Osteopathic Manipulative Medicine in the Era of the Single Accreditation System: Can the Past Guide the Way to the Future of OMM?

David M. Kanze, DO, FAAO

ORIGINAL RESEARCH

Abstract

The purpose of this study was twofold: 1) to evaluate the education of osteopathic physicians who integrate osteopathic manipulative medicine in practice and attempt to find key factors that might be viewed as best practices to be adopted by colleges of osteopathic medicine (COMs), Departments of Osteopathic Manipulative Medicine (OMM), and postgraduate training programs; and 2) to evaluate if gross human anatomy was seen as valuable in OMM training.

A 31-question, online survey was distributed to English-speaking members of the American Academy of Osteopathy (AAO) in the United States from July through October of 2016. Of the 438 respondents, 325 (74.3%) reported having a mentor in osteopathic manipulative medicine (OMM) or osteopathic manipulative treatment (OMT) while in school. In addition, 270 (61.6%) had dedicated time to practice OMT while in school, with 186 (42.5%) practicing supervised in a school clinic, 340 (77.6%) practicing during an undergraduate rotation, and 244 (55.7%) practicing after school hours. Many of the mentees participated in several of the above activities. Chi square test was applied to participants who are Fellows of the American Academy of Osteopathy (FAAOs). This test revealed that 24 of 26 (92.3%) of FAAOs, who responded, had a mentor, a statistically significant relationship between having an OMT/OMM mentor and becoming an FAAO (P=.03).

Almost all survey participants (438 [99.5%]) had some type of gross anatomy while in medical school. The majority of respondents (321 [73.8%]) performed dissections, 81 (18.6%) had both prosection and dissections, 33 (7.6%) only had prosection, and 321 (73.8%) found that it was extremely helpful in their OMM training. In comparison, 341 respondents (78.2%) reported that gross anatomy was important to their specialty.

The survey clearly demonstrated that early exposure to an OMM mentor leads to increased use of OMT and OMM and that a strong foundation in gross human anatomy was found to be useful for physicians across specialty training, including OMM.

From the Arcana Center for Integrative Medicine in Wynnewood, Pennsylvania.

Disclosures: none reported.

Correspondence address:
David Kanze, DO, FAAO
Arcana Center for Integrative Medicine
300 Lancaster Ave., Suite 201B
Wynnewood, PA 19096
(267) 437-3299
2dockanze@comcast.net

Submitted for publication March 26, 2019; final revision received August 16, 2019; manuscript accepted for publication December 10, 2019.

Dr. Kanze prepared this thesis as one of the requirements to earn fellowship in the American Academy of Osteopathy. The Committee on Fellowship in the AAO provided peer reviewing for this article, and it was edited to conform to the *AAOJ*'s style guidelines.

Background

The use of osteopathic manipulative medicine has been steadily decreasing among osteopathic physicians despite the increase in the number of osteopathic medical schools.[1,2,3] The single accreditation system could cause a further decrease in the use of OMM, or it could enhance its usage.

Osteopathy was created to fill a void in the medical science of the late 19th century.[4] In the century and decades since, it has evolved into *osteopathic medicine*, a complete system of medical practice that emphasizes the body's innate ability to heal itself and the relationships between structure and function. Osteopathic medicine is practiced by fully licensed physicians, and it integrates the needs of the individual patient with current medical practices including obstetrics, surgery, and medicine.[5(p33)]

(continued on page 18)

(continued from page 17)

As an evolving system, osteopathic medicine has been misunderstood, seen as "alternative" or outright rejected mainly because of the use of osteopathic manipulative medicine (OMM) and osteopathic manipulative treatment (OMT).[1,2,4,6,7,8]

OMM refers to the use of the osteopathic philosophy while treating patients, generally including the use of OMT. OMT refers to the manual treatment thereof by a U.S. physician.[5(p28)] While osteopathic medicine, including OMT, is now accepted, it is still commonly misunderstood even among colleagues and especially among medical staff.[6] This misunderstanding is most likely because of the terms *osteopathy* or *osteopathic*. Many people believe osteopathic physicians are simply "bone doctors." This, of course, is not true, as osteopathic physicians span the spectrum of medical specialties but share a common genesis, *finding the root cause of suffering*.

The use of OMM is decreasing nationwide despite the increase in the number of osteopathic medical schools.[1,3,9,10,11,12,13,14] Many have seen the single accreditation system (SAS) as the culmination of what Dr. Andrew Taylor Still would have wanted, while others have seen it as the death knell of our profession as it will further blur the lines between osteopathic and allopathic physicians. In order to maintain our osteopathic distinctiveness, we need to educate allopathic and osteopathic students, residents, and physicians in OMM and OMT. This can be accomplished by utilizing physicians who are not only teaching OMM and OMT but who are practicing it, excelling at it, and championing it.

The Single Accreditation System

The SAS began in 2014 as a Memorandum of Understanding (MOU), between the American Osteopathic Association (AOA) and the Accreditation Council for Graduate Medical Education (ACGME) that outlined a single graduate medical education accreditation system in the United States.[15,16,17] Before the SAS, allopathic students were not accepted into programs accredited only by the AOA. The SAS allows all students, whether DO or MD, to apply for and matriculate at any residency program. The ACGME, in coordination with the AOA, as part of the SAS, created a program for osteopathic recognition so that all residents, DO or MD, could benefit from osteopathic training. The SAS created an Osteopathic Principles Committee that, in turn, formulated a set of standards that became osteopathic recognition. As of June 2020, the AOA will no longer accredit residencies.[18,19] Dr. Still desired osteopathic medicine for the masses.[4] The SAS may help the medical community achieve this, or it may dilute the osteopathic concept into extinction.

Osteopathic Recognition

Medical students and residency program directors alike value osteopathic recognition[20,21,22] despite multiple studies detailing the declining use of OMM.[22,23] The interest in OMM and OMT wanes after the first 2 years of medical school, and the use of OMT is declining among osteopathic residents and physicians.[2,3,9,10,11,12,13,14,24] This is true in spite of an increase in the number of colleges of osteopathic medicine (COM).[13] Ching expounded upon this by discussing osteopathic postgraduate training by stating many DOs used to complete a traditional rotating internship and then enter into practice. She explained how more DO students entered into ACGME residencies rather than AOA residencies and provided the various reasons why this was occurring, specifically geography, lack of specialty access, and lack of prestige among the AOA-approved residencies and fellowships.[13] The SAS should resolve these issues during residency, especially if there is a way to mentor and train our DO students and residents to function osteopathically.[13] In this effort to incorporate the SAS, the University of Washington's WWAMI (Washington, Wyoming, Alaska, Montana, Idaho) network is actively assisting its AOA-only programs to become accredited by the ACGME and is encouraging osteopathic recognition in its residency programs.[20,21,22]

According to Veit, "most students chose to utilize osteopathic principles and practices because they have had a relationship with an osteopathic primary care mentor."[25] Teitelbaum found that students were more likely to choose osteopathic residency programs if they had an osteopathic mentor.[26] Rubeor et al, found that osteopathic residents in allopathic programs were less likely to utilize OMM frequently because "they lack adequate mentors and equipment."[27]

Mentoring

A mentor is defined as, "a wise and trusted counselor or teacher,"[28] and can be attributed to Homer's *The Odyssey*.[29] The term *doctor* is derived from the Latin "docere" meaning "to teach." Mentoring has been extensively researched, and the outcomes of these studies have shown that job satisfaction, productivity, advancement, effective teaching, and salaries are increased while career proficiency, socialization, and working relationships are created and maintained.[29] Mentors also receive increased satisfaction as they, often, receive recognition for being a mentor and can rejuvenate themselves and their careers by working with younger people.[29,30,31] In fact, osteopathic students and residents have called mentoring "critical" in the first years of a career.[29]

