

Quantitative and qualitative evaluation of Clinical Human Anatomy ultrasound education

knowledge changing life

Jared Muench, Michael Schellpfeffer, MD, MS
Cell Biology, Neurobiology, and Anatomy / Medical College of Wisconsin, Milwaukee, WI

PROJECT GOAL

Explore current state of ultrasound education at MCW and other U.S. medical schools through literature review and student survey

Identify strengths and areas for improvement in MCW's current ultrasound education program

Propose recommendations to enhance student engagement in ultrasound education at MCW

LITERATURE REVIEW

• Point-of-care ultrasound...

IMPROVES

Diagnosis and efficiency
Patient satisfaction
Procedural success rate

DECREASES

Procedural complications
Length of stay
Hospitalization costs

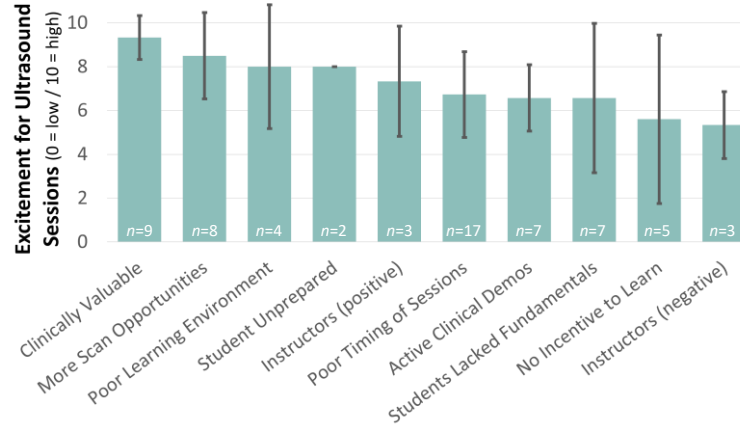
• ~75% of U.S. medical institutions incorporate hands-on ultrasound training into curriculum

• These efforts vary based on...

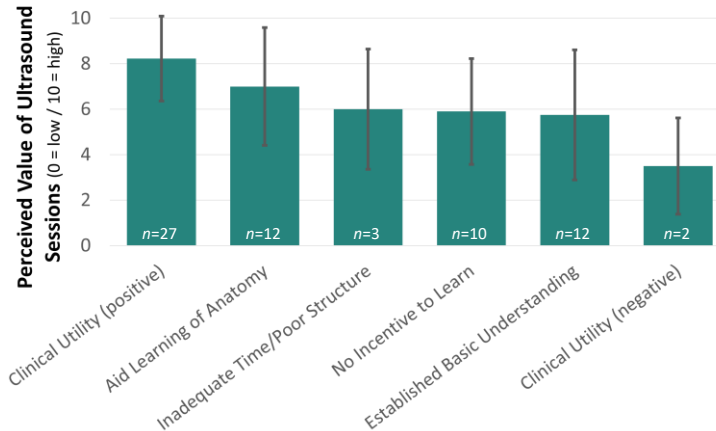
- Course length: *Single workshop* ↔ *4-year curriculum*
- Stage of implementation: *Preclinical vs. Clinical*
- Mode of integration: *"flipped" classroom being used more*
- Instructors: # of EM > # IM > # RAD > # ANES > # OB/GYN

• Greatest benefit seen when used in physical exam classes, as opposed to basic science courses

STUDENT EXCITEMENT RATING by THEME



STUDENT PERCEIVED VALUE RATING by THEME



STUDY DESIGN

• 10-question survey distributed to first-year students after completing Clinical Human Anatomy, including...

- Student excitement (1-10) + impacting factors (free response)
- Student perceived value (1-10) + impacting factors (free response)

• **Quantitative:** Descriptive statistics performed

• **Qualitative:** Thematic analysis used to identify themes in feedback and subsequently organize, code, and associate with higher or lower student ratings

DISCUSSION

• **Important survey findings:**

- Clinically-focused sessions increase student interest and perceived benefit
- No ultrasound content on exams = low session engagement
- Instructors play a role in generating student excitement

• Ultrasound aids students' learning of anatomy but may have further-reaching, secondary outcomes of enhancing students' career exploration and clinical skillset

• **Limitation:** Limited survey response rate of 30%

REFERENCES

Constantino et al. 2005, *Ann Emerg Med.*; Li et al. 2020, *Neurol Clin Pract.*; Mercaldi and Lanes 2013, *Chest*; Nicholas et al. 2021, *J Ultrasound Med.*; Dreher et al. 2014, *J Emerg Med.*; Patel et al. 2017, *Clin Anat.*