Utility of Classroom Subject Performance Outcomes in Preparation for the Comprehensive Osteopathic Medical Licensing Examination (COMLEX)

Rachna Chaudhari & Sarah Zahl, PhD

Marian University College of Osteopathic Medicine, Indianapolis, Indiana

MARIAN UNIVERSITY
Indianapolis®
College of Osteopathic Medicine

Introduction

- Correlations exist between undergraduate GPA, MCAT, and COMLEX-USA Level 1 scores as well as between course grades and overall COMLEX score (Wong et al. 2009 & Sefcik et al. 2003).

- Longitudinal reports on ProgressIQ contain aggregate data over two years of didactic work in the first two years of medical school. Classroom subjects divided into systems report an average score over two years.

- NBOME provides COMLEX-USA Level 1 score reports for each examiner which include discipline sub-scores for each system.

Methods

- Class of 2021 and 2022 COMLEX data was de-identified and used in this study.

- Any longitudinal report category with <30 items was removed.

- Correlations and p values were calculated using Microsoft Excel Data Analysis Toolkit.

Classroom Category:	Correlated To:
Classroom discipline i.e. Anatomy	COMLEX discipline sub-score i.e. Anatomy
Blooms 1-6	Overall COMLEX score
Fundamental Osteopathic Medical Competency Domains (FOMCD)	Overall COMLEX score
Biosystems	Overall COMLEX Score