Studies have demonstrated that "mentoring introduces the protégés to and reinforces their understanding of the various standards of practice, conduct and participation which are underpinned by a

(continued on page 19)

(continued from page 18)

set of professional values, and constitute acceptable norms within a profession."[29,30] Kashiwagi et al called mentoring "vital to professional development in the field of medicine, influencing career choice and faculty retention."[32]

Mentoring is vital. It has shown a clear benefit to multiple professions, including osteopathic medicine, especially in the areas of OMT and OMM.[27,33] In fact, among osteopathic medical students, an earlier exposure to OMT, even in the premedical years, portrayed higher levels of agreement with the osteopathic concept and the intention of utilizing OMT in the future.[34] Other medical specialty based studies have depicted that among students, career choice and job satisfaction have been shown to be influenced by mentors as well.[35,36,37] The Draper study also demonstrated the congruence with the osteopathic concept and the intention to utilize OMT was dependent on which COM they attended.[34] This most likely can be attributed to mentorship, whether direct or indirect, in the particular college of osteopathic medicine. Multiple studies[2,3,9,10,11,12,13,14,34] have shown that interest in utilizing OMT and the osteopathic concept decline as students participate in their clinical years of school, and one even stated that osteopathic physicians discouraged the use of OMT as a treatment modality in the hospital.[2,3] This same study elicited that OMM/OMT rotations were very valuable, perhaps secondary to mentorship and direct "hands-on" time with an attending physician.[3] These studies indirectly show that mentorship is key to the preservation of osteopathic distinctiveness.

Purpose

This study evaluated the relationships between how our current physicians came to utilize OMM and OMT. It evaluated their use of osteopathic principles and practices, their exposure to anatomy, their residency training, and their utilization of mentorship.

There were multiple endpoints, including the comfort using OMT/OMM in various years of medical school training, residency training, as well as, outside training. Secondary endpoints included evaluating the number of COM faculty certified by the American Osteopathic Board of Neuromusculoskeletal Medicine (AOBNMM) or certified for special proficiency in OMM (C-SPOMM) at time of matriculation and during residency. It also helped to determine what physician specialties, including NMM/OMM, have been utilizing OMM. Other secondary endpoints included the types of techniques that physicians who utilize OMM[35] perform most often and for what conditions.[38,39]

Methods

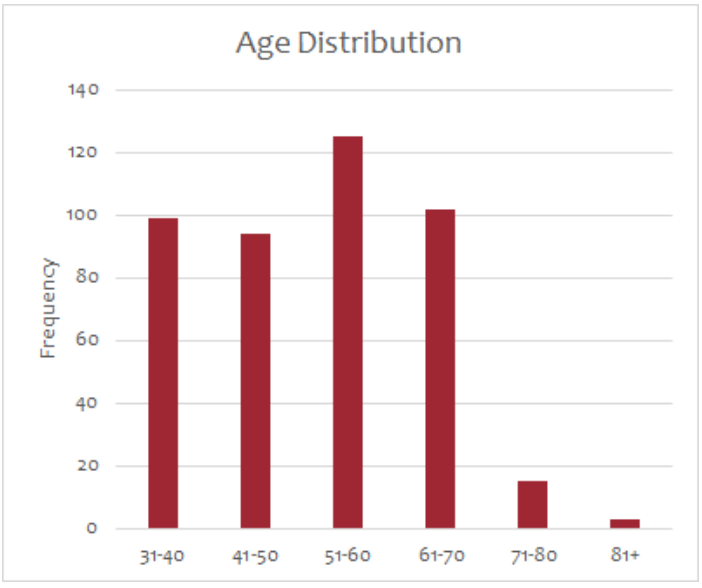
A 31-question, online survey *(see Appendix)* was distributed to English-speaking, U.S.-trained DOs who were full members of the American Academy of Osteopathy (AAO) in July 2016 and again in October 2016 utilizing the REDCap electronic data collection services.[40] Survey data was imported into SPSSv24.0 software (IBM Corp.) and summarized using frequencies and percentages. Associations between ordinarily scaled metrics were tested for significance via exact Kendall's tau test. Nominally scaled metrics were tested for distributional equality via Pearson chi-square test. All statistical testing was 2-sided with $P<0.05$ considered statistically significant.

Of the 1157 fully licensed U.S. DO members of the AAO to whom the survey was sent, 438 responded (37.86%). This is greater than the average standard response rate among the medical community of 35%.[41] This data will help dictate what we need to do in the future, in our schools and residencies, for osteopathic medicine to maintain its osteopathic distinctiveness and to introduce and educate our allopathic colleagues to osteopathic principles and practices including OMM and OMT.[20,21,22]

Results

Physicians responding to the survey represented 25 of the 37 campuses of the colleges of osteopathic medicine (COM) from all geographical areas of the United States that were in existence at the time the survey was distributed. Several of the COMs were not represented, as they have not yet had graduates from residency programs. Physicians aged 31 to over 81 were represented *(see Figure 1)*.

Figure 1. *Survey respondents represented physicians aged 31 to over 81.*



(continued on page 20)

(continued from page 19)

Graduates ranging from 1956 to 2013 responded with the largest number of respondents having graduated in 2009 *(see Figure 2)*. The largest number of respondents (93 [21.3%]) completed residencies within the last 5 years.

Contrary to numerous published studies stating that the overall usage of OMM/OMT among all DOs is decreasing,[2,3,9,10,11,12,13,14,34] respondents in this study were found to practice OMM often, and the greatest number of AAO members utilizing OMM/OMT had completed residencies within the last 5 years (96 [21.9%]).

A broad spectrum of practice types was represented as well, with 316 (72.2%) being in private or group OMM practices, 74 (16.9%) in multispecialty practices, 119 (27.2%) in academic institutions, and 18 (4.1%) who were not practicing. Of the respondents, 78.1% are currently teaching OMM/OMT.

Table 1 depicts how OMM/OMT physicians overwhelmingly are involved in teaching. Many of these physicians teach students and residents in addition to leading continuing medical education (CME) courses.

Table 1. *Of the 438 respondents, 342 (78.1%) continue to teach osteopathic manipulation.*

Currently Teach OMT/OMM	Frequency	Percent
College of osteopathic medicine	136	31.1
Residency program	103	23.5
CME courses	143	32.6
Students on rotation	242	55.3
Residents on rotation	173	39.5
Not currently teaching OMT/OMM	96	21.9.

Residency-trained family physicians had the highest representation among study participants with 159 respondents (36.7%) completing traditional family medicine programs and 31 (7.2%) completing integrated family medicine and neuromusculoskeletal medicine (NMM) programs. The second highest group of respondents were those trained in NMM/OMM residency programs (79 [18.2%]), and the third highest represented group completed only an osteopathic or traditional rotating internship (48 [11.1%]). *Table 2* lists complete residency information for respondents.

