

## Prediction of Osteopathic Medical School Performance on the Basis of MCAT Score, GPA, Sex, Undergraduate Major, and Undergraduate Institution

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**Context:** The relationships of students' preadmission academic variables, sex, undergraduate major, and undergraduate institution to academic performance in medical school have not been thoroughly examined.

**Objectives:** To determine the ability of students' preadmission academic variables to predict osteopathic medical school performance and whether students' sex, undergraduate major, or undergraduate institution influence osteopathic medical school performance.

**Methods:** The study followed students who graduated from New York College of Osteopathic Medicine of New York Institute of Technology in Old Westbury between 2003 and 2006. Student preadmission data were Medical College Admission Test (MCAT) scores, undergraduate grade point averages (GPAs), sex, undergraduate major, and undergraduate institutional selectivity. Medical school performance variables were GPAs, clinical performance (ie, clinical subject examinations and clerkship evaluations), and scores on the Comprehensive Osteopathic Medical Licensing Examination-USA (COMLEX-USA) Level 1 and Level 2-Clinical Evaluation (CE). Data were analyzed with Pearson product moment correlation coefficients and multivariate linear regression analyses. Differences between student groups were compared with the independent-samples, 2-tailed *t* test.

**Results:** A total of 737 students were included. All preadmission academic variables, except nonscience undergraduate GPA, were statistically significant predictors of performance on COMLEX-USA Level 1, and all preadmission academic variables were statistically significant predictors of performance on COMLEX-USA Level 2-CE. The MCAT score for biological sciences had the highest correlation among all variables with COMLEX-USA Level 1 performance (Pearson  $r=0.304$ ;  $P<.001$ ) and Level 2-CE performance (Pearson  $r=0.272$ ;  $P<.001$ ). All preadmission variables were moderately correlated with the mean clinical subject examination scores. The mean clerkship evaluation score was moderately correlated with mean clinical examination results (Pearson  $r=0.267$ ;  $P<.001$ ) and COMLEX-USA Level 2-CE performance (Pearson  $r=0.301$ ;  $P<.001$ ). Clinical subject examination scores were highly correlated with COMLEX-USA Level 2-CE scores (Pearson  $r=0.817$ ;  $P<.001$ ). No statistically significant difference in medical school performance was found between students with science and nonscience undergraduate majors, nor was undergraduate institutional selectivity a factor influencing performance.

**Conclusion:** Students' preadmission academic variables were predictive of osteopathic medical school performance, including GPAs, clinical performance, and COMLEX-USA Level 1 and Level 2-CE results. Clinical performance was predictive of COMLEX-USA Level 2-CE performance.

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Medical schools use a variety of measures to evaluate and select students who are likely to be successful in medical school. Previous research has documented that the preadmission academic variables of the Medical College Admission Test (MCAT) scores and undergraduate grade point averages (GPAs) are predictive of performance in osteopathic medical schools, including performance on the Comprehensive Osteopathic Medical Licensing Examination-USA (COMLEX-USA) Level 1 and Level 2-Clinical Evaluation (CE).<sup>1-6</sup> In addition, preadmission academic variables have been shown to predict performance in allopathic medical schools, including performance on the United States Medical Licensing Examination (USMLE) Step 1 and its precursor, the National Board of Medical

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To my knowledge, there have been only 2 studies from osteopathic medical schools that investigated the validity of preadmission academic variables for predicting performance in clinical clerkships.<sup>4,5</sup> These studies found no statistically significant correlations. More thorough studies about preadmission variables as predictors of clinical performance are needed.

The present study was designed to explore the ability of preadmission variables to predict osteopathic medical school performance at the New York College of Osteopathic Medicine of New York Institute of Technology in Old Westbury (NYCOM) during the first 2 years (the clinical years) and performance on COMLEX-USA Level 1 and Level 2-CE. Other purposes of this study were to determine if students' sex, undergraduate major, or undergraduate institutional selectivity influence osteopathic medical school performance.

### Methods

The study followed all osteopathic medical students in 4 successive graduating classes (2003-2006) from NYCOM who had completed their course work in 4 years and who had passed COMLEX-USA Level 1 and Level 2-CE on their first attempt. Preadmission data were obtained from the American Association of Colleges of Osteopathic Medicine Application Service. Students' GPAs were obtained from institutional databases, and COMLEX-USA scores were those reported to NYCOM by the National Board of Osteopathic Medical Examiners (NBOME). Upon reviewing the planned project, the New York Institute of Technology's Institutional Review Board for the Protection of Human Participants determined that the study was exempt from federal regulations requiring institutional review board approval.

