



The Utility of an Interview Day

Passage-Based Writing Assessment to Predict Academic Success.

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BACKGROUND

- Previously, we reported that poor performance on our School's interview day algebra-based math assessment moderately correlates with worse PY1 curricular outcomes and jeopardizes progression.
- Beginning in the 2021-22 PharmCAS application cycle, a passage-based writing assessment (e.g., a Medscape article) was incorporated into the School's holistic and standardized admissions process.
- Whether poor performance on this writing assessment (1) correlates with math assessment score (MAS), overall interview score (OIS), and PY1 course outcomes and (2) is associated with worse PY1 curricular outcomes and hindered progression were assessed.

METHODS

- The writing assessment was comprised of a science passage and writing prompt and was administered on the interview day.
- Hand-written submissions were independently graded by the same two evaluators, and three components were scored and totaled:

Essay Summary
5 points

Grammar & Spelling
2.5 points

Clarity & Readability
2.5 points

- The overall writing assessment score (WAS) constituted 10% of the OIS.
- Component WAS were compared between matriculating applicants scoring <70% vs. ≥70% overall. The overall WAS and MAS of progressing vs. academically dismissed students were also compared.
- Correlations between WAS and MAS, OIS, and final grades in five consistently-delivered didactic PY1 courses (listed below) were determined. Pearson correlation coefficients (r) were classified as weak (r=0.00-0.29), moderate (r=0.30-0.49), or strong (r≥0.50).

PY1 DIDACTIC CURRICULUM ASSESSED

Term	Courses	Content Areas
I	Biochemistry, Introduction to Patient Care I, Introduction to Interprofessional Education, Introduction to Physiology	Foundational
II	Medicinal Chemistry, Pharmacology, and Toxicology	Patient Care Process

- Mean final grades of students with an overall WAS <70% vs. ≥70% were also compared.
- Two-way multivariate analysis of variance (2-W MANOVA) was performed to assess the main and interactive effects of WAS and MAS on OIS, course outcomes, and progression status.

RESULTS

Matriculating applicants receiving an overall WAS of ≥70% performed better on all assessment components.

