



Letter to Editor

## Are we in need of super-specialized musculoskeletal physicians in the future?

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Dear Editor,

The human musculoskeletal system is a complex network of interconnected bones, muscles, and joints that control our movements. This intricate system breaks down; getting around the field of musculoskeletal care can be like navigating a maze. This raises an important question: Are we in need of a future where musculoskeletal physicians are super-specialized?

The current paradigm, anchored in the established fields of orthopedics and rheumatology, serves as a well-worn foundation. These broad-spectrum specialists possess a holistic understanding of the musculoskeletal system, effectively diagnosing and managing a diverse array of clinical conditions. However, as scientific advancements unveil the intricate nuances of the human body and its ailments, the need for granular expertise becomes increasingly apparent.<sup>[1,2]</sup>

Considering the burgeoning field of sports medicine, an elite athlete with a torn anterior cruciate ligament demands a different treatment strategy than an elderly patient with knee osteoarthritis and a completely different approach to a child with clubfoot or hip dysplasia. Just as a cardiologist delves into the intricate workings of the heart, a foot and ankle surgeon possesses an intimate understanding of the biomechanical symphony of locomotion, offering more targeted and effective treatment for complex foot and ankle issues.<sup>[3]</sup>

Similarly, once considered a monolithic structure, the spine is now recognized as a multifaceted composition of vertebrae, discs, and nerves. Spine surgeons who dedicate their practice to these intricate structures can offer unparalleled expertise and precision, potentially leading to faster recovery and improved long-term outcomes for patients with complex spinal disorders.<sup>[4]</sup>

The argument for super-specialization transcends merely tackling individual conditions. It is about personalized care. By immersing themselves in specific anatomical regions and pathologies, physicians can tailor their approach to each patient's unique needs and anatomical variations. This personalized approach can potentially enhance diagnostic accuracy, optimize treatment plans, and, ultimately yield better patient outcomes.<sup>[5]</sup>

However, this potential symphony of super-specialization is not without its potential for discord [Table 1]. Fragmentation of care, leading to communication gaps and siloed expertise, is a significant concern. In addition, ensuring equitable access to such specialized physicians in underserved communities poses logistical and financial hurdles.<sup>[6]</sup>

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**Table 1:** Advantages and disadvantages of super-specialized musculoskeletal physicians.

Feature	Advantages	Disadvantages
Expertise	Highly specialized knowledge and skills in specific anatomical regions or pathologies	Limited scope of practice, not suited for broad diagnosis
Treatment Precision	Tailored treatment plans for complex conditions	Increased cost due to specialized equipment and procedures
Patient Outcomes	Potentially improved success rates and faster recovery	Risk of fragmented care if coordination with other specialists is lacking
Accessibility	May be less readily available in rural or underserved areas	Potential for increased need for telemedicine and travel
Collaboration	Requires strong partnerships with primary care and other specialists for holistic care	Potential for communication gaps and siloed knowledge

Nevertheless, these challenges can be addressed through strategic collaboration and innovative health-care models. Telemedicine can bridge geographical disparities while fostering interdisciplinary teams with primary care physicians, physiotherapists, and other specialists, which can ensure holistic care and knowledge exchange.<sup>[7]</sup> Furthermore, technological advancements, such as artificial intelligence and big data, can support diagnostic and treatment decision-making, potentially mitigating resource limitations in underserved areas.<sup>[8,9]</sup>

In conclusion, while the current broad-spectrum approach to musculoskeletal care has served us well, the future demands a nuanced composition. With its in-depth knowledge and targeted expertise, super-specialization can offer unparalleled care to patients with complex conditions. However, its integration into the existing health-care system must be carefully orchestrated, ensuring equitable access, seamless collaboration, and a commitment to holistic care.

The potential for super-specialization extends beyond the realm of orthopedics. Many other medical fields face similar challenges of increasing complexity and growing knowledge. Cardiology, for instance, has witnessed the rise of specialized subfields such as electrophysiology and interventional cardiology, offering targeted expertise for specific types of heart conditions. Similarly, oncology has embraced subspecialization in various cancers, leading to tailored therapies and improved outcomes.

As we move forward, let us embrace the potential of super-specialization while recognizing its limitations. By finding this harmonious balance, we can ensure that the intricate concerto of the musculoskeletal system continues to play on, each instrument resonating in perfect harmony, creating a future of stronger, more resilient movement for all.

### AUTHORS' CONTRIBUTIONS

YS and MM designed this paper/letter for the editor, provided the data material, interpreted the data, wrote the initial and final manuscript, and reviewed the literature. YS

and MM have critically reviewed and approved the final draft and are responsible for the manuscript's content and similarity index.

### ETHICAL APPROVAL

The Institutional Review Board approval is not required.

### DECLARATION OF PATIENT CONSENT

Patient's consent is not required as there are no patients in this study.

### USE OF ARTIFICIAL INTELLIGENCE (AI)-ASSISTED TECHNOLOGY FOR MANUSCRIPT PREPARATION

The author confirms that there was no use of artificial intelligence (AI)-assisted technology to assist in the writing or editing of the manuscript.

### CONFLICTS OF INTEREST

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