The preadmission academic variables used in the analysis were the MCAT subtest scores and undergraduate GPAs. The MCAT subtests used were verbal reasoning (verbal MCAT), physical sciences (physical MCAT), and biological sciences (biological MCAT). The MCAT scores used were the most recent ones available. The undergraduate GPAs were the science GPA and nonscience GPA. Other preadmission variables were students' sex, undergraduate major, and undergraduate institutional selectivity.

Medical school performance measures included the students' GPAs from years 1 and 2 and scores from COMLEX-USA Level 1 and Level 2-CE. Clinical performance data consisted of scores on clinical subject examinations and evaluation scores in clinical clerkships. Clinical subject examination results, derived from examinations prepared by and obtained from the NBOME, were used to measure clinical knowledge. The 7 clinical subjects tested were principles of osteopathic medicine, family practice,

medicine, obstetrics/gynecology, pediatrics, psychiatry, and surgery. Student performance was evaluated at the end of each clerkship by the clinical preceptor. The mean score of the clerkship evaluations, based on a 5-point scale, was the clinical clerkship evaluation score.

Pearson product moment correlation coefficients were determined for all dependent and independent variables. Test-wide *P* values were corrected for table-wide *P* values by the application of the Holm-Sidak correction, an adjustment used for tests with multiple comparisons. Hierarchical multiple regressions were calculated to predict COMLEX-USA Level 1 and Level 2-CE performance from selected predictors.

Differences between groups were measured by comparing the means of the preadmission variables to the medical school performance measures using the independent-samples, 2-tailed *t* test. An  $\alpha$  level of  $\leq .05$  or  $\leq .01$  was deemed to be statistically significant, depending on the particular data examined. All statistical tests were calculated with SPSS statistical software (version 16.0, SPSS Inc, Chicago, Illinois).

### Results

A total of 737 osteopathic medical students were followed in the present study. The study sample consisted of 398 women (54.0%) and 339 men (46.0%). Of 648 available undergraduate majors, the study sample had 450 science majors (69.4%) and 198 nonscience majors (30.6%). The undergraduate majors of 89 students were not available.

*Table 1* shows the correlations of students' preadmission variables and medical school year-1 and year-2 GPAs with the COMLEX-USA Level 1 scores. The biological MCAT score and the science undergraduate GPA were the only preadmission variables significantly correlated with the year-1 and year-2 GPAs (biological MCAT Pearson  $r=0.194$  and  $0.159$ , respectively; science undergraduate GPA Pearson  $r=0.216$  and  $0.201$ , respectively;  $P<.001$ ). Except for the nonscience undergraduate GPA, all preadmission variables and the medical school GPAs were significantly correlated with performance on COMLEX-USA Level 1 ( $P\leq .01$ ). The biological MCAT score had the highest correlation among all preadmission variables with COMLEX-USA Level 1 performance (Pearson  $r=0.304$ ;  $P<.001$ ), followed by the physical MCAT score (Pearson  $r=0.224$ ), and the science undergraduate GPA (Pearson  $r=0.210$ ).

Regression analyses were used to examine the prediction of COMLEX-USA Level 1 results based on the preadmission variables. Model 1—using the preadmission predictors of verbal, physical, and biological MCAT scores and the science undergraduate GPA—yielded an  $r^2$  value of 0.13. Model 2—in which the year-1 and year-2 GPAs were added to the preadmission predictors—yielded an  $r^2$  value of 0.59.

**Table 1.**  
Correlation of Osteopathic Medical Students' Preadmission Variables and Medical School GPAs With COMLEX-USA Level 1 Scores (N=737)