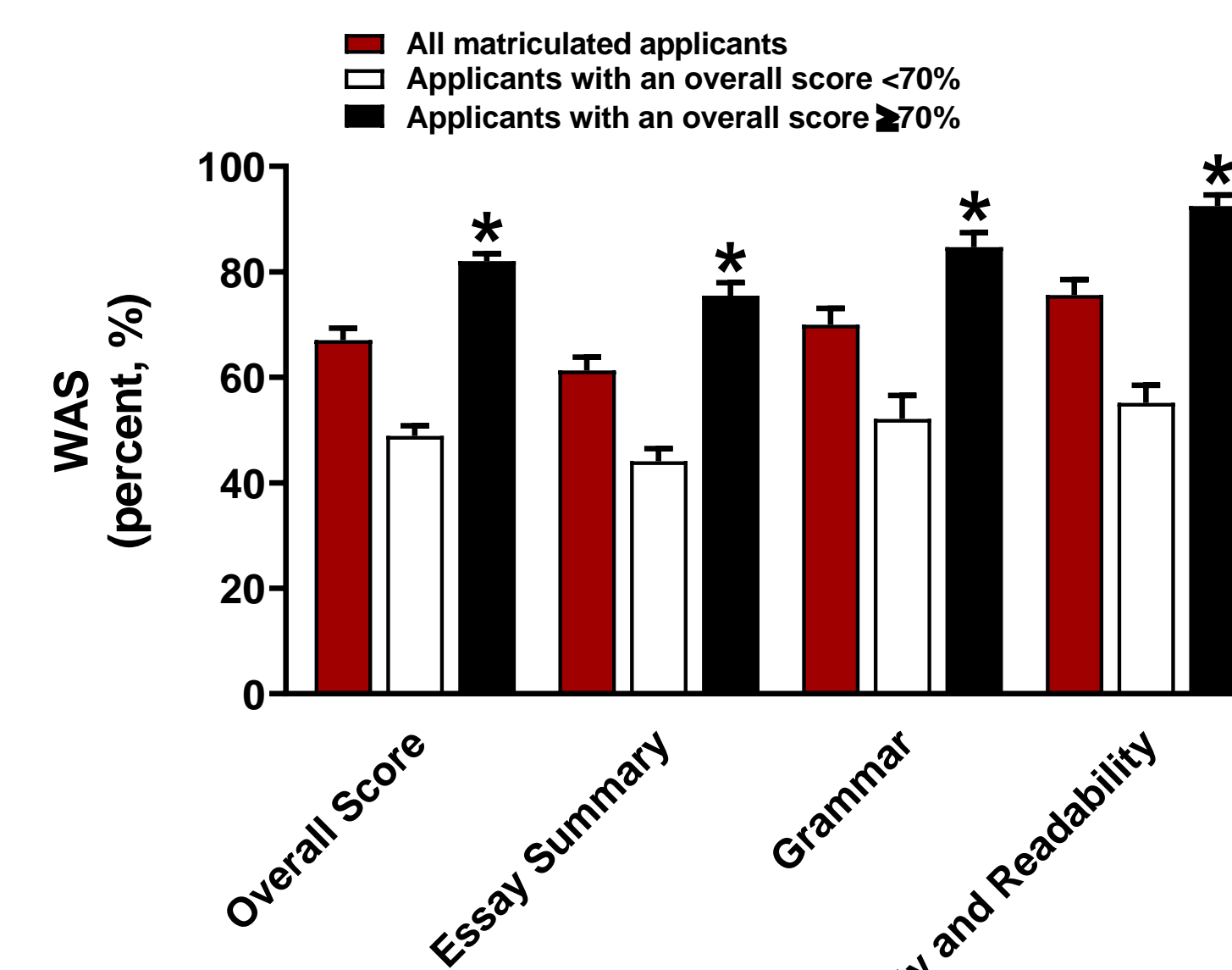


Figure 1. Data are mean±SEM and represent overall and component WAS for all matriculated applicants as well as those applicants scoring either <70% (N=2) or ≥70% (N=71). *p<0.05 vs. overall WAS <70%.

Academically dismissed students performed similarly to progressing students on the writing assessment but worse on the math assessment.

