As the premier scholarly publication of the osteopathic medical profession, JAOA—The Journal of the American Osteopathic Association encourages osteopathic physicians, faculty members and students at colleges of osteopathic medicine, and others within the healthcare professions to submit comments related to articles published in the JAOA and the mission of the osteopathic medical profession. The JAOA’s editors are particularly interested in letters that discuss recently published original research.

Letters to the editor are considered for publication in the JAOA with the understanding that they have not been published elsewhere and that they are not simultaneously under consideration by any other publication. Although the JAOA welcomes letters to the editor, readers should be aware that these contributions have a lower publication priority than other submissions. As a consequence, letters are published only when space allows.

All accepted letters to the editor are subject to editing and abridgement. Letter writers may be asked to provide JAOA staff with photocopies of referenced material so that the references themselves and statements cited may be verified.

Readers are encouraged to prepare letters electronically in Microsoft Office Word (.doc) or in plain (.txt) or rich text (.rtf) format. The JAOA prefers that readers e-mail letters to jaoa@osteopathic.org. Mailed letters should be addressed to Gilbert E. D’Alonzo, Jr, DO, Editor in Chief, American Osteopathic Association, 142 E Ontario St, Chicago, IL 60611-2864. Mailed submissions and supporting materials will not be returned unless letter writers provide self-addressed, stamped envelopes with their submissions.

Letter writers must include their full professional title(s) and affiliation(s), complete preferred mailing address, day and evening telephone numbers, and preferred fax number and e-mail address. In addition, writers are responsible for disclosing financial associations and other conflicts of interest. No unsigned letters will be considered for publication.

Although the JAOA cannot acknowledge the receipt of letters, a JAOA staff member will notify writers whose letters have been accepted for publication.

All osteopathic physicians who have letters published in the JAOA receive continuing medical education (CME) credit for their contributions. Writers of original letters receive 5 hours of AOA Category 1-B CME credit. Authors of published articles who respond to letters about their research receive 3 hours of Category 1-B CME credit. Writers of original letters to the editor receive 5 hours of AOA Category 1-B CME credit. Authors of published original letters who respond to letters about their research receive 3 hours of Category 1-B CME credit for their responses.

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**Personality Types and Performance: COMLEX-USA Level 2-CE**

To the Editor:

In the June edition of JAOA—The Journal of the American Osteopathic Association, a team of researchers (myself included, D.J.S.)1 presented recent findings regarding the relationships among the four Myers-Briggs Type Indicator (MBTI) mental-function pairs2 and performance on Level 1 of the Comprehensive Osteopathic Medical Licensing Examination-USA (COMLEX-USA) by 263 osteopathic medical students at Midwestern University/Chicago College of Osteopathic Medicine in Downers Grove, Illinois.

Based on subsequent inquiries and comments received from colleagues and students, we decided to investigate the relationship between the MBTI mental-function pairs and student performance on Level 2-CE of COMLEX-USA.

The primary question we sought to answer in this new investigation was the following: *Is the performance of students with each of the four mental-function pairs the same or different in Level 2-CE vs Level 1 of COMLEX-USA?*

Subsequent to review and approval of the new study by Midwestern University’s institutional review board, we began to analyze data from the original 295 osteopathic medical students—including 32 students who were excluded from the first study1 because they did not meet criteria specified for participation. This group consisted of 132 students from the class of 2008 and 163 students from the class of 2009.1 Because 12 of these students had transferred to another college of osteopathic medicine or had extended their course of study, the final cohort for the new analysis consisted of 283 students, including 130 in the class of 2008 and 153 in the class of 2009.

Analysis revealed that the rank order of students’ MBTI function-pairs with regard to mean test scores was the same for both portions of COMLEX-USA (Table).

Our results demonstrate that the performance of osteopathic medical students on Levels 1 and 2-CE in COMLEX-USA, based on MBTI mental-function pairs, is similar. This finding should encourage faculty at osteopathic medical schools to further evaluate the use of the MBTI during student assessment and training. We believe that information gained from the MBTI can be used to enhance student learning and improve academic performance in osteopathic medical school.