Variable	Measure	MCAT		Undergraduate GPA		Medical School GPA		COMLEX-USA Level 1
		Physical Sciences	Biological Sciences	Science	Nonscience	Year 1	Year 2	
<b>MCAT</b>								
Verbal reasoning	Pearson <i>r</i>	0.104	0.159	-0.190	-0.115	0.065	0.069	0.109
	<i>P</i> value	.006 <sup>a</sup>	<.001 <sup>a</sup>	<.001 <sup>a</sup>	.002 <sup>a</sup>	.138	.113	.004 <sup>a</sup>
Physical sciences	Pearson <i>r</i>	...	0.566	0.145	0.028	0.077	0.055	0.224
	<i>P</i> value	...	<.001 <sup>a</sup>	<.001 <sup>a</sup>	.458	.078	.205	<.001 <sup>a</sup>
Biological sciences	Pearson <i>r</i>	...	...	0.179	-0.019	0.194	0.159	0.304
	<i>P</i> value	...	...	<.001 <sup>a</sup>	.615	<.001 <sup>a</sup>	<.001 <sup>a</sup>	<.001 <sup>a</sup>
<b>Undergraduate GPA</b>								
Science	Pearson <i>r</i>	...	...	...	0.599	0.216	0.201	0.210
	<i>P</i> value	...	...	...	<.001 <sup>a</sup>	<.001 <sup>a</sup>	<.001 <sup>a</sup>	<.001 <sup>a</sup>
Nonscience	Pearson <i>r</i>	...	...	...	...	0.080	0.079	0.057
	<i>P</i> value	...	...	...	...	.065	.069	.130
<b>Medical School GPA</b>								
Year 1	Pearson <i>r</i>	...	...	...	...	...	0.809	0.677
	<i>P</i> value	...	...	...	...	...	<.001 <sup>a</sup>	<.001 <sup>a</sup>
Year 2	Pearson <i>r</i>	...	...	...	...	...	...	0.688
	<i>P</i> value	...	...	...	...	...	...	<.001 <sup>a</sup>

<sup>a</sup> Statistical significance based on independent-samples, 2-tailed *t* test set at level of  $\leq .01$ .

**Abbreviations:** COMLEX-USA, Comprehensive Osteopathic Medical Licensing Examination; GPA, grade point average; MCAT, Medical College Admission Test.

Table 2 shows the correlations of the preadmission variables, medical school GPAs, and clinical performance measures with the COMLEX-USA Level 2-CE. Clinical performance data consisted of the mean of scores on individual NBOME clinical subject examinations and the average score of the clinical clerkship evaluations. The medical school GPAs and all preadmission variables were significantly correlated with COMLEX-USA Level 2-CE (Table 2).

The mean clinical examination score had a high correlation with COMLEX-USA Level 2-CE results (Pearson  $r=0.817$ ;  $P<.001$ ). Individual clinical subject examination scores were all correlated with COMLEX-USA Level 2-CE results. Among the individual clinical subject examinations, the highest correlation with COMLEX-USA Level 2-CE was the medicine examination followed by, in decreasing order, the pediatrics, family practice, obstetrics and gynecology, principles of osteopathic medicine, surgery, and psychiatry examinations. The verbal reasoning and physical sciences MCAT scores were correlated with the mean clinical clerkship evaluation score (Pearson  $r=0.073$  and  $-0.081$ , respectively;  $P\leq .05$ ). The mean clerkship evaluation score was significantly correlated with the year-1 and year-2 GPAs (Pearson  $r=0.187$  and  $0.192$ , respectively) and with the mean clinical examination score (Pearson  $r=0.267$ ;  $P<.001$  for all 3 values). The clerkship evaluation

score had a modest correlation with COMLEX-USA Level 2-CE performance (Pearson  $r=0.301$ ;  $P<.001$ ).

Regression analyses were used to examine the prediction of COMLEX-USA Level 2-CE results from the preadmission variables. Model 1—using the preadmission predictors of verbal, physical, and biological MCAT scores and the science undergraduate GPA—yielded an  $r^2$  value of 0.092. Model 2—in which the year-1 and year-2 GPAs were added to the preadmission predictors—yielded an  $r^2$  value of 0.45. Model 3—with the addition of the clerkship and clinical examination predictors—had an  $r^2$  value of 0.70.

Table 3 shows the mean differences between men and women (ie, women's mean subtracted from men's mean) in the preadmission variables and in the measures of medical school performance. Men had statistically significant higher physical and biological MCAT scores than women, and women had statistically significant higher nonscience undergraduate GPAs than men ( $P<.001$ ). Verbal MCAT scores and science undergraduate GPAs were not significantly different between sexes. Men had statistically significant higher COMLEX-USA Level 1 scores than women ( $P\leq .001$ ), but when the MCAT scores were controlled, there was no statistically significant difference between men's and women's COMLEX-USA Level 1 scores. Women had statistically significant higher clerkship evaluation scores than men ( $P<.001$ ). There were no significant

**Table 2.**  
Correlation of Osteopathic Medical Students' Preadmission Variables, Medical School GPAs, and Clinical Performance With COMLEX-USA Level 2-CE Scores (N=737)