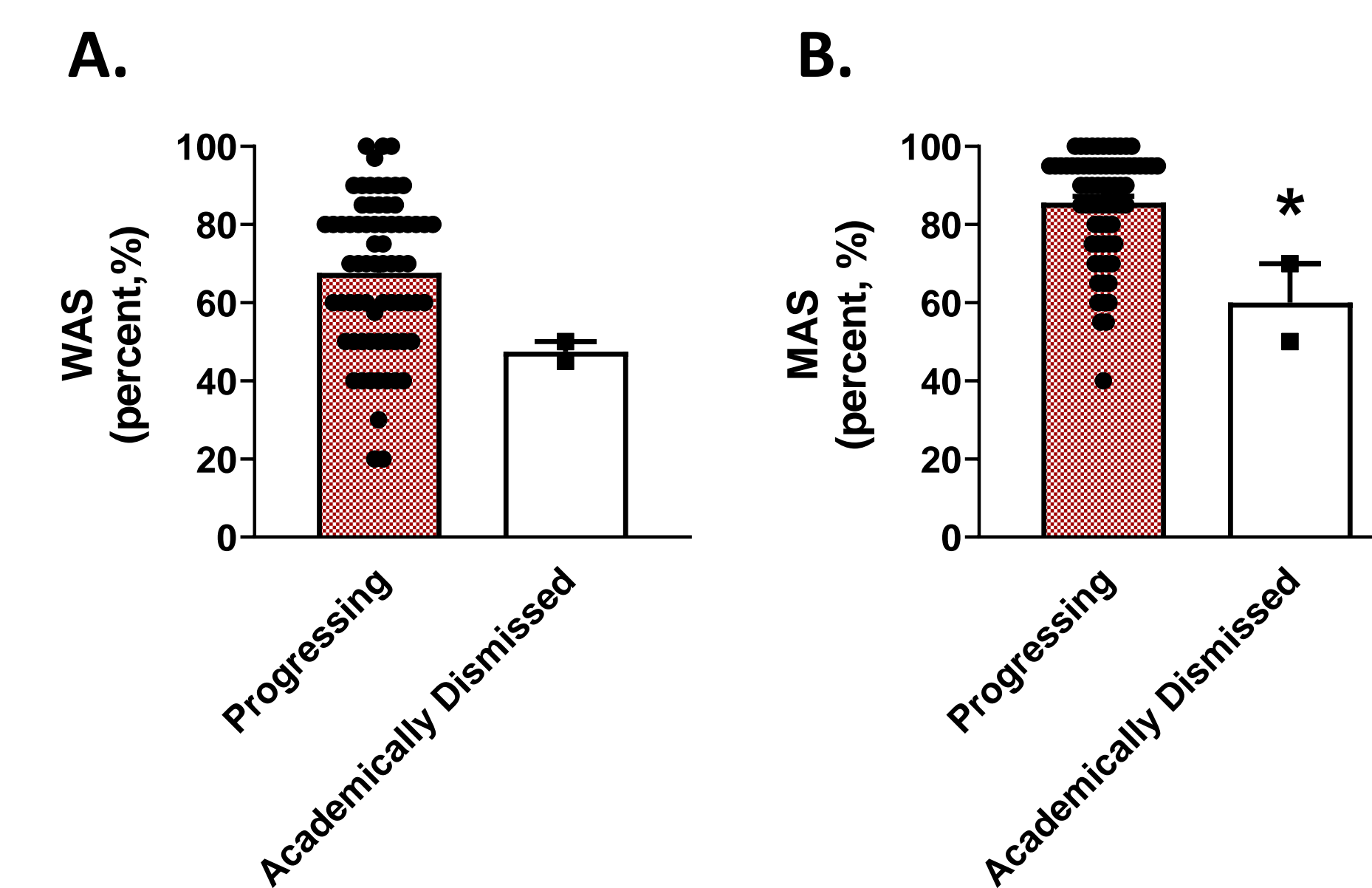


Figure 2. Data are mean±SEM and represent overall (A) WAS and (B) MAS in progressing (N=71) vs. academically dismissed students (N=2). *p<0.05 vs. progressing.

There is no correlation between WAS and MAS, but WAS is moderately and positively correlated with OIS.

