

This Medical Education theme issue introduces a new collaboration between the *JAOA* and the American Association of Colleges of Osteopathic Medicine (AACOM) to recruit, peer review, edit, and distribute articles through the *JAOA* on osteopathic medical education research and other scholarly issues related to medical education.

## **JAOA and AACOM**

### Effect of a Mandatory Third-Year Osteopathic Manipulative Treatment Course on Student Attitudes

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**Context:** Despite interest by osteopathic medical students in learning and incorporating osteopathic manipulative treatment (OMT) techniques into their future practices, most students indicate that OMT is rarely or never taught during many clinical rotations.

**Objective:** To determine whether a mandatory OMT course taken during the third year of medical school would influence students' exposure to OMT, confidence in OMT, intent to continue developing OMT skills, and plan to provide OMT as practicing physicians.

**Methods:** A mandatory pilot OMT course was implemented in the 2014 third-year curriculum. A survey was then developed to assess students' attitudes toward OMT. Surveys were administered to students whose third year was in 2013 and thus had not taken the course (group 1) and to students who had taken the course in 2014 (group 2).

**Results:** Of the 223 students in group 1, 143 (64%) responded. Of the 213 students in group 2, 112 (53%) responded. Students in group 2 reported greater exposure to OMT compared with students in group 1, higher confidence levels in practicing OMT (61 [54%] vs 71 [50%]), greater intent to continue developing OMT skills, and plan to provide OMT as practicing physicians (91 [81%] vs 94 [66%]).

**Conclusion:** A pilot course in OMT increased students' levels of confidence in and intent to provide OMT in their future practices.

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In the 2013-2014 academic year, colleges of osteopathic medicine (COMs) graduated approximately 5000 osteopathic physicians (ie, DOs).<sup>1</sup> The American Association of Colleges of Osteopathic Medicine (AACOM) is projecting that in the 2018-2019 academic year, the number of DO graduates will increase to 6000,<sup>1</sup> as 11 new COMs, 3 branch campuses, and 8 remote teaching sites have been established since 2005, bringing the total number of colleges, branch campuses, and additional locations to 42.<sup>2</sup> Although DOs currently comprise 7% to 8% of the practicing physician population in the United States, they are quickly approaching 20% of this population, owing to the exponential growth in DO graduates over the past decade.<sup>1,3</sup> This increase, however, has raised concern about how to preserve a unique osteopathic identity, particularly through the use of osteopathic manipulative treatment (OMT).<sup>3,4</sup>

Osteopathic physicians are taught to consider the somatic and visceral functions in patients, and it is this whole-person approach that is considered the distinguishing feature of a DO.<sup>5</sup> Studies<sup>4,6</sup> have found that osteopathic medical students are interested in learning and incorporating the techniques of OMT into their future practices. However, Gamber et al<sup>4</sup> reported that most students indicated that OMT was rarely or never taught during many of their clinical rotations. The study<sup>4</sup> also found that 57% of entering osteopathic medical students were interested in or enthusiastic about OMT, but by the time they finished residency, the percentage had decreased to 34%. Of those surveyed, approximately one-third noted that the clinical rotation years directly influenced their current use of OMT.<sup>4</sup> According to the study,<sup>4</sup> 82% of fourth-year osteopathic medical students indicated that their OMT skills were “useful” or “very useful,” but the use of OMT during clinical rotations was reported as “sometimes” or “never” by 65%. Gamber et al<sup>4</sup> reported that obstacles to applying OMT in the clinical setting included lack of time (46%), discouragement of the use of OMT by a preceptor (22%), discomfort with skill level (19%), and lack of interest in OMT (6%).<sup>4</sup> Chamberlain and Yates<sup>7</sup>

found that by approximately 10 months into their third year, osteopathic medical students were deciding not to perform structural examinations on a standardized patient with chronic obstructive pulmonary disease, reflecting a change in attitudes toward the use of palpatory skills and OMT early in the clinical training years.

