

Preliminary findings on the use of osteopathic manipulative treatment by osteopathic physicians

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The literature suggests that the extent to which osteopathic physicians actually use osteopathic manipulative treatment (OMT) and the factors that predict the use of OMT remain virtually unexplored. A mailed survey of practicing osteopathic physicians was used to query respondents about their use of OMT and about the effects of a number of factors on use of OMT. The survey showed that 71% of 100 practicing physicians used OMT with 5% or more of their patients, and 14% in 50% or more of their patients. Multivariate statistical procedures revealed that a physician's having learned a new OMT format since graduation from medical school was the primary predictor of the use of OMT, followed by interest in OMT during internship. The other predictor was whether the respondent had a family member who was also a DO. Physician's specialty, emphasis on OMT during graduate and postgraduate training, and the era during which DOs received their training were not significant predictors of OMT use. These results indicate a need for further research on OMT use and the variables examined in this study.

(Key words: American Osteopathic Association [AOA] membership, osteopathic manipulative treatment, osteopathic principles and procedures, surveys)

Osteopathic medicine has been described as being in a state of crisis.^{1,2} Meyer and Price¹ see the source of current turmoil rooted in the transformation of "osteopathy" to what they call "osteopathic medicine," with the latter characterized by

full-service healthcare. This transformation has won acceptance for osteopathic medicine from the public, government, allopathic physicians, and others, but it has also created new problems for the osteopathic medical profession. Graduates of osteopathic medical training programs have turned increasingly to MD programs for residency training, and osteopathic medicine's primary care orientation has been eroded by an increased emphasis on specialty training.

The literature suggests that concomitant with the emphasis on full-service healthcare is an apparent decline in the profession's emphasis on osteopathic manipulative treatment (OMT). Once seen as the backbone of osteopathic medicine, some students now report that osteopathic physicians discourage them from using OMT in hospital settings.³ Others have called for an end to this trend. Recently in *JAOA*, Kasovac and Jones⁴ called for an "osteopathic medical renaissance" with a renewed emphasis on the teaching of osteopathic principles and techniques as the centerpiece of their program. The purpose of this study was to address several issues critical to programs concerned with the use of OMT: the extent of the use of OMT and the factors that predict the use of OMT by osteopathic physicians.

Extent of OMT use by DOs

As Miller⁵ noted in 1992, concern over the use of OMT has a long history in the osteopathic medical profession. For example, Gevitz^{6,7} reported that a decline in the use of OMT was acknowledged as early as the 1930s. Gevitz⁶ cited a 1974 report that indicated that less than 17% of patient office visits include the use of OMT by DOs. The decreased use of OMT is seen as a threat to the unique identity of the osteopathic medical profession, but there is little current evidence about the actual amount of OMT provided by DOs. Whether their use of OMT is down since the report referred to by Gevitz remains an open question.

In one recent study, identification of the factors related to use of OMT and osteopathic princi-

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Table 1
Characteristics of the Subjects (N=100)

Characteristic	No.	%
Age, yr		
<35	23	24
35 to 44	43	44
≥45	31	32
Missing = 3		
Sex		
Male	85	88
Female	12	12
Missing = 3		
Graduation year		
1970 and earlier	26	27
1971 and later	72	74
Missing = 2		
Practice specialty		
General practice	74	76
Specialties	23	24
Missing = 3		
Practice location		
Urban	35	40
Suburban	21	24
Rural	32	36
Missing = 12		
DO patient before medical school		
Yes	38	39
No	59	61
Missing = 3		
Any family member a DO		
Yes	23	24
No	73	76
Missing = 4		
Entered practice		
After residency	57	57
After internship	43	43

ples and procedures (OPP) was attempted. Miller⁵ identified four general classes of factors that had the potential for impact on attitudes and intentions regarding OPP and OMT: student characteristics, formal school experiences, faculty characteristics, and other medical school experiences.

Miller⁵ conducted student and faculty surveys at four osteopathic medical schools. The survey instrument was designed to measure student and

faculty attitudes toward behavioral intentions about OMT and OPP, as well as to identify the process that contributed to the development of those attitudes and behavioral intentions. The survey results can be summarized as follows:

- Student characteristics showed no strong effects on attitudes or intentions toward OMT.
- There were no attitudinal differences among the four schools.
- Faculty role models were important in the development of attitudes and intentions regarding OMT.
- Students were found to rely on informal sources of information (other students) more than formal sources (medical school, American Osteopathic Association [AOA]) for information about OMT and OPP.

