Tilmelding af Foredrag

Foredragets titel

Doktordisputats: Simulation-based training and assessment of mastoidectomy—perspectives on the outside, inside, and in-between conditions of practice

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Uddannelsesniveau

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Introduktion

Hands-on training of mastoidectomy through traditional cadaver dissection is increasingly challenging given the diminishing number of donated human temporal bones. Further, modern surgical education requires evidence-based approaches to skills training and competency assessment. Altogether, this has propelled the development of virtual reality (VR) simulation for surgical skills training including in temporal bone surgery. This thesis explores different learning conditions for simulation-based training of mastoidectomy based on contemporary medical educational frameworks because what we do outside, inside and in-between simulation matters.

Materiale/metode

This research doctoral thesis is based on eight peer-reviewed papers published between 2016 and 2021. These papers explore simulation-based temporal bone surgical training and assessment in relation to concepts such as Generalizability theory, distributed practice, cognitive load, fidelity, and patient-specific models. The oral defense for the degree of dr.med. at the University of Copenhagen (successfully) took place on 23th November 2023 at Rigshospitalet.

Resultater

Metrics-based assessment might have a role for automated summative feedback and proficiency-based training but needs to be used in conjunction with other mechanisms to ensure that a safe performance is also learned. Distributed VR simulation practice increases performance and reduces CL and acquired technical skills transfer to the cadaveric dissection environment where CL is found to be higher for novices. Simulator-integrated tutoring and the use of operating microscope eyepieces during VR simulation are unfavorable for learning.

Diskussion

Altogether, the work presented in this thesis provides insights into the outside, inside and in-between conditions of VR simulation training in temporal bone surgery—with broader implications for simulation-based surgical skills training in general. The optimal VR simulation training program consists of structured and distributed practice, supporting directed, self-regulated learning. The role of addressing the cognitive process, motivating the trainee, and providing proper direction and feedback cannot be stressed enough.

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