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Student perceptions of osteopathic manipulative treatment after completing a manipulative medicine rotation

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Recent studies have demonstrated a decline in the use of osteopathic manipulative treatment (OMT) by osteopathic physicians, reflecting a trend that may begin in medical school. The authors used a questionnaire to examine the teaching and use of OMT in five rotations and the perceptions of 86 graduating osteopathic medical students of their experiences following their core manipulative medicine rotation.

Most students indicated that they applied osteopathic principles sometimes (39.5%) or often (29.1%) during rotations. Forty-three percent of students rated their ability to apply osteopathic principles as average. The number of students who indicated that they rarely used OMT during their rotations was 31 (36.0%) for internal medicine, 21 (24.4%) for surgery, 23 (26.7%) for pediatrics, and 24 (27.9%) for obstetrics/gynecology. When asked why OMT was not used during a rotation, 47.2% of respondents cited time constraints, and 21.7% stated that their attending physicians discouraged the use of OMT. These results demonstrate a distinction between students' perceived level of osteopathic principles and skills and their application during clinical rotations.

(Key words: orthopedic manipulation, spinal manipulation, osteopathic manipulative treatment, medical education)

The distinctiveness of modern osteopathic physicians compared with allopathic physicians has recently been questioned,[1,2] causing some to suggest that efforts be undertaken to return to and preserve a uniquely osteopathic identity.[3] Of particular concern is a documented decline in the use of osteopathic manipulative treatment (OMT).[1,4] One survey found that 73% of practicing osteopathic physicians used OMT on less than 25% of their patients.[5] Moreover, 94% of all spinal manipulation in the United States is administered by chiropractors.[6] Potential explanations for the decline in OMT use include an increased emphasis on specialty training, time constraints, and an increase in allopathic residency training of osteopathic medical school graduates.[5]

A recent survey found that 57% of osteopathic physicians were interested in or enthusiastic about OMT when they were freshmen medical students.[5] However, this number dropped to 34% by the time they completed their residencies. Nearly a third of the survey respondents indicated that their clinical rotations influenced their current use of OMT. Furthermore, students in another study reported that osteopathic physicians discouraged them from using OMT as a treatment modality in hospital settings.[7]

The present study aimed to determine the perceptions of a group of graduating osteopathic medical students with respect to their use of OMT and the perceived instruction in OMT given by their attending physicians on rotations through various specialties. Each of the students surveyed had completed a core rotation in osteopathic manipulation.

Methods

A questionnaire was developed to determine the clinical areas in which OMT is used and to determine the perceived importance of the use of OMT in rotations by students (*Figure 1*). The questionnaire was designed to be a self-reported, paper-and-pencil instrument requiring less than 10 minutes to complete. The survey was distributed in 1997 to senior osteopathic medical students at the Texas College of Osteopathic Medicine (TCOM) of the University of North Texas Health Science Center on the first day of their last period before graduating. Responses were anonymous.

The rotations selected for review by survey respondents were internal medicine, surgery, pediatrics, obstetrics/gynecology, and family practice, which represent the majority of time students spend on their mandatory rotations. Respondents were specifically asked about their experiences since completing their core osteopathic manipulative medicine rotation. This core rotation consists of 1 month spent in an ambulatory manipulative medicine specialty clinic in which students see and treat their own patients as well as accompany faculty members during clinic hours. Such rotations include an intensive didactic and hands-on review of osteopathic manipulative medicine and are designed to train students about

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Osteopathic Manipulative Medicine Questionnaire

In this survey, we are specifically asking about your practice experiences **since you finished** our OMM rotation.