Osteopathic medical students require models of physician behavior to understand what it means to embody osteopathic distinctiveness—in particular, having first-hand experiences with physicians who incorporate OMT into practice. Johnson and Kurtz<sup>5</sup> reported that of 979 responses by osteopathic physicians across all specialties, more than 50% used OMT on less than 5% of their patients. Approximately 70% of family physicians reported using OMT on 5% or more of patients, and 31.3% of specialists used OMT on more than 5% of patients. Chamberlain and Yates<sup>7</sup> reported that 36% of third- and fourth-year medical students were given an opportunity to do an osteopathic palpatory evaluation on 5 to 14 of the required rotations, and 28% were given the opportunity to apply OMT. Nonetheless, Teng et al<sup>3</sup> found that when students are exposed to a mandatory osteopathic manipulative medicine (OMM) course in the third- and fourth-year clinical rotations, their levels of comfort with OMT were favorably influenced.<sup>3</sup>

The American Osteopathic Association (AOA) Commission on Osteopathic College Accreditation has maintained high standards for OMT training, practice, and evaluation as required for COM accreditation. In addition, Ching and Burke<sup>8</sup> suggested that by increasing the presence of osteopathic principles and practice in the clinical years, graduates’ interest in AOA residencies would increase. In February 2014, the AOA, the American Association of Colleges of Osteopathic Medicine, and the Accreditation Council for Graduate Medical Education (ACGME) agreed to move forward with a single system of graduate medical education accreditation under the ACGME.<sup>9</sup> It is yet to be determined as to the quality and depth of postdoctoral training that the ACGME residency programs with an osteopathic focus will provide.

It is our aim to help keep osteopathic distinctiveness at the forefront of osteopathic medical education. By implementing a mandatory pilot OMT course in the third year, we sought to determine whether mandatory use of OMT skills during the third year would influence students' exposure to OMT, confidence in OMT, intent to continue developing OMT skills, and plan to provide OMT as practicing physicians. Based on the findings of Teng et al,<sup>3</sup> we hypothesized that these factors would increase.

## Methods

This study used a nonexperimental design for a descriptive analysis of the experiences and perceptions of OMT by 2 medical student classes at a single osteopathic medical school. Survey participation by all students was voluntary and anonymous. The procedures in this study were reviewed and determined to be exempt by the institutional review board at Des Moines University College of Osteopathic Medicine (DMU-COM).

### Pilot OMT Course

To address the current requirements of the AOA Commission on Osteopathic College Accreditation and potentially influence interest in continued osteopathic principles and practice, a pilot course with 2 components was created for all third-year students in 2014. To develop the cognitive skills in their clinical OMM knowledge base, students were required to read 13 select chapters and complete postchapter quizzes from *Somatic Dysfunction in Osteopathic Family Medicine*.<sup>10</sup> Students could electronically access the text and quizzes remotely at all hours. Quiz questions were taken from the supplemental materials in the textbook, and an average of 5 quizzes per chapter were used. Students were permitted to access the quizzes through an online portal. The passing grade for an individual quiz was 80% or higher, and students were permitted 1 retake per quiz.

To nurture students' understanding of osteopathic philosophy and encourage development of students' palpa-

tory and psychomotor OMT skills, they were required to perform 6 OMT encounters per year and create encounter notes for each one. Students were allowed to submit 1 note per clinical rotation. They were encouraged to treat patients with OMT when allowed by the preceptor; however, OMT was not required for submission or acceptance of the note. On the OMT encounter note, students were required to document the presenting medical condition and diagnosis, their thought process on important body regions to evaluate for somatic dysfunction related to the presenting medical condition, the osteopathic structural examination findings, the OMT techniques used (if applicable), the immediate results of the treatment, the plan or follow-up recommendations for the patient, and the preceptor's signature confirming the encounter. Notes were faxed to the Department of Osteopathic Manual Medicine and were reviewed by DO faculty in the department (K.L.H., D.D.L., and S.V.C.). Timely feedback on the notes was delivered, and students were informed whether their notes were accepted for credit.

Successful completion of the course required the completion of the assigned readings and quizzes and the submission of 6 approved OMM encounter notes (*Table 1*).

### Survey Implementation and Analysis

During a week-long comprehensive clinical assessment course held at the end of the third year of the osteopathic medical curriculum at DMU-COM, students in the classes of 2014 and 2015 were asked to complete a survey to assess the amount of OMT they had observed and provided during their third-year clinical rotations, their confidence in using OMT, their intent to continue developing OMT skills, and their plan to provide OMT as practicing physicians (*Table 2*). Students in the class of 2014 had not completed the pilot OMT course (group 1), and the students in the class of 2015 had completed the course (group 2). The survey results were used to gauge whether the new course influenced students' attitudes toward OMT. Descriptive statistics including frequency were used to detail results.

