

Performances of candidates with osteopathic compared with allopathic subspecialty training on the American Osteopathic Board of Internal Medicine subspecialty certifying examinations 1984 to 1992

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The American Osteopathic Board of Internal Medicine has been examining various factors that may affect candidate performance on subspecialty certifying examinations. To see whether taking subspecialty training in an osteopathic compared with an allopathic institution could predict better performance on the certifying examinations, the authors analyzed examination performance for all candidates from 1984 through 1992. There was no significant difference between the mean scores for the two groups for any of the nine subspecialty certifying examinations. When the results from all nine examinations were pooled, the mean first-time

examination takers' score for candidates in allopathic subspecialty programs (n=201) was 78.3 and for those in osteopathic subspecialty programs (n=153), 77.4 ($P>0.2$). On the basis of these results, we cannot conclude that osteopathic subspecialty training is a factor that predicts better performance on the subspecialty certifying examination.

(Key words: Osteopathic subspecialty training, allopathic subspecialty training, osteopathic subspecialty examinations)

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This study does not necessarily reflect the opinions or policies of the American Osteopathic Board of Internal Medicine.

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The American Osteopathic Association (AOA) began approving allopathic subspecialty training in internal medicine in 1970 for those candidates who had completed an AOA-approved internship followed by at least 2 years of an osteopathic internal medicine residency program. The American College of Osteopathic Internists and the Committee on Postdoctoral Training of the AOA have not had a valid measuring stick to determine whether the training of osteopathic physicians in osteopathic subspecialty programs is comparable to that in allopathic subspecialty programs. Although performance on a certifying examination may not accurately reflect the quality of training in a subspecialty field, it is one method of comparing the ability of candidates who have completed a similar type of training program.

The purpose of this study was to determine

Table 1
Mean Converted Scores for All Subspecialty Examination
Candidates With Osteopathic Versus Allopathic
Subspecialty Training—1984 to 1992

Examination	Subspecialty training			
	Osteopathic		Allopathic	
	No.	Mean score $\pm$ SD	No.	Mean score $\pm$ SD
Cardiology	65	76.8 $\pm$ 5.8	71	79.4 $\pm$ 6.5
Endocrinology	2	68.0 $\pm$ 9.9	9	80.4 $\pm$ 5.4
Gastroenterology	46	77.0 $\pm$ 7.6	25	75.3 $\pm$ 9.0
Hematology	6	80.1 $\pm$ 4.8	9	76.8 $\pm$ 7.4
Infectious disease	3	77.3 $\pm$ 8.6	15	78.6 $\pm$ 5.3
Pulmonary diseases	59	76.2 $\pm$ 6.8	35	76.6 $\pm$ 6.5
Nephrology	13	78.8 $\pm$ 9.7	22	80.5 $\pm$ 7.3
Oncology	2	84.0 $\pm$ 0.0	45	76.3 $\pm$ 5.9
Rheumatology	1	*	13	79.9 $\pm$ 5.9
Total	197	76.9$\pm$6.9	244	78.0$\pm$6.7

No. = number of candidates; SD = standard deviation.
 *Scores not recorded for fewer than two candidates; however, scores are included in the totals.

if an allopathic or osteopathic subspecialty training program had any impact on the subspecialty medical knowledge of osteopathic physicians at the completion of their subspecialty training. The subspecialty certifying examination of the American Osteopathic Board of Internal Medicine (AOBIM) was used to assess this knowledge. Specifically, candidates who had completed identical types of medical training, except for the terminal subspecialty training, were included in the study. This information may be useful to the various accrediting agencies and to candidates contemplating subspecialty training.

Methods

Study subjects were candidates for subspecialty certification who took one of the AOBIM subspecialty certifying examinations between 1984 and 1992. Candidates who had taken the examination for the first time and those who had retaken the examination were included. All subjects met Board requirements for examination, which included certification in internal medicine by the Board and completion of an AOA-approved 2-year subspecialty training program. Candidates who qualified to sit for both the hematology and oncology examinations were required to complete 3 years of subspecialty training.

Multiple-choice questions of the single-best-answer type were used on all examinations. A few of

the examinations included a small number (<5%) of the matching type of multiple-choice questions. Examinations were administered in the subspecialty areas of cardiology, endocrinology, gastroenterology, hematology, infectious disease, nephrology, oncology, pulmonary diseases, and rheumatology. Each examination consisted of a minimum of 200 items in a wide variety of question formats from simple recall to problem-based questions related to clinical case situations.

Converted scores were recorded for each candidate. A consistent minimum pass standard was set by the Board for each of the subspecialty examinations. The minimum pass raw score was designated as a converted score of 75, and all other scores were adjusted upward by the same difference as the minimum passing score. The method for determining the converted score was described previously in more detail.¹ Maintenance of a consistent minimum passing standard allowed results from year to year to be compared on a relatively equal basis.