1. I applied osteopathic principles on my rotations:

   All the time — Sometimes — Never

   10 9 8 7 6 5 4 3 2 1

2. My ability to apply osteopathic principles is:

   Superior — Average — Poor

   10 9 8 7 6 5 4 3 2 1

3. I consider my osteopathic manipulative treatment skills to be:

   Vital — Useful — Useless

   10 9 8 7 6 5 4 3 2 1

For questions 4-14, enter the number in the space provided based on the following scale:

Always — Sometimes — Never

10 9 8 7 6 5 4 3 2 1

4. I utilized osteopathic manipulative treatment skills: _____
5. I **utilized OMT** during the **Internal Medicine** rotation: _____
6. I **utilized OMT** during the **Surgery** rotation: _____
7. I **utilized OMT** during the **Pediatric** rotation: _____
8. I **utilized OMT** during the **OB/Gyn** rotation: _____
9. I **utilized OMT** during the **Family Practice** rotation: _____
10. OMT was **taught** during the **Internal Medicine** rotation: _____
11. OMT was **taught** during the **Surgery** rotation: _____
12. OMT was **taught** during the **Pediatric** rotation: _____
13. OMT was **taught** during the **OB/Gyn** rotation: _____
14. OMT was **taught** during the **Family Practice** rotation: _____
15. On average, how many different patients per day did you incorporate the use of OMT into their regimen?

    ___ Less than 1 patient a day
    ___ 1 patient a day
    ___ 2-5 patients a day
    ___ 6 -10 patients a day
    ___ Greater than 10 patients a day

16. Since your core rotation, rank the three activating forces/techniques you used most frequently (1 being the most frequently used)

    ___ HVLA ___ Springing ___ Cranial ___ Myofascial release
    ___ Muscle energy ___ Strain/counterstrain ___ Other

17. If you did not use OMT on a service/patient, what was your reason for not using OMT (please check all that apply)?

    ___ Lack of time ___ Uncomfortable with skill level ___ Other
    ___ Lack of interest ___ Discouraged by attending

18. Please tell us how you have been able to integrate the osteopathic philosophy and skills to meet your expectation with respect to medical practice in the past year (please use the back).

Thank you for your time.

the osteopathic philosophy while also teaching them the practical applications of the philosophy in the care of patients.

In our survey, most answers were based on a scale of 1 to 10 (1 being the lowest rating). For questions involving frequency, such as application of osteopathic principles or use or teaching of OMT during rotations, responses were chosen from a scale with defined endpoints ("all the time/always" and "never") and midpoints ("sometimes"). For purposes of reporting results, responses 1 and 2 were grouped as "never," 3 and 4 as "rarely," 5 and 6 as "sometimes," 7 and 8 as "often," and 9 and 10 as "always." Similarly, subjects' ratings of their ability to apply osteopathic principles used a scale with defined endpoints and midpoints in which responses of 1 and 2 were grouped as "poor," 3 and 4 as "fair," 5 and 6 as "average," 7 and 8 as "above average," and 9 and 10 as "superior." Likewise, the question of the importance of OMT skills used the same 1-to-10 scale, and answers were treated as follows: 1 and 2 were grouped as "useless," 3 and 4 as "somewhat useful," 5 and 6 as "useful," 7 and 8 as "very useful," and 9 and 10 as "vital." The survey included an open-ended question regarding the ability of students to integrate osteopathic philosophy and treatment skills into their rotations.

Descriptive statistics were compiled for responses to all questions. Additionally, mean scores and standard deviations were calculated for use and teaching of OMT during each rotation. These scores were compared using paired *t*-tests. Significance was set at the .05 level. Data were managed and analyzed with SPSS software (SPSS for Windows, Release 8.0.0, SPSS Inc, Chicago, Ill).

