Previous studies of osteopathic manipulative treatment (OMT) have examined its use in several clinical settings, but no study to date has been specific to emergency medicine. This article examines the use of OMT in the practice of emergency medicine by osteopathic physicians.

Osteopathic physicians who identified their practice as emergency medicine were surveyed to determine OMT use, including techniques used, graduate medical education, and factors affecting usage. Use of OMT was common (55%), with a large minority (28%) of osteopathic physicians reporting daily or weekly usage. Techniques most often used include soft tissue treatment, high velocity/low amplitude treatment, and muscle energy treatment. Factors affecting usage include residency training, undergraduate medical experiences, and practice environment. These findings indicate that further investigation into the indications and efficacy of OMT in emergency medicine is warranted.

Osteopathic manipulative treatment (OMT) is one of the hallmarks of osteopathic medicine. Previous studies have found it to be efficacious in the treatment of many conditions, including influenza, pneumonia, and pain in various regions such as the neck, low back, and extremities. Most studies have focused on hospital-based or office-based OMT usage. Emergency medicine, however, presents many unique challenges, including a wide variety of patient presentations and acuity. Paul and Buser have proposed that OMT could be used to treat many patients in the emergency setting, including those with low back pain, chest pain, torticollis, asthma, and sinusitis.

Fry examined the use of OMT by osteopathic physicians across all specialties, while Johnson and Kurtz examined its use by family physicians. No study to date, however, has examined its use in the emergency department or studied emergency physicians specifically. The goal of this study was to determine the demographics of OMT use by osteopathic emergency physicians.

Methods
We developed a survey (Figure) to measure the frequency of OMT use. Frequency of OMT usage was defined as daily, weekly, or infrequent (monthly/rarely) use. Frequent use was defined as self-reported daily or weekly usage. Other factors included on the survey were the following:
- General biographical information about the respondent—medical school attended, graduation date, date and type of residency completed;
- Work history—number of years practiced in an emergency department; number of hours worked in an emergency department per week;
- Emergency department practice environment;
- If OMT was used, techniques that were used and frequency of usage;
- If OMT was used, patients’ conditions treated;
- If OMT was not used, reasons why OMT was not used; and
- Whether their emergency department bills for OMT.

A total of 4071 surveys were mailed to osteopathic physicians who identified emergency medicine as their primary or secondary practice focus. This population included members and nonmembers of the American Osteopathic Association (AOA). For logistical simplicity, the American College of Osteopathic Emergency Physicians (ACOEP) distributed surveys to its members (n = 1435) in August 2000 with prepaid return envelopes. The remaining 2636 surveys were mailed in October 2000 with individually numbered prepaid return envelopes. Limited resources precluded follow-up of nonrespondents. All returned surveys were treated anonymously and independently coded to yield 100% interrater reliability. Data analysis was completed using SPSS for Windows 10.0 (SPSS Science, Chicago, Ill).

Results
A total of 965 surveys were returned (ACOEP, 364; non-ACOEP, 601), and 3 were returned as undeliverable, yielding...
Emergency Department OMT Usage Survey

1. Medical school attended: ______________

2. Year of graduation from medical school: ______________

3. Was use of OMT addressed in your emergency medicine class during medical school?
   Yes___  No___

4. Please indicate the year you completed any of the following areas of graduate medical education training (residency and/or fellowship). Additionally, please place a “C” next to any areas you are board-certified in or an “E” for areas for which you are board-eligible:
   - Emergency medicine __________
   - Family practice __________
   - Internal medicine __________
   - Pediatrics __________
   - Emergency medicine/family practice __________
   - Emergency medicine/internal medicine __________
   - Toxicology __________
   - Obstetrics and gynecology __________
   - Osteopathic manipulative medicine __________
   - Surgery (any type) __________
   - Other (indicate area) __________

5. Type of residency training:
   - AOA (osteopathic) Yes ___  No ___
   - ACGME (allopathic) Yes ___  No ___
   - Dually accredited Yes ___  No ___

6. Was use of OMT addressed in your residency/fellowship? Yes___  No___

7. Years practicing in emergency medicine: ______________

8. Please approximate the number of hours you practice weekly in the emergency department (on average):
   - ___ 1-15 hours
   - ___ 16-30 hours
   - ___ 31 or more hours

9. Estimated annual emergency department visits:
   - ___ 0-14,999
   - ___ 15,000-29,999
   - ___ 30,000-44,999

10. Using the specialty number from question 4, please indicate if you practice in any other areas of medicine: ______________

