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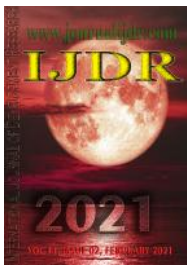

RESEARCH ARTICLE OPEN ACCESS

MEDICAL INTERNSHIP AND PEDIATRIC RESIDENCY TEACHING DURING THE COVID-19 PANDEMIC: REFLECTIONS FROM BRAZIL *COVID-19 AND MEDICAL EDUCATION*

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ABSTRACT

This article aims to present reflections regarding medical education on internship and pediatric residency in the Brazilian scenario, in the light of the COVID-19 pandemic. It is, therefore, a documentary report complemented with the authors' experiences, which focused on interns and pediatric residents upon medical teaching challenges, the impact of cancellations, online activities and medical competencies. The results indicate a trend towards the adoption of a hybrid model and the need to enhance the students' communication, support their mental health and apply a competence-based evaluation, aiming to correct gaps in time.

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INTRODUCTION

Around the world, medical teaching activities were affected by the COVID-19 pandemic, as a result of social distancing targeted to stop the transmission chain of Sars-Cov-2. In Brazil, both the Ministry of Health and the Ministry of Education determined the cessation of undergraduate classrooms and practice activities. Many students experienced a rupture in their clinical course. This comprised all education levels, from undergraduate to postgraduation. Those at the front teams experienced an increasing workload and therefore residency programs lost their holistic approach in favour of care provision in the front teams. Hammond *et al*. (2020) from King's College said, "education had to temporarily take a back seat".

Considering the challenges to medical teaching, the number of medical students in Brazil, facilities and difficulties to online learning, the impact on mental health status and medical competencies desired, we made some reflections regarding this theme that may help to establish post-pandemic priorities.

Medical teaching challenges and the impact of cancellations: Medical curriculum in Brazil is determined by the National Curriculum Guidelines which emphasize the quality of care and critical thinking as their key-elements (Brasil, 2014). The genuine care is practiced in real life and quality of care must consider Donabedian's seven pillars and eleven buttresses which can only be accomplished in real life health care (Schiff & Rucker, 2001). Reality

is an essential scenario and contributes to a critical, reflexive and proactive performance. Also, health learning process is a result of social interaction between people (Epstein & Hundert, 2002). Thus, continuing medical education was vital and medical school attachments required clinical exposure, specially to interns and residents.We agree with Hammond *et al.* (2020) that online teaching does not substitute clinical placements. Medical residency programs dedicate at least 80% of their course load on clinical scenarios. Thus far, strategies to protect medical students in clinical scenarios were crucial. The resulting impact of any measure reflected on the student itself and far-reaching, on medical care offered to society, as both the health system and health education are interdependent (Frenk *et al*., 2010). It is important to have an overview of this issue. In the last decade there was an increasing trend in the number of medical schools in Brazil. As a result, in October 2020, there were 357 medical schools and all of them offered 37,823 first year graduation positions. In 2019, 20,618 students who were attending the last year' medical schools were examined by the National Students Performance Exam, representing the number of sixth year interns and so, future candidates for medical residency programs. At that year, all medical residents represented 53,776 positions and from those, 5,156 were pediatric medical residents (Scheffer *et al*., 2020). Considering all last year interns and pediatric residents, we are talking about around 25,774 medical students. Disruptions could cause impairments in graduation and postgraduation, resulting in less doctors and specialists in the job market, just at a moment they are so important.