Results

Of the 92 surveys given to senior students, 86 were returned, providing a 93% response rate. *Figure 2* shows the relationship between the students' per-

◀ **Figure 1.** *Osteopathic manipulative medicine survey.*

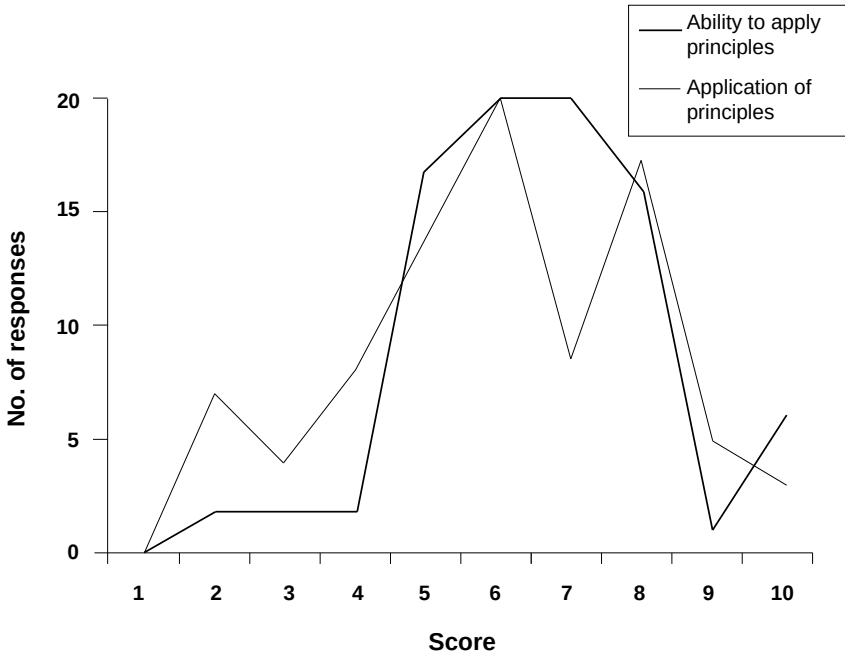

Figure 2. *Students' perceptions of their ability to apply and actual application of osteopathic principles during rotations.*

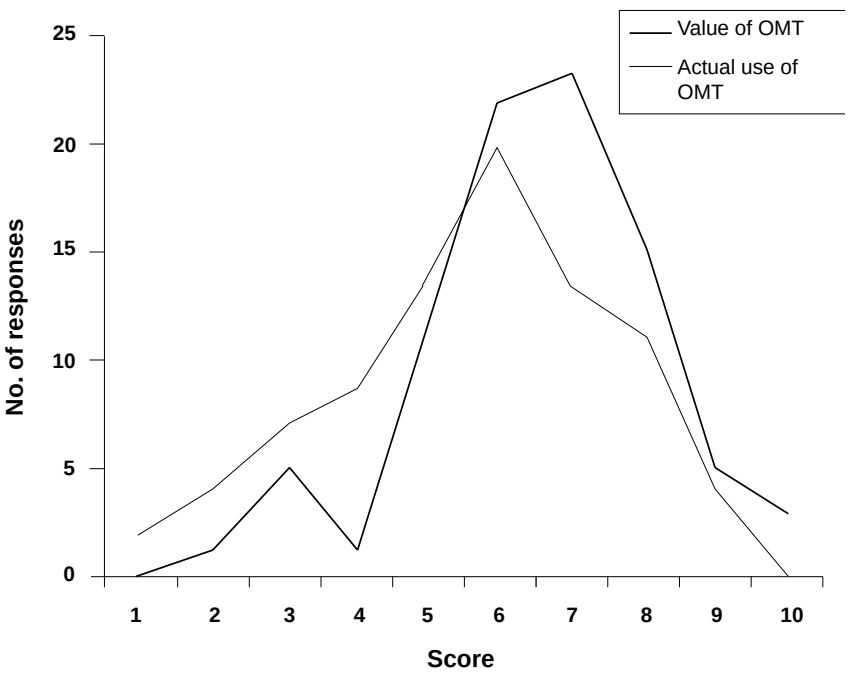

Figure 3. *Student perceptions of the value and use of osteopathic manipulative treatment during rotations.*