11. Hospital type:
   - Osteopathic Yes ___  No ___
   - Allopathic Yes ___  No ___
   - Mixed staff Yes ___  No ___

(continued)
Emergency Department OMT Usage Survey (continued)

12. Hospital setting:
   ___ Rural (>2500 people)   ___ Suburban (2500-50,000 people)   ___ Urban (<50,000 people)

13. Academic/teaching hospital:   ___ Yes   ___ No

14. Do you use OMT in your practice, and if so, how often?
   ___ Never   ___ Daily   ___ Weekly   ___ Monthly

15. If you do not use any OMT when practicing in the emergency department, please rank as many as three statements that are most indicative of your reasons for not using OMT:
   ___ I do not believe OMT is beneficial to the patients in this setting.
   ___ There is insufficient time to use OMT with a patient.
   ___ I am not comfortable with my OMT skills.
   ___ Fellow physicians/administrators have discouraged the use of OMT.
   ___ I am not reimbursed for OMT.
   ___ Patients are unfamiliar with OMT usage/procedures.
   ___ I have concerns regarding liability.
   ___ Lack of formal guidelines regarding use of OMT in the emergency department.
   ___ Other

16. If applicable, please indicate which OMT techniques you use on a regular basis:
   ___ Balanced ligamentous tension treatment/membranous technique
   ___ Counterstrain treatment (Jones’ tenderpoints)
   ___ Craniosacral
   ___ High velocity/low amplitude treatment
   ___ Muscle energy treatment
   ___ Soft tissue treatment
   ___ Other

17. If applicable, please indicate on what patient population you typically use OMT:
   ___ Back pain
   ___ Headaches
   ___ Trauma-related musculoskeletal complaints
   ___ Idiopathic musculoskeletal complaints
   ___ Obstetrics
   ___ Respiratory
   ___ Visceral (eg, chest pain, constipation, gastritis, ulcers)
   ___ Other

18. Does your emergency department bill for OMT use?   ___ Yes   ___ No

*If you would like to have the results from this survey made available to you, please place your name and mailing address on a separate piece of paper and include it with your completed survey. This procedure will allow for your survey to remain anonymous.*
a 24% response rate (ACOEP, 25%; non-ACOEP, 23%).

Table 1 summarizes the demographics of the respondents. The average responding physician graduated osteopathic medical school in 1985 and had been practicing for 10.6 years (n = 962; SD, 7.03). There is a positive correlation between years worked in emergency departments and OMT usage (P < .05), indicating a greater frequency of OMT use as the number of years practicing in emergency departments increases.

Results shown in Table 2 indicate that most respondents did not receive OMT training in acute care settings. This was reported for both undergraduate and graduate medical education. Predictably, respondents in AOA-approved residencies received more OMT training than did their counterparts in Accreditation Council for Graduate Medical Education (ACGME)-accredited programs.

Table 3 illustrates that most (55%) of the respondents use OMT in emergency departments, with 28.2% indicating frequent (daily or weekly) use. Table 4 shows the use of OMT based on residency training, with those completing AOA-approved residencies using OMT more frequently. Table 5 lists frequency of OMT technique approaches by respondents, with soft tissue treatment, high velocity/low amplitude treatment, and muscle energy treatment each being used by more than 60% of respondents. Table 6 lists reasons cited for not using OMT in the emergency department. Insufficient time and physicians’ lack of comfort with their OMT skills were reported most frequently (50.8% and 24.7%, respectively).

Discussion
We have demonstrated that most of the responding osteopathic emergency physicians use OMT in the emergency department. The three technique approaches used by most respondents—soft tissue treatment, high velocity/low amplitude treatment, and muscle energy treatment—are those requiring little time and whose results are often immediately apparent. More time-intensive techniques, such as counterstrain and osteopathy in the cranial field, are used much less frequently.

Not surprisingly, osteopathic physicians completing AOA-approved or dually accredited residencies are more likely to use OMT than those trained in allopathic residencies. The highest OMT use is noted to be by those physicians not completing residency training beyond internship. Emergency medicine is a fairly new specialty in terms of residency training. The first residency started in 1970. It is likely that most of the practicing emergency physicians who did not complete residency training are physicians who have been practicing for some time. We commented previously on the positive correlation between years worked in the emergency department and OMT usage. Other authors have reported that OMT use
increasing the instruction in OMT use in specific clinical settings during students’ undergraduate medical education might benefit those who pursue allopathic graduate medical education.

