RESEARCH & TECHNOLOGY
ABSTRACTS
Designing a Plastic and Reconstructive Surgery Virtual Curriculum: Assessment of Medical Student Knowledge, Surgical Skill, and Community Building

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PURPOSE: Virtual and interactive learning are the future of plastic surgery education. This shift is essential in the COVID-19 era, as medical students have been displaced from clinical rotations into virtual classrooms resulting in losses of traditional opportunities to learn about plastic and reconstructive surgery. The impact of this pandemic is far-reaching and may adversely influence interest in surgical specialties, diversity in anatomic knowledge, and hands-on surgical experience. We aimed to provide medical students worldwide with a virtual educational opportunity and developed the Plastic and Reconstructive Surgery Virtual Curriculum (PRSVC), a structured, four-week, flipped classroom course with virtual clinical case discussions and surgical skills workshops. Additional programming was available for medical students applying to or considering applying into plastic surgery residency programs to socialize with each other and build community.

METHODS: We designed and implemented a structured, four-week educational curriculum, which included curated learning modules that covered main topics within plastic surgery. Students were provided daily assignments from the American Society of Plastic Surgeons Resident Education Curriculum and DeckerMed Plastic Surgery Core Curriculum, which were available to all enrolled participants free of charge. As an adjunct to the educational coursework, students had opportunities to participate in biweekly, small group virtual flipped classroom case discussions and weekly surgical skills workshops. Pre- and postcourse surveys were administered and analyzed using SPSS.

RESULTS: In total, 303 medical students and recent graduates (43.4% fourth-years) from 18 countries enrolled in the course in June 2020. An estimated 182 students completed the precourse survey (60% response rate), and of those, 50.0% (n = 91) completed the postcourse survey for paired comparison. About two-thirds were medical students in the United States and the remaining one-third of students were from Canada and other international countries. Over one-third did not have home plastic surgery programs, and almost half of the participants reported having an educational experience scheduled for June 2020 cancelled due to the COVID-19 pandemic. Students reported significant improvement in confidence discussing the relevant anatomy, work-up, and surgical approaches to clinical cases, as well as confidence in knowledge of all topic areas (P < 0.001). Confidence in suturing and knot-tying techniques significantly improved among workshop participants (P < 0.001). Students applying to residency programs this cycle felt significantly more prepared for sub-internships (P < 0.001) and significantly more connected to the community of applicants (P < 0.001).

CONCLUSIONS: The Plastic and Reconstructive Surgery Virtual Curriculum improved knowledge, surgical skills, and community in the field among medical student participants. This course may serve to inform other surgical subspecialties in developing similar virtual educational opportunities and also serve to provide a paradigm for structured virtual learning activities for students interested in plastic surgery.

REFERENCE:
1. Ali K, Colchado D, Davis MJ, et al. Online resources in plastic surgery education: a toolbox for modern trainees and plastic surgeons. Plast Reconstr Surg Glob Open. 2020;8(7):e2894. Published 2020 Jul 17. doi:10.1097/ GOX.0000000000002894

Genomic Findings in Bone Blood Paired DNA Comparison of Nonsyndromic Craniosynostosis

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