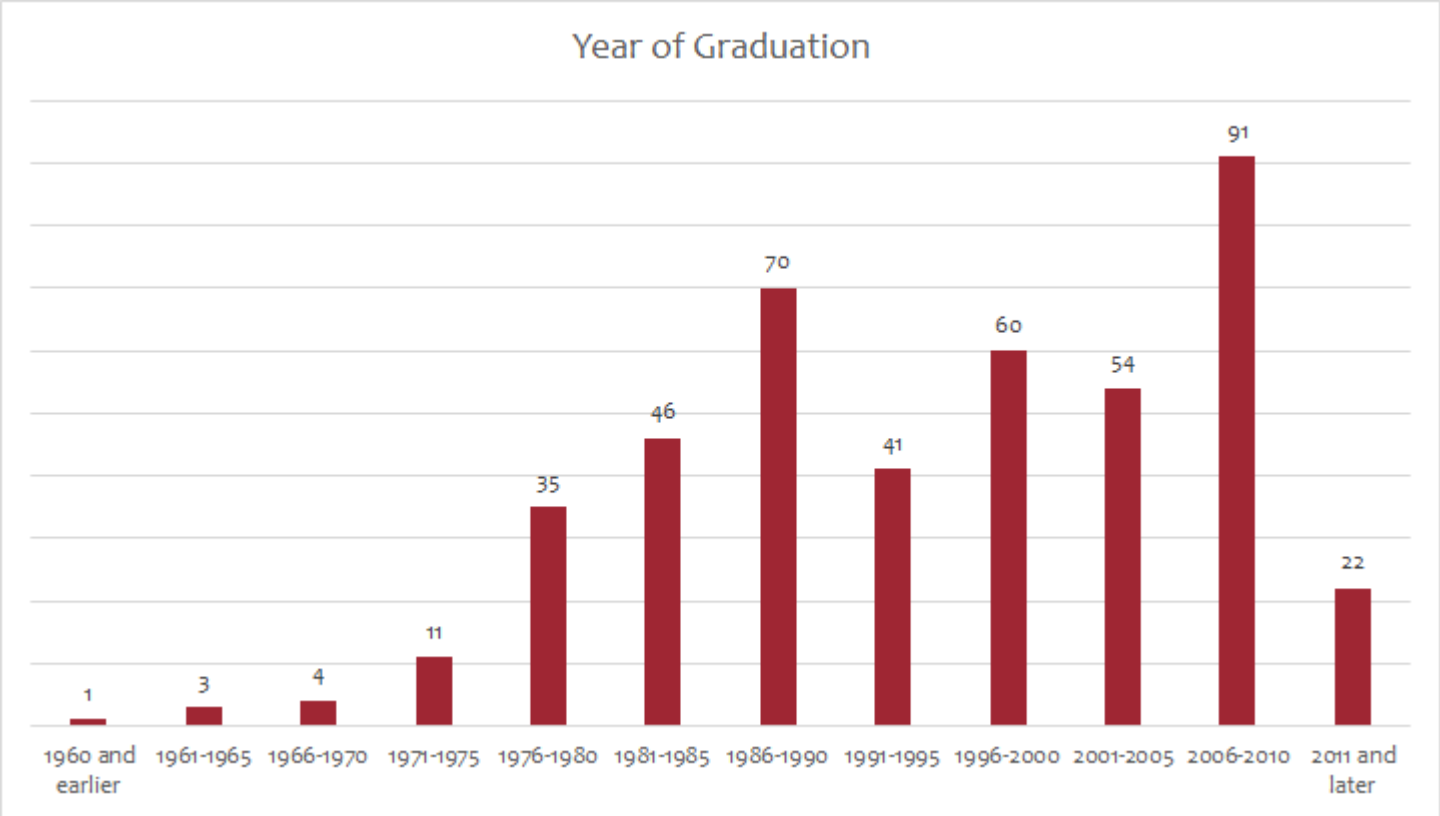


Figure 2. *While respondents represented graduating classes from 1956 to 2013, the largest number of respondents graduated in 2009.*

(continued on page 21)

(continued from page 20)

Table 2. *Family medicine residents were the most represented among survey participants, followed by NMM-trained residents.*

	Frequency	Percent
Emergency medicine	15	3.5
Family medicine	159	36.7
FM/NMM	31	7.2
IM/NMM	4	0.9
Internal medicine	20	4.6
Internship only	48	11.1
Neurology	2	0.5
Neuromusculoskeletal medicine (NMM/OMM)	79	18.2
Ob/Gyn	6	1.4
Orthopedics	1	0.2
Other	33	7.6
Pediatrics	11	2.5
Physical medicine and rehabilitation	20	4.6
Surgery	4	0.9
Total	**433***	**100.0**

**Five respondents did not provide their residency information.*

Of the participants, 81 (18.5%) completed an NMM Plus-1 residency, 122 (27.9%) were undergraduate fellows in osteopathic principles and practices or OMM, 294 (67.1%) are SPOMM- or NMM-certified, and 26 (5.9%) are FAAOs.

There was a great variance in the number of C-SPOMM or C-NMM/OMM physicians teaching at the COMs at the time of the respondents' matriculation. The survey did not distinguish between full-time and part-time faculty. A majority of respondents (306 [70.3%]) came from COMs with at least 1 faculty member who was NMM- or SPOMM-certified[42] *(see Figure 3)*. Of the 435 respondents who answered this question, 147 (33.8%) reported attending COMs with 5 or more certified faculty on staff, and 349 respondents (80.2%) reported their COMs had at least one FAAO faculty member with 2 being the most frequent (94 [21.6%]). Some respondents reported in the comment section of the survey that they attended school before the SPOMM or NMM/OMM certifications were established.[43]

While in school, 270 (61.6%) of study participants had dedicated time to practice OMT, with 186 (42.5%) practicing with an accomplished DO in a school clinic, 340 (77.6%) practicing during one or more student rotations, and 244 (55.7%) practicing after school hours.

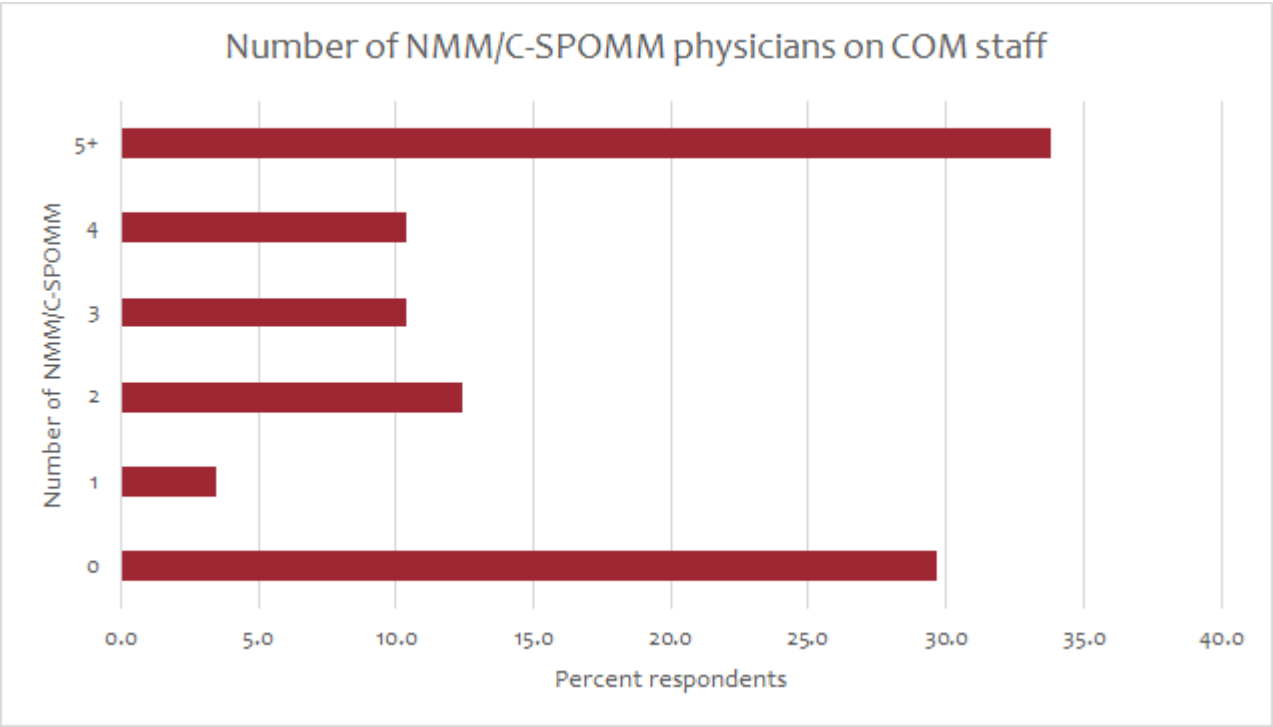


Figure 3. *The majority of respondents reported attending COMs with at least one NMM- or SPOMM-certified faculty member on staff.*

