Integrating ergonomics into surgical education to enhance surgeon wellbeing and career longevity

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Madam, Surgery is an inherently demanding profession, requiring prolonged static postures, repetitive motions, and awkward torso angles for optimal access to surgical sites. These physical demands, though essential, impose significant strain on the musculoskeletal system over time. Despite the well-documented prevalence of musculoskeletal disorders affecting surgeons—especially in the neck, shoulders, and lower back—ergonomic considerations remain largely overlooked in medical education.[1,2] This oversight not only compromises surgeon well-being but also poses a threat to their career longevity and overall surgical precision. Hess and Cerier demonstrated that targetted programmes focussing on ergonomics education, postural coaching, and wellness significantly reduce injury risks while enhancing occupational performance in the operating room (OR).[3, 4] These findings emphasize that ergonomic interventions do more than alleviate physical discomfort—they also improve procedural efficiency and precision, ultimately benefitting both surgeons and their patients.

The implications of poor ergonomics extend beyond individual well-being. Surgeon fatigue, resulting from chronic physical strain, is associated with diminished concentration and fine motor skills, increasing the risk of surgical errors and compromising patient safety.[5] Furthermore, the economic burden of musculoskeletal injuries, including absenteeism, reduced productivity, and early retirement, places a substantial strain on healthcare systems. Preventive ergonomic measures could also alleviate these costs, making them a worthwhile investment.

To address this issue, several strategic steps can be implemented. First, establish a dedicated team trained in human factors and ergonomics to educate and mentor medical students and surgical residents. Second, develop and implement a standardized, credited curriculum focussed on ergonomics, ensuring that all trainees in surgical specialties receive comprehensive training. Also, accessible resources and tools for self-evaluation can be established that can enable surgeons to assess and optimize their ergonomic practices continuously. Incorporating virtual reality and simulation-based training into surgical education can also provide a controlled environment for trainees to develop and refine ergonomic practices. Finally, fostering a culture of wellness and ergonomics within surgical departments will not only enhance surgeon health and reduce burnout, ensuring a healthier and more sustainable workforce. National accreditation bodies like Pakistan Medical and Dental Council (PMDC) and College of Physicians and Surgeons of Pakistan (CPSP) can also consider mandating ergonomic training as a core competency, ensuring its integration into surgical education.

Integrating ergonomics into surgical education is a necessity. By prioritizing ergonomics, we can safeguard the health and longevity of future surgeons, enhance surgical precision, and ultimately improve the quality of patient care.

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