Data collected for each candidate included a converted score. Whether the candidate had passed the examination with a minimum passing converted score of 75 was also noted. Examination performance data for candidates with either kind of training experience (allopathic or osteopathic subspecialty) was analyzed. All candidates had completed similar training before acceptance into the subspecialty program, that is, completion of requirements for the DO degree,

Table 2
Mean Converted Scores for First-Time Subspecialty Examination
Candidates With Osteopathic Versus Allopathic
Subspecialty Training—1984 to 1992

Examination	Subspecialty training				P value
	Osteopathic		Allopathic		
	No.	Mean score±SD	No.	Mean score±SD	
Cardiology	51	77.5±5.6	58	79.4±6.8	NS
Endocrinology	1	*	9	80.4±5.4	NS
Gastroenterology	37	77.2±7.6	18	75.8±9.0	NS
Hematology	4	80.4±3.1	9	76.8±7.4	NS
Infectious disease	3	77.3±8.6	12	78.7±5.1	NS
Pulmonary diseases	46	76.6±6.5	26	76.5±7.1	NS
Nephrology	8	80.3±12.1	20	81.0±7.4	NS
Oncology	2	84.0±0.0	36	76.6±5.6	NS
Rheumatology	1	*	13	79.9±5.9	NS
Total	153	77.4±6.8	201	8.3±6.9	NS

No. = number of candidates; SD = standard deviation; NS = not significant.

*Scores not recorded for fewer than two candidates; however, scores are included in the totals.

1 year of an AOA-approved internship, and a minimum of 2 years of residency in an osteopathic medical training institution or a military program.

Results

Table 1 summarizes the mean converted scores for all candidates (first-time examination takers and repeaters) taking each subspecialty examination, grouped according to whether the subspecialty training was in an osteopathic or allopathic medical training institution. *Table 2* summarizes the same data as *Table 1* but includes information only for first-time examination takers.

There was no statistically significant difference between the mean scores of candidates (total or first-time takers) who trained in osteopathic or allopathic subspecialty training institutions. From 1984 to 1992, a slightly greater number of first-time candidates had trained in allopathic medical institutions (201 vs 153) than in osteopathic hospitals. The numbers of candidates taking some of the subspecialty examinations (endocrinology, infectious disease, oncology, and rheumatology) were insufficient to make any valid conclusions regarding comparative group performance. Nevertheless, performance on any of the subspecialty examinations was not significantly different whether the subspecialty training of the candidates was

osteopathic or allopathic.

Because the mean converted scores on any of the subspecialty examinations were not significantly different, the data from all the examinations were pooled and analyzed according to type of subspecialty training. Of the 201 candidates with allopathic subspecialty training taking the examination for the first time, the mean converted score was 78.3 $\pm$ 6.9 SD. The 153 first-time examination takers with osteopathic subspecialty training had a mean converted score of 77.4 $\pm$ 6.8 SD. The difference was not significant between the two groups ($P \geq 0.2$).

Discussion

Since 1987, the AOBIM has been closely monitoring the performance of candidates on the subspecialty certifying examinations. Included in the monitoring process has been the tracking of candidate performance according to subspecialty training location. The Board has been particularly interested in the performance of candidates in allopathic training programs and in comparing their performance with that of candidates in osteopathic subspecialty training programs. Because of the small numbers of candidates in some of the subspecialties, it has been difficult to track the performance over a short period.

With 9 years of examination results, it has become evident that in those subspecialty fields that have sufficient numbers of trainees of both osteopathic and allopathic subspecialty training programs, there exists no significant difference in mean scores or pass-rate percentages based on training location. Certain subspecialty fields (rheumatology, endocrinology, oncology, infectious disease) have had few osteopathic-subspecialty-trained candidates, and comparison data cannot be interpreted with any valid conclusions. Meaningful data may soon become available in the fields of endocrinology and infectious disease, because more candidates are currently entering osteopathic subspecialty training programs.

Several factors may help to explain the lack of difference in the performance level of osteopathic versus allopathic subspecialty trainees, including candidate selection and the effect of the training program. Traditionally, the selection process for training positions in most osteopathic and allopathic medical fellowship programs has been competitive. It would be unlikely that a significant difference would exist between the candidates entering osteopathic subspecialty training programs and those entering allopathic subspecialty training programs; however, this factor would be difficult to evaluate with the information that is available to the Board. We must therefore conclude that the training in osteopathic subspecialty programs has not prepared candidates to any

significantly better degree than the training in allopathic medical institutions.

It is possible that the persons developing and writing the subspecialty examinations may favor one group over another. Subspecialty examination question content is coordinated by one Board member; however, a panel of consultants is used to write the items for each year's examination. Close scrutiny of the panel of consultants reveals that there is a wide distribution of consultants according to whether their training has been in osteopathic or allopathic medical institutions and also a wide distribution in location of the consultants' current faculty/staff appointment. There exists no one identifiable, consistent factor regarding consultant item-writers or Board members that could significantly prejudice the examination content toward candidates in osteopathic subspecialty programs or those in allopathic subspecialty programs.

The Board will continue to monitor group performance on the subspecialty examinations for any trends. This is of special interest now that competition for subspecialty training program positions is increasing dramatically, especially in allopathic medical institutions.

Reference

1. Slick GL: Performance of candidates on the American Osteopathic Board of Internal Medicine subspecialty certifying examinations 1984-1992. *JAOA* 1994;94:240-245.