**Table 1.**  
**Grading Protocol for Third-Year**  
**Osteopathic Medical Students**  
**Participating in an OMT Curriculum<sup>a</sup>**

OMT Course	Points
<b>Reading Assignments</b>	
Chapters 1, 4, and 5	20
Chapters 8 and 14	20
Chapter 9	10
Chapter 7	10
Chapter 10	10
Chapters 12 and 18	20
Chapter 16	10
Chapter 26	10
Chapter 27	10
<b>Total</b>	<b>120</b>
<b>Diagnostic Procedures</b>	
OMM diagnosis and summary #1	20
OMM diagnosis and summary #2	20
OMM diagnosis and summary #3	20
OMM diagnosis and summary #4	20
OMM diagnosis and summary #5	20
OMM diagnosis and summary #6	20
<b>Total</b>	<b>120</b>

<sup>a</sup> Assignments were taken from *Somatic Dysfunction in Osteopathic Family Medicine*.<sup>10</sup>

**Abbreviations:** OMM, osteopathic manipulative medicine; OMT, osteopathic manipulative treatment.

## Results

A total of 143 of 223 students in group 1 (64%) completed the survey, and 112 of 213 students in group 2 (53%) completed the survey.

More students in group 1 reported 0% exposure to OMT in rotations than did those in group 2 (45 [31%] vs 20 [18%], respectively; *Figure 1*). More students in group 2 reported observing OMT in more than 10% and more than 30% of their rotations than did those in group

1 (76 [68%] vs 87 [61%] and 16 [14%] vs 10 [7%], respectively; *Figure 1*).

Fewer students in group 2 reported being asked to provide OMT in 0% of their rotations than in group 1 (28 [25%] vs 52 [36%], respectively; *Figure 2*). More students in group 2 reported being asked to provide OMT in more than 10% and more than 30% of their rotations than those in group 1 (69 [62%] vs 81 [57%] and 14 [13%] vs 9 [6%], respectively). One student from each group reported being asked to provide OMT in more than 50% of their rotations.

Of the students in group 2, 101 (90%) reported that they requested to provide OMT in their rotations, compared with 84 (59%) in group 1 (*Table 2*). Of the students in group 2, 61 (54%) reported that they felt comfortable asking their preceptor permission to provide OMT, compared with 71 students (50%) in group 1 (*Table 2*).

When asked whether they intended to practice OMT independent of their clinical rotations, 71% of students in group 2 responded “yes” compared with 57% of students in group 1 (*Table 2*). Similarly, students in group 2 were more likely than students in group 1 to report that they planned to provide OMT as practicing physicians (81% vs 66%, respectively) (*Table 2*).

## Discussion

Although the percentage of hands-on OMT experiences was reported to be low in the third-year curriculum by students overall, after implementation of the pilot OMT course, students in group 2 reported an increase in exposure to OMT, an increase in confidence in practicing OMT, an increase in intent to continue developing OMT skills, and a plan to provide OMT in their future practices. Although the pilot course could not influence the frequency of patient presentations appropriate for OMT, it did appear to influence the students’ willingness to look for opportunities to observe and participate in OMT.

**Table 2.**  
**Survey for Third-Year Osteopathic Medical Students Who Either**  
**Participated or Did Not Participate in an OMT Curriculum<sup>a</sup>**

Survey Item <sup>a</sup>	Student Responses, No. (%)			
	Group 1 (n=143)		Group 2 (n=213)	
	Yes	No	Yes	No
While on your rotations did you request to provide OMM/OMT for your preceptor's patients?	84 (59)	59 (41)	101 (90)	11 (10)
Did you feel comfortable asking an attending to perform OMM/OMT on your preceptor's patients?	71 (50)	72 (50)	61 (54)	51 (46)
Have you continued to practice OMM/OMT independent of your clinical rotations?	81 (57)	62 (43)	79 (71)	33 (29)
Will you be providing OMM/OMT in your future practice?	94 (66)	49 (34)	91 (81)	21 (19)

<sup>a</sup> Two additional questions appeared in the survey, as follows: "OMT was observed on what percentage of your rotations?" and "On what percentage of your rotations were you asked to provide OMM/OMT?" Answer choices were >75%, >50%, >30%, >10%, and 0%. Students in the class of 2014 (group 1) did not take the OMT course, and those in the class of 2015 (group 2) did take the OMT course.

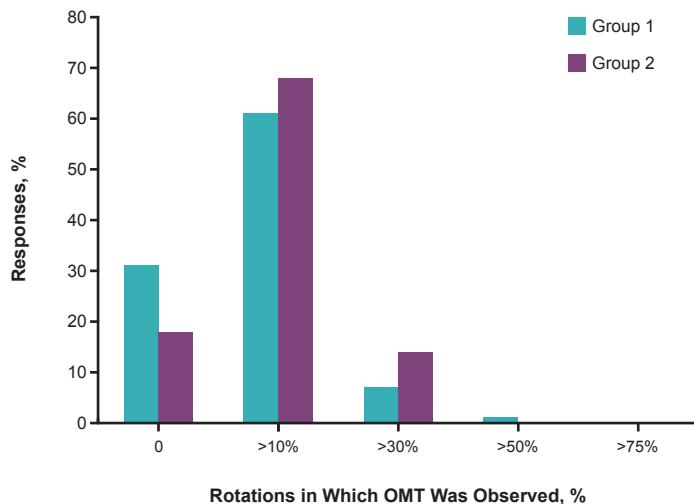
**Abbreviations:** OMM, osteopathic manipulative medicine; OMT, osteopathic manipulative treatment.