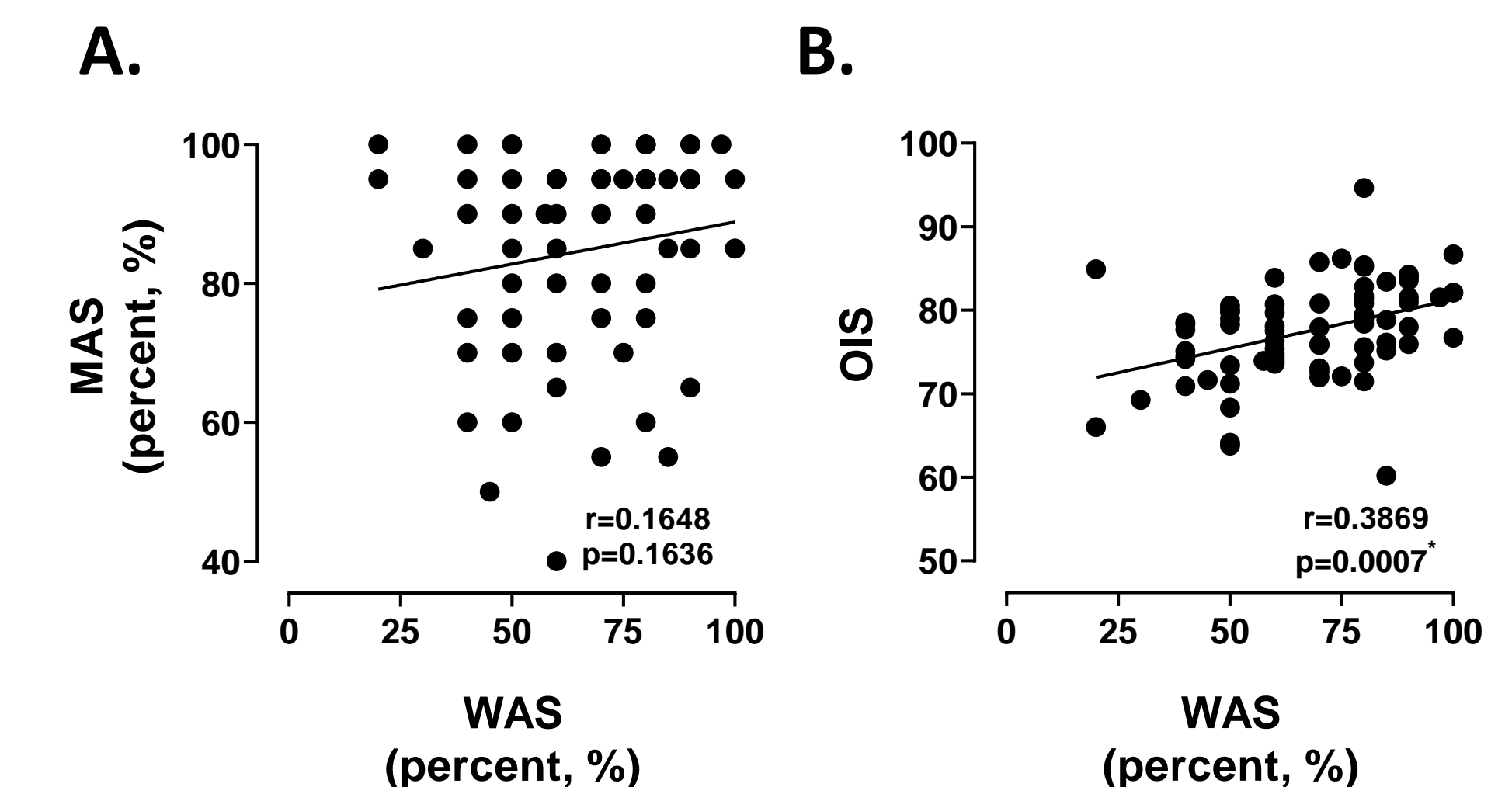


Figure 3. Correlation data are overall WAS plotted against corresponding (A) overall MAS and (B) OIS. Pearson correlation coefficients (r) and p-values are shown.

Mean final grades in Biochemistry, Introduction to Physiology, and MCPT were lower for students with an overall WAS <70%.

