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Predoctoral periodontal education and COVID-19: Challenges, actions, and learned lessons

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1 | PROBLEM

The COVID-19 pandemic has substantially impacted dental education[1,2] that required the development of innovative teaching approaches to allow for continued training of predoctoral dental students in a new environment.[3] Second-year and third-year students (DS2s and DS3s, respectively) had no direct patient contact since the closure of clinical settings from mid-March 2020 through the summer. Therefore, our goals for the summer semester were to (i) reorganize the curriculum to ensure students continue their hands-on and didactic learning and (ii) transition them through clinical curricula to their respective next years of training. Training continuity was maintained according to the Commission on Dental Accreditation "Guidelines for Reporting an Interruption of Education During COVID-19.[4]"

2 | SOLUTION

Before COVID-19, the predoctoral clinical practice was organized by separating students into 5 group practices, supervised by dedicated periodontists. All 107 DS2s started their clinical hands-on and treatment-planning experiences in January 2020 and had therefore gained only limited clinical experience by mid-March. We addressed these interruptions in DS2s' hands-on and didactic experiences using virtual and in-person classroom activities. We created a virtual treatment-planning course, where students practiced and enhanced treatment-planning skills by presenting their existing clinical cases. We also organized classroom lectures on periodontal instrumentation, followed by simulated periodontal rotations in which students practiced and enhanced their hand instrumentation skills on "calculus"-coated typodonts.

COVID-19 also prevented 99 DS3s from completing their clinical hands-on and competency assessments. We first addressed these interruptions by organizing spring virtual lectures on various periodontal topics, including periodontal therapy, and periodontal biology/pathogenesis, as outlined before.[3] Later during the summer semester, DS3s undertook in-person, simulated periodontal rotations in which they either presented existing clinical cases (toward unfinished periodontal diagnosis/treatment planning and re-evaluation competency assessments and clinical case requirements) or performed instrumentation on "calculus"-coated typodonts (toward unfinished periodontal instrumentation competency assessments).

To prevent interruptions in training and create opportunities for fourth-year dental students to complete their graduation requirements, we developed virtual sessions on surgical periodontal and dental implant therapy, as discussed recently.[3]

3 | RESULTS

Despite the changes in a teaching format, our hybrid approaches maintained and enhanced students' hands-on and didactic experiences, allowed them to continue through the curricula, and provided them with

opportunities to discuss clinical cases in an open manner, without the concern of patients being present. As we aimed to attain social distancing yet enhance active learning and maintain pre-COVID-19 student-to-faculty ratio (10:1), we conducted all in-person classroom and simulated sessions in small group settings. This process has reinforced that substantial knowledge can be taught using a virtual and remote approach, which has a promising future perspective.

Considering the limited time frame, our approaches, expectedly, have some room for improvement, namely by creating a series of mock-up virtual patient cases and implementing video lectures on various aspects of periodontal and dental implant therapy. As it may not be feasible to overcome the inherent limitations of virtual and simulated sessions, such as lack of direct patient care, the hybrid teaching approaches, including direct patient interactions, are essential for comprehensive student training.

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