Variable	Measure	Mean Clinical Examination	Mean Clerkship Evaluation	COMLEX-USA Level 2-CE
<b>MCAT</b>				
Verbal reasoning	Pearson <i>r</i>	0.106	0.073	0.145
	<i>P</i> value	.004 <sup>a</sup>	.018 <sup>b</sup>	<.001 <sup>a</sup>
Physical sciences	Pearson <i>r</i>	0.167	-0.081	0.149
	<i>P</i> value	<.001 <sup>a</sup>	.033 <sup>b</sup>	<.001 <sup>a</sup>
Biological sciences	Pearson <i>r</i>	0.266	0.021	0.272
	<i>P</i> value	<.001 <sup>a</sup>	.576	<.001 <sup>a</sup>
<b>Undergraduate GPA</b>				
Science	Pearson <i>r</i>	0.174	-0.028	0.095
	<i>P</i> value	<.001 <sup>a</sup>	.465	.010 <sup>b</sup>
Nonscience	Pearson <i>r</i>	0.110	0.065	0.080
	<i>P</i> value	.003 <sup>a</sup>	.088	.032 <sup>b</sup>
<b>Medical School GPA</b>				
Year 1	Pearson <i>r</i>	0.750	0.187	0.606
	<i>P</i> value	<.001 <sup>a</sup>	<.001 <sup>a</sup>	<.001 <sup>a</sup>
Year 2	Pearson <i>r</i>	0.732	0.192	0.627
	<i>P</i> value	<.001 <sup>a</sup>	.007 <sup>a</sup>	<.001 <sup>a</sup>
<b>Clinical Performance</b>				
Mean clinical examination	Pearson <i>r</i>	...	0.267	0.817
	<i>P</i> value	...	<.001 <sup>a</sup>	<.001 <sup>a</sup>
Mean clerkship evaluation	Pearson <i>r</i>	...	...	0.301
	<i>P</i> value	...	...	<.001 <sup>a</sup>

<sup>a</sup> Statistical significance based on independent-samples, 2-tailed *t* test set at level of  $\leq .01$ .  
<sup>b</sup> Statistical significance based on independent-samples, 2-tailed *t* test set at level of  $\leq .05$ .

**Abbreviations:** CE, Clinical Evaluation; COMLEX-USA, Comprehensive Osteopathic Medical Licensing Examination; GPA, grade point average; MCAT, Medical College Admission Test.

differences between sexes in medical school GPAs, clinical subject examination scores, or COMLEX-USA Level 2-CE scores.

Table 4 shows the mean differences between science majors and nonscience majors (ie, nonscience majors subtracted from science majors) in the preadmission variables and in the measures of medical school performance. Science majors had statistically significant higher science and nonscience undergraduate GPAs than nonscience majors ( $P < .001$ ). There was no statistically significant difference between science and nonscience majors in any measure of medical school performance, including either COMLEX-USA Level 1 or Level 2-CE scores. When students were further divided into 4 groups of majors (ie, biological and premedical sciences, humanities, hard sciences, and social sciences), no statistically significant differences were seen in preadmission variables or in any measure of medical school performance.

To examine the possible influence of students' undergraduate institution on medical school performance, the undergraduate institutions were classified into 9 categories

of college selectivity as ranked by *Barron's Profiles of American Colleges*.<sup>16</sup> The college categories, listed in order of increasing competitiveness, were as follows: noncompetitive, less competitive, competitive, competitive +, very competitive, very competitive +, highly competitive, highly competitive +, and most competitive. These categories were ranked from 1 to 9, and this number was added to the science undergraduate GPA scores. Using these adjusted undergraduate GPA values—both alone and in combination with the MCAT scores—correlations with the medical school performance variables were calculated. The results showed no increase in the predictive value of the adjusted preadmission variables for COMLEX-USA scores. Nor did the results show any statistically significant difference in performance measures between students from the different college categories.

**Comment**

The present study has shown that the preadmission variables of MCAT sub-scores and undergraduate GPAs were significantly correlated with osteopathic medical school performance measures at NYCOM. The biological MCAT score and science undergraduate GPA were significantly correlated with both medical school

year-1 and year-2 GPAs. All preadmission variables, except nonscience undergraduate GPA, were significantly correlated with COMLEX-USA Level 1 scores, and all preadmission variables were significantly correlated with COMLEX-USA Level 2-CE scores. The biological MCAT score had the highest correlation among preadmission variables with both COMLEX-USA Level 1 and Level 2-CE performance.