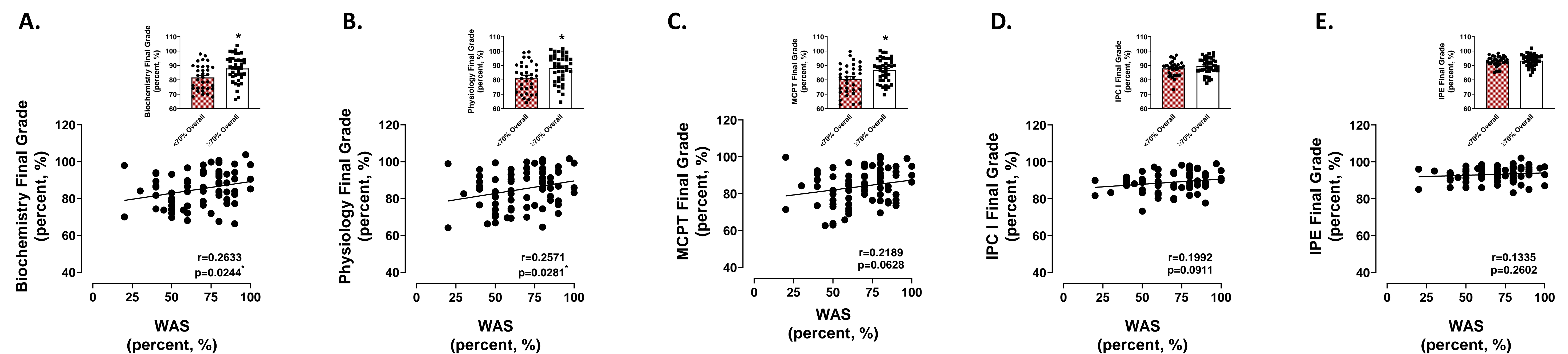


Figure 4. Correlation data are overall WAS plotted against corresponding final grades in (A) Biochemistry, (B) Physiology, (C) MCPT, (D) IPC I, and (E) IPE. Inset graphs: Data are mean±SEM and represent corresponding final grades in students with a WAS <70% (N=2) vs. ≥70% (N=71). *p<0.05 vs. overall WAS <70%.

Table 1. Two-way multivariate analysis of variance (2-W MANOVA) statistical analysis.

INDEPENDENT VARIABLES	DEPENDENT VARIABLE	MAIN AND INTERACTIVE EFFECTS	POINT ESTIMATE	PARAMETER ESTIMATES		p-value	
				95% Confidence interval Lower bound	Upper bound		
MAS category, WAS category	Overall interview score	MAS Category	1.652	-3.766	7.069	0.393	
		WAS Category	5.100	-1.957	12.157	0.009*	
		Interaction	-0.029	-7.632	7.574	0.994	
	Biochemistry	Final grade	MAS Category	2.960	-5.719	11.638	0.233
			WAS Category	4.912	-6.393	16.217	0.070
			Interaction	1.421	-10.759	13.601	0.817
			MAS Category	6.882	-2.502	16.266	0.085
	Introduction to Physiology	Final grade	WAS Category	8.382	-3.842	20.606	0.031*
			Interaction	-2.245	-15.415	10.925	0.735
			MAS Category	5.804	-2.989	14.597	0.329
			WAS Category	10.848	-0.607	22.303	0.011*
	Medicinal Chemistry, Pharmacology, and Toxicology	Final grade	Interaction	-5.524	-17.865	6.817	0.375
			MAS Category	0.843	-4.342	6.027	0.137
			WAS Category	-1.758	-8.512	4.996	0.937
Interaction			3.806	-3.470	11.082	0.300	
Introduction to Patient Care I	Final grade	MAS Category	-1.044	-4.759	2.672	0.567	
		WAS Category	-2.576	-7.416	2.264	0.552	
		Interaction	3.590	-1.625	8.804	0.174	
		MAS Category	-0.164	-0.319	-0.009	0.136	
Introduction to Professional Education	Final grade	WAS Category	-0.200	-0.402	0.002	0.034*	
		Interaction	0.165	-0.053	0.382	0.136	
		WAS Category	-0.200	-0.402	0.002	0.034*	
		Interaction	0.165	-0.053	0.382	0.136	
Progression status	Progression status	WAS Category	-0.200	-0.402	0.002	0.034*	
		Interaction	0.165	-0.053	0.382	0.136	

WAS category: Overall WAS <70%, N=33; ≥70%, N=40. MAS category: Overall MAS ≥70%, N=63; <70%, N=10. Progression status: Progressing vs. academically dismissed. *p < 0.05 between groups.

Poor WAS is associated with lower OIS, worse curricular outcomes in select first-year courses, and academic dismissal.

Table 1. Two-way multivariate analysis of variance (2-W MANOVA) assessing main and interactive effects of WAS and MAS on OIS, final grades, and progression status.

CONCLUSIONS

- Poor WAS weakly and moderately correlates with MAS and OIS, respectively.
- WAS <70% is weakly correlated to reduced OIS and is associated with worse outcomes in select PY1 didactic courses and failure to progress; however, MAS is not.
- The subjective nature of a writing assessment vs. objective nature of a math assessment may confound data interpretation.
- Although limited, these findings highlight the importance of routinely assessing the value of interview elements.