BACKGROUND

The National Board of Osteopathic Medical Examiners (NBOME) provides formative assessments that serve as a tool to help gauge student preparedness for the COMLEX board exam. These comprehensive Osteopathic Medical Self-Assessment Examinations (COMSAEs) are offered for both COMLEX-USA Level 1 and Level 2-C in forms that students can purchase directly as well as forms available exclusively for COMA to administer to students.

The COMSAE Phase 2 forms are formative assessments for COMLEX-USA Level 2-C, and the NBOME has found a strong correlation between COMSAE Phase 2 scores and subsequent COMLEX-USA Level 2-C scores (correlation coefficient = 0.89, n=3348 for COMSAEs taken between 11/2014 and 2/2016; source, 2017 NBOME Update). Touro University Nevada College of Osteopathic Medicine (TUNCOM) purchases COMSAE Phase 2 Form D for third year medical students and requires the students to take it at least 10 days prior to sitting for COMLEX-USA Level 2-C. The students take the assessment timed but unsupervised, and they must achieve a “cut score” of at least 500 in order to maintain their scheduled COMLEX date. A student who scores <500 on the COMSAE must reschedule the COMLEX, from COMLEX. The only subgroup that averaged a higher score on COMPLEX than on the COMSAE were the H-Ps. Conversely, the A-R subgroup had the greatest drop in COMPLEX score compared to the COMSAE.

OBJECTIVES

Our hypothesis was that high-performing and low-performing students use the results of their COMSAEs differently to guide their final COMLEX preparation, and COMLEX results reflect this difference.

We tested this hypothesis with the following specific aims:

1) The COMSAE results were compared to the subsequent COMLEX-USA Level 2-C results for third year TUNCOM osteopathic medical students.
2) The students were divided into four subgroups based on their COMLEX-USA Level 2-C scores, as detailed in the Methods. Students were then given a survey with questions that probed the conditions under which they took COMSAE, how they used results for final COMLEX preparation, and study aids used during final preparation. Results were collected separately for each student subgroup.

METHODS

We divided the TUNCOM DO2018 cohort into four subgroups based on their COMLEX-USA Level 2-C scores relative to the national mean, which was 555 (SD=104) at that time of the study:

- ≥1SD above the national mean, i.e., ≥659 (high-performers, “H-P”, n=15)
- within 1SD above (n=38)
- within 1SD below (n=53)
- ≤1SD below the national mean, i.e., ≤451 (at-risk students, “A-R”, n=21)

For each group, we calculated:

- The mean difference between the COMLEX-USA Level 2-C & COMSAE Phase 2 form D scores;
- The average number of days between taking the COMSAE and COMLEX.

We then surveyed students within each subgroup concerning conditions under which they took COMSAE, how they used results for final COMLEX preparation, and study aids used during final preparation. The Office of Institutional Research administered the survey to each student subgroup separately, but responses within subgroups were anonymous. Participation in the survey was voluntary, and students were informed that they would not receive any compensation or penalty for participating or not participating, respectively. The project was approved by the TUN IRB.

RESULTS

The graph below shows the average difference between the COMLEX-USA Level 2-C and COMSAE Phase 2 form D scores for the entire DO2018 cohort and for each subgroup, calculated by subtracting COMSAE from COMLEX. The only subgroup that averaged a higher score on COMPLEX than on the COMSAE were the H-Ps. Conversely, the A-R subgroup had the greatest drop in COMPLEX score compared to the COMSAE.

- A higher percentage of the two above average subgroups reported no study materials present (85% vs 65%) and no assistance (88% vs 65%) when taking the COMSAE.
- A large majority of students across all four subgroups, 80-88%, indicated that the number of hours per day spent studying for COMLEX did not change following the COMSAE. Among students who did change the number of study hours per day, the tendency was for those in the above average subgroups to reduce study hours, while those in the below average subgroups increased hours.
- 12% of students in the above average subgroups stated that they decreased the number of hours per day spent studying, while just one student (3%) in the below average subgroups decreased the study hours.
- Conversely, 6% of students in the above average subgroups indicated that they increased daily study hours following the COMSAE, while 13% in below average subgroups did so.
- A majority of students in all subgroups used the UWorld question bank in the period following the COMSAE, although the students in the below average subgroups were more variable in which question banks they used.
- In most students who used UWorld, the number was <60% in the above average subgroups.
- Among board review books used in the time between the COMSAE and COMLEX, “Master the Boards” was popular among H-Ps, with 63% of H-P respondents indicating they used this resource. “Step Up” was most popular among A-Rs, used by 55% of A-R respondents; while this was not used at all by H-Ps.

A couple of notable points common to all subgroups for the period between the COMSAE and COMLEX:

- Online MedEd videos were popular among all subgroups, used by roughly 40-50% of the students across subgroups. Most of the remaining students did not use videos in that time period.
- Few students in any subgroups used other online resources outside of the question banks and videos. Sketchy was used by 9-16% of the students in each subgroup, while no students claimed to use Osmosis or Firecracker in the time period between COMSAE and COMLEX.

DISCUSSION

The difference between the COMSAE Phase 2 form D and COMLEX-USA Level 2-C scores for A-Rs was strikingly lower than for other subgroups. At least three factors could contribute to this observation:

1. Students in the A-R subgroup are more likely to suffer from test anxiety when taking high-stakes exams;
2. Students in the A-R subgroup are more likely to lack the stamina needed to complete an 8 exam (the COMSAE is 4 hours);
3. Some students had assistance while taking COMSAE even though they indicated otherwise in the survey.

- We can control for factor #2 by administering an 8 hour practice exam. This could be accomplished with full-length Kaplan or COMBank practice exams, or back-to-back COMSAE.
- We can control for factor #3 in future by administering COMSAE in a formal, proctored setting. We could then focus our efforts on addressing the other factors.

- We could administer the COMSAE several weeks before any student has COMLEX scheduled, which would provide more time to address deficiencies.
- Results make us consider raising the cut score, but this may not be necessary if we administer COMSAE.

The H-P subgroup was the only one that scored higher on COMLEX than on the COMSAE. The H-P students were generally well-prepared for COMLEX even before taking the COMSAE. We hypothesize that these students used the COMSAE results to identify their areas of greatest weakness, and successfully targeted their final COMLEX preparation to those areas.

ACKNOWLEDGEMENTS

The investigators thank Tricia Garrelts for her invaluable assistance. We also thank members of the TUN Office of Institutional Effectiveness, Laura Yavitz, Ph.D., and Cheryl Vanier, Ph.D., for administering the survey.

COMSAE vs. COMLEX-USA Level 2-CE Performance: Diagnostic Differences and Student Response

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