(continued on page 22

(continued from page 21)

Of the respondents, 325 (74.3%) participants reported having an OMM/OMT mentor as well. Many spent extra time doing OMT, including but not limited to, shadowing OMM mentors, participating in CME courses, or being members of the Student American Academy of Osteopathy (SAAO) or its predecessor, the Undergraduate American Academy of Osteopathy (UAAO).

Osteopathic medical students report their greatest exposure to OMM/OMT is during the first and second years of medical school, and this gradually declines during their clinical third and fourth years and is almost nonexistent in their residency training.[3,14,34,44,45] This survey's participants reported that 391 (90.1%) of them utilized OMT in their residencies even though 263 (60.3%) of the residency sites did not have an NMM/OMM- or SPOMM-certified physician on site.

According to survey data, 437 out of the 438 (99.8%) participants apply OMT at least some of the time with the vast majority (280 [63.9%]) utilizing OMT 80% to 100% of the time. This is not representative of the osteopathic community , but it does show that AAO members are performing OMT/OMM at an incredible rate.[2,9]

Respondents practice a broad spectrum of osteopathic techniques depending on patient needs and physician comfort *(see Figure 4).*[35,39,45] The most utilized technique overall was osteopathic cranial manipulative medicine (formerly called osteopathy in the cranial field), which was reported used by 405 (92.5%) of respondents; followed closely by muscle energy, used by 404 (92.2%); and myofascial release, used by 402 (91.8%).

Participants report treating a variety of diseases and injuries, the most common being treatment of the spine to alleviate back pain (16.4%) followed by "everything" (16.0%) and dysfunctions and disorders of the head (14.7%). Other answers included additional areas of the musculoskeletal system, trauma, developmental problems, joint dysfunctions, inflammation, temporomandibular joint disorder, and visceral issues. Of those who responded to the survey, 63.7% reported using OMT to treat musculoskeletal complaints. When the study included the physicians who answered "everything," it arrived at a total at 79.4% who treat musculoskeletal problems. This corresponds to a recent study that reviewed common conditions being managed with OMT. That study revealed 68% to 75% of the diagnoses where OMT was utilized were musculoskeletal in origin.[48] *(See Figure 5.)*

Additional analysis of variance (ANOVA) was utilized to discover how to maintain osteopathic manipulative medicine. A chi square test was applied to participants who are FAAOs. This test revealed that 24 of 26 (92.3%) of responding FAAOs had a mentor. This showed a statistically significant relationship between having an

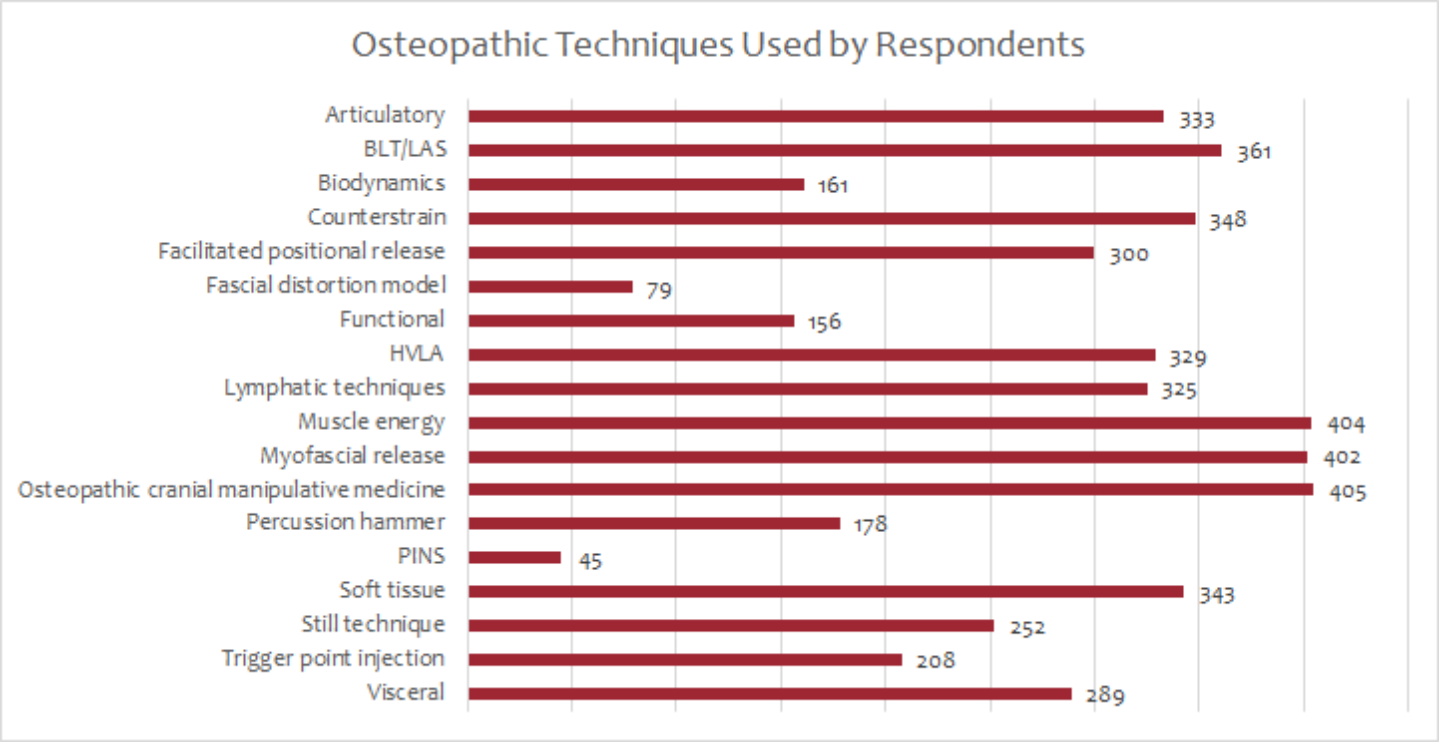


Figure 4. *While respondents reported using a broad spectrum of osteopathic manipulative techniques, osteopathic cranial manipulative medicine (OCMM) was the most popular.*

(continued on page 23)

(continued from page 22)

OMT/OMM mentor and becoming an FAAO (P=.03). Additional cross tabulations revealed a statistically significant correlation between being an FAAO and increased usage of OMT (P=.04 via exact Kendall's tau test).

