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Osteopathic Medical Student Practice of Osteopathic Manipulative Treatment During School Break

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Context: Osteopathic manipulative treatment (OMT) is integral in osteopathic medical education. The timing of the loss of interest, leading to decreasing clinical use, is unclear. Osteopathic medical students' activities during laboratories or rotations are determined by laboratory or preceptor requirements and do not characterize students' interest in or how they value OMT. Students who practice OMT when they are not required to may demonstrate that they are interested in, perceive a positive value of, and have confidence in using OMT.

Objective: To characterize preclinical students practicing OMT during their school break.

Methods: First- and second-year students at the Touro University College of Osteopathic Medicine-CA and the University of New England College of Osteopathic Medicine were surveyed about whether they practiced OMT during winter break, types of conditions addressed, OMT technique(s) used, their practice partners' response to OMT, and reasons for not practicing OMT, if applicable. Students were also asked if they would have practiced more OMT if they had setups similar to those of the practice environment at school.

Results: Of the 499 surveys sent, 407 (81.6%) were returned. Of 407 students, 269 (66.1%) reported that they practiced OMT during winter break, and they used a full range of OMT techniques. Students reported a total of 551 practice partners and 602 complaints. Overall, 429 of 497 practice partners (86.3%) reported they were much improved or improved, and 6 of 497 (1.2%) felt worse or much worse. The most common reasons for not practicing OMT were that no one had complaints (56.3%) and that there was no place to practice (37.3%).

Conclusion: More than half of surveyed students showed an interest in practicing OMT when it was not required of them. These findings may imply the need for curriculum changes at osteopathic medical schools to ensure student competency with using OMT techniques that take less time and can be done in a variety of settings and with discussing OMT with practice partners.

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Although osteopathic manipulative treatment (OMT) is recognized as an integral component in the training of osteopathic physicians (ie, DOs), a small percentage of DOs currently use OMT in clinical practice.¹ One factor that may affect the use of OMT in practice is the training osteopathic medical students receive in the clinical application of osteopathic philosophy and OMT. A survey of osteopathic medical students at graduation reported that 93% had already decided that of their future patients, a small percentage would be treated with OMT.² Preclinical OMT training in the first and second years is geared toward osteopathic principles and practice, concepts, and techniques, with little clinical exposure. During the clinical components of the third and fourth years of school, students have ample clinical exposure to real patients; however, students' OMT training during this time may not only be less formal and prescribed, but also limited in both quantity and quality. Furthermore, students have limited access to preclinical osteopathic manipulative medicine (OMM) faculty when they are at clinical sites, and many clerkships are with allopathic preceptors or DO preceptors who do not use OMT, thereby diminishing their opportunity to apply hands-on skills clinically.^{1,3,4}

Some studies have indicated that students' lack of interest in OMT, their perception that OMT lacks efficacy, and their lack of confidence and competence in using OMT in real-world settings contribute to the eventual abandonment of OMT use in their future clinical practice.^{2,3,5} Traditionally, students have opportunities to improve their OMT skills during required formal training settings, such as OMM laboratories in the preclinical years when assessments are focused on competence in diagnoses and OMT. However, other potential contributing factors, such as access to OMM faculty and clerkship preceptors, cannot be assessed using the standard methods seen in the preclinical curriculum.

In the current study, we surveyed first- and second-year students at the Touro University College of

Osteopathic Medicine-CA (TUCOM) and the University of New England College of Osteopathic Medicine (UNECOM). Our objectives were to determine if students practiced OMT during break from school, to characterize the complaints their family or friends (ie, "practice partners") had, to examine which OMT techniques students used, and to describe any obstacles that prevented students from practicing OMT. We hypothesized that students who practiced OMT when they were not required to would demonstrate that they were interested in, perceived a positive value of, and had confidence in using OMT.

Methods

Institutional review board approval was obtained at TUCOM and UNECOM, and a paper survey was administered to all 499 first- and second-year students at both schools. These surveys were distributed and collected during required first- and second-year OMM laboratory sessions shortly after students returned from winter break. Students were not informed before the break that the survey would be distributed. Participation in the survey was voluntary and anonymous. Investigators did not view the surveys until all were returned for each laboratory session to ensure anonymity.