Results

- r ≥0.50 indicates a positive correlation

- (); not correlated. *; moderately-strongly correlated. Red; correlated to overall COMLEX score not sub-score. ^; not statistically significant.
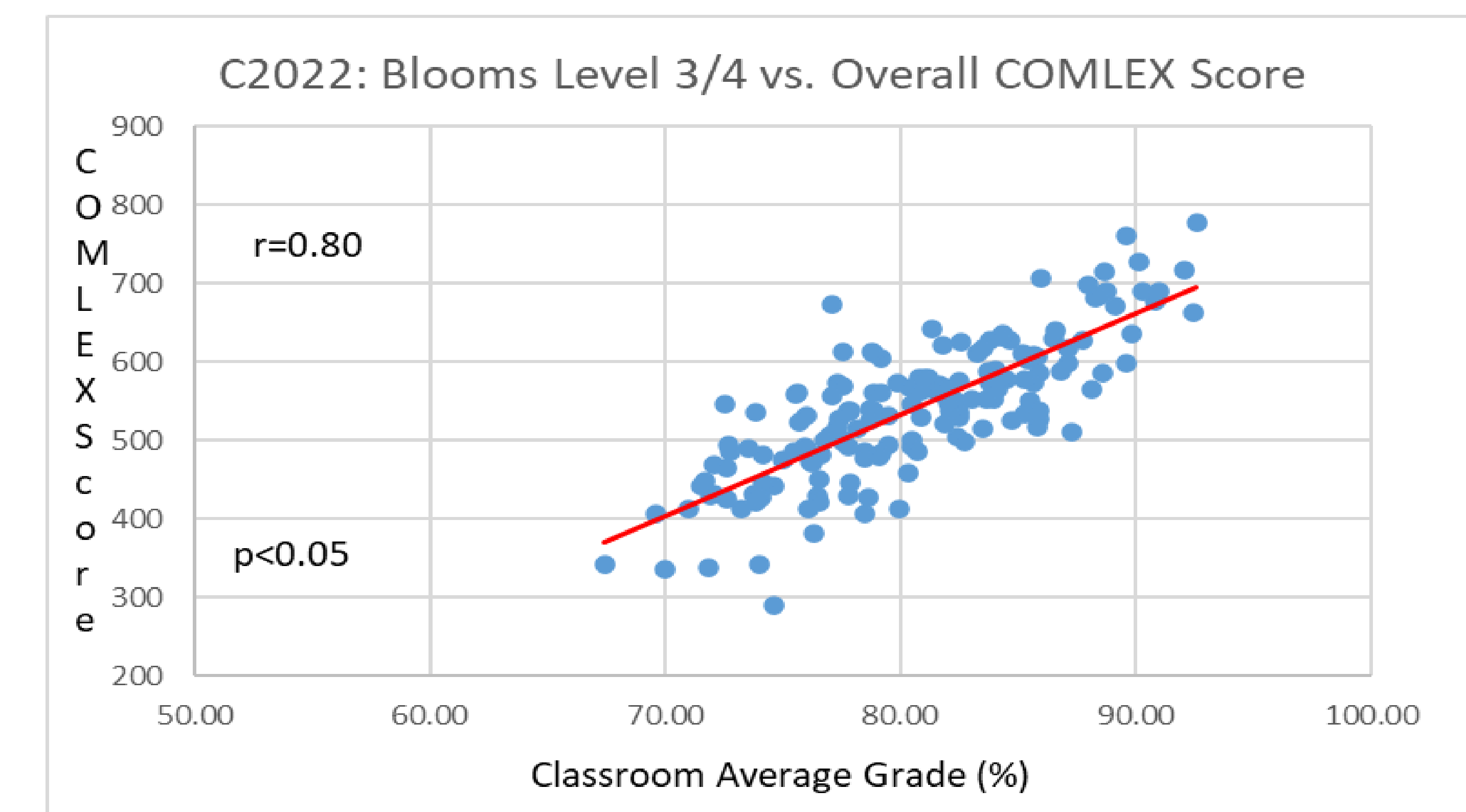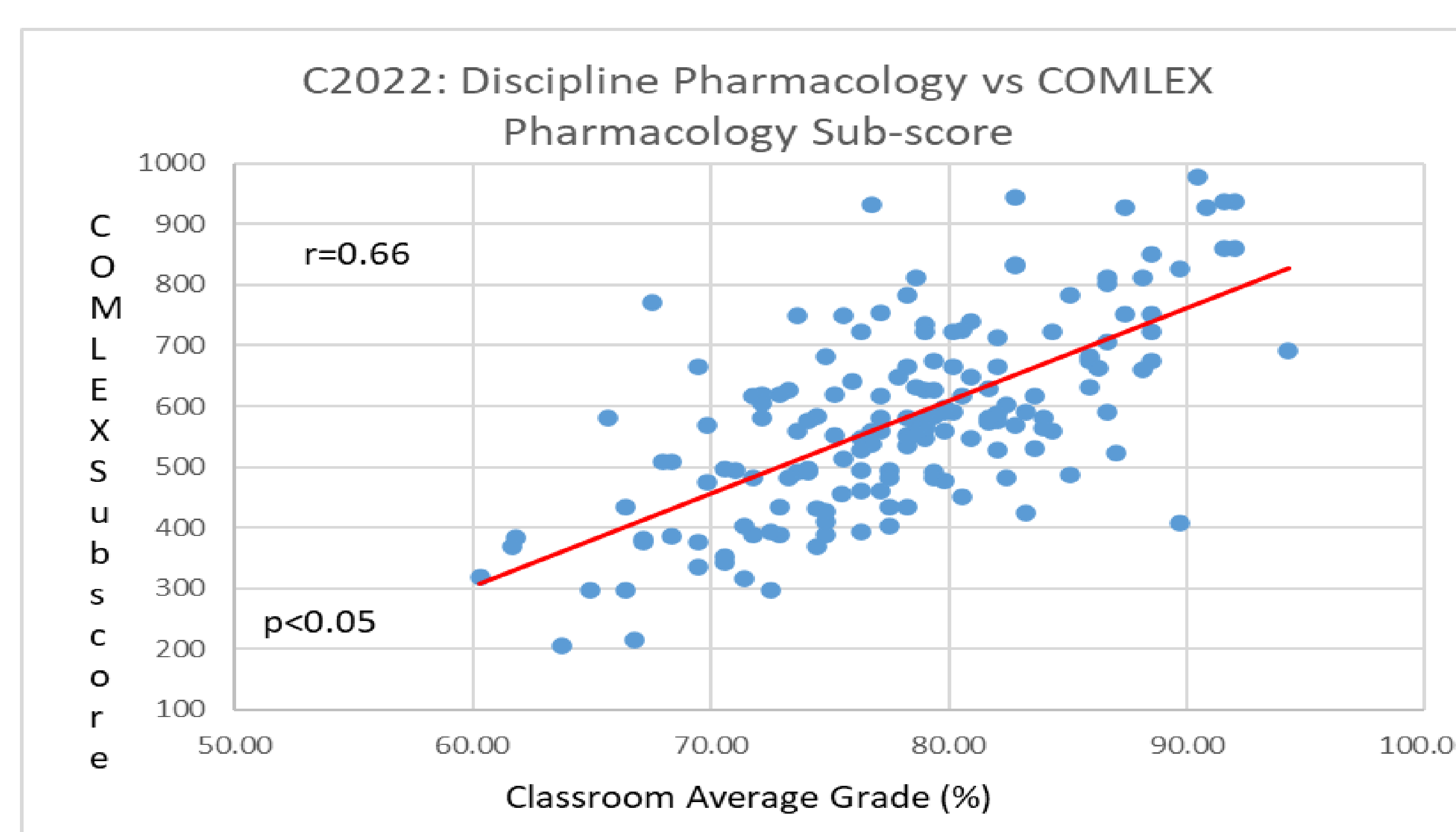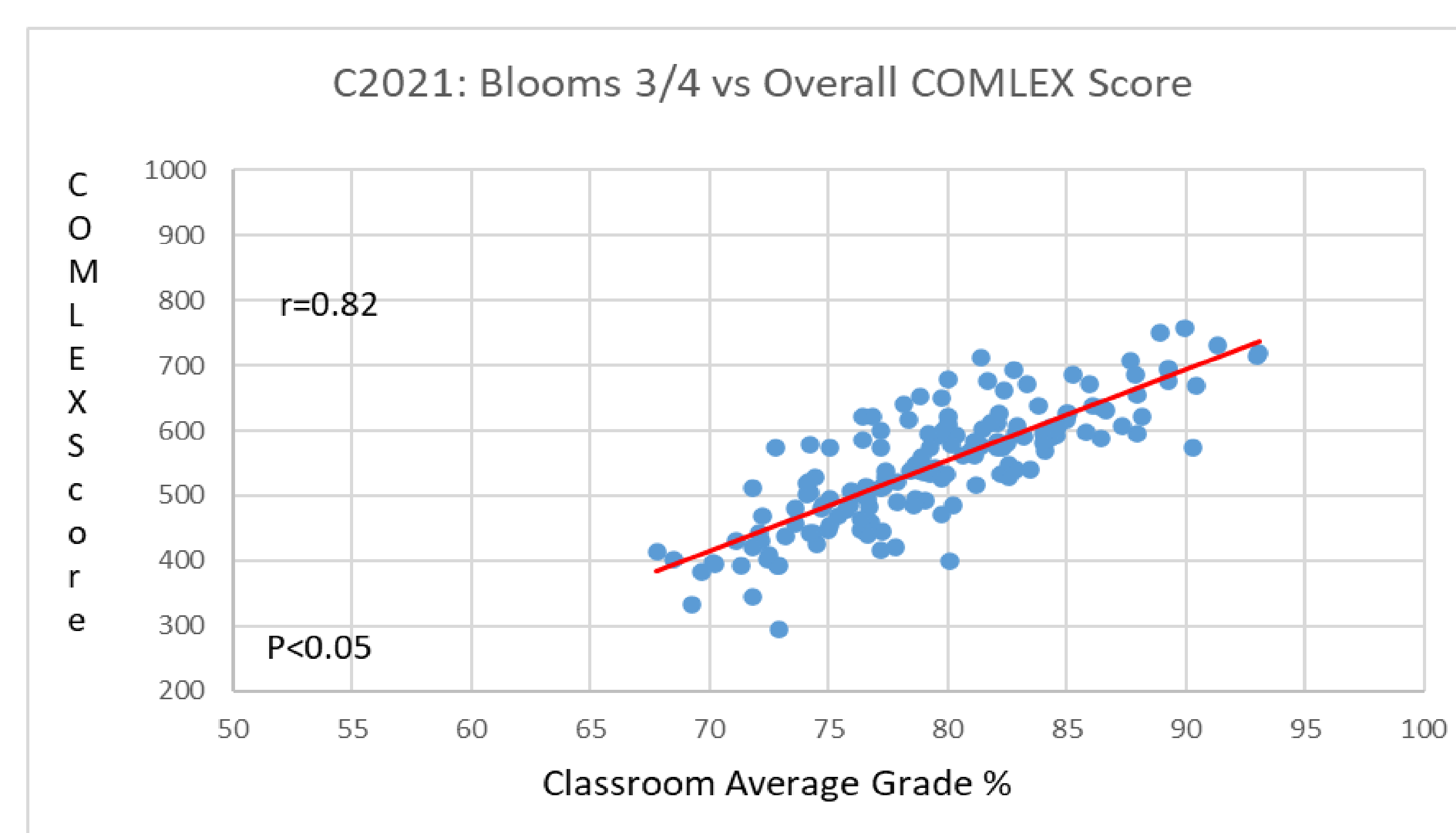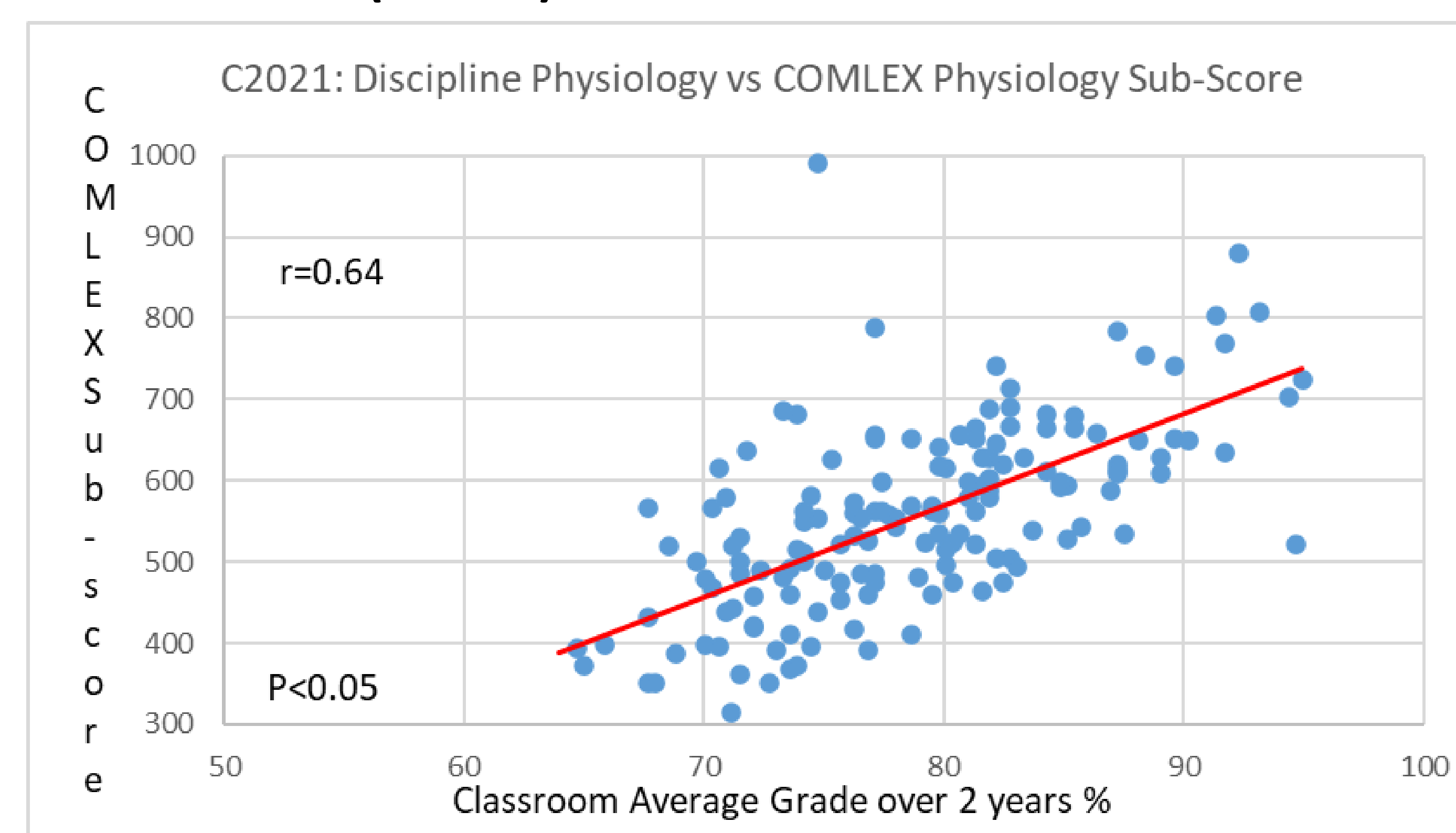
Discipline	Biosystems	FOMCD & Blooms
•Anatomy*	•(Asymptomatic)	•Medical Knowledge*
•Embryology*	•Cardiovascular*	•Osteopathic Manipulative Medicine/ Osteopathic Principles and Practice*
•Histology*	•Endocrine*	
•Biochemistry*	•Foundational*	
•Microbiology*	•Gastrointestinal*	
•Immunology*	•Genitourinary*	
•Osteopathic Principles and Practice*	•Head and Neck*	•Patient Care Procedural*
•Pathology*	•Hematology Oncology*	•(Professionalism)
•Pharmacology*	•Integumentary*	•Blooms 1/2*
•Physiology*	•Musculoskeletal*	•Blooms 3/4*
•(Behavioral Science)^	•Nervous System*	•Blooms 5/6*
•Diagnosis and Management*	•Reproductive System*	
•(Medical Ethics)	•Respiratory System*	