In our opinion, the next two questions that need to be answered by researchers are as follows:

- How are MBTI function-pairs related to evaluation of osteopathic medical students by preceptors?

The article caught our attention regarding personality types and performance on aptitude and achievement tests. The article published in the June issue by Donald J. Sefcik, DO, MBA, et al, described the Myers-Briggs Type Indicator (MBTI) mental-function pairs for osteopathic medical students.

The main finding of the study was that students with the intuitive-feeling (NF) MBTI mental-function pair had the highest adjusted mean COMLEX-USA Level 1 scores. These results were found to be statistically significant (P<.05) in two-tailed tests of significance.

Our finding that NF personalities made up the majority of our study population of osteopathic medical students was similar to data previously reported by O’Donnell.

In a study of allopathic medical students taking the National Board of Medical Examiners (NBME) Part 1 examination, O’Donnell analyzed the performance of 114 medical students at the University of New Mexico in Albuquerque. He concluded that students with the NF temperament had the most difficulty with the NBME Part 1 examination—with 42% of these students failing the examination on their first attempt.

According to O’Donnell, the focus placed on factual, “memory learning” in standardized examinations rather than theory and “possibilities” makes a high level of achievement in the NBME Part 1 examination especially difficult for students with the NF personality type—though his findings and those of Myers, as well as those of Myers and David, indicated that NF is exactly the personality type most often attracted to careers in medicine.

It is also interesting to note that the NF personality type was found to make up the majority of our osteopathic medical student sample despite the fact that this personality type was found by Myers and McCaulley to represent only 25% to 35% of the general population.

Because students with NF personalities tend to focus on possibilities and abstractions, rather than details, while processing information, they are often more responsive to theory than facts, and they typically attend to relationships and patterns of information. By contrast, students with intuitive-thinking personalities temper their focus on abstraction and possibilities with logical analysis, thereby helping them make the factual judgments that allow them to excel in examinations.

<table>
<thead>
<tr>
<th>MBTI Mental-Function Pair</th>
<th>Level 1</th>
<th>Level 2-CE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>Score, Mean (SD)</td>
</tr>
<tr>
<td>Sensing-thinking</td>
<td>52</td>
<td>535.2 (76.8)</td>
</tr>
<tr>
<td>Intuition-thinking</td>
<td>42</td>
<td>529.0 (90.5)</td>
</tr>
<tr>
<td>Sensing-feeling</td>
<td>59</td>
<td>515.9 (71.9)</td>
</tr>
<tr>
<td>Intuition-feeling</td>
<td>110</td>
<td>493.5 (61.7)</td>
</tr>
<tr>
<td>Total</td>
<td>263</td>
<td>512.4 (73.8)</td>
</tr>
</tbody>
</table>

**Abbreviations:** CE, Cognitive Evaluation; COMLEX-USA, Comprehensive Osteopathic Medical Licensing Examination; MBTI, Myers-Briggs Type Indicator.

### Personality Types and Performance on Aptitude and Achievement Tests

To the Editor:

We read with interest the medical education article in the June issue by Donald J. Sefcik, DO, MBA, et al, regarding personality types and performance on aptitude and achievement tests. The article caught our attention in light of our recent study on student personalities and Comprehensive Osteopathic Medical Licensing Examination (COMLEX-USA) Level 1 scores at the University of Medicine and Dentistry of New Jersey-School of Osteopathic Medicine (UMDNJ-SOM), on which we reported at the annual meeting of the American Association of Colleges of Osteopathic Medicine in April.

In our study, we evaluated the results obtained from 317 osteopathic medical students at UMDNJ-SOM who completed the Myers-Briggs Type Indicator (MBTI) and COMLEX-USA Level 1. We analyzed and correlated 5 years of MBTI data and COMLEX-USA Level 1 results. We used a one-way mixed-model analysis of variance (ANOVA) to control for student sex (0, man; 1, woman), race/ethnicity (0, nonwhite; 1, white), and age (y). We then conducted post hoc mean comparisons and analyzed the data with a comparable mixed-model ANOVA.