These results, along with those of Teng et al,<sup>3</sup> support efforts to increase OMT experiences during clinical rotations. It is our hope that by requiring OMT experiences in the third and fourth years of osteopathic medical school, preceptors will develop a heightened awareness of the importance of providing clinical experiences and training in OMT. In a grassroots manner, perhaps this effort will also increase the number of patients that a preceptor decides to treat with OMT.

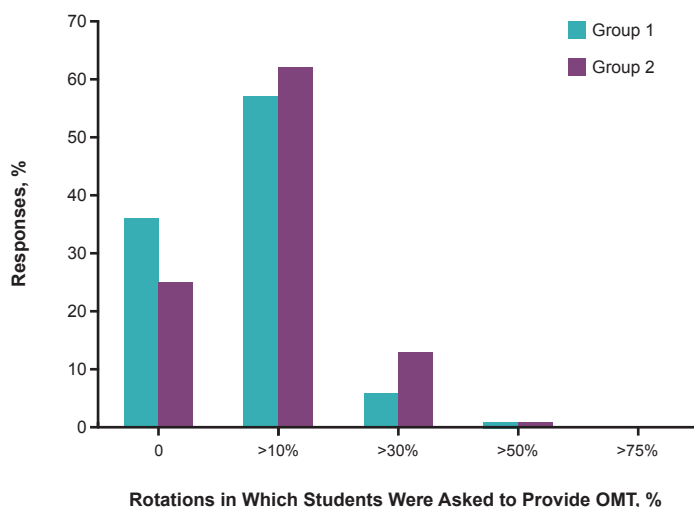
Surveys are useful to determine the attitudes of a large participant population; however, this method has some research limitations. On average, survey response rates have been found to range from 30% to 55%.<sup>11</sup> Our response rates of 64% and 53% were high. The use of self-reported data by voluntary participants has the potential for bias. Students may have overreported or underreported confidence levels, intent to continue developing OMT skills, or plan to provide OMT as practicing physicians. Similarly, the self-reported data may have been influenced by the partici-

pants' interest level in OMT. To help minimize this bias, all surveys were anonymous and submitted electronically. No points were awarded toward the students' overall grade for completing the survey. The present study included only students from DMU-COM; therefore, the results may not be generalizable to other COMs, although DMU-COM is similar to many other COMs in that it does not currently require an OMT rotation.

Further research should be conducted to determine whether there is a difference in students' exposure to OMT, confidence in OMT, intent to continue developing OMT skills, and plan to provide OMT when rotating with DO vs MD preceptors. Future research could also longitudinally track the current respondents into their clinical practice to determine whether intentions to use OMT can predict use in practice. Also, with the results of our survey as a baseline, we are planning to repeat the survey in future years for comparison and tracking.



**Figure 1.** Survey responses to the question, “OMT (osteopathic manipulative treatment) was observed in what percentage of your rotations?” by students who had not taken a pilot third-year OMT course (group 1) and students who had taken the course (group 2).



**Figure 2.** Survey responses to the question, “In what percentage of your rotations were you asked to provide OMT (osteopathic manipulative treatment)?” by students who had not taken a pilot third-year OMT course (group 1) and students who had taken the course (group 2).

## Conclusion

Our findings point to a desire on the part of students who have greater exposure to OMT in clinical rotations to continue its practice. Conversely, a lack of exposure during this period leads to less of an interest in further using OMT. Efforts to preserve the use of OMT as one of the key distinguishing features of the osteopathic medical profession must begin with predoctoral education in COMs.<sup>3,5,8</sup> With the single ACGME residency accreditation process set to launch in July 2020,<sup>9</sup> it is increasingly important that OMT training extend beyond the first and second years of medical school. Our findings demonstrate that a third-year OMT course had a positive influence on students’ attitudes toward OMT.

## Author Contributions

All authors provided substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; all authors drafted the article or revised it critically for important intellectual content; all authors gave final approval of the version of the article to be published; and Dr Heineman agrees to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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