

Internal Orthopedics: A New Perspective in Medicine

Mahdi Mazandarani¹, Narges Lashkarbolouk¹, Mohammad Hossein Nabian^{2,*}

¹Endocrinology and Metabolism Research Institute, Tehran University of Medical Sciences, Tehran, Iran; School of Medicine, Golestan University of Medical Sciences, Gorgan, Iran

²Center of Orthopedic Trans-Disciplinary Applied Research, Tehran University of Medical Sciences, Tehran, Iran

*Corresponding author: Mohammad Hossein Nabian; Center of Orthopedic Trans-Disciplinary Applied Research, Tehran University of Medical Sciences, Tehran, Iran. Tel: +98-9126305095, Email: drnabian@yahoo.com

Received: 12 January 2023; Revised: 21 March 2023; Accepted: 07 April 2023

Keywords: Intersectoral Collaboration; Medical Education; Internal Medicine; Orthopedic Procedures; Interdisciplinary Communication

Citation: Mazandarani M, Lashkarbolouk N, Nabian MH. **Internal Orthopedics: A New Perspective in Medicine.** *J Orthop Spine Trauma* 2023; 9(4): 158-9.

With the expansion of medical knowledge, various new disciplines and subspecialties have been developed and trained for the comprehensive management of diseases. There is always an inevitable correlation between medical disciplines that cannot be completely separated from each other. Some diseases involve multiple organs/systems of the human body simultaneously, requiring the cooperation of a team of specialists to manage them. In addition, in some cases, there is an overlap between different specialties in managing and treating the same disease. Although specialists aim to give the patient the best possible treatment options, this overlap can lead to confusion in management according to different practice guidelines (1).

Among the specialties, the connection and correlation between internal medicine and orthopedic surgery are rarely addressed, which is perhaps why a new title called "Internal Orthopedics" has been created in today's medical field.

Orthopedic surgeons are experts in the field of the musculoskeletal system. During their training program, they are acquainted with diagnosing and treating diseases of bones, joints, muscles, tendons, or ligaments. They can also treat limb and axial skeleton traumatic injuries, help with rehabilitation, and advise on how to prevent further musculoskeletal damage. On the other hand, internists not only treat general ailments but also specialize in caring for people with musculoskeletal problems. They specialize in treating arthritis, autoimmune diseases, and rheumatic diseases affecting joints, muscles, and bones. Internists should be aware of acute and chronic musculoskeletal conditions, how the disease affects the musculoskeletal system, and the need for drug or surgical treatment (2, 3).

Because of this deep correlation, internal medicine and orthopedic residents train together at level 1 of their residency program in some countries like the United States (US). However, internists and orthopedists spend less than 1% of their total clinical training time during a residency program on these overlaps. Whereas according to epidemiologic data, musculoskeletal disorders are more common than upper respiratory infections, high blood pressure, or diabetes. It is also mentioned that 33% of consultations requested in orthopedic departments are internal consultations (4, 5).

In contrast, internists focus on managing chronic disease conditions and systemic causes, whereas orthopedics focuses more on procedures, aftercare, and

specific musculoskeletal regions. To the best of our knowledge, interdisciplinary differences in disease management and procedures, including joint injections, aspirations, ultrasound-guided injections, diagnostic examinations, laceration repairs, joint dislocation and fracture reductions, and fracture splinting and casting, have been noted. Several articles have addressed this issue separately, and their scientific associations have published different guidelines with great care taken in cases of overlap between internists and orthopedists (6, 7).

It is proposed that the "Internal Orthopedics" concept leads internists and orthopedic surgeons to act as a multi-disciplinary team in overlapping situations, peri-operative care, performing secondary assessments, and making decisions together in an inter-digitated chain of treatment modalities. We hope that by introducing this term, internal medicine and orthopedic specialists will be able to make a correct diagnosis, reduce complications, prevent the progress of musculoskeletal diseases, and provide the best possible practice for the patient.

The experience of the coronavirus disease 2019 (COVID-19) pandemic was another example that made the importance of interdisciplinary communication more evident to us. This interdisciplinary collaboration became essential with the increase in patients with COVID-19 and the declaration of a critical status and national lockdown along with the shortage in clinical care staff and medical equipment. According to the studies, considering that this cooperation led to the improvement of clinical outcomes in patients during this period, health policymakers should focus on removing barriers to interdisciplinary coordination and helping to improve it, along with other health sector needs. The experience of intersectoral collaboration shows a promising view of teamwork that improves patient care, problem-solving span, and development in clinical care. Comprehending the role of every member in this teamwork creates trust, cooperation, and mutual respect to gain optimal results in treating patients (8-10).

We suggest that internal medicine and orthopedic specialists should have more common courses during residency due to the degree of overlap between these two majors. In addition, common clinics, webinars, seminars, and even joint associations between internists and orthopedists should be organized to raise awareness in the new field of diagnosis and treatments for prevalent diseases between the two disciplines.



Conflict of Interest

The authors declare no conflict of interest in this study.

Acknowledgements

The authors of this manuscript state that they did not receive any financial or other forms of support.