The strength of correlations found in our analysis between the preadmission variables and COMLEX-USA scores are consistent with previous studies. Other osteopathic medical studies have reported that MCAT scores and undergraduate GPA were significantly correlated with COMLEX-USA scores,<sup>1-6</sup> and all but 1 of those studies found that the biological MCAT score was the best predictor of COMLEX-USA performance. Many studies from allopathic medical schools have also found that both MCAT scores and undergraduate GPA were predictors of USMLE performance, and in almost all of those studies, the MCAT scores were found to be the best predictors of USMLE performance.<sup>7-14</sup>

**Table 3.**  
Mean Differences Between Men and Women  
in Preadmission Variables and Measures of Osteopathic  
Medical School Performance (N=737)

Variable	Mean Difference <sup>a</sup>	P Value
<b>MCAT</b>		
Verbal reasoning	0.02	.88
Physical sciences	0.95	<.001 <sup>b</sup>
Biological sciences	0.62	<.001 <sup>b</sup>
<b>Undergraduate GPA</b>		
Science	0.01	.80
Nonscience	-0.09	<.001 <sup>b</sup>
<b>Medical School GPA</b>	0.10	.75
<b>COMLEX-USA</b>		
Level 1	19.34	<.001 <sup>b</sup>
Level 2-CE	1.17	.82
<b>Clinical Performance</b>		
Mean clinical examination	0.21	.97
Mean clerkship evaluation	-0.09	<.001 <sup>b</sup>

<sup>a</sup> Women's mean subtracted from men's mean.  
<sup>b</sup> Statistical significance based on independent-samples, 2-tailed t test set at level of  $\leq .01$ .

**Abbreviations:** CE, Clinical Evaluation; COMLEX-USA, Comprehensive Osteopathic Medical Licensing Examination; GPA, grade point average; MCAT, Medical College Admission Test.

**Table 4.**  
Mean Differences Between Science Majors  
and Nonscience Majors in Preadmission Variables and Measures  
of Osteopathic Medical School Performance (N=737)

Variable	Mean Difference <sup>a</sup>	P Value
<b>MCAT</b>		
Verbal reasoning	0.121	.433
Physical sciences	-0.159	.203
Biological sciences	-0.268	.014 <sup>b</sup>
<b>Undergraduate GPA</b>		
Science	0.079	<.001 <sup>c</sup>
Nonscience	0.095	<.001 <sup>c</sup>
<b>Medical School GPA</b>	-0.611	.164
<b>COMLEX-USA</b>		
Level 1	1.065	.807
Level 2-CE	1.107	.829
<b>Clinical Performance</b>		
Mean clinical examination	3.448	.581
Mean clerkship evaluation	-0.017	.558

<sup>a</sup> Nonscience majors' mean subtracted from science majors' mean.  
<sup>b</sup> Statistical significance based on independent-samples, 2-tailed t test set at level of  $\leq .05$ .  
<sup>c</sup> Statistical significance based on independent-samples, 2-tailed t test set at level of  $\leq .01$ .

**Abbreviations:** CE, Clinical Evaluation; COMLEX-USA, Comprehensive Osteopathic Medical Licensing Examination; GPA, grade point average; MCAT, Medical College Admission Test.

In our analysis, the verbal MCAT score had a low positive correlation with the clerkship evaluation scores. The mean of the clerkship evaluation scores had a modest correlation with the COMLEX-USA Level 2-CE results. Clinical clerkship scores are by nature subjective, because they depend on faculty evaluations by preceptors. In addition, there is a restricted range of grades in clerkship evaluations. Therefore, differences among students may be limited.

Studies from other osteopathic medical schools that investigated clerkship evaluations have found low to modest correlations with COMLEX-USA Level 2-CE scores.<sup>17-19</sup> None of those studies investigated the relationship between preadmission variables and clerkship performance. Studies from allopathic medical schools have found that MCAT scores and undergraduate GPAs were predictive of clinical clerkship scores.<sup>12,20-22</sup> Furthermore, the clerkship performance was found to be predictive of performance on USMLE Step 2.<sup>23-24</sup> However, most of the allopathic medical studies on clinical performance used data from multiple institutions. Thus, the different methods of determining clerkship scores would seem to make these data somewhat unreliable.