Table 1. C2021 (n=155) Correlation Results

Results cont.

Discipline	Biosystems	FOMCD & Blooms
•Anatomy*	•Community Wellness*	•Medical Knowledge*
•Anat/Embryology*	•Human Development; Reproductive; Sexuality*	•Osteopathic Manipulative Medicine/ Osteopathic Principles and Practice*
•(Anat/Histology)		
•Biochemistry*	•Endocrine*	
•Microbiology*	•Nervous System; Mental Health*	
•Microbiology/Immunology*	•Musculoskeletal*	•Patient Care Procedural*
•Osteopathic Principles & Practice*	•Genitourinary*	•(Professionalism)
•Pathology*	•Gastrointestinal; Nutrition*	•Blooms 1/2*
•Pharmacology*	•Circulatory; Hematology*	•Blooms 3/4*
•Physiology*	•Respiratory*	•Blooms 5/6*
•(Behavioral Science)^	•Integumentary*	
•(Public Health)		

Table 2. C2022 (n=163) Correlation Results

C2021: Discipline Physiology vs COMLEX Physiology Sub-Score
r=0.64, P<0.05

C2021: Blooms 3/4 vs Overall COMLEX Score
r=0.82, P<0.05

C2022: Discipline Pharmacology vs COMLEX Pharmacology Sub-score
r=0.66, p<0.05

C2022: Blooms Level 3/4 vs. Overall COMLEX Score
r=0.80, p<0.05

Discussion and Future Direction

- Even though discipline sub-scores are based on a relatively lower number of items and scores may be less reliable, a statistically significant moderate-strong correlation exists for almost every category.

- Behavioral Science exam questions should be investigated and compared with NBOME's blueprint.