Only 16.8% of respondents work in emergency departments that bill for OMT. Among those who practice in environments where OMT is reimbursed, only 28.1% (n = 138) provide OMT for their patients. Even more surprising is the number of respondents who were unaware of their emergency departments’ billing practices. Almost 10% (n = 94) of respondents did not know whether OMT was billed for, and an additional 11% (n = 106) left the question unanswered. The reasons behind both the lack of reimbursement for OMT and unfamiliarity with OMT billing are beyond the scope of this study.

Students’ exposure and training during medical school and graduate medical education have an impact on physician practices following residency. It seems logical that providing students information about use of OMT in various clinical settings, including the acute application in the emergency department, would increase its use. When contacted, only six of the nineteen colleges of osteopathic medicine reported training in emergency medicine as a didactic course during the first 2 years of medical school, and none of these courses includes OMT use in emergency care. However, 26.4% (n = 218) of respondents indicated that they had received training in OMT use during an emergency medicine course while in medical school. As no current emergency medicine course taught in osteopathic medical schools includes OMT training, these responses are puzzling. It may be that these are older physicians and that OMT has been removed from the curricula of those courses due to the ever-burgeoning medical.

<table>
<thead>
<tr>
<th>Frequency of use (n = 944)</th>
<th>Yes, No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>108 (11.4)</td>
</tr>
<tr>
<td>Weekly</td>
<td>159 (16.8)</td>
</tr>
<tr>
<td>Monthly/rarely</td>
<td>252 (26.7)</td>
</tr>
<tr>
<td>Never</td>
<td>425 (45.0)</td>
</tr>
</tbody>
</table>

*Percentages do not total 100 due to rounding.

<table>
<thead>
<tr>
<th>Type of Residency Training</th>
<th>Frequently (Daily/ Weekly), No. (%)</th>
<th>Daily, No. (%)</th>
<th>Weekly, No. (%)</th>
<th>Monthly/ Rarely, No. (%)</th>
<th>Never, No. (%)</th>
<th>Any Usage, No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None (n = 156)</td>
<td>60 (38.5)</td>
<td>24 (15.4)</td>
<td>36 (23.1)</td>
<td>35 (22.4)</td>
<td>57 (36.5)</td>
<td>95 (60.9)</td>
</tr>
<tr>
<td>All residency-trained physicians (n = 802)</td>
<td>202 (25.2)</td>
<td>80 (10.0)</td>
<td>122 (15.2)</td>
<td>217 (27.1)</td>
<td>367 (45.8)</td>
<td>419 (52.2)</td>
</tr>
<tr>
<td>AOA-approved or dually accredited residencies (n = 579)</td>
<td>159 (27.5)</td>
<td>61 (10.5)</td>
<td>98 (16.9)</td>
<td>167 (28.8)</td>
<td>241 (41.6)</td>
<td>326 (56.3)</td>
</tr>
<tr>
<td>ACGME-accredited residencies (n = 232)</td>
<td>45 (19.4)</td>
<td>20 (8.6)</td>
<td>25 (10.8)</td>
<td>53 (22.8)</td>
<td>130 (56.0)</td>
<td>98 (42.2)</td>
</tr>
</tbody>
</table>

AOA indicates American Osteopathic Association; ACGME, Accreditation Council for Graduate Medical Education.
curriculum. It may also be possible that OMT applications in the emergency department are being taught through the schools’ osteopathic manipulative medicine department courses.

It has been noted that faculty role models are important in developing attitudes and intentions regarding OMT. It seems logical that one way to increase OMT usage by osteopathic emergency physicians is to provide such role models through an emergency medicine course during the first 2 years of undergraduate osteopathic medical education.

Fry found that physician interest in OMT during internship was statistically correlated to OMT use. Put simply, those