Although Miller's study is the most comprehensive recent study of factors affecting the use of OMT, it concentrated on attitudes and intentions of students after graduation. This points to the need to study actual physician behavior and to identify factors that influence the use of OMT in actual practice.

Because of the paucity of literature devoted to the use of OMT, the socialization approach found in the medical sociology literature was used in this study.^{8,9} Socialization in this sense refers to the process whereby a person internalizes the knowledge, skills, values, and behaviors deemed appropriate by socializing agents, that is, those who instruct or influence osteopathic medical schools and the larger osteopathic medical profession.

Socialization focuses on the process that transforms osteopathic medical students into osteopathic physicians. The product of this process has an identity as an osteopathic physician and possesses certain attitudes, values, and ways of thinking, including his or her use of OMT as a treatment modality. This approach also builds personal and educational background and incorporates occupational and practice experiences and additional training, as well as the effects of directly practicing on patients.

As implied in the recent osteopathic medical literature, a sense of the history of the profession is required to understand trends in OMT use. Meyer and Price¹ suggested that it has been during the past 20 years that the osteopathic medical profession lost its distinct image through deemphasis on manual medicine. They referred to the period from 1971 to the present as "the full-service care/multispecialty era." Meyer and Price indicated that DOs who were graduated before 1971 were trained in either what they called the manual medicine era (1892–1950) or the family practice/manual medicine era (1951–1970). The distinction between manual and full-service medicine actually refers to the fact

Table 2
Respondents' Interest in Osteopathic Manipulative Treatment

Year	Little interest/ disinterested		Interested		Very interested/ enthusiastic	
	No.	%	No.	%	No.	%
Freshman	15	15	28	28	57	57
Sophomore	14	14	35	35	51	51
Junior	17	17	35	35	48	48
Senior	18	18	36	36	46	46
Internship	30	30	34	34	36	36
Residency*	17	32	18	34	18	34

*Only resident responses are included in this category.

Table 3
Respondents' Training Emphasis on Osteopathic Manipulative Treatment

Year	None or excessive		Too little or more than enough		Enough	
	No.	%	No.	%	No.	%
Freshman	7	7	45	45	48	48
Sophomore	5	5	42	42	52	53
Clinical undergraduate	9	9	60	60	29	30
Internship	30	31	51	52	17	17
Residency*	27	49	18	33	10	18

*Only resident responses are included in this category.

that over the past 20 or so years, osteopathic physicians may be seen to have become more like allopathic physicians than DOs of earlier eras. In the present study, this implication and others were investigated as possible explanations for the differential use of OMT by practicing DOs.

Methods

Sample

The sample used in this study was generated from the *1990 Yearbook and Directory of Osteopathic Physicians*.¹⁰ A systematic random sample was drawn, stratified in such a manner that at least two AOA members were picked from each of the 50 states. Every 10th, 15th, and 20th case was drawn until each state's quota was filled. The initial sample selection process identified 200 potential respondents. After the initial mailing, six questionnaires were returned as undeliverable. A total of 123 surveys were returned complete enough to be useable in the analysis, a response rate of 63.4% (123 of 194 potential respondents). Of these surveys, 100 respondents reported that they were in practice, entering either after completing internship or after completing residency. These subjects will be the focus of further analysis.

Measures

Respondents were asked to estimate their use of OMT with patients. Fixed response categories were provided as follows: (1) less than 5%; (2) 5% to 25%; (3) 25% to 50%; (4) 50% to 75%; and (5) 75% to 100%.

Besides basic sociodemographic information, the questionnaire asked the respondents to provide information about their present practice, including location, type of practice, and their specialties. Several questions dealt with experience with DOs before medical school, as a patient, or whether a family member was a DO. Additional questions dealt with educational and training experiences since graduation from medical school. Respondents were asked about the way certain factors affected their current use of OMT. These factors include classroom instruction during medical school, clinical rotations during medical school, internship and residency, and personal experiences since completion of medical school. Another series of questions dealt directly with OMT, asking whether respondents had received additional training in OMT or had learned a new OMT format since graduation from medical school. Other questions queried respondents about the emphasis their medical school had placed on OMT during training, from the freshman year through residency. Fixed responses ranged

Table 4

Percent of Patients in Whom Respondents Use Osteopathic Manipulative Treatment (OMT)

Patients in whom OMT used	Respondents reporting use	
	No.	%
<5%	28	29
5% to 25%	43	44
25% to 50%	12	12
50% to 75%	6	6
75% to 100%	8	8

from "none" through "enough" to "excessive." The final set of questions included in the analysis here asked about interest in OMT at various stages in the training process, from freshman year through residency. Fixed responses ranged from "disinterested" to "enthusiastic."