Another cross tabulation of study participants yielded a positive, statistically significant relationship between years post-residency and increased OMT use (P=.001 via Kendall's tau test). *Figure 6* depicts the years post-residency and their corresponding percentage of usage of OMT. For example, 6 of 93 (6.5%) participants 0 to 5 years post-residency reported using OMT 0% to 19% of the time.

The small sample sizes of respondents from each of the COMs did not allow for a statement of significance for the amount of OMT performed by each school's graduates. However, 360 (82.2%) of participants from all of the COMs use OMT at least 40% of the time.

Almost all (436 [99.5%]) of survey participants were taught gross anatomy while in medical school: 321 (73.8%) performed dissections; 81 (18.6%) did both prosection and dissections; and while a small minority (33 [7.6%]) only did prosection. The majority (358 [86.7%]) had gross anatomy for more than 4 months, and no one had it for longer than 1 year. Some (55 [13.3%]) only had it for 3 months or less. Only 5 (1.1%) of participants felt that gross anatomy was not helpful to their OMM training while 321 (73.8%) found that it was extremely helpful to their OMM training. In comparison, 341 (78.2%) reported that gross anatomy was important to their specialty while only 1 (0.2%) found it not helpful at all.

Limitations

The study was limited in several regards as the survey was only sent to English-speaking, fully licensed U.S.-trained DO members of the AAO and no student, resident or international members were surveyed. It was only given to the group (the AAO) most likely to utilize OMM and OMT and it was a survey based on the memories of those surveyed as well.

To improve the data in the survey, a longitudinal approach could be taken and a similar survey could be provided to all students entering the COMs, and then again in their third year, fourth year, intern year, immediately after residency and again 5 years after residency, regardless of specialty. This would allow the osteopathic community a more accurate picture of osteopathic training to provide a platform for continuous reassessment and improvement of this very needed practice.

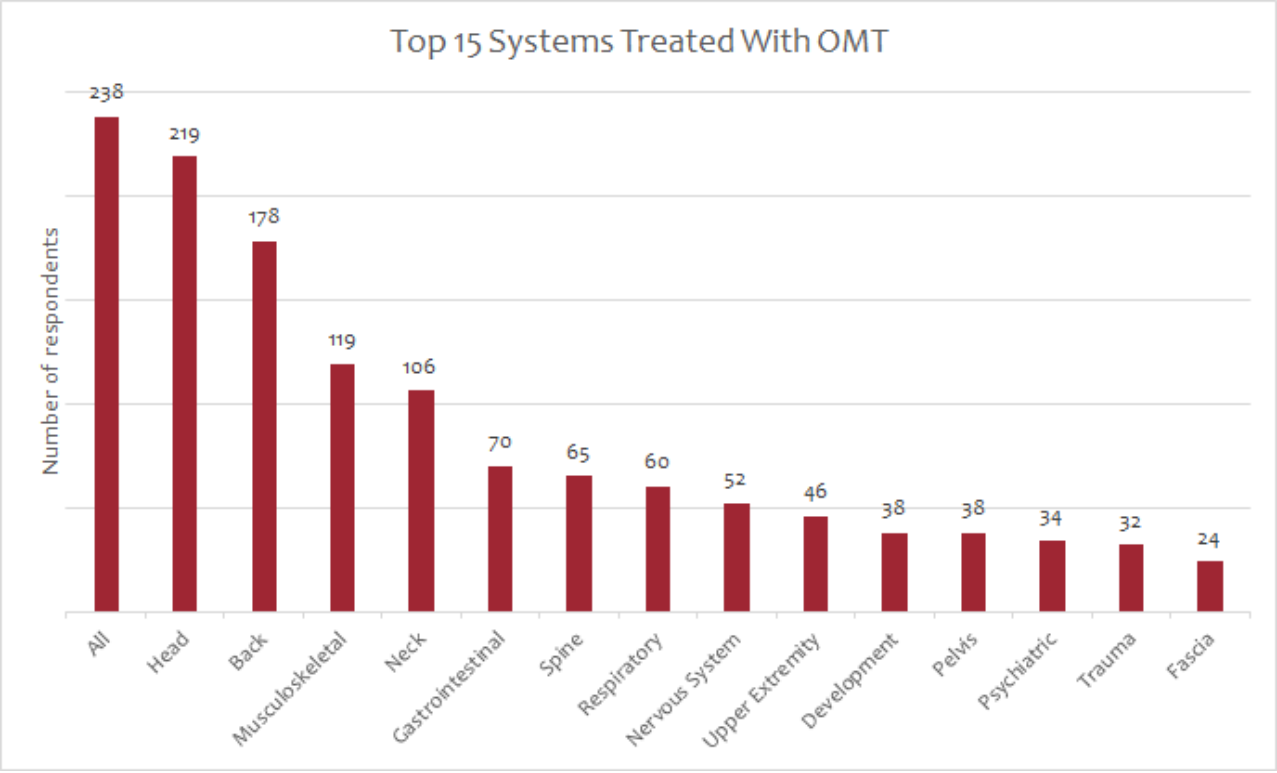


Figure 5. *Top 15 systems treated with osteopathic manipualtive treatment by survey participants.*

(continued on page 24)

(continued from page 23)

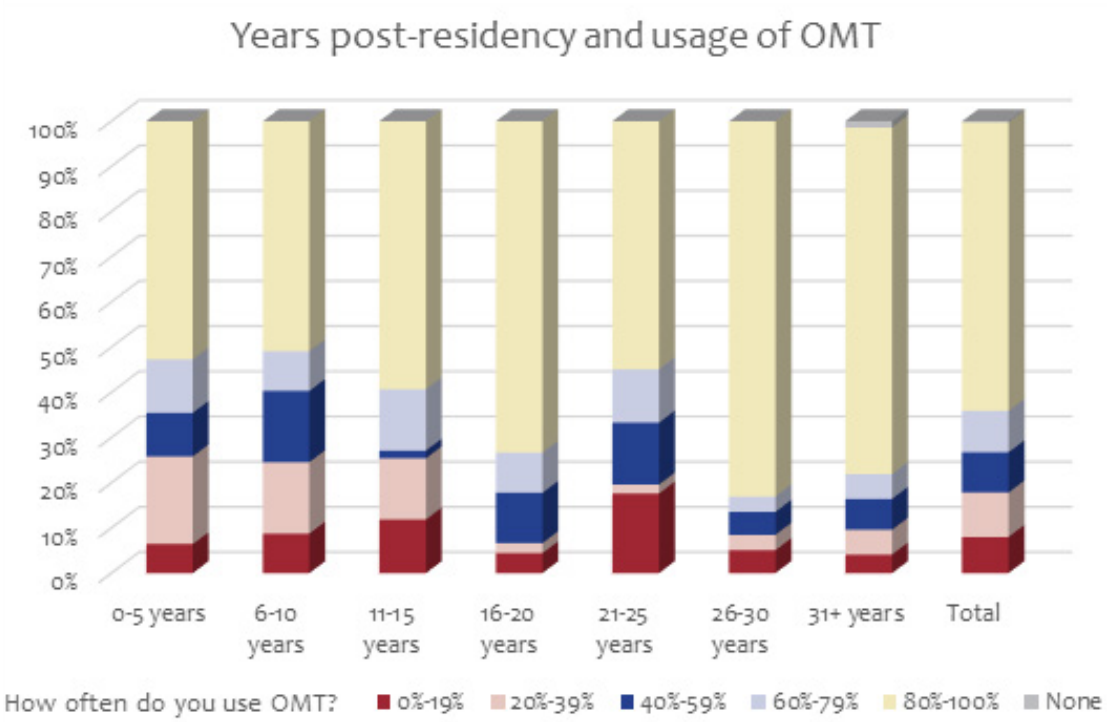


Figure 6. *A crosstabulation of time post-residency and usage of OMT (percentage of time).*

Discussion and Next Steps

The survey delineated and confirmed that members of the AAO perform OMM utilizing every different type of OMT in the armamentarium for all sorts of conditions, the majority of which are musculoskeletal in nature.