We have more doubts than certainties: Adherence to online activities was widespread and it has been suggested maintaining some online activities thereafter, in a hybrid model. However, one should remember that interpersonal competence during the pandemic was not the same as usual. Student-to-student relations were affected. Also, we know that the virtual learning environment, though convenient, is different from the real environment and depends on individual acceptance of technology (Santana-Mancilla *et al*., 2019). Schools that choosed to keep online activities in their curriculum after the pandemic should evaluate those interpersonal skills properly. We think that as soon as possible, most of the activities should return to their real scenario, but this is not a consensus. Considerations about mental health of interns and residents who were exposed in the front must be done as many of them felt unsafe to do that. Besides, the charged clinical skills, emotional suffering, life risk situations and the real possibility of death probably caused stress, anguish, anxiety in face of insecurity and helplessness feelings, self-isolation and hopelessness and these feelings will have lasting consequences (Park *et al*., 2020). In France, during the pandemic, among 340 pediatric residents, 37,4% presented burnout, a matter of concern for medical residents (Treluyer and Tourneaux, 2021). The Association of American Medical College (2020) stated in 2020 that "Unless there is a critical health care workforce need locally, we strong suggest that medical students not be involved in any direct patient care activities". We experienced a particular situation on internship. In March 2020, the Brazilian Ministry of Health created the program "Brazil Counts On Me", a supervised voluntary practice activity for interns against COVID-19. Interns who joined the strategy would receive a 10% additional punctuation on public residency recruitment processes. This program was challenged as it was not thoroughly discussed with medical schools. Some students could not join this due to their own particular characteristics, and this created the possibility of inequality in future residency recruitment processes. We recognize that this is a unique moment, we simply do not know which strategy is the best. We tend to choose the one that looks better, but we should not increase inequality. It is noteworthy that "Brazil Counts On Me" allowed some interns to conclude their clinical trainee course. Other stressing situations included the fear of how the COVID-19 pandemic could influence the undergraduateprogram and curriculum, financial issues and housing insecurity. A national research recruited senior medical students to know their situation in the pandemic scenario. Although 80% felt satisfied about how the University was handling with the situation, half of the students felt insecure about how they could compensate the lost internship time and 21,5% felt worried because this situation would delay their graduation. Carrascosa *et al*. (2020) suggested that the level of students' satisfaction could be improved by enhancing communication between coordinator staff and students and providing them psychological support.

How pediatric residency programs worked? In Brazil, medical residents are considered essential workers. Medical residency programs were encouraged to keep their essential activities, including the practice ones. Risk group residents could ask for program interruption. Practice training on these residency programs was reduced, especially those related to elective diagnostic and surgical procedures. Maternity scenarios were less affected. One university, for example, made a government assignment to become a COVID-19 reference hospital and residents were displaced from pediatric scenarios to adult ones, in the front-line, to help medical assistance. Despite the importance of medical assistance and the impact of the pandemic on medical support, neither the staff nor the residents from the Department of Pediatrics agreed with the displacement. We think that the pandemic does not justify authoritarianism. This context is relevant as we should exercise our ability to go along and communicate better.To match this thinking, we mention Hall *et al.* (2020) who suggested that flexibility should help residents to attain specific competencies regarding their pedagogical project in different scenarios, instead of just replacing health professionals. As suggested by Shaw (2020), we must raise some questions: are residents being supervised all the time and receiving enough support during the pandemic period? How can we keep services operating with the diary loss of professionals? How can we face the question that self-isolation is dangerous to mental health? What is our responsibility and role as medical educators promoting well-being and mental health? Are we communicating properly with our students? And, most of all, are we projecting these experiences in future education processing?

Medical competencies: We agree with Van Dam *et al*. (2020) that "bedside skills are essential for clinical care and so for medical teaching", and that "the pandemic probably caused a decrease in time spent with history taking and physical examination, the backbone of clinical reasoning". This can cause a future increase in health service costs as diagnosis would rely on technology and exams, sometimes unnecessary, also resulting in a low-quality medical assistance. However, some important emerging skills could be reinforced during the pandemic such as resilience, compassion, and empathy. Medical educators were charged with the task of using creativity and courage while accepting uncertainties, respecting students and their difficulties.This will result in a humanist education that balances demands and resources. Health competence requires a medical practice targeted to empathy, commitment and quality of care (Carracio *et al*., 2002). This competence is constructed as the medical student interacts with patients' demands and with the need of working as a health team, with new and real situations. Although there is a trend on creating a "new world" after the pandemic, we should never forget that medical competencies are acquired by personal interactions, on humanity positive attitudes and these skills cannot be completely learned online. There will not exist "a new doctor" without these competencies. Also, to be really involved with a patient reality, with his/her suffering, with the fear of him/her passing away, as it sometimes happens, students must interact in the real world (Scanagatta, 2017) and the translation of this competence into practice can be done by the Reliable Professional Activities, applied in many countries (ten Cate *et al*., 2010).

Final considerations: At present, we do not know the real impact of these strategies applied on medical education but this impact needs to be evaluated. The disruption caused by the pandemic led to a migration to online medical education activities and a change in examination methods. It seems that some institutions will adopt a hybrid model thereafter. We should recognize that some medical competencies cannot be learned online, as those related to empathy and humanity. Also, we suggest that medical residents' displacements should mainly focus on competencies required for their medical expertise. In the post-pandemic period, we suggest that educators refocus on supporting students' mental health and evaluating strategies to measure the impact of this reducing clinical activities on

medical learning in a competency-based model, aiming for correcting the educational gaps in time. Although education had to take a back seat, it is time to refocus on medical education.

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