The present study is the first to present data on the use of standardized NBOME clinical subject examinations as predictors of osteopathic medical school performance. All preadmission variables were correlated with the scores

of those clinical examinations. Because the examination scores are objective, their predictability for COMLEX-USA Level 2-CE performance is greater than that for the subjective clerkship evaluations. The mean clinical examination score was highly correlated with COMLEX-USA Level 2-CE performance, and the individual clinical subject examinations were all significantly correlated with COMLEX-USA Level 2-CE performance.

In our comparison of men and women with respect to their preadmission variables and medical school performance, men had statistically significant higher physical and biological MCAT scores, and women had higher statistically significant nonscience undergraduate GPAs. Men had higher COMLEX-USA Level 1 scores than women, and women had higher clerkship evaluation scores than men. Other performance measures in years 1 and 2 and on COMLEX-USA Level 2-CE were not significantly different between the sexes. These findings confirmed results of our previous study.<sup>15</sup>

Wong et al<sup>15</sup> reported that there was no difference between women and men on COMLEX-USA Level 1 or Level 2-CE performance. Researchers from some allopathic medical schools reported that men performed better than women on the NBME Part I<sup>8,25</sup> and the USMLE Step 1.<sup>26</sup> Researchers from other allopathic medical schools reported

the higher performance of women on the USMLE Step 2,<sup>27</sup> in a fourth-year clinical performance examination,<sup>28</sup> and in an obstetrics and gynecology clerkship.<sup>29</sup>

Because COMLEX-USA Level 1 is taken after the first 2 years of osteopathic medical school and focuses on basic science knowledge, our finding that men had higher scores on this examination than women may be partly the result of men's higher mean MCAT scores. The performance of women on COMLEX-USA Level 2-CE and on the NBOME clinical examinations was equal to that of men, and women had higher clinical clerkship evaluation scores than men. The clerkship evaluation forms that rate attitude, professionalism, and clinical skills include such variables as cooperation, patient communication, and receptivity to feedback. These are areas in which women may particularly excel.

It can be postulated that the higher clinical clerkship evaluation scores for women found in the present study may reflect women's better abilities in cooperation, patient communication, interviewing, and counseling. In the previously mentioned clinical performance examination study, women were found to perform better than men in 9 skills, including introduction, interviewing, counseling, and interpersonal communication.<sup>28</sup>

In the present study—which is to my knowledge the first report from an osteopathic medical school evaluating the relationship between undergraduate major and medical school performance—I found no difference in medical school performance between students whose undergraduate majors were science subjects compared with those whose majors were nonscience subjects. Most allopathic medical studies have also reported that college major played no role in medical school performance.<sup>30,31</sup> However, 1 allopathic medical study reported that students with biology majors outperformed students with other majors.<sup>26</sup>

The grading policies of undergraduate institutions affect students' undergraduate GPAs. Undergraduate institutions that are more selective may have more challenging grading policies. However, we found no differences in any performance measure among our sample of students, whose undergraduate institutions had a wide range of selectivity. In addition, I found no variability in the predictability of preadmission academic variables. I am aware of no other osteopathic medical studies examining the influence of undergraduate college selectivity on medical school performance. Some allopathic medical studies have reported that use of an analytical factor based on undergraduate college selectivity did not significantly increase the predictive value of preadmission variables for medical school performance.<sup>12,32</sup> By contrast, 2 allopathic medical studies reported that use of a selectivity factor did significantly increase the predictability of the undergraduate GPAs.<sup>14,33</sup>

The present study has some limitations. Because it was conducted at a single osteopathic medical school, its

findings may not be applicable to other medical schools. I did not investigate my finding that women had higher clerkship evaluations than men. Future research might further investigate differences between men and women in clinical clerkship performance.

### Conclusion

The present study shows that many student preadmission academic variables are statistically significant predictors of performance in the graded years of osteopathic medical school and on COMLEX-USA Level 1 and COMLEX-USA Level 2-CE. Because the biological sciences MCAT score and the science undergraduate GPA were the highest preadmission predictors of medical school GPAs and COMLEX-USA Level 1 and Level 2-CE scores, these areas of student performance should be given more weight in osteopathic medical school admission decisions.

At NYCOM, 2 school-specific differences between men's and women's performance were observed—men performed better on COMLEX-USA Level 1, and women had higher clerkship evaluation scores. I have further shown that, at NYCOM, a student's undergraduate major, whether science or nonscience, does not play a role in medical school performance, nor does the student's undergraduate institution's selectivity.

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