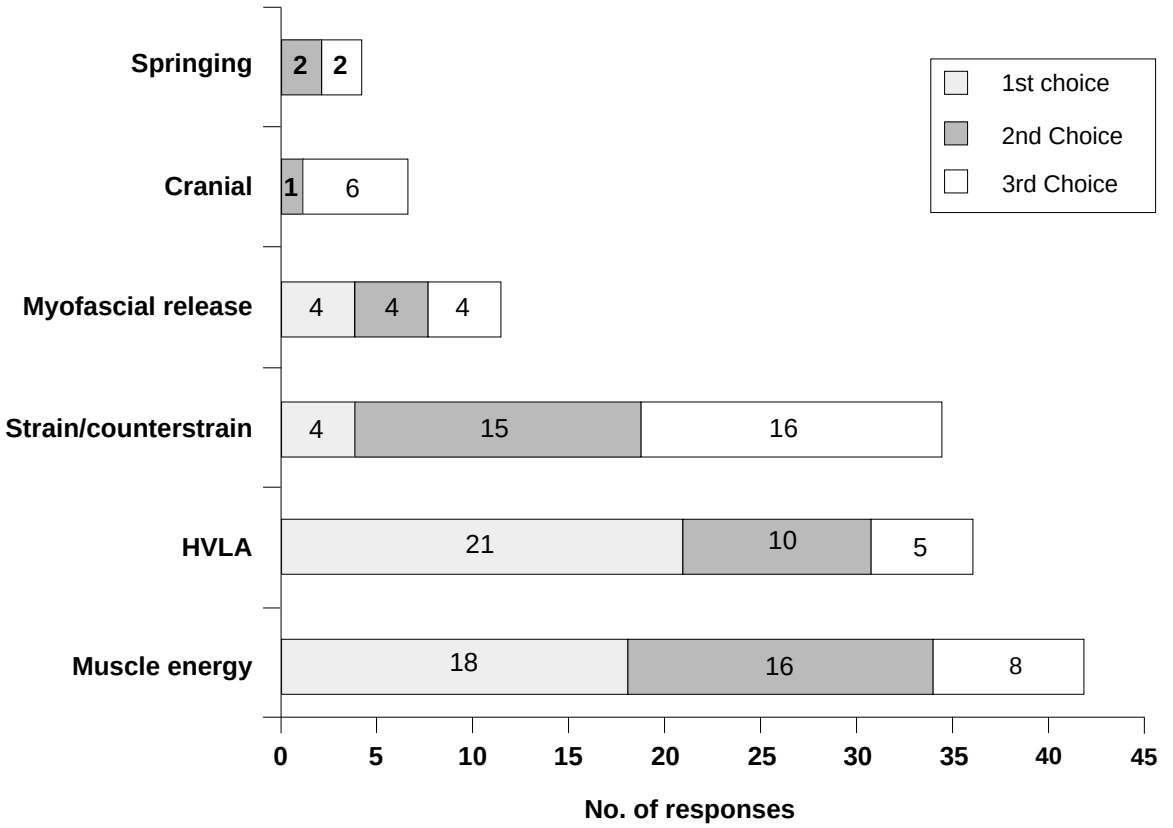

Figure 4. *Activating forces/techniques used most often by osteopathic medical students.*

ceived ability to apply osteopathic principles and the actual application of these principles on their rotations. Nearly 85% of students ranked their perceived ability to apply osteopathic principles as either "average" or "above average," and 8.1% rated their ability as "superior." With respect to the actual application of the principles, 68.6% of the respondents indicated that they sometimes or often applied those principles on rotations.

Figure 3 illustrates the relationship between students' perceived value of OMT and their actual use of OMT during rotations. Most students (82.6%) ranked their OMT skills as "useful" or "very useful." However, when asked about actual use of OMT during rotations, 65.9% of responses fell between "sometimes" to "never," indicating that a large number of students were unable to use their OMT skills to the level of perceived importance.