The survey also detailed that a strong foundation in gross human anatomy was found to be useful for physicians across specialty training and practicum. Dr. Still wrote, "An osteopath [-ic physician] reasons from his knowledge of anatomy. He compares the work of the abnormal body with the normal body."[46] Osteopathic medicine grew from "the bones" as Dr. Still garnered a knowledge of anatomy from local graves.[4] Still absorbed all the information he could from the dead, including the normal and abnormal anatomy. This knowledge of anatomy guided Dr. Still's treatments and laid the groundwork for the profession. In contrast to this, Moxham and Pais have stated the number of hours of gross anatomy instruction have decreased in medical school in the United States.[47] In addition, new teaching methods that exclude cadaveric teaching have been introduced as well. The decline in gross anatomy and its consequences have been denounced by surgeons and other clinicians alike.[47]

The survey clearly characterized that early exposure to an OMM mentor leads to increased use of OMT and OMM. It is apparent that resources for mentoring at each of the COMs are present but perhaps they need to be made more available to students not only in the preclinical years, but in the clinical third and fourth years and in residency training as well. This is secondary to the proven decline in interest in OMT during those times.[2,3,44]

Furthermore, the survey clearly characterized that having an OMM mentor directly leads to becoming an FAAO and that FAAOs utilize more OMT and OMM. It did not show that having more NMM/C-SPOMM faculty present during medical school or residency created more physicians who use OMM. COMs were about equal in creating members who utilize OMM with their patients over 40% of the time despite having different numbers of NMM/C-SPOMM certified physicians.

Figure 3 depicted the numbers of NMM/C-SPOMM certified physicians on site while students matriculated, and 129 (29.7%) of respondents reported that the COMs did not have any OMM certified physicians on staff. Multiple explanations exist for this response, including the fact that many respondents attended their COM prior to the designation of C-SPOMM or NMM certification existing. A comment was emailed to the AAO stating this was the case. The C-SPOMM designation was formally adopted in 1990 and changed to its current moniker of NMM/OMM in 1998.[43]

In addition, this survey depicted how OMM/OMT, like other specialties and procedures, perpetuates itself as practicing physicians

(continued on page 25)

(continued from page 24)

are teaching and mentoring the next generation. *(see Table 1)* The Royal College of Surgeons advocates mentoring at "all stages of a surgeon's education and career," and offers guidance and a publication on such.[49,50] Mentoring is a concept that needs to be expanded and supported in osteopathic arenas as it is in other specialties.

In order to support and expand the current mentorship initiatives and for these initiatives to be successful, a multipronged approach should be created, and it ought to begin with prospective medical students and continue through the preclinical medical school years (years 1 and 2), the clinical medical school years (years 3 and 4), residency, and throughout professional life.

Despite an ongoing advertising campaign by the American Osteopathic Association,[51] public knowledge of OMT is lackluster at best. In fact, no results on public knowledge of OMT exist via Google search. Patients who have received OMT advocate for its usage and become the first step in educating the public. They also are prospective osteopathic physicians and should be mentored as such by their physicians. The premedical advisers at colleges and universities around the United States should be educated about the values, virtues, and philosophies of osteopathic medicine and its distinct advantages, and they, in turn, can advise prospective physicians in applying for osteopathic medical school. These advisers should have a list of local osteopathic physicians that utilize OMT and who encourage and enjoy mentoring premedical students, in order to prepare them for osteopathic medical school interviews and in the use of OMT.

The exposure to OMT and mentoring has been proven by multiple studies to be most prevalent during the preclinical years of medical school.[27,29,32,34,38] This is most likely due to the mandatory attendance at osteopathic manipulative lab sessions and in preparation for boards. It also may be attributed to interested students shadowing local and COM physicians who utilize OMT. Physicians teaching OMT should be seen utilizing OMT to reinforce its use. Mandatory quarterly OMT shadowing could be implemented by the COMs to highlight osteopathic distinctiveness. OMT exposure declines greatly during the clinical and residency years, except in NMM residencies, as many have reported not seeing the use of OMT during this time.

There are many barriers to utilizing OMT in students' clinical years, such as rotations with allopathic or osteopathic preceptors who do not utilize OMT. This again can be addressed with COM- or AAO-sponsored OMT weeks or shadowing experiences. It can also be altered with mentoring. Mentoring can continue through the clinical years in various proven ways. Borrowing strategies from other specialty groups that have established mentoring policies and procedures could prove helpful. The Royal College of Surgeons has a procedure manual that details mentoring and introduces 2 mentoring models; the Egan model and the GROW model.[50] The Egan model works on empowering the mentee while the GROW model encourages goal identification and assessments of how to achieve them.[50] Alternative models that could be utilized include the apprenticeship, cloning, nurturing, and friendship models.[52] Other methods that could be employed include distance mentoring (from inside or outside the student's COM or the AAO), group mentoring sessions, local mentoring (from the institution, local/regional AAO component societies/study groups or rotation site) and peer mentoring.[32] Installing distance mentoring programs in the COMs for third- and fourth-year students would require financial, temporal, and personal resources; although with the increasing use of online training, it is easier to accomplish than it once was. The AAO could assist by creating a central database of evidence-based osteopathic treatments for common ailments encountered during the third and fourth year. These essential treatments could then be further researched and confirmed in multi-centered studies by the COMs utilizing them.

Further assistance can be provided to medical students and residents though group mentoring sessions. These take place currently regionally in the form of osteopathic study groups, Osteopathic Postdoctoral Training Institutions (OPTIs) and regional component societies of the AAO. These groups can expand their numbers by including local rotating students and residents. This would enhance the societies' exposure and should increase the usage of OMT among the students and residents who attend these sessions. These societies and organizations would also garner members for themselves and the AAO as a whole. Moreover, they would create relationships that could become the basis for local mentoring and lifelong mentoring amongst attendees. This also may help to fulfill some of the required training and journal club requirements for residencies to obtain and maintain osteopathic recognition. If the study groups had local and regional sessions for residency programs, this could reduce the burden of residencies finding OMT instructors and also could reduce cost for the residencies, increase exposure for OMT, and help residents and students gain valuable OMT instruction.

The AAO Membership Committee currently hosts mentoring/mentee sessions annually during the AAO's Convocation. These sessions are designed to begin a mentor/mentee relationship in the standard dyad mentorship method. These relationships can then blossom via the distance or local models depending on the actual distance between the mentor and mentee. This program should be expanded to include other AAO-sponsored events, continuing medical education courses and throughout the year.

(continued on page 26)

(continued from page 25)

Mentoring is known to reap benefits for the mentor and mentee alike.[53] Increasing the usage of OMT is one of these benefits, and to obtain osteopathic recognition, the mentoring relationship must be strong. The members of the AAO with experience in the application process, residency teaching, hospital policy and the like, must mentor the less experienced members of the AAO and the osteopathic and allopathic communities in order for osteopathic recognition to be obtained and maintained at more than its foundational levels. This will increase the usage of OMT and should open new research opportunities to prove how and what OMT is useful for. This in turn should result in an upsurge of the number of physicians utilizing it and championing it, thereby maintaining osteopathic distinctiveness for future generations.