Thirty-nine percent of the students in our study were classified as having the intuitive-feeling (NF) MBTI mental-function pair; the type of personality described by Keirsey and Bates as “idealist.” Among students who had COMLEX-USA Level 1 scores greater than or equal to 600, those classified as having the intuitive-thinking mental-function pair had the highest adjusted mean COMLEX-USA Level 1 score—followed by those with the mental-function pairs of sensing-feeling, sensing-thinking, and NF. All of these results were found to be statistically significant (P<.05) in two-tailed tests of significance.

Our finding that NF personalities made up the majority of our study population of osteopathic medical students was similar to data previously reported by O’Donnell.

In a study of allopathic medical students taking the National Board of Medical Examiners (NBME) Part 1 examination, O’Donnell analyzed the performance of 114 medical students at the University of New Mexico in Albuquerque. He concluded that students with the NF temperament had the most difficulty with the NBME Part 1 examination—with 42% of these students failing the examination on their first attempt.

According to O’Donnell, the focus placed on factual, “memory learning” in standardized examinations rather than theory and “possibilities” makes a high level of achievement in the NBME Part 1 examination especially difficult for students with the NF personality type—though his findings and those of Myers, as well as those of Myers and David, indicated that NF is exactly the personality type most often attracted to careers in medicine.

It is also interesting to note that the NF personality type was found to make up the majority of our osteopathic medical student sample despite the fact that this personality type was found by Myers and McCaulley to represent only 25% to 35% of the general population.

Because students with NF personalities tend to focus on possibilities and abstractions, rather than details, while processing information, they are often more responsive to theory than facts, and they typically attend to relationships and patterns of information. By contrast, students with intuitive-thinking personalities temper their focus on abstraction and possibilities with logical analysis, thereby helping them make the factual judgments that allow them to excel in examinations.
them to achieve success more readily on medical board examinations.\textsuperscript{4,8}

In their June article, Dr Sefcik et al\textsuperscript{1} stated that students with the NF mental-function pair “have a preference for the big picture and process data less objectively and therefore tend to select incorrect answers on examinations that are detail-based and analytical by design.”

However, we found that students with NF personality types initially tend to select the correct answers on “sensor-oriented” examinations, such as COMLEX-USA Level 1, but they then second-guess themselves and change their answers to incorrect options.\textsuperscript{2} Thus, often their first, intuitive answer is the correct one.\textsuperscript{2} Myers and McCaulley\textsuperscript{7} state that intuitive personality types make multiple-choice questions more complex than the examiners intended.

Given that people have multiple types of intelligence,\textsuperscript{9,10} there is a need to value and accommodate all types of thinkers in medical schools. Multiple learning formats—incorporating memorization and critical thinking—can be developed with more integrative methodologies of information delivery, making examinations more inclusive of diverse learning styles.

Our study results,\textsuperscript{2} as well as the results reported by Dr Sefcik et al\textsuperscript{1} and others,\textsuperscript{4-7} have important implications for osteopathic medical school curriculum development—especially as applied to preparation for COMLEX-USA Level 1. Some suggested curriculum changes may yield a better understanding of the teaching and learning processes. The insights gained might enable educators to enhance instructional effectiveness, counsel students on identifying potential learning problems before matriculation, and address other impediments to educational achievement.

Finally, knowledge of one’s personality type has been found to promote self-awareness,\textsuperscript{8} which could assist osteopathic medical students in their own self-assessments. Such knowledge could also help students move beyond the limitations of their existing personality types to improve their personal long-term learning methodologies and practice of medicine.

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Claudia A. Switala, MEd
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References
2. Kimmelman M, Giacobbe J, Switala CA. Examining student scores on COMLEX Level 1 examination and possible explanations for performance based on student personalities as measured by the Myers-Briggs Type Indicator. Paper presented at: Annual Meeting of the American Association of Colleges of Osteopathic Medicine; April 2009; North Bethesda, MD.
(continued from page 526)


6. Myers IB, David J. Relation of medical students’ psychological type to their specialties twelve years later. Paper presented at: Annual Meeting of the American Psychological Association; September 4-9, 1964; Los Angeles, CA.