Table 1 gives the mean scores for the use and teaching of OMT during each rotation. Osteopathic manipulative treatment was used significantly more often in family medicine than in any other rotation ($P < .001$ for each pairwise comparison). More than 68% of the students indicated that they often or always used OMT during their family medicine rotation. In contrast, 80% of respondents indicated that they rarely or never used OMT during an internal medicine rotation. Results for the surgery rotation were similar, with 24.4% ranking their use of OMT as rare and 54.7% of students stating they never used OMT on this rotation. Nearly 83% of pediatrics rotation students ranked their use of OMT as rare or never, whereas 68.6% of students in the obstetrics/gynecology rotation ranked their use as rare or never ($P = .01$).

OMT was taught significantly more often during the family medicine rotation than any other rotation ($P < .001$ for each pairwise comparison). Seventy-nine percent of students indicated that OMT was never taught during their surgery rotation, as did 82.5% for the pediatrics rotation, 87.2% for the internal medicine rotation, and 64.0% for the obstetrics/gynecology rotation. OMT was taught significantly more often in obstetrics/gynecology than internal medicine ($P = .01$) and pediatrics ($P = .02$). Only 10.5% of respondents stated that OMT was never used during the family medicine rotation.

Nearly 39% of respondents used OMT on less than one patient a day, 31.8% indicated they used it on one patient a day, and 29.4% used OMT on two to five patients a day. The most commonly used activating force or technique was muscle energy. This was due mainly to muscle energy being most com-

Table
Use and Teaching of Osteopathic Manipulative Treatment During Clinical Rotations*

Rotation	Use score	Teaching score
Family practice	6.87 ± 2.02	6.09 ± 2.46
Internal medicine	2.98 ± 1.65	1.70 ± 1.25
Obstetrics/gynecology	3.49 ± 2.31	2.36 ± 1.88
Pediatrics	2.71 ± 1.79	1.78 ± 1.37
Surgery	2.84 ± 1.98	1.99 ± 1.85

*Data presented in aggregate as mean ± standard deviation. Scores based on a scale of 1 (never) to 10 (always).

monly employed as a second choice of treatment. High velocity low amplitude was most often chosen as first choice of treatment (25.0%). However, it was not commonly used as a secondary choice of correction (11.9%). The third most common technique chosen was strain/counterstrain. These results are presented in *Figure 4*.

Figure 5 represents students' rationale for not using OMT in patient care. More than 47% of students stated that they did not have time to treat patients with OMT. Another 21.7% cited discouragement by attending physicians, followed by 18.9% stating that they felt uncomfortable performing OMT given their skill level at the time. Only 6.6% stated they had a lack of interest in OMT.

Responses to the open-ended question on the survey revealed a desire to use and learn OMT. Such responses included the following:

☐ "I have gained some confidence in my skills. I think the manipulation rotation is very valuable and it helped integrate medicine and osteopathic principles and philosophy for me."

☐ "Osteopathic principles and philosophy has helped in avoiding symptomatic treatment and [allows me] to focus on the problem causing the symptoms. I have been able to treat problems manually that drugs were unable to touch."

However, some responses exhibited an angry undertone, including these:

☐ "I have found I often use osteopathic skills and philosophy and it is interesting to know my peers are surprised. My use of osteopathic principles is automatic—it is not something I think about."

☐ "It is unfortunate that OMT was neither taught nor used by physicians here—other than in the OMT department!"

☐ "I feel I received an allopathic clinical education in which OMT was occasionally mentioned and even more rarely employed (except on the OMT rotation)."

☐ "I will not use [OMT] in my practice under any circumstances."This last response was the most negative one of the survey.

