ACS 2022 Surgeons and Engineers: A Dialogue on Surgical Simulation Meeting

Research Abstracts

The Use of Simulation in Undergraduate Surgical Education for Sub-Saharan Africa- Opportunities for Collaboration: A Scoping Review

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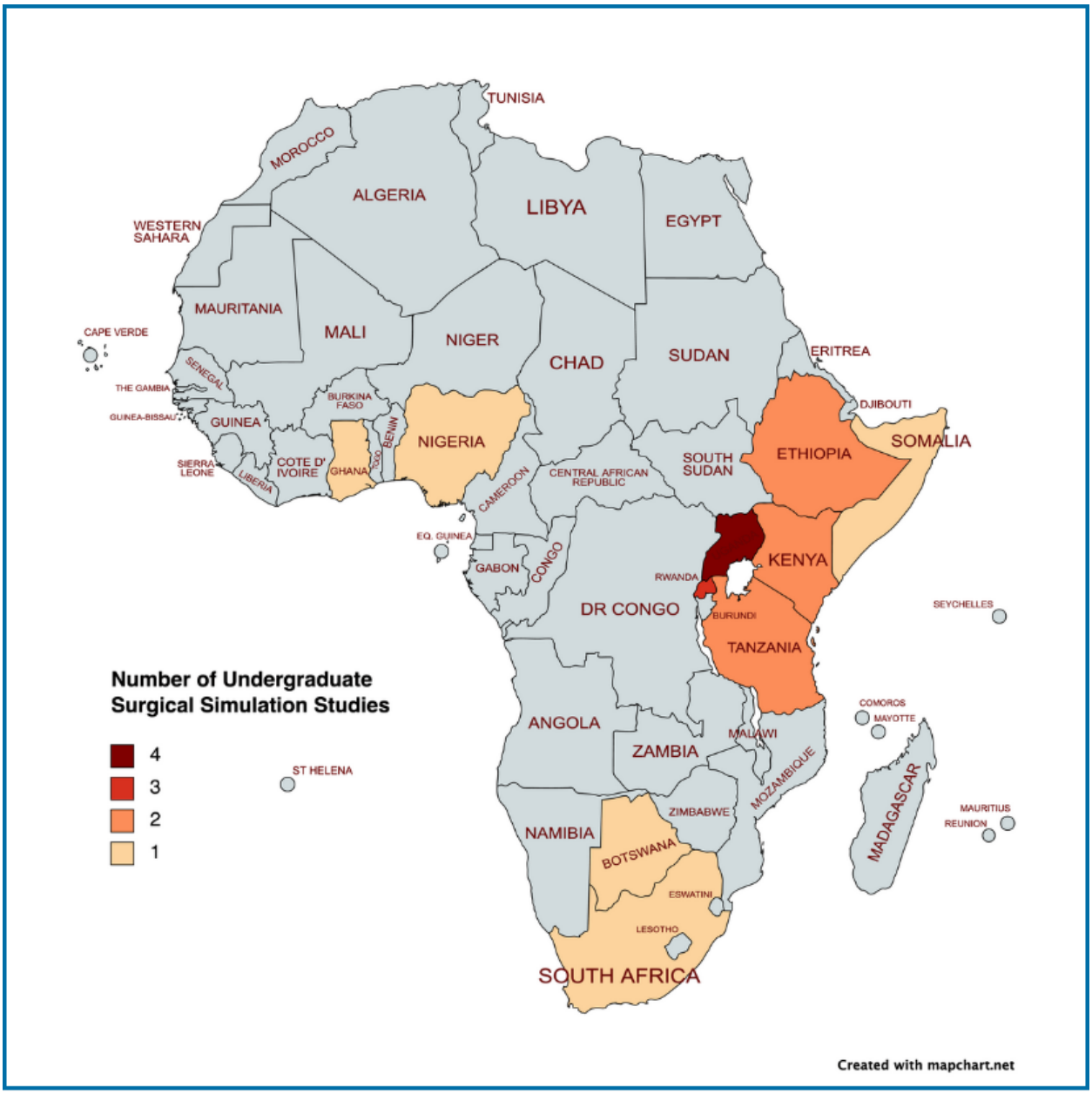
Introduction: Most surgical simulation training is applied to the increasingly complex High-Income Country educational context, and prioritized for residency training. However, prioritization of simulation in undergraduate surgical training for sub-Saharan Africa (SSA) is crucial due to the large burden of surgical disease, and low surgical provider density. This scoping review aimed to identify the application of simulation to undergraduate surgical education in sub-Saharan Africa as a first step to identifying geographic and educational gaps, and potential opportunities for collaboration.

Methods: We conducted a scoping literature search using PubMed, Embase, and African Index Medicus in August, 2021. Studies that reported data on simulation for undergraduate or internship surgical training in SSA specific to surgical clerkships, programs or procedures were included with no language or date restrictions.

Results: We identified 119 studies; 19 were included in the final analysis. Most simulations for undergraduate surgical training in SSA began recently (2017-2021), and were mostly reported from Eastern Africa (78%) (Figure 1). Medical, nursing, anesthesia, dental, and emergency medicine undergraduates benefitted from simulation, training in cohorts ranging from 5 to 198 learners. Only 25% of programs applied simulation to early undergraduate training. Most simulators were low fidelity (69%). Most programs were internal (94%) and general surgery led. Only half were planned as recurring, sustained simulation programs, and most (60%) were newly introduced. 44% of primary care and 32% of first-level hospital essential surgical procedures, as defined by the Disease Control Priority Program (DCP3), important for graduates' surgical practice, are reported as taught by simulation. Only 15% of programs included non-technical skills and 14% had engineering collaboration.

Conclusions: There is need for surgical simulation in early SSA undergraduate medical training, trans-sectoral and interdisciplinary collaboration, and expansion to other African regions. Currently, there is a lack of published experience in simulation-based teaching of 65% of the DCP3-defined essential operations.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Number of Undergraduate Surgical Simulation Studies
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