack of information sources, once the handouts and students' notes can be used as a temporary study material.

## Students' future

We cannot help commenting on the impact of the pandemic on the completion of the medical course, which is an important stress factor for the students. Upon the impossibility to accomplish mandatory practical activities, there is concern about when the graduation would be completed, whether the practical activities will be carried out after the ending of the pandemic, or whether the students will be considered ready to graduate even after all these difficulties<sup>7</sup>. We are aware that, in some countries like Italy and Brazil<sup>9,10</sup>, medical graduation was anticipated to increase the number of human resources available during the pandemic. However, there's doubt if these just-graduated doctors would feel confident to practice their profession, especially in a situation like the COVID-19 pandemic.

Along with the medical course completion, another stress and doubt-generator factor is the Medical Residency Exam. Much doubt hangs over how and when it will take place. Furthermore, there is one more complication, which is the preparation for the test. While some students undergo preparatory courses supported by ODL and provide study materials, others rely on curricular theoretical activities and on textbooks

to get prepared. And, logically, all this situation related to the Medical Residency Test matches what was already discussed about timely access to study materials.

### CONCLUSIONS

Based on all that was discussed here, we can picture and understand how the current situation

about the pandemic affects multiple aspects of medical students' lives. Many anguishes lead to a mix of anxiety, depression, and fear of those who are ultimately worried about their medical graduation, namely, the responsibility to gain as much knowledge as possible for future medical practice. To illustrate it, we structured the ideas discussed in this paper in the following diagram (Figure 1).

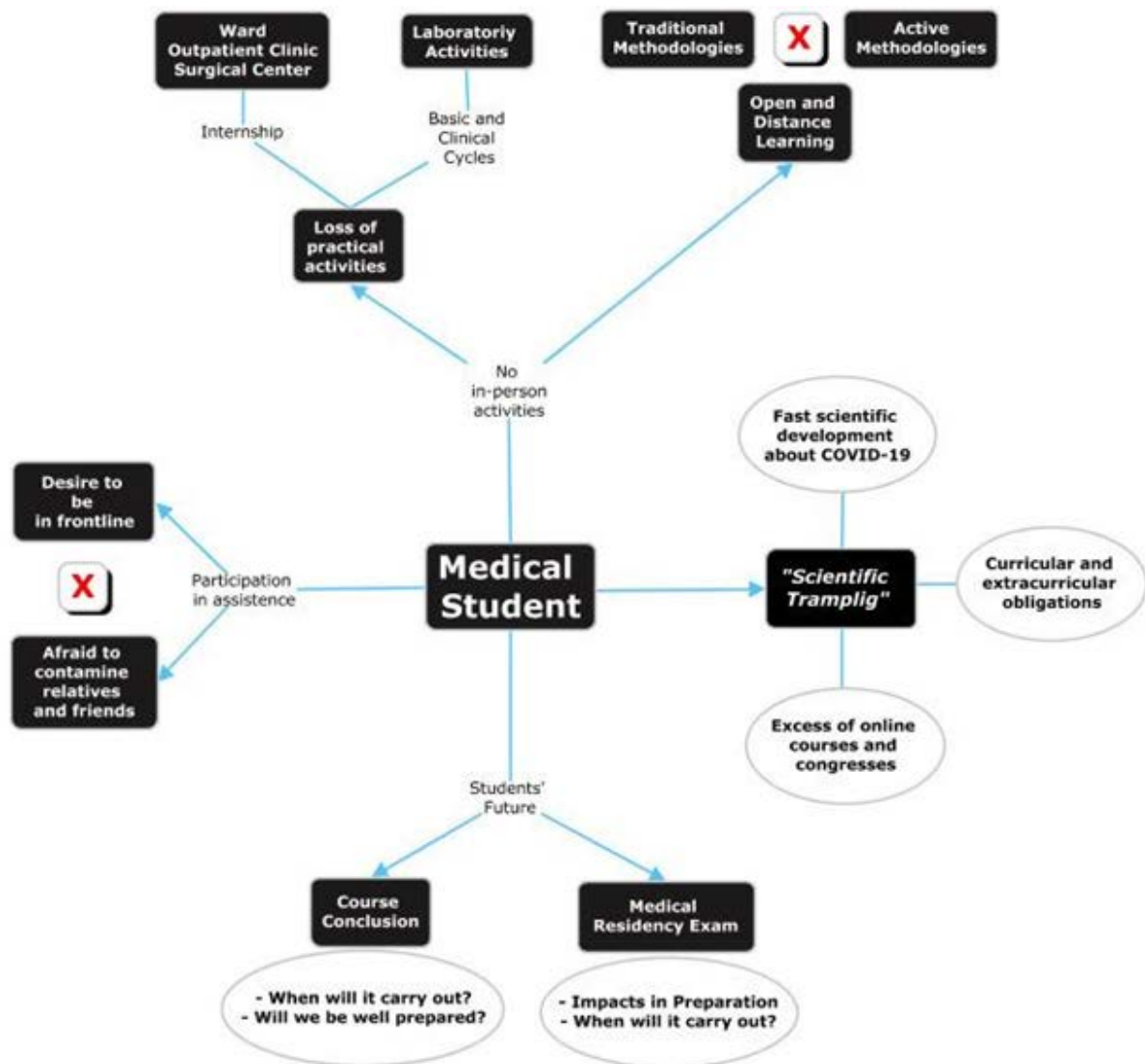


Figure 1 – Diagram summarizing the medical students' issues in COVID-19 pandemic

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