Comments

This study demonstrated a definite interest by the students in learning and incorporating the techniques of OMT into their practice, with only 6.6% of students indicating a lack of interest in OMT. However, an overwhelming number of students indicated that OMT was rarely or never taught during many clinical rotations. Assuredly, OMT is not the only basis by which to evaluate the practice of osteopathic medicine. However, while 50% of students perceived their ability to apply osteopathic principles as "above average" or "superior," only 36% of students applied those principles more often than "sometimes" during rotations. The discrepancy between these two numbers may be explained by a lack of time to perform OMT. However, we postulate that students may not have been comfortable using the manipulative modality on patients in settings in which they were unfamiliar or inexperienced in using OMT or on patients who were younger, older, or sicker than those seen in the

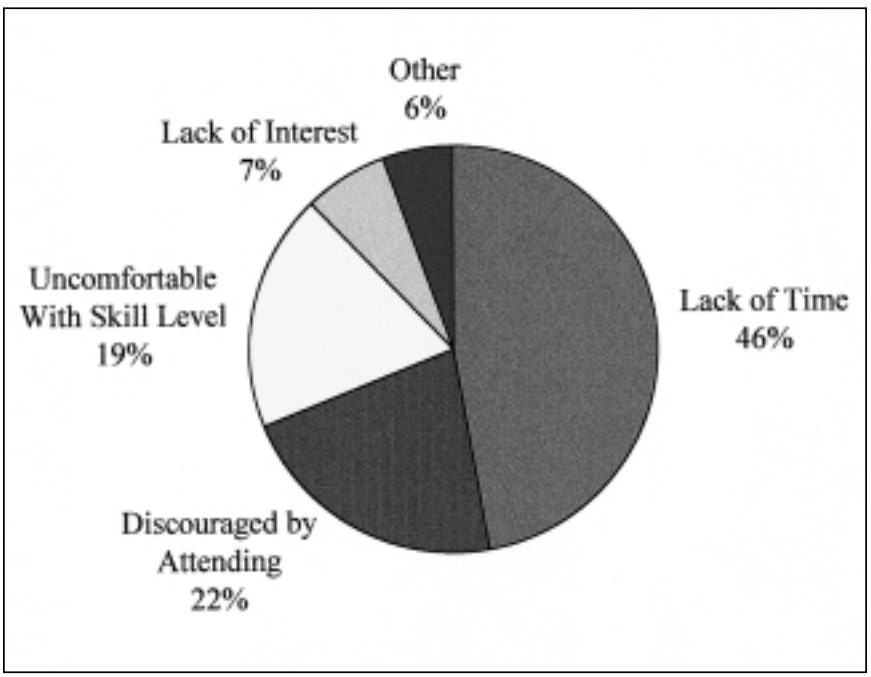

Figure 5. *Student perceptions of why osteopathic manipulative treatment was not used.*

ambulatory setting. That is, at TCOM, students are taught OMT in an outpatient, specialty setting, where they commonly practice their manipulative skills on each other or on outpatients who visit the manipulative medicine clinic.

One rather disturbing finding was the number of students (23; 21.7%) who noted that attending physicians discouraged the use of OMT during a rotation. This may be due in part to some students completing rotations in allopathic medical institutions, where physicians may not be comfortable supervising students performing OMT or may disallow OMT altogether. Alternatively, attending osteopathic physicians may not be modeling the use of OMT. Past studies have confirmed that faculty role models are important factors in the development of attitudes and use of OMT.[8]

The descriptive nature of this study does not lend itself to causal inferences. Future research in this area may expand on these findings by establishing a longitudinal study to identify predictive factors in the teaching and use of OMT during clinical rotations. Future investigators may also wish to study the correlation between the time lapse from a manipulative medicine rotation to subsequent clinical rotations and the use of OMT. Another potential limitation of the present research is the use of a nonfixed response scale. The scale used in this study specifically defined only its limits and midpoints, leaving the remaining values open to subjective interpretation. Finally, these results may not be generalizable to other colleges of osteopathic medicine. TCOM is unique in that the school requires a core 1-month manipulative medicine rotation. Therefore, these results may overestimate the extent to which OMT is taught and used in rotations at other schools.

The American Osteopathic Association's House of Delegates recently recommended stronger measures for "the integration of osteopathic principles and practices across all phases of the osteopathic medical education curriculum."[9] The lack of teaching and utilization demonstrated in the present study presents a challenge for educators at colleges of osteopathic medicine for future use of OMT.

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