

## INTRODUCTION

- Gross anatomy and embryology (GAE) is an **8 credit hour** occurring during Block 1 of the 1<sup>st</sup> year undergraduate medical curriculum at BSOM
- Ninety-six (96) hours of required laboratory dissection in addition to 3 other foundational sciences courses taught during Block 1
- Cadaveric-based laboratory examinations presented in a timed, station-based format
- Source of stress and anxiety for many learners given the course content (anatomy, embryology, and radiology) and condensed pre-clinical curriculum
- This study evaluates the utility of practice laboratory practicals for improving student exam preparation, perceived emotional well-being and confidence

## MATERIALS & METHODS

- M1 cohort (n=91) in the BSOM Fall 2022 GAE course voluntarily participated in practice practicals prior to each exam
- Near-peer educators (2<sup>nd</sup>-3<sup>rd</sup> year BSOM students) designed the practice practicals to mimic course exams
- Practice practicals consisted of 45-second cadaveric stations each containing one A-E multiple choice question ranging from structure identification to “derivative” questions; learners did not revisit stations
- Radiology, osteology, and anatomical models were included in practice practicals
- Learners asked to complete a 15-question, 10-point Likert scale survey to evaluate self-perception of preparedness and emotional well-being
- Survey participation was voluntary; 68 students responded to the survey (74.7%)

Question:  
Compression of this vessel by the nearby superior mesenteric artery may cause which of the following?



<https://anatomy.elpaso.ttuhsu.edu/quizzes/practical2007/musculoskeletal/lab1.html#>

Answer Choices:

- A) Blood in the stool
- B) Renal carcinoma
- C) Hydronephrosis
- D) Varicocele
- E) Caput medusae

## RESULTS

Questions (Indicate Your Level of Agreement with the Following)	Minimum	Maximum	Mean	Std Deviation
The Mock Practical Helped Me to Learn Human Anatomy	6.00 (n=2)	10.00 (n=52)	9.46	1.05
The Mock Practical Helped to Prepare Me For The Exam	8.00 (n=4)	10.00 (n=59)	9.81	0.52
The Mock Practical Were the Most Beneficial Preparatory Tool for Practical Style Questions	4.00 (n=1)	10.00 (n=50)	9.41	1.14
Participating in Mock Practical of Similar Length and Duration to the Exam Helped to Prepare Me For the Mental Fatigue of A 50 Question Timed Exam in a Way That Would Not Have Been Possible Otherwise	5.00 (n=1)	10.00 (n=57)	9.59	1.06
Participating Under The Same Conditions As Test Day Helped to Maximize my Performance by Minimizing External Errors Not Inherent to the Material (ie. running out of time, understanding flow, preparing test day strategies)	6.00 (n=1)	10.00 (n=56)	9.68	0.78
Administering the Mock Practical 2 Days Prior to the Exam Allowed Time to Fill Knowledge Gaps Before Test Day	4.00 (n=1)	10.00 (n=47)	9.40	1.15
Future Classes Would Benefit From Participating in Mock Practical	9.00 (n=1)	10.00 (n=67)	9.99	0.12
Participation In The Mock Practical Helped Me to Identify My Weaknesses	5.00 (n=1)	10.00 (n=55)	9.62	0.92
For the Mock Practical, the More Difficult, the Better	4.00 (n=1)	10.00 (n=30)	8.46	1.65
Having Time to Review Missed Questions on the Mock Was Beneficial to My Learning	6.00 (n=1)	10.00 (n=58)	9.74	0.72
Including The Name of the Tagged Structure In Addition to the Multiple Choice Answer on the Answer Key Would Help Facilitate Review After the Mock	7.00 (n=3)	10.00 (n=51)	9.54	0.86
A Structured Classroom Review After the Mock Practical on the Questions Asked Would Be Beneficial to Student Learning	3.00 (n=1)	10.00 (n=26)	8.01	1.97
Participating in the Mock Practical Reduced My Anxiety/Stress On Test Day	3.00 (n=1)	10.00 (n=43)	9.06	1.54
The Rigor of The Mock Practical Increased My Anxiety/Stress Prior to the Exam	0.00 (n=16)	10.00 (n=10)	3.41	3.30
The Benefit of Seeing Rigorous Questions Before the Exam Outweighed any Stress or Anxiety Caused by the Mocks	4.00 (n=2)	10.00 (n=40)	8.87	1.64

Questions were scored on a 10 ppt Likert scale with 0 indicating strong disagreement and 10 indicating strong agreement

## DISCUSSION

- Based on survey results, participation in full-length practice lab practicals prior to course exams:
  - Increased student understanding of anatomical structures
  - Helped prepare for the mental fatigue of practicals
  - Filled knowledge gaps
  - Reduced student anxiety and stress
  - Increased perceived performance on test day
- Mock practicals contribute to the growing curricular changes placing emphasis on student wellness, including the newly instated pass/fail grading schema
- This study supports continuing near-peer created full-length mock practicals prior to each course exam as resources allow
- Given the time commitment required to create, set-up, and administer practice lab practicals, it is prudent that there are adequate resources for tutors

## FUTURE DIRECTIONS

- Explore the correlation between participation in near-peer created full-length mock lab practicals and examination scores
- Investigate how future mock practicals can be created as a structured, yearly model for ease of administration by future classes
- Evaluate whether the in-person practice lab practical is as effective as an online version
- Work with faculty to develop a format that is applicable to the future systems-based year-long curriculum currently in development

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- This study was deemed IRB exempt