The survey asked students to report their year in school and the name of their institution. They were asked if they practiced OMT during winter break, why they did not practice OMT (if applicable), and if they would have practiced OMT more if they had space or a table. If students did practice OMT, they were asked to list the types of complaints described by their practice partner, the technique used, and the practice partner's response to OMT.

Osteopathic manipulative treatment techniques queried on the survey included articular; counter-strain; facilitated positional release; high-velocity, low-amplitude; ligamentous articular strain/balanced ligamentous tension/myofascial release; lymphatic;

muscle energy; osteopathic cranial manipulative medicine; soft tissue; and Still techniques. In addition, students had space to add other techniques used (ie, Chapman, Spencer, and interosseous).

Complaints were aggregated into similar complaint groupings and further characterized into musculoskeletal and nonmusculoskeletal groups. To assess whether students practiced on practice partners with only nonmusculoskeletal complaints, we identified which practice sessions involved exclusively musculoskeletal complaints and those that involved exclusively nonmusculoskeletal complaints.

Statistical analyses were conducted using SPSS statistical software version 18.0 (SPSS, Inc). χ^2 significance tests were performed to investigate differences between the 2 schools and between first- and second-year students, whether students practiced during winter break, and whether there was a difference in practice sessions with only nonmusculoskeletal complaints.

Results

Of 499 surveys that were distributed to first- and second-year students at TUCOM and UNECOM, 407 (81.6%) were returned for analysis. At TUCOM, 112 of 134 first-year students (83.6%) and 122 of 128 second-year students (95.3%) completed the survey. At UNECOM, 78 of 123 first-year students (63.4%) and 95 of 114 second-year students (83.3%) completed the survey.

At TUCOM, 81 of 112 first-year students (72.3%) practiced OMT during winter break, compared with 75 of 122 second-year students (61.5%). At UNECOM, 45 of 78 first-year students (57.7%) and 68 of 95 second-year students (71.6%) practiced OMT during winter break. No statistical significance was noted between the 2 schools ($P=.776$) or between first- and second-year students ($P=.929$). In total, 269 of 407 students (66.1%) practiced OMT during winter break.

A total of 551 practice partners reported 602 complaints. Overall, 385 complaints were specified, which

were aggregated into 20 different complaint types (*Table 1*). Five complaint types were nonmusculoskeletal: asthma, constipation, dysmenorrhea, upper respiratory tract infection, and vertigo. Of the total practice sessions, 328 were with practice partners that reported either all musculoskeletal or all nonmusculoskeletal complaints. Statistical significance was noted in the difference between the 2 schools and class year for students who used OMT on practice partners with only nonmusculoskeletal complaints. More TUCOM students (compared with UNECOM) and more first-year students (compared with second-year students) practiced on practice partners with only nonmusculoskeletal complaints ($P<.001$ for both). At TUCOM, 11 of 89 first-year students (12.4%) and 11 of 95 second-year students (11.6%) reported practice sessions with only nonmusculoskeletal complaints. At UNECOM, 5 of 58 first-year students (8.6%) and 2 of 86 second-year students (2.3%) reported practice sessions with only nonmusculoskeletal complaints. No statistical significance was reported in student practice between schools or year in school.

Although our sample size was not large enough to make statistical comparisons, we can conclude that students at the 2 schools chose to practice different OMT techniques (*Table 2*). Students at TUCOM most frequently chose soft tissue; muscle energy; counterstrain; high-velocity, low-amplitude; and lymphatic techniques. Students at UNECOM chose high-velocity, low-amplitude; muscle energy; counterstrain; soft tissue; and facilitated positional release techniques. At TUCOM, 2 of 144 first-year students (1.4%) and 32 of 159 second-year students (20.1%) used osteopathic cranial manipulative medicine in practice sessions; no UNECOM students practiced these techniques.

After practice partners received OMT, 429 of 497 complaints (86.3%) were much improved or improved. Students reported that 6 of 497 practice partners (1.2%) felt worse or much worse after receiving OMT.

Overall, the most frequent reason for not practicing OMT was that “no one had complaints” (71 [51.4%]).