Results

Almost half of these 100 respondents (44%) were 35 to 44 years old. Eighty-eight percent were men, 74% graduated from medical school after 1971, 75% were in general practice, and slightly more practiced in urban as opposed to rural settings (40% vs 36%, respectively). Thirty-nine percent had been the patient of a DO before medical school, and 24% had a family member who was also a DO. Fifty-seven percent entered practice after completing a residency. The characteristics of the DOs chosen for analysis are presented in *Table 1*.

Respondents' interest in OMT declined steadily over the course of formal training (*Table 2*). Fifty-seven percent indicated that they were either very interested or enthusiastic about OMT as freshmen, collectively, but this level of interest decreased to 46% by senior year and to 36% and 34%, respectively, when respondents were interns and residents.

With regard to emphasis on OMT in training programs, 48% of these practicing osteopathic physicians thought there was enough during their freshman year (*Table 3*). This percentage increased to 53% in the sophomore year and then declined steadily over the rest of formal training to 30% during the clinical undergraduate years and to 17% and 18% during internship and residency, respectively. So, the decline was steady and similar to that with respondents' interest.

Seventy-three percent of the respondents listed in *Table 4* provided OMT to less than 25% of their patients and 29% to less than 5%. By way of contrast, only 14% indicated that they used OMT with more than 50% of their patients, with 8% using OMT with 75% to 100%. With regard to spe-

Table 5

Responses to Questions Concerning Influences on the Use of Osteopathic Manipulative Treatment (OMT)

Questions	Respondents	
	No.	%
■ Additional hands-on manipulation experience during undergraduate or graduate training ☐ Yes ☐ No Missing = 13	17	20
	70	80
■ Classroom instruction's influence on amount of OMT use ☐ Yes ☐ No Missing = 2	53	54
	45	46
■ Clinical rotations' influence on amount of OMT use ☐ Yes ☐ No Missing = 1	34	34
	65	66
■ Internship's influence on amount of OMT use ☐ Yes ☐ No Missing = 3	29	30
	68	70
■ Residency's* influence on amount of OMT use ☐ Yes ☐ No	25	44
	32	56
■ Learned new manipulative format since graduation ☐ Yes ☐ No Missing = 1	45	46
	54	55
■ After-school experience's influence on amount of OMT use ☐ Yes ☐ No Missing = 4	64	67
	32	33

*Responses of those who entered practice from residency.

cific influences on respondents' use of OMT, only 20% of these practicing osteopathic physicians had additional hands-on manipulative experiences as undergraduates or in their postdoctoral training (*Table 5*). About half indicated that classroom instruction influenced their use of OMT, and roughly a third

Table 6
Stepwise Regression Results

Order of entry	B	SEB	β	P
Learned new format	.93	.21	.40	.0000
Internship interest in OMT	.30	.09	.30	.001
Family member a DO	.50	.24	.18	.04
*Multiple $R = .58$; adjusted $R^2 = .31$; $F = 14.56$ ($P = .0000$); $df = 91$.				

indicated that their clinical rotations influenced their current use of OMT. Seventy percent said that their internships did not influence their use of OMT, but this percentage dropped to 56% with residency. Almost half, 46% checked that they had learned a new manipulative format since graduation, and two thirds said that experience after completion of formal training influenced the amount of OMT they presently used.

Because this study was exploratory, the final step in the analysis was an attempt to determine which factors seemed to predict OMT use by practicing osteopathic physicians. Because of the larger number of variables included in *Tables 1* through *5*, stepwise multiple regression was the statistical procedure chosen for that purpose. The independent variable with the highest correlation with the dependent variable, percent of patients receiving OMT in this instance, was entered into the regression equation first. Successive variables were then added to the equation as long as they met a preset selection criterion ($P = .05$). With the single exception of the measures restricted to only those who completed residencies, *Table 6* contains the results of the stepwise regression for all the variables included in *Tables 1* through *5*.