As residency program directors, residents, and students are desiring osteopathic recognition, current OMT physicians should help residency programs achieve this recognition.[20,21,22,23] In fact, residency directors of programs with OMT curricula perceived their osteopathic residents' academic preparation as superior to those without OMT curricula.[24] This is most likely due to the increased anatomic learning that takes place. To help with osteopathic recognition, OMT curricula can be passed down from mentors to mentees and can be shared with residency programs in order to help create a national standard of excellence. Again, an AAO centralized database that is specialty-specific and evidence-based could be created to assist in this regard. This database should include written articles, techniques (video and described) for residencies and COMs to stream for usage.

This standard of excellence could result in certificates of excellence in OMT for programs achieving osteopathic recognition, once again increasing the overall knowledge of OMT. In the era of the SAS, certification will be the standard to which all of us will be held. What is unknown is whether it will become easier or more difficult to maintain osteopathic distinctiveness. In January 2017, Levine published a "call to action" for osteopathic graduate medical education (OGME) programs to step up and apply for ACGME accreditation and osteopathic recognition.[54] As of August 2019, there were 220 programs that had achieved or applied for osteopathic recognition.[55] These programs are both allopathic and osteopathic.

Conclusion

This survey proved that mentorship is the key to maintaining osteopathic distinctiveness. This concept is not new, but with the evidence provided above that proves mentorship creates FAAOs and that FAAOs utilize the most OMT, it proves that mentorship is the key to maintaining OMT. The AAO is in the prime position to provide mentorship to the COMs, residencies, and programs pursuing osteopathic recognition. The creation of an evidence-based OMT database by the AAO can go a long way in helping COMs and programs achieve this.

ACGME program directors and osteopathic students want osteopathic recognition and with such, recognition and appropriate OMM mentorship.[20,21,22,23] Program directors of programs with OMT curricula perceived their osteopathic residents' academic preparation as superior to those without OMT curricula.[24] This is most likely due to the reinforcement of key concepts including anatomy, the interconnectedness of the body, and neurologic concepts. With the above data and these wants, we can achieve Dr. Still's goal of osteopathic medicine for all: "Dr. Still never contemplated for a moment the keeping of his discoveries a secret. His one concern, after he had developed Osteopathy into a complete system, seemed to be how he could best give it to the public so that it might most effectually bless mankind."[56]

Finally, utilizing OMM/OMT mentoring in conjunction with the single accreditation system (SAS) with osteopathic recognition, may prove to integrate the best of what medicine has to offer. This mentorship can cross boundaries, imbuing the strength of allopathic research and innovation, humanism, and the 4 tenets of osteopathic medicine to create caring, humanistic, patient-centered physicians. This very well could become the culmination of what Andrew Taylor Still, MD, DO, envisioned when he unfurled the banner of osteopathy (osteopathic medicine) on June 22, 1874.[4]

Acknowledgements

Douglas Hayes, DO, compiled and analyzed data for this manuscript.

I would like to acknowledge Wm. Thomas Crow, DO, FAAO, for mentoring me through the FAAO process. I also thank Dr. Crow; Stephen I. Goldman, DO, FAAO; Stephan Hagopian, DO, FAAO; and Viola M. Frymann, DO, FAAO, for being my Mt. Rushmore of mentors; and Leann D. Jons-Cox, DO; Virginia M. Johnson, DO, MBA, FAAO; Precious L. Barnes, DO, MS, MS; Allison Abresch-Meyer, DO; and Allison Franklin, DO, along with the above mentors for reviewing and assisting me with the survey prior to its release. And mostly I thank Kylie Kanze, DO, for all of the above and for helping me through the entire process.

References

1. Meyer CT, Price A. The crisis in osteopathic medicine. *Acad Med*. 1992;67(12):810-816.

(continued on page 27)

(continued from page 26)

2. Johnson S, Kurtz M. Diminished use of osteopathic manipulative treatment and its impact on the uniqueness of the osteopathic profession. *Acad Med.* 2001;76(8):821-828.
3. Gamber RG, Gish EE, Herron KM. Student perceptions of osteopathic manipulative treatment after completing a manipulative medicine rotation. *J Am Osteopath Assoc*. 2001;101(7):395-400.
4. American Osteopathic Association. (2010). *Foundations of Osteopathic Medicine*. Lippincott Williams & Wilkins. 9-34.
5. Educational Council on Osteopathic Principles. *Glossary of Osteopathic Terminology*. Rev ed. Chevy Chase, MD: American Association of Colleges of Osteopathic Medicine; 2011. www.aacom.org/docs/default-source/insideome/got2011ed.pdf?sfvrsn=2.
6. Smith-Kelly JB, Cardenas A. Assessment of hospital staff's knowledge of osteopathic manipulative medicine: a survey-based study. *J Am Osteopath Assoc*. 2016;116(12):764-769.
7. Freedman J. 5 questions, answers about attending osteopathic medical school. U.S. News and World Reports website. https://www.usnews.com/education/blogs/medical-school-admissions-doctor/2014/12/16/5-qustions-answers-about-attending-osteopathic-medical-school. Published December 16, 2014. Accessed June 26, 2017.
8. Sandhu V. 3 reasons to consider osteopathic medical schools. U.S. News and World Reports website. https://www.usnews.com/education/blogs/medical-school-admissions-doctor/articles/2016-05-03/3-reasons-to-consider-osteopathic-medical-schools. Published May 3, 2016. Accessed June 26, 2017.
9. Goldman S. Rising to new challenges: problems and proposed solutions for osteopathic program directors. *AAO J*. 2015;25(3):7-10.
10. Johnson K, Raczek J, Meyer D. Integrating osteopathic training into family practice residencies. *Fam Med*. 1998;30(5):345-349.
11. Cummings M. The predicament of osteopathic postdoctoral education. *Acad Med*. 2006;81(12):1123-1127.
12. Volokitin M, Ganapathiraju PV. Osteopathic philosophy and manipulation enhancement program: influence on osteopathic medical students' interest in osteopathic manipulative medicine. *J Am Osteopath Assoc.* 2017;117(1):40-48. doi:10.7556/jaoa.2017.006
13. Ching LM, Burke WJ. Osteopathic distinctiveness in osteopathic predoctoral education and its effect on osteopathic graduate medical education. *J Am Osteopath Assoc.* 2011;111(10):581-584.
14. Spaeth D, Pheley A. Evaluation of osteopathic manipulative treatment training by practicing physicians in Ohio. *J Am Osteopath Assoc.* 2002;102(3):145-150.
15. Nasca TJ. Accreditation Council for Graduate Medical Education website. https://www.acgme.org/Portals/0/PDFs/NascaLetterACGME-AOA-AACOMAgreementMarch2014.pdf. Published March 13, 2014. Accessed June 14, 2016.
16. Single GME accreditation system. Accreditation Council for Graduate Medical Education website. http://www.acgme.org/What-We-Do/Accreditation/Single-GME-Accreditation-System/GraduateMedicalEducation/SingleAccreditationSystemforAOA-ApprovedPrograms. Accessed June 14, 2016.
17. Buser BR, Swartwout J, Gross C, Biszewski M. The single graduate medical education accreditation system. *J Am Osteopath Assoc*. 2015;115(4):251-255.
18. Osteopathic recognition. Accreditation Council for Graduate Medical Education website. https://www.acgme.org/What-We-Do/Recognition/Osteopathic-Recognition. Accessed August 10, 2019.
19. Accreditation Council for Graduate Medical Education. Osteopathic recognition requirements [PDF]. https://www.acgme.org/Portals/0/PFAssets/ProgramRequirements/801OsteopathicRecognition2018.pdf?ver=2018-02-20-154513-650. Updated February 4, 2018. Accessed August 10, 2019.
20. Weidner AK, Pauwels J, McGuire M, Davis A. Collaboration between ACGME and AOA programs to enhance success in the single accreditation system: a process paper. *J Am Osteopath Assoc.* 2017;117(11):705.
21. Hortos K, Corser W, Church B, Rohrer J, Waarala K. Perceived importance of pursuing osteopathic recognition in the single accreditation system: a survey of medical students, residents, and faculty. *J Am Osteopath Assoc.* 2017;117(10):651.
22. Raymond R. ACGME program director discusses value of osteopathic recognition. The DO website. http://thedo.osteopathic.org/2016/12/acgme-program-director-discusses-value-of-osteopathic-recognition. Published December 28, 2016. Accessed June 14, 2017.
23. The DO Staff. Osteopathic recognition matters: medical students value the 'DO difference'. The DO website. http://thedo.osteopathic.org/2016/10/osteopathic-recognition-matters-medical-students-value-the-do-difference. Published October 28, 2016. Accessed June 14, 2017.
24. Hempstead LK, Shaffer TD, Williams KB, Arnold LCJ. Attitudes of family medicine program directors toward osteopathic residents under the single accreditation system. *J Am Osteopath Assoc.* 2017;117(4):216-224. doi:10.7556/jaoa.2017.039
25. Veit KJ. Osteopathic medical graduates in ACGME residencies: a threat to the core philosophy and distinctiveness of osteopathic medicine. *Acad Med.* 2009;84(6):697.
26. Teitelbaum HS. Osteopathic medical education in the United States: improving the future of medicine. http://www.iaomc.org/Improving-FutureofMed.pdf. 2005.
27. Rubeor A, Nothnagle M, Taylor JS. Introducing osteopathic medical education in an allopathic residency. *J Am Osteopath Assoc.* 2008;108(8):404-408.
28. Mentor. Dictionary.com website. http://www.dictionary.com/browse/mentor?s=t. Accessed June 15, 2017.
29. Bland CJ, Taylor AL, Shollen SL, Weber-Main AM, Mulcahy PA. *Faculty Success Through Mentoring: A Guide for Mentors, Mentees, and Leaders*. Lanham MD: Rowman & Littlefield Publishers; 2009:5-7,9-10,17-66.
30. Ramanan RA, Phillips RS, Davis RB, Silen W, Reede JY. Mentoring in medicine: keys to satisfaction. *Am J Med.* 2002;112(4):336-341.
31. Taherian K, Shekarchian M. Mentoring for doctors. Do its benefits outweigh its disadvantages? *Med Teach*. 2008;30(4):e95-99. doi:10.1080/01421590801929968
32. Kashiwagi DT, Varkey P, Cook DA. Mentoring programs for physicians in academic medicine: a systematic review. *Acad Med*. 2013 Jul 1;88(7):1029-1037.
33. Ritchie A, Genoni P. Group mentoring and professionalism: a programme evaluation. *Libr Manage*. 2002;23(1/2)68-78. doi:10.1108/01435120210413869
34. Draper BB, Johnson JC, Fossum C, Chamberlain NR. Osteopathic medical students' beliefs about osteopathic manipulative treatment at 4 colleges of osteopathic medicine. *J Am Osteopath Assoc.* 2011;111(11):615-630.

