

Introduction

Comprehensive Medical Self-Assessment Examination (COMSAE) is a three phase self-assessment series to gauge the knowledge and ability of candidates prior to taking the Comprehensive Osteopathic Medical Licensing Examination of the United States (COMLEX-USA) series. Each COMSAE form has a similar format and structure to the corresponding level of the COMLEX-USA form.

Objective

The purpose of the study is to:

- Investigate how COMLEX-USA Level 1 (Level 1) candidates have used COMSAE Phase 1 (Phase 1) since Level 1 transitioned to only Pass/Fail reporting
- Determine the relationship between performance on Phase 1 and Level 1
- Identify prediction relationship between Phase 1 scores and the probability of passing Level 1

Methods

The Phase 1 and Level 1 examination data for first-time Level 1 takers in the 2023-2024 administration (N=9,222) were used in this study. We analyzed their first attempt Level 1 performance and their timed Phase 1 performance prior to it. "Outlier" scores from students who answered less than 90% of the questions were removed from the analysis. We investigated:

- The number of unique Phase 1 forms taken by Level 1 candidates and the mean scores for each subgroup
- The correlation between the candidates' Phase 1 scores and underlying level 1 scores used for Pass/Fail reporting
- The improvement in Phase 1 performance and Level 1 performance as more Phase 1 forms were taken
- The prediction of the probability of passing Level 1 based on the first attempt Phase 1 scores, controlling for the time gap between the two examinations

Results

- The majority of candidates took one to three timed Phase 1 forms prior to the Level 1 examination (32% for one form, 34.5% for two forms, and 19.4% for three forms) (Table 1).
- Level 1 scores showed a strong and positive correlation ($r=0.59$ to 0.70 , $p<0.001$) with Phase 1 first attempt scores, last attempt scores, and mean scores across all forms (Table 2).
- Candidates with lower initial Phase 1 scores tended to take more Phase 1 forms, and their Phase 1 scores improved as they practiced with additional forms (Table 3 and Figure 1).
- Taking extra timed Phase 1 forms improved candidates' probability of passing Level 1 compared to taking only one timed Phase 1 form (Figure 2).
- For first-attempt Phase 1 score of 400, 450, and 500, the predicted probability of passing Level 1 was 94%, 97%, and 99%, respectively, while the time gap between the two examinations was at the mean value of 67 days (Figure 2).

Table 1: Number of Phase 1 forms taken by first-time Level 1 candidates

Number of forms	0*	1	2	3	4	5	6	Total
Frequency	481	2,948	3,177	1,788	768	57	3	9,222
Proportion	5.2%	32.0%	34.5%	19.4%	8.3%	0.6%	0.03%	100%

*Note: This includes candidates who did not take Phase 1 in timed administrations or who answered less than 90% of the questions.

Table 2: Pearson's product-moment correlation between Level 1 and Phase 1 scores.

	r	t	df	p-value
First Phase 1 Score	0.65	80.9	8,739	<.0001
Last Phase 1 Score	0.59	68.5	8,739	<.0001
Average Phase 1 Scores	0.70	90.8	8,739	<.0001

Table 3: Mean first-attempt and last-attempt Phase 1 scores for candidates taking different numbers of Phase 1 forms

Number of forms	1	2	3	4	5	6	All
Mean First Attempt Phase 1 scores	454	408	373	344	301	269	410
Mean Last Attempt Phase 1 scores	454	473	467	457	432	466	463

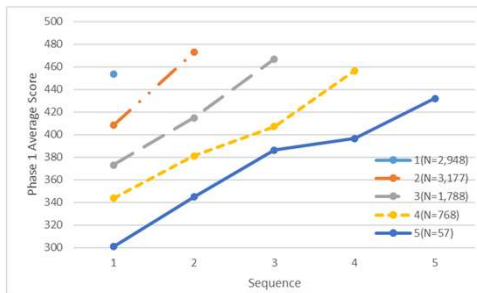


Figure 1. Phase 1 mean score by number of forms taken and sequence

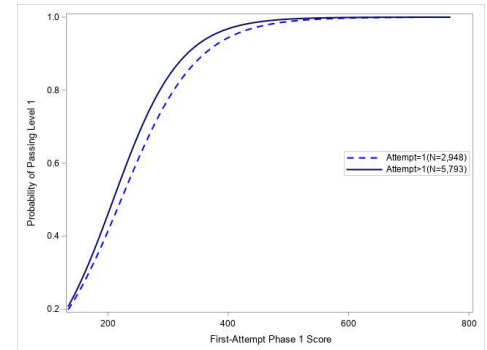


Figure 2. Prediction of Level 1 outcome based on Phase 1 performance

Discussion

- Our study confirms a strong correlation between Phase 1 and Level 1 performance and supports Phase 1's validity in a pass/fail environment.
- The correlation is stronger for candidates who took multiple Phase 1 forms (using mean scores), and those with lower initial scores benefited from additional practice.
- Findings align with previous research when Level 1 used numerical scores. However, candidates now appear to aim for a lower Phase 1 threshold (~460 vs. ~500 previously), suggesting reduced motivation for higher scores.
- Additionally, candidates scoring 400 on their first Phase 1 attempt had a higher probability of passing Level 1 (94%) than in the prior study (85%), despite a similar overall correlation.
- These results suggest that the pass/fail transition may have shifted study behaviors toward meeting the passing threshold rather than maximizing scores.

Conclusions

The COMSAE Phase 1 is utilized by osteopathic medical students as a self-assessment tool to evaluate their knowledge and readiness for the COMLEX-USA Level 1. This study provides further validity evidence for Phase 1 as a predictor of Level 1 performance in a pass/fail environment. The findings also suggest that the transition to pass/fail may have influenced candidate study behaviors. These insights contribute to a better understanding of candidate preparation strategies and may inform future assessment policies.

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