<table>
<thead>
<tr>
<th>Technique</th>
<th>Any OMT Use (n = 518), No. (%)</th>
<th>Frequent (Daily/Weekly) Use (n = 266), No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soft tissue treatment</td>
<td>396 (76.4)</td>
<td>217 (81.6)</td>
</tr>
<tr>
<td>High velocity/low amplitude treatment</td>
<td>365 (70.5)</td>
<td>210 (78.9)</td>
</tr>
<tr>
<td>Muscle energy treatment</td>
<td>350 (67.6)</td>
<td>192 (72.1)</td>
</tr>
<tr>
<td>Counterstrain treatment</td>
<td>181 (34.9)</td>
<td>116 (43.6)</td>
</tr>
<tr>
<td>Balanced ligamentous tension treatment/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>membranous technique</td>
<td></td>
<td></td>
</tr>
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<td>Muscle energy treatment</td>
<td>350 (67.6)</td>
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<td>116 (43.6)</td>
</tr>
<tr>
<td>Balanced ligamentous tension treatment/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>membranous technique</td>
<td>82 (15.8)</td>
<td>63 (23.7)</td>
</tr>
<tr>
<td>Osteopathy in the cranial field</td>
<td>37 (7.1)</td>
<td>33 (12.4)</td>
</tr>
<tr>
<td>Other</td>
<td>16 (3.1)</td>
<td>16 (6.0)</td>
</tr>
</tbody>
</table>

OMT indicates osteopathic manipulative treatment.

<table>
<thead>
<tr>
<th>Reason</th>
<th>All Respondents (n = 947), No. (%)</th>
<th>Respondents Not Using OMT (n = 424), No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficient time for OMT</td>
<td>481 (50.8)</td>
<td>335 (79.0)</td>
</tr>
<tr>
<td>Physicians not comfortable with OMT skills</td>
<td>234 (24.7)</td>
<td>200 (47.2)</td>
</tr>
<tr>
<td>Patients unfamiliar with OMT</td>
<td>251 (26.5)</td>
<td>161 (38.0)</td>
</tr>
<tr>
<td>Lack of formal guidelines regarding OMT use</td>
<td>197 (20.8)</td>
<td>143 (33.7)</td>
</tr>
<tr>
<td>OMT not beneficial to patients in emergency care</td>
<td>90 (9.5)</td>
<td>79 (18.6)</td>
</tr>
<tr>
<td>Liability concerns</td>
<td>98 (10.3)</td>
<td>69 (16.3)</td>
</tr>
<tr>
<td>Not reimbursed for OMT</td>
<td>97 (10.2)</td>
<td>49 (11.6)</td>
</tr>
<tr>
<td>Fellow physicians/administrators discouraged OMT use</td>
<td>37 (3.9)</td>
<td>16 (3.8)</td>
</tr>
<tr>
<td>Other</td>
<td>42 (4.4)</td>
<td>18 (4.2)</td>
</tr>
</tbody>
</table>

OMT indicates osteopathic manipulative treatment.
with greater interest in OMT will use it more than those with lesser interest. While that study was limited to osteopathic internships, presumably such correlation applies to interest in OMT during residencies as well. Other authors\(^{11,12}\) have commented on a deficit in OMT training during internship and residency. Fry found that only 18% of residents believed that they were receiving enough emphasis on OMT in their training. Most internships and residencies completed by respondents did not specifically address OMT. Only half of the AOA-approved or dually accredited residencies discussed OMT use. While this study is not encompassing of all emergency medicine residencies, it appears that room still exists to improve OMT education in emergency medicine residencies.

Given that most osteopathic emergency physicians use OMT in their practice, it seems prudent to investigate thoroughly the indications and efficacy of the various techniques used. Further research into the applications of these techniques in the acute setting of emergency departments is also appropriate.

In reviewing the returned surveys and results, several limitations have been identified. While we believe that the information revealed by the survey respondents is useful, the 24% response rate makes generalizing the survey results to the larger population of osteopathic emergency physicians difficult. As with all surveys, self-reporting bias must also be considered. It is possible that physicians who use OMT were more inclined to return the survey than those who do not use OMT. However, the magnitude to which this bias is present is impossible to determine.

**Conclusion**

Osteopathic emergency physicians often use OMT. The most common technique approaches include soft tissue treatment, high velocity/low amplitude treatment, and muscle energy treatment. Lack of time in patient encounter was cited as the most common reason not to use OMT. An association between OMT use and prior training (both undergraduate and graduate) has been observed. Further research into the details of this association, as well as the indications for and efficacy of OMT in the emergency department, is warranted.

**Acknowledgments**

The authors thank the American Osteopathic Association and the American College of Osteopathic Emergency Physicians for their support of this project, as well as the individual osteopathic emergency physicians who responded to the survey. Additionally, the authors thank Pamela Arnsberger, PhD, for guidance in survey design and Nancy Sonnenfeld, PhD, for assistance with statistics. Georgia Gavens, DO, and Carolyn Saluti, DO, deserve special recognition for their assistance with the survey distribution process.

**References**