(continued on page 28)

(continued from page 27)

35. Indyk D, Deen D, Fornari A, Santos MT, Lu WH, Rucker L. The influence of longitudinal mentoring on medical student selection of primary care residencies. *BMC Med Educ*. 2011;11:27.
36. Fricke TA, Lee MG, Brink J, d'Udekem Y, Brizard CP, Konstantinov IE. Early mentoring of medical students and junior doctors on a path to academic cardiothoracic surgery. *Ann Thorac Surg*. 2018;105(1):317-320.
37. Garmel GM. Mentoring medical students in academic emergency medicine. *Acad Emerg Med*. 2004;11(12):1351-1357.
38. Johnson S, Kurtz M. Osteopathic Manipulative Treatment Techniques Preferred by Contemporary Osteopathic Physicians. *J Am Osteopath Assoc. 2003*;103 (5): 219-224.
39. Ray AM, Cohen JE, Buser BR. Osteopathic emergency physician training and use of osteopathic manipulative treatment. *J Am Osteopath Assoc.* 2004;104(1):15-21.
40. REDCap [software]. https://projectredcap.org/software/.
41. Cunningham CT, Quan H, Hemmelgarn B, et al. Exploring physician specialist response rates to web-based surveys. *BMC Med Res Methodol.* 2015;15(1):32.
42. American Osteopathic Association Commission on Osteopathic College Accreditation. Accreditation of Colleges of Osteopathic Medicine: COM Continuing Accreditation Standards. Chicago, IL: American Osteopathic Association; 2017.
43. Newman D. The evolution of the AOA/AAO neuromusculoskeletal medicine and osteopathic manipulative medicine (NMM/OMM) residency programs. Unpublished; 2014.
44. Allee B, Pollak M, Malnar K. Survey of osteopathic and allopathic residents' attitudes toward osteopathic manipulative treatment. *J Am Osteopath Assoc.* 2005;105 (12): 551-561.
45. Hon G, Snider K, Johnson J. Variations in the diagnosis and treatment of somatic dysfunction between 4 osteopathic residency programs. *J Am Osteopath Assoc.* 2015;115(5):294-303.
46. Still AT. *Osteopathy Research and Practice*. Kirksville, MO: A.T. Still; 1910:12
47. Moxham BJ, Pais D. How optional should regional anatomy be in a medical course? An opinion piece. *Clin Anat.* 2016;29(6):702-710.
48. Degenhardt BF, Johnson JC, Gross SR, Hagan C, Lund G, Curry WJ. Preliminary findings on the use of osteopathic manipulative treatment: outcomes during the formation of the practice-based research network, DO-Touch.NET. *J Am Osteopath Assoc.* 2014;114(3):154-170.
49. Mentoring. Royal College of Surgeons website. https://www.rcseng.ac.uk/standards-and-research/support-for-surgeons-and-services/professional-support-for-surgeons/mentoring/. Accessed March 28, 2018.
50. Royal College of Surgeons. *Mentoring: A Guide to Good Practice*. London, England: Royal College of Surgeons. https://www.rcseng.ac.uk/-/media/files/rcs/standards-and-research/standards-and-policy/good-practice-guides/new-docs-may-2019/rcs-_mentoring.pdf. Published November 2018.
51. Doctors of Osteopathic Medicine website. https://doctorsthatdo.org.
52. Ratnapalan S. Mentoring in medicine. *Can Fam Physician*. 2010;56(2):198.
53. Sambunjak D, Straus SE, Marušić A. Mentoring in academic medicine: a systematic review. *JAMA*. 2006;296(9):1103-1115.
54. Levine MS. Keeping Osteopathic Medicine Osteopathic in a Single Accreditation System for Graduate Medical Education. *J Am Osteopath Assoc.* 2017;117(1):4-6.
55. List of Programs Applying for and with Osteopathic Recognition by Specialty. Accreditation Council for Graduate Medical Education website. https://apps.acgme.org/ads/Public/Reports/Report/17. Accessed August 10, 2019.
56. Booth ER. *History of Osteopathy and Twentieth-Century Medical Practice*. Cincinnati, OH: Jennings and Graham; 1905:66. ■