Table 1.
Practice Partner Complaints as Reported to Osteopathic
Medical Students Practicing OMT During Vacation^a

Outcome Measure	TUCOM		UNECOM	
	First-Year OMS	Second-Year OMS	First-Year OMS	Second-Year OMS
Total Complaints Reported, No.	106	116	82	81
Nonmusculoskeletal Complaint, No. (%)				
Asthma	0	1 (0.9)	0	0
Constipation	0	2 (1.7)	0	0
Dysmenorrhea	0	0	1 (1.2)	0
Upper respiratory tract infection	14 (13.2)	11 (9.5)	4 (4.9)	2 (2.5)
Vertigo	0	2 (1.7)	0	0
Musculoskeletal Complaint, No. (%)				
Arthritis	0	1 (0.9)	0	0
Back pain	61 (57.5)	51 (44.0)	42 (51.2)	57 (70.4)
Clavicle pain	0	1 (0.9)	0	0
Fibromyalgia	0	1 (0.9)	0	0
Headache	5 (4.7)	14 (12.1)	3 (3.7)	0
Hip pain	0	1 (0.9)	2 (2.4)	2 (2.5)
Lower extremity pain	7 (6.6)	14 (12.1)	9 (11.0)	6 (7.4)
Muscle spasm	1 (0.9)	1 (0.9)	0	0
Pelvic pain	0	0	0	1 (1.2)
Pubic pain	1 (0.9)	0	0	0
Restless legs syndrome	1 (0.9)	0	0	0
Sacral pain	0	0	0	1 (1.2)
Scoliosis	0	0	0	1 (1.2)
Temporomandibular joint dysfunction	1 (0.9)	0	0	0
Upper extremity pain	15 (14.2)	16 (13.8)	21 (25.6)	11 (13.6)

^a Based on respondents' feedback, a total of 551 practice partners had a total of 385 complaints (217 practice partners did not describe a specific complaint, and 47 had more than 1 complaint).

Abbreviations: OMS, osteopathic medical student; OMT, osteopathic manipulative treatment; TUCOM, Touro University College of Osteopathic Medicine-CA; UNECOM, University of New England College of Osteopathic Medicine.

Other reasons that were reported (*Table 3*), such as “no place to treat,” “no time,” and “not confident,” can be modified with curriculum changes. Regardless of whether they practiced OMT, the majority of students responded that they would practice more if they had a table and space to work (ie, a setting similar to where they practice during their formal curriculum): 69 of 111 first-year TUCOM students (62.2%), 76 of 102

second-year TUCOM students (74.5%), 65 of 89 first-year UNECOM students (73.0%), and 56 of 72 second-year UNECOM students (77.8%).

Discussion

Data on whether students practiced OMT during winter break and the description of the OMT practice

Table 2.
Frequency of OMT Techniques Used on Practice Partners by Students During Winter Break^a

Outcome Measure	TUCOM		UNECOM	
	First-Year OMS	Second-Year OMS	First-Year OMS	Second-Year OMS
Practice Partners, No.	144	159	154	88
OMT Technique, No. (%)				
Articular or Still	5 (3.5)	12 (7.5)	14 (9.1)	19 (21.6)
Counterstrain	0	48 (30.2)	60 (39.0)	37 (42.0)
Facilitated positional release	1 (0.7)	35 (20.1)	0	20 (22.7)
High-velocity, low-amplitude	2 (1.4)	43 (27.0)	82 (53.2)	57 (64.8)
Ligamentous articular strain/balanced ligamentous tension/myofascial release	10 (6.9)	57 (35.8)	6 (3.9)	18 (20.5)
Lymphatic	48 (33.3)	32 (20.1)	14 (9.1)	10 (11.4)
Muscle energy	113 (78.5)	71 (44.7)	72 (46.8)	52 (59.1)
Osteopathic cranial manipulative medicine	2 (1.4)	32 (20.1)	0	0
Soft tissue	115 (79.9)	86 (54.1)	24 (15.6)	25 (28.4)
Other ^b	0	5 (3.1)	0	0

^a Based on respondents' feedback, 545 practice partner sessions resulted in a total of 1227 osteopathic manipulative treatment (OMT) techniques used. Techniques were not specified in 6 practice partners.

^b Other OMT techniques used were Chapman, Spencer, and interosseous.

Abbreviations: OMS, osteopathic medical student; TUCOM, Touro University College of Osteopathic Medicine-CA; UNECOM, University of New England College of Osteopathic Medicine.

sessions could identify needs for curricular improvements. In the present study, 66.1% of students were interested and confident enough in OMT to practice on family and friends.