Response

We wish to thank Dr Kimmelman, Ms Giacobbe, and Ms Switala for sharing their comments and research findings with us.

The complete sentence from our June JAOA article1 that was quoted in part by Dr Kimmelman and her colleagues appeared as follows (emphasis added):

One potential explanation [for their lower test scores] is that students with an NF [intuition-feeling] mental-function pair have a preference for the big picture and process data less objectively and therefore tend to select incorrect answers on examinations that are detail-based and analytical by design (eg, COMLEX-USA [Comprehensive Osteopathic Medical Licensing Examination-USA] Level 1).

We appreciate that in their study,2 Dr Kimmelman and her coinvestigators found that students with NF personalities tended initially to select correct answers on “sensor-oriented” examinations, like COMLEX-USA Level 1, but then change their answers to incorrect selections. However, a number of questions remain regarding test performance by osteopathic medical students, including the following:

- Does changing answers from correct to incorrect selections on sensor-oriented items result in reduced overall test scores? (In other words, might “intuition-based” examination items that are changed from incorrect to correct answers negate the impact of other answers that are changed from correct to incorrect?)
- Does changing answers from correct to incorrect selections happen to a greater degree among students with the NF mental-function pair than among students with other mental-function pairs?
- Might differences in students’ critical reading abilities factor into how they interpret items on examinations and how they consider and select answers?

We encourage Dr Kimmelman and her colleagues—as well as other osteopathic medical educators—to join us as we consider not only these questions but others, such as:

- How do students with NF personalities study—that is, how do they perform such mental tasks as managing their time, organizing their thoughts, and memorizing test material?
- Will interventions designed to increase self-awareness, study skills, and/or “test-wiseness”3 result in increased academic performance for students of all mental-function pairs on tests during medical school courses, as well as on COMLEX-USA?

We look forward to the discovery of answers to these questions and to the identification of additional avenues for further research regarding performance of osteopathic medical students on aptitude and achievement tests. We also look forward to discussing these issues with our colleagues at the American Association of Colleges of Osteopathic Medicine Annual Meeting this coming April.

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Scott E. Arbet, PhD
Vice President, National Commission on Certification of Physicians Assistants, Duluth, Georgia

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2. Kimmelman M, Giacobbe J, Switala CA. Examining student scores on COMLEX Level 1 examination and possible explanations for performance based on student personality types as measured by the Myers-Briggs Type Indicator. Paper presented at: Annual Meeting of the American Association of Colleges of Osteopathic Medicine; April 2009; North Bethesda, MD.


Do Not Exclude IMGs

To the Editor:

In recent years, there has been much discussion within the pages of JAOA—The Journal of the American Osteopathic Association,1-3 as well as other forums in the profession,4 regarding allowing allopathic medical school graduates to enter residency training programs approved by the American Osteopathic Association (AOA). Part of this ongoing discussion relates to including vs excluding international medical graduates (IMGs) from consideration by AOA-approved residency training programs.4 I would like to object—in the strongest possible terms—to the suggestion that IMGs be excluded from eligibility.

First, excluding IMGs from AOA-approved residency training programs may lead to the misconception that the AOA is discriminatory with regard to IMGs—perhaps for reasons of race or
ethnicty.

Second, the osteopathic medical profession is a minority profession within the wider medical community. Excluding IMGs would propagate a type of professional discrimination similar to that we, as osteopathic physicians, have spent our careers fighting against. Such a policy would make us seem self-serving and hypocritical.

Third, I have observed that many IMGs are hospital house staff who hold prominent positions, such as medical directors, board members, and physician organization leaders, at institutions where large numbers of osteopathic medical students train and where many osteopathic physicians work. Adoption of a policy that might be seen as unfairly discriminatory against IMGs could result in a backlash against these members of the osteopathic medical profession.

Furthermore, there is no scientific rationale for a policy that singles out IMGs for exclusion from AOA-approved residency training programs, while potentially leaving the door open to US-trained allopathic graduates. Does anyone believe that graduates of Liaison Committee on Medical Education–accredited allopathic programs in the United States are any more “allopathic” than IMGs?