- **Survey to C2021 and C2022, 30% response rate:**

- ☐ *Inquired about study habits*

When asked if longitudinal reports are used to tailor study plans:
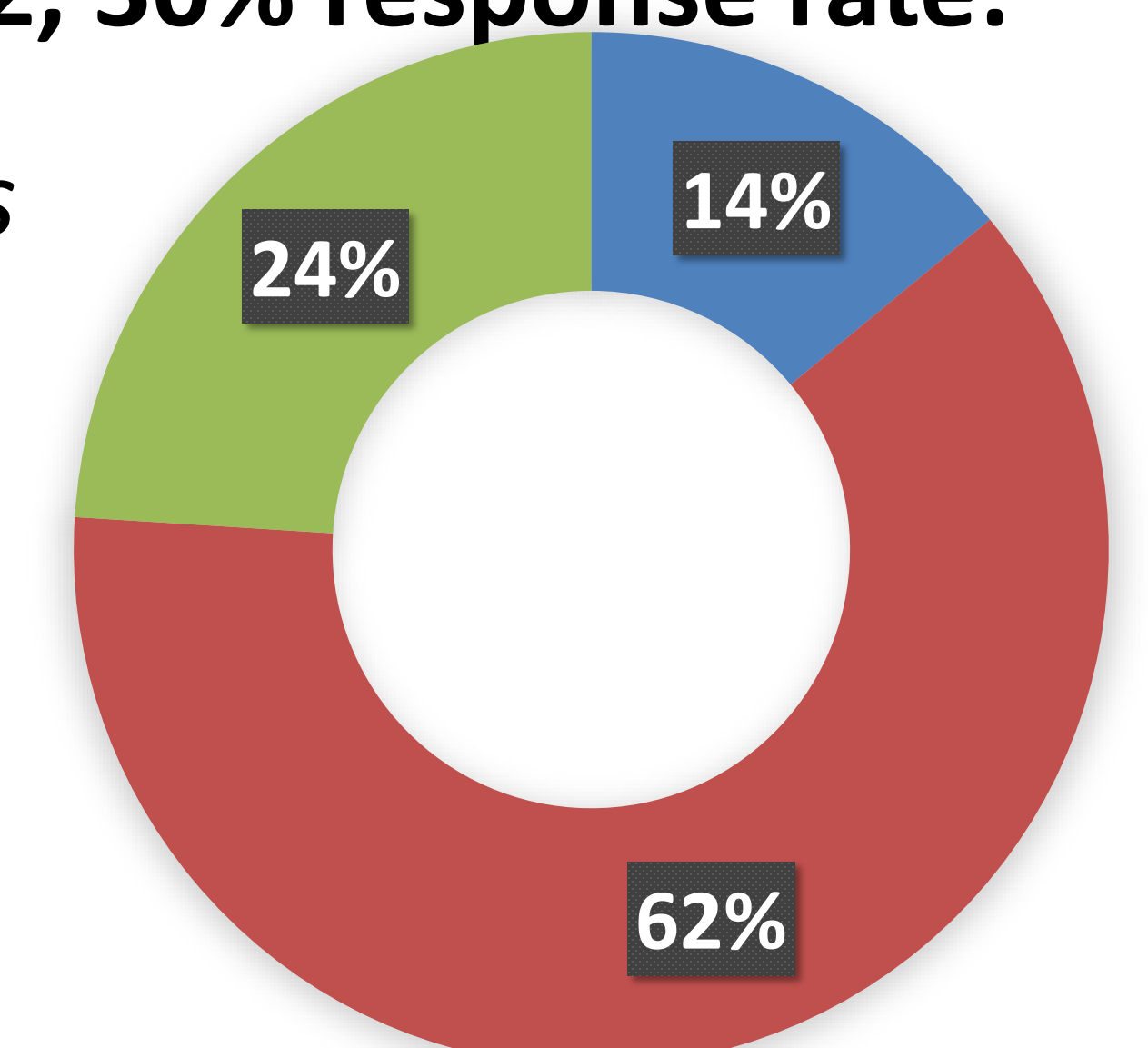
14% — ■ Yes
62% — ■ No
24% — ■ N/a did not know about reports

- By identifying weaker areas in the curriculum and targeting those areas, it can potentially improve sub-score outcomes which impacts overall performance.

- Since COMLEX-USA is becoming Pass/Fail in May 2022, making sure students have a strong understanding in each area of the curriculum will be even more important to ensure passing the examination.

- Future studies should analyze student data at other osteopathic medical schools to see if similar correlations exist at institutions utilizing different curriculums.

References

1. Sefcik, DJ et al. (2003). Characteristics of the Courses That Best Predict COMLEX-USA Level 1 Performance. JAOA, 103(10), 491-494.
2. Wong, SK et al. (2009). Student Performance on Levels 1 and 2-CE of COMLEX-USA: Do Elective Upper-Level Undergraduate Science Courses Matter? JAOA, 109(11), 592-598.

Acknowledgements