



Evaluating Medical Students' Confidence in Musculoskeletal Examination: Implications for Improving Musculoskeletal Medicine Education

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Background

- Musculoskeletal (MSK) issues make up 20% of primary care and emergency department visits in the US¹
- In informal feedback to the pre-clerkship education committee, students from the class of 2022 commented that they felt their preparation for the musculoskeletal examination during the first two years was insufficient

Objectives

This study surveyed **third-year medical students** to identify their:

1. confidence with MSK examination skills
2. MSK exam education experience
3. suggestions to improve the curriculum

Methods

15-question survey including Likert-scale and open-ended questions administered to third-year students who have completed:

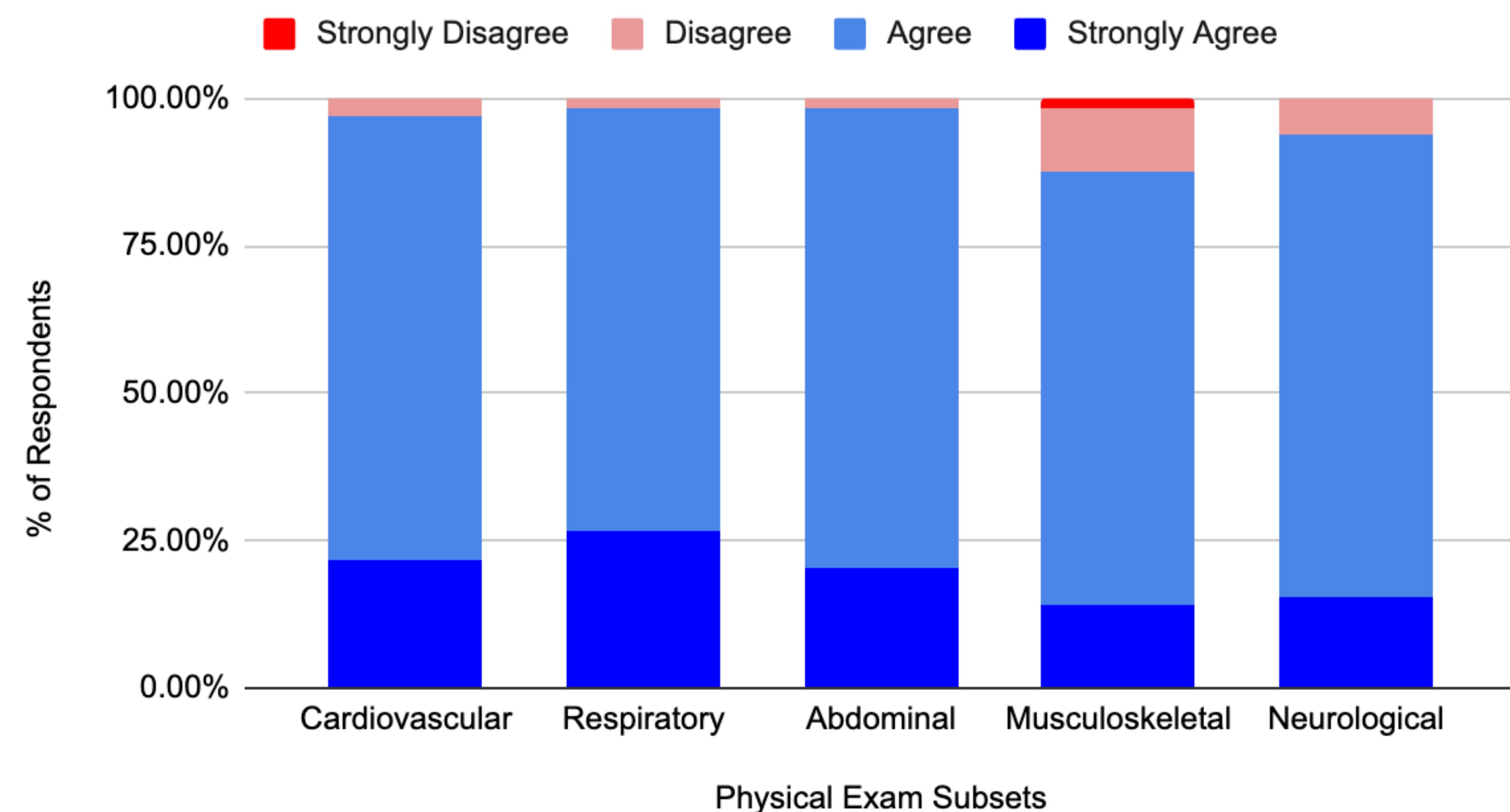
1. two years of preclinical organ-system-based curriculum
 2. orthopedic clinical skills lab
 3. the rheumatology clinical skills lab
 4. “Transition to Clerkship” musculoskeletal clinical skills lab
- Questions 1-5: assessed **confidence level** with clinical exam of various organ systems
 - Questions 6-11: assessed **perceived utility** of existing MSK curricular activities
 - Question 12: assessed helpfulness of having MSK clinical skills **during MD3 anatomy**
 - Questions 13-15: open-ended questions assessing the most helpful parts of MSK curriculum and **suggestions for improvement**

References

1. Miller AN. Evaluation of Common Musculoskeletal Injuries in the Urgent Setting. MedEdPORTAL. 2016;12:10514. Published 2016 Dec 7. doi:10.15766/mep_2374-8265.10514
2. Jaime C. Yu, Marghalara Rashid, Andrea Davila-Cervantes & Carol S. Hodgson (2022) Difficulties with Learning Musculoskeletal Physical Examination Skills: Student Perspectives and General Lessons Learned for Curricular Design, Teaching and Learning in Medicine, 34:2, 123-134, DOI: 10.1080/10401334.2021.1954930

Results

Confidence Performing Physical Exams



- Students expressed the **least confidence in performing the MSK exam** compared to other organ systems (12.5% reported low confidence in MSK exam vs. 3%, 1.5%, 1.5%, and 6% of students for the cardiovascular, respiratory, abdominal, and neurological exams, respectively), despite 92.2% of students agreeing that the MSK curriculum provided adequate teaching
- Students reported **positive feedback** (“strongly agree”/“agree”) regarding the Shriner’s Orthopedics experience (92.2%), Rheumatology clinical experience (90.7%), and Transition to Clerkship MSK clinical skills lab (95.3%) as **valuable learning experiences**
- 98.4% of students strongly agreed/agreed that **adding clinical MSK skills to the MD3 anatomy unit would be helpful**

Discussion

- Medical students in the US & Canada have a relative lack of confidence in conducting MSK exams, especially when compared to exam of other organ systems²
- Despite adequate instruction of the MSK exam, there were **fewer opportunities for practicing the MSK exam** in full compared to other organ systems, which could contribute to decreased confidence
- Proposed **curriculum modifications** are being implemented by the Office of Medical Education:
 - **Early introduction** of MSK clinical exam skills during first year instead of second year
 - Incorporating MSK clinical exam skills into the **corresponding anatomy unit (MD3)**
 - Assigning a **physiatrist** to work with the anatomy department to teach MSK exams
 - Increasing small-group **problem-based learning sessions** related to MSK conditions