There is also no need for such an exclusionary policy in terms of lack of IMG qualifications. Many top allopathic-based hospitals accept IMGs into their residency training programs, and it is well known that many of these IMGs have excellent US Medical Licensing Examination scores. In addition, many of the foreign medical schools that have provided training to these individuals are considered “top notch” in the international medical community.

My final reason for objecting to any policy that would exclude IMGs from AOA-approved residency training programs is that program directors should have the right to determine which students they will accept into their programs. Program directors should also have the right to decide the schools from which they will consider applicants and how to rank those applicants.

I have previously had a letter published in the JAOA advocating acceptance of allopathic medical school graduates into AOA-approved residency training programs. I propose that allopathic trainees be eligible for any AOA-approved residency position that remains unfilled as of June 1 of each year—for a July 1 start date. In other words, osteopathic medical school graduates would have every opportunity to secure such residency positions before allopathic medical school graduates are accepted.

Incidentally, as a former director of osteopathic medical education and an AOA-approved internal medicine residency program, all positions in my residency program were filled with DOs through the AOA Intern/Resident Registration Program (ie, AOA “Match”) and the post-Match scramble.

It should be kept in mind that if any funded positions in AOA-approved residency training programs remain unfilled, those programs may be in jeopardy of losing their accreditation status. Also, as I mentioned previously,2 AOA-approved residency training programs are likely to face increased competition for residency positions from a growing number of allopathic medical school graduates.

My main rationale for accepting allopathic graduates—including IMGs—into AOA-approved residency training programs is to keep as many of these programs and positions alive as possible. One day in the not-so-distant future, our profession may need these residency positions as increasing numbers of graduates of osteopathic medical schools seek the slots.

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Southampton Pulmonary Associates, New York; Adjunct Clinical Professor, New York College of Osteopathic Medicine of New York Institute of Technology, Old Westbury

References
4. American Association of Colleges of Osteopathic Medicine, American Osteopathic Association. Study on the impact of admitting MDs into OGME training programs. White paper developed in response to request from Medical Education Summit Progress Task Force; April 2009; Chicago, IL.

Response
The issue raised by Dr Steier was brought to the attention of osteopathic medical education leadership as a central focus of Medical Education Summit II (MES II) in November 2007. At the direction of the summit steering committee, a task force was appointed to study the impact of admitting graduates of allopathic medical schools (including international medical graduates) into osteopathic graduate medical education (OGME) training programs.

In April, members of the MES Progress Task Force, with representatives from the American Osteopathic Association (AOA) Bureau of Osteopathic Education and the American Association of Colleges of Osteopathic Medicine, developed a white paper with recommendations titled, “Study on the Impact of Admitting MDs Into OGME Training Programs.”

This white paper was posted on the AOA Web site for members of the AOA House of Delegates to read in advance of its annual meeting in July. However, the paper was not formally submitted to delegates until the meeting.

At the meeting, the House of Delegates voted to refer the paper back to the AOA Department of Education (Resolution 325 [A/2009], Recommendations regarding admitting MDs into osteopathic graduate medical education programs) with the intent of deferring action until the delegates’ annual
meeting next July, providing the delegates with time to review the task force’s recommendations fully.

All members of the House of Delegates will receive access to the paper in advance of the July 2010 annual meeting. In addition, public comments, which will be collected until December 1, will be reviewed and provided to the delegates.

Diane N. Burkhart, PhD
Director, AOA Department of Education;
Secretary to the Task Force to Study the Impact of Admitting MDs into OGME Programs,
Chicago, Illinois

Maintaining Distinctiveness and Affordability of Osteopathic Medical Education

To the Editor:

I value the merits of osteopathic manipulative medicine (OMM) and the high quality of osteopathic medical education, which presents students with a holistic approach to patient care using unique diagnostic and therapeutic tools.

Unfortunately, most osteopathic medical students currently obtain only about 200 hours of preclinical experience in OMM at colleges of osteopathic medicine (COMs), and this training must be provided for hundreds of students by relatively few faculty members. This is definitely not enough exposure to OMM for osteopathic medical students.