Only three independent variables met the significance criterion for entry into the stepwise regression equation. In order, these were whether the respondent had learned a new manipulative format since graduation from medical school, the level of interest in OMT during internship, and whether the respondent had a family member who was also a DO. These three variables produced a multiple R of .58 and an adjusted R^2 of .31. That is, those three factors explained 31% of the variance in the present use of OMT by these practicing osteopathic physicians.

Discussion

The data generated by this survey of osteopathic physicians provide some indication of the amount of OMT provided by practicing osteopathic physicians.

Almost three fourths indicated that they provided OMT to less than 25% of their patients, and almost 30% indicated that they provided OMT to less than 5% of their patients.

This study used a physician self-report measure to determine the level of use of OMT. The results therefore cannot be directly compared with those generated by Gevitz,⁶ because his results were produced from actual office visits to determine the level of OMT provided by osteopathic physicians.

The present study did provide some interesting findings about the way education and training related to the use of OMT. The factors that were entered into the regression equation in *Table 6* provide some support for the need to adopt a socialization approach to osteopathic physician use of OMT. This is not to say that any clear interpretation of the regression findings will emerge from this discussion.

The first factor that was entered into the regression equation was whether the respondent had learned a new manipulative format since graduation. As *Table 5* reveals, almost half of this sample of practicing osteopathic physicians had learned a new manipulative format since medical school graduation. Because the mailed questionnaire asked respondents to identify what new format(s) they had learned and where they had learned them, this finding can be examined in more detail in a later paper.

The second factor entered into the regression equation was the degree of interest in OMT during internship. The questions about residency listed in *Tables 2*, *3*, and *5* were not included in the regression analysis because almost half (43%) of these osteopathic physicians entered practice after completing an internship. Including those osteopathic physicians who had entered practice from residency would have confounded the regression analysis because those who entered from internship would have been listed as missing cases. As a result, the measures that pertain to residency were excluded. Two findings indicated that this omis-

sion was not a serious problem in terms of interpreting the results of the regression analysis. The first is the fact that whether respondents entered practice from either internship or residency was included in the regression analysis (from *Table 1*), but coded as a dummy variable (1 for those who completed a residency and 0 for those entering practice after completing internship). This distinction was not determined to be significant because it did not meet the criterion for the regression results in *Table 6*. As a follow-up to that finding, the regression analysis was run with just those who completed residency and, again, interest in OMT during internship appeared as the second predictor of the use of OMT (data not shown). The point is that none of the measures restricted to residency, including interest in OMT as a resident, turned out to be significant predictors of the use of OMT.

The final factor that predicted the use of OMT was whether the resident had a family member who was also a DO. Twenty-four percent ($n=24$) of this sample indicated that they had such a family member. If the respondent checked "yes" for this question, an open-ended question asked them to identify what relation that person was to them. Given the limited number of respondents with DOs as family members (including parents, spouses, and siblings, as well as step-relatives), the range of responses created a range of categories with too few respondents to be meaningful for analytic purposes. One need for future research is a much larger sample of respondents who have osteopathic physicians as family members.

The results of the regression analysis do support the notion that a socialization approach is necessary to begin to understand the factors that predict the use of OMT by practicing osteopathic physicians. Three variables were found to predict physician use of OMT:

- ☐ a background factor (having an osteopathic physician as a family member);
- ☐ an education-training measure (interest in OMT as an intern); and
- ☐ a posteducation-practice-related factor (learning a new manipulative format since graduation).

Perhaps what is most interesting in this study are the factors that were not found to be significant predictors of the use of OMT, including the notion of eras proposed by Meyer and Price,¹ the physician's specialty, the emphasis on OMT during undergraduate and postgraduate training, and others. Clearly, there is a need for more research on the use of OMT and for better measures of the critical variables described as important in this study.

One of the weaknesses of the present study was the ability to identify those osteopathic physicians who completed an osteopathic, as opposed to allopathic, internship or residency. Previously, we have commented on the need for a larger number of osteopathic physicians with family members who are also DOs. The same concern should be echoed regarding physician specialties. Future research will need an improved use of OMT measure, specifically one that separates those who do not use OMT (0%) from all others.

Comment

This article reports on the results of a mailed survey of members of the AOA. The questionnaire was designed to determine the extent to which DOs provide OMT to their patients and the factors predicting the use of OMT. The survey showed that about 73% of these DOs used OMT with less than 25% of their patients, and only 14% used OMT with more than half of their patients. Stepwise regression analysis revealed three factors that predicted physician use of OMT. Collectively, those three factors explained about a third of the variance in osteopathic physician use of OMT.

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