

Background

The Learning and Study Strategies Inventory (LASSI) is an assessment of personal attributes regarding a student’s characteristic behaviors and attitudes toward educational topics. This inventory takes student self-responses and calculates a corresponding score for each of 10 different attributes. U.S. medical student’s LASSI scores have been shown in previous studies to be significantly different dependent on their scores during the pre-clerkship curriculum, mainly USMLE step 1.

Study Aim

This study aimed to evaluate LASSI and other early academic performance markers utility for predicting the likelihood of NBME shelf exam underperformance in third-year medical students.

Methods

A retrospective analysis of student-specific demographic information, LASSI scales, and medical school performance from 220 students from the University of Texas Southwestern class of 2022 was performed. Students were then categorized based on underperformance (score in <25th percentile) on each NBME shelf exam and statistical analysis was performed to identify associated risk factors.

Discussion

In contrast to previous studies, no single LASSI scale was significantly associated with underperformance on all 7 NBME shelf exams. Univariate analysis identified several LASSI scales that correlated with NBME underperformance, but the drastic inter-clerkship heterogeneity makes use of these scales in early academic intervention impractical. Conversely, Pre-clerkship Average was found to be strongly associated with shelf exam underperformance. Undergraduate major did not show statistical significance when associated with underperformance, but the inter-group likelihoods were starkly different.

Results

Clerkship:	Surgery	Internal Medicine	Pediatrics	Ob-Gyn	Neurology	Family Medicine	Psychiatry
Significant LASSI scales and academic variables associated with NBME shelf underperformance:	Pre-clerkship average, LASSI TMT	Pre-clerkship average, LASSI ATT, TST, TMT, average LASSI	Pre-clerkship average	Pre-clerkship average, LASSI ANX	Pre-clerkship average, LASSI ANX, CON, INP, TST,TMT, average LASSI	Pre-clerkship average, LASSI ANX, TST, UAR, average LASSI	None

Table 1: Demographic, academic, and LASSI inventory variables that were found to be correlated with NBME shelf exam underperformance (score <25th percentile) categorized by clerkship.

LASSI Scales	Undergraduate Major Category:	Engineering/Math/Physics (EMP)	Basic Sciences (BS)	Other (O)
Information Processing (INP)	Majors Included:	Applied Mathematics Bioengineering Biomechanics Biomedical Engineering Chemical Engineering Civil Engineering Mathematics Physics Statistical Science	Behavioral Biology Biochemistry Biological Chemistry Biology Biological Sciences Biomedical Science Cognitive Science Chemistry Cell Biology Ecology & Evolutionary Biology Exercise & Sports Science Exercise Science Genetics Human Biology Kinesiology Medical Humanities Microbiology Microbiology and Immunology Molecular Biology Neuroscience Nutritional Science Psychobiology Psychology	Anthropology Economics Finance History Humanities Linguistics Philosophy Public Health Sociology
Selecting Main Idea (SMI)				
Test Strategies (TST)				
Anxiety (ANX)				
Attitude (ATT)				
Motivation (MOT)				
Concentration (CON)				
Self Testing (SFT)				
Time Management (TMT)	n = Total # Of Students:	19	180	21
Using Academic Resources (UAR)	% of students that underperform on >= 1 shelf exam	26%	37%	60%

Table 2: LASSI scales and abbreviations

Table 3: Undergraduate major demographic data for the UTSW class of 2022 divided into 3 categories.