References

- Mun F, Scott AR, Cui D, Lehman EB, Jeong S, Chisty A, et al. A comparison of orthopaedic surgery and internal medicine perceptions of USMLE Step 1 pass/fail scoring. *BMC Med Educ.* 2021;21(1):255. doi: [10.1186/s12909-021-02699-4](https://doi.org/10.1186/s12909-021-02699-4). [PubMed: [33941167](https://pubmed.ncbi.nlm.nih.gov/33941167/)]. [PubMed Central: [PMC8091716](https://pubmed.ncbi.nlm.nih.gov/PMC8091716/)].
- Liddle DG, Changstrom B, Senter C, Meirick P, Stern N, Putukian M, et al. Recommended musculoskeletal and sports medicine curriculum for internal medicine residency training. *Curr Sports Med Rep.* 2021;20(2):113-23. doi: [10.1249/JSR.0000000000000811](https://doi.org/10.1249/JSR.0000000000000811). [PubMed: [33560036](https://pubmed.ncbi.nlm.nih.gov/33560036/)].
- Saavedra MA, Villasenor-Ovies P, Harfush LA, Navarro-Zarza JE, Canoso JJ, Cruz-Dominguez P, et al. Educational impact of a clinical anatomy workshop on 1st-year orthopedic and rheumatology fellows in Mexico City. *Clin Rheumatol.* 2016;35(5):1299-306. doi: [10.1007/s10067-015-3076-x](https://doi.org/10.1007/s10067-015-3076-x). [PubMed: [26400643](https://pubmed.ncbi.nlm.nih.gov/26400643/)].
- Singh N, Wong BM, Stroud L. Characterizing resident preferences for faculty involvement and support in disclosing medical errors to patients. *J Grad Med Educ.* 2018;10(4):394-9. doi: [10.4300/JGME-D-17-00722.1](https://doi.org/10.4300/JGME-D-17-00722.1). [PubMed: [30154968](https://pubmed.ncbi.nlm.nih.gov/30154968/)]. [PubMed Central: [PMC6108362](https://pubmed.ncbi.nlm.nih.gov/PMC6108362/)].
- von Kaeppler EP, Akabas MH, Brass LF, Amanatullah DF. MD-PhD graduates remain underrepresented in orthopaedic surgery: National MD-PhD Program Outcome Survey update. *J Orthop Res.* 2020;38(10):2181-8. doi: [10.1002/jor.24669](https://doi.org/10.1002/jor.24669). [PubMed: [32198793](https://pubmed.ncbi.nlm.nih.gov/32198793/)].
- Shashar S, Polischuk V, Friesem T. Internal medicine physician embedded in an orthopedic service in a level 1 hospital: clinical impact. *Intern Emerg Med.* 2022;17(2):339-48. doi: [10.1007/s11739-021-02745-5](https://doi.org/10.1007/s11739-021-02745-5). [PubMed: [33904116](https://pubmed.ncbi.nlm.nih.gov/33904116/)].
- Sinsky C, Colligan L, Li L, Prgomet M, Reynolds S, Goeders L, et al. Allocation of physician time in ambulatory practice: A time and motion study in 4 specialties. *Ann Intern Med.* 2016;165(11):753-60. doi: [10.7326/M16-0961](https://doi.org/10.7326/M16-0961). [PubMed: [27595430](https://pubmed.ncbi.nlm.nih.gov/27595430/)].
- Lashkarbolouk N, Mazandarani M, Pourghazi F, Eslami M, Khonsari NM, Ghonbalani ZN, et al. How did lockdown and social distancing policies change the eating habits of diabetic patients during the COVID-19 pandemic? A systematic review. *Front Psychol.* 2022;13:1002665. doi: [10.3389/fpsyg.2022.1002665](https://doi.org/10.3389/fpsyg.2022.1002665). [PubMed: [36211913](https://pubmed.ncbi.nlm.nih.gov/36211913/)]. [PubMed Central: [PMC9540372](https://pubmed.ncbi.nlm.nih.gov/PMC9540372/)].
- Fernandes SF, Trigueiro JG, Barreto MAF, de Carvalho REFL, da Silva MRF, Moreira TMM, et al. Interprofessional work in health in the context of the COVID-19 pandemic: A scoping review. *Rev Esc Enferm USP.* 2021;55:e20210207. doi: [10.1590/1980-220X-REEUSP-2021-0207](https://doi.org/10.1590/1980-220X-REEUSP-2021-0207). [PubMed: [34807228](https://pubmed.ncbi.nlm.nih.gov/34807228/)].
- Turner S, Ulloa AM, Nino N, Valencia G, V. The Role of intersectoral action in response to COVID-19: A Qualitative study of the roles of academia and the private sector in Colombia. *Int J Health Policy Manag.* 2021;11(9):1913-25. doi: [10.34172/ijhpm.2021.100](https://doi.org/10.34172/ijhpm.2021.100). [PubMed: [34523858](https://pubmed.ncbi.nlm.nih.gov/34523858/)]. [PubMed Central: [PMC9808252](https://pubmed.ncbi.nlm.nih.gov/PMC9808252/)].