Students in the present study reported using all OMT techniques that the survey listed, as well as most of the OMT techniques currently taught in osteopathic medical schools. Although a wide range of OMT techniques were reported by students at TUCOM and UNECOM, osteopathic cranial manipulative medicine was used by 20% of second-year TUCOM students but by no UNECOM students. Students likely selected OMT techniques that they received instruction on, felt most comfortable with, and obtained the best results with in class. No analysis of the OMM curriculum at TUCOM and UNECOM was done for the present study. The findings of the current study may provide insight for OMM faculty of student perception of their OMT skills, understanding of OMT

techniques, and efficacy of the techniques being taught.

The most commonly reported reason for not choosing to practice OMT during winter break was that “no one had complaints.” Although the frequency of complaints cannot be modified, other reasons may identify opportunities to assess the OMM curriculum. Regarding “no place to treat,” the curriculum could emphasize OMT techniques that do not require a table. The other common reasons of “no time” and “not confident” could be addressed by increasing students' proficiency and emphasizing techniques that require less time. Most students reported that they would have practiced more if they had setups similar to those of the practice environment at school.

Students practicing OMT on family and friends raises a number of issues that need further discussion. Students must be able to competently describe OMT in terms that their practice partners outside the profession can compre-

Table 3.
Reasons Students Did Not Practice OMT Over Winter Break^a

Reason	TUCOM		UNECOM		Total (n=138)
	First-Year OMS (n=31)	Second-Year OMS (n=47)	First-Year OMS (n=33)	Second-Year OMS (n=27)	
No one had complaints	19 (61.3)	19 (40.4)	17 (51.5)	16 (59.3)	71 (51.4)
No place to treat	16 (51.6)	8 (17.0)	11 (33.3)	12 (44.4)	47 (34.1)
No time	15 (48.4)	6 (12.8)	4 (12.1)	9 (33.3)	34 (24.6)
Not confident	13 (41.9)	7 (14.9)	5 (15.2)	3 (11.1)	28 (20.3)
Did not want to	7 (22.6)	10 (21.3)	3 (9.1)	3 (11.1)	23 (16.7)
Did not feel OMT would be helpful	5 (16.1)	2 (4.3)	1 (3.0)	1 (3.7)	9 (6.5)
Did not spend time with people	1 (3.2)	2 (4.3)	1 (3.0)	1 (3.7)	5 (3.6)

^a Data are given as No. (%). Respondents could select more than 1 reason.

Abbreviations: OMS, osteopathic medical student; OMT, osteopathic manipulative treatment; TUCOM, Touro University College of Osteopathic Medicine-CA; UNECOM, University of New England College of Osteopathic Medicine.

hend. Practice partners must also understand that students are not licensed DOs and are not practicing medicine during these sessions.

Although OMT is safe in clinical practice,⁶ a small number of students reported that their practice partners felt worse after the practice session. This response could be considered a treatment reaction or complication and raises questions of safety in a student practice setting. Osteopathic medical schools must teach students to identify complications and take necessary steps to address these complications during OMT training.

The most notable issue is how students are prepared and precepted when they practice OMT during breaks from school. During the formal course curriculum, students are closely precepted, and faculty members provide educational support. However, students typically do not have this support while they are away from school. Perhaps osteopathic medical schools can provide this support during breaks from school and clinical clerkships.

A limitation of the present study is students' ability to recall which OMT techniques they practiced or what complaints were reported. Also, the present study was

conducted at 2 osteopathic medical schools, limiting the generalizability of our findings.

Future direction may include expanding the survey to assess other osteopathic medical schools and curricular differences, which may influence students' practice of and choice of OMT techniques. Additionally, expansion to track the survey into third- and fourth-year students would assist in following trends of OMT practice and techniques used in clinical rotations. Future surveys may also gather data on the actual practice of OMT, as well as factors surrounding its practice, such as comfort level with communicating and discussing OMT.

Conclusion

The present study found that 66.1% of surveyed first- and second-year students at 2 osteopathic medical schools practiced OMT on family and friends during winter break when it was not required. This finding demonstrates students' early interest and confidence in using OMT, which can be maintained through OMM rotations and other OMM-related clinical learning.⁷ The current study suggests that students are interested in practicing OMT out-

side of a graded environment, and curricular steps should be taken to continue to facilitate this interest.

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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 all authors agree 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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