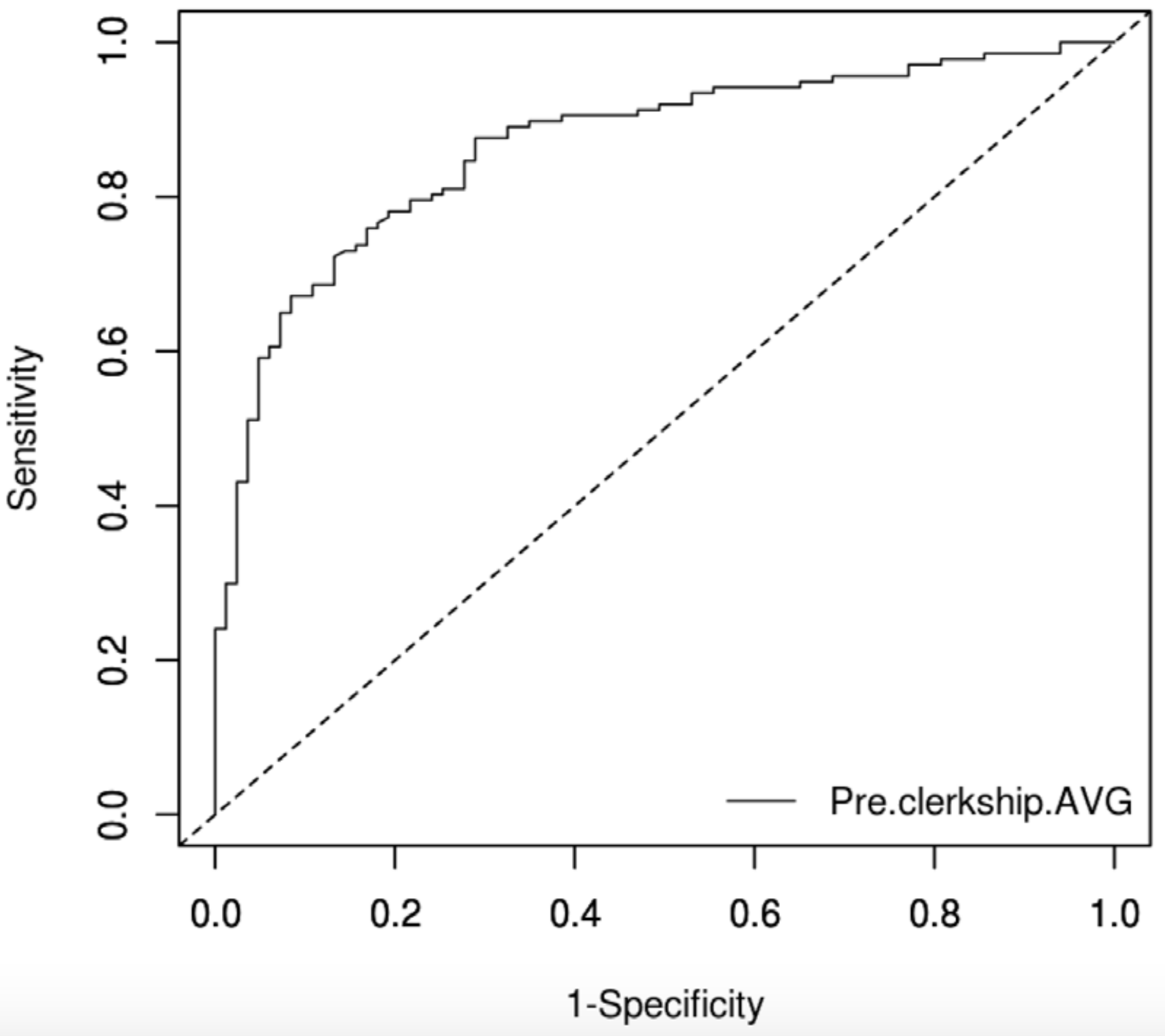


Figure 1: Receiver operator characteristic (ROC) depicting the relationship between various Pre-Clerkship Average thresholds and their corresponding sensitivity/specificity for predicting underperformance on at least one NBME exam during clerkship.

More on the ROC:

A Pre-clerkship Average of < 85% (76 students), as determined by the minimization of misclassification method, was associated with a sensitivity of 0.71 and specificity of 0.88 when predicting students that will underperform on at least 1 NBME shelf exam. This threshold may be useful for identifying students that would benefit from additional academic support during the transition to clerkships.



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