In the words of Norman Gevitz, PhD, “it appears that OPP [osteopathic principles and practice] have moved from the center toward the periphery of the osteopathic medical profession.”

I do not advocate that osteopathic medicine start and end with OMM. However, I do believe that our profession must deliver on the “distinctiveness” that it claims so that osteopathic physicians can—to again quote Dr Gevitz—“make [the] leap from being regarded only as a medical minority to becoming broadly recognized as medical elite.” Thus, OMM and OPP need to be more emphasized and fully integrated into undergraduate and postdoctoral osteopathic medical training.

Our students need more exposure to OMM to acquire an understanding of the uniqueness of osteopathic medicine’s holistic approach to patient care, while still having sufficient time to learn the tremendous amount of basic sciences taught during the first 2 years of medical school. I believe that additional time should be allocated in the undergraduate COM curriculum to OMM, as well as to disease prevention, nutrition, spirituality, and other approaches to medicine beyond conventional medical treatments so that our graduates are equipped to provide the best-informed healthcare to their patients.

Therefore, I propose that the COM academic year start slightly earlier—in June instead of August—and that an additional 300 to 400 hours of instruction compressed into the preclinical years provide our students with needed holistic and OMM skills.

If we claim to offer something unique and more integrative in healthcare, compared with our allopathic counterparts, this uniqueness should be reflected in our COMs’ curricula.

Sufficient numbers of OMM faculty members and exposure to basic research related to OMM are crucial to communicate the merits of OMM and the distinctiveness of OPP to osteopathic medical students. Furthermore, formal hands-on rotations in OMM and complementary and alternative medicine (CAM), as well as a dissertation on OPP or CAM, should be instituted as requirements for graduation.

In this “information age,” patients can easily obtain information about the education and qualifications of osteopathic physicians. By emphasizing the uniqueness and distinctiveness of our profession in education and clinical practice, we can help patients realize that our profession is a special brand. However, this can happen only if we live up to the tenets of OPP. The survival of our profession depends on the full incorporation of OPP into osteopathic medical education and practice.

Along with extending the content of our undergraduate medical curriculum, we need to find ways to shorten the total expense and length of medical training. According to a study published in Health Affairs, median tuition and fees for students in public medical schools increased by 312%—and in private medical schools by 165%—between 1984 and 2004. Median medical student debt increased by more than 150% during this same period.

The Association of American Medical Colleges reported that the average debt load of graduates from public medical schools and private medical schools were $120,000 and $160,000, respectively, in 2006. Only six of the nation’s 25 COMs are public schools.

Colleges of osteopathic medicine should actively partner with various undergraduate universities to offer accelerated 6- to 7-year BS/DO medical programs to as many qualified students as possible. Lake Erie College of Osteopathic Medicine in Pennsylvania has designed a 3-year accelerated curriculum designed to encourage osteopathic medical students to choose primary care careers—and also to save students the cost of 1 year of medical education. This curriculum can serve as a model for other COMs.

The American Osteopathic Association has restructured the traditional osteopathic internship into three options, allowing each specialty college to choose its own preferred model for osteopathic graduate medical education (OGME). This restructuring, which went into effect last year, is a positive step forward. At the very least, it helps osteopathic medical students match or track to their chosen specialties in their senior year, instead of at the end of their internship year.

However, the duration of postdoctoral training for some osteopathic medical specialties is still longer than that of our allopathic counterparts—potentially making OGME a less attractive option to trainees. Approximately 60% of COM
graduates are presently being trained in Accreditation Council for Graduate Medical Education–accredited training programs. We need to make OGME a more attractive training option.

One incentive for graduates to pursue OGME would be to redefine the role of and requirements for a traditional rotating osteopathic internship—so that the osteopathic internship mirrors that of the preliminary internship in allopathic training programs. This change would help reduce the length of training for osteopathic medical students. Furthermore, additional training opportunities in nonprimary care specialties need to be developed to attract and meet the career aspirations of COM graduates.

Tayson DeLengocky, DO
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Reference

Sir Thomas Browne
Religio Medici (1643)