

The Practice of Acupuncture: Who Are the Providers and What Do They Do?

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ABSTRACT

PURPOSE This study provides basic information about the training and practices of licensed acupuncturists.

METHODS Randomly selected licensed acupuncturists in Massachusetts and Washington state were interviewed and asked to record information on 20 consecutive patient visits.

RESULTS Most acupuncturists in both states had 3 or 4 years of academic acupuncture training and had received additional "postgraduate" training as well. Acupuncturists treated a wide range of conditions, including musculoskeletal problems (usually back, neck, and shoulder) (33% in Massachusetts and 47% in Washington), general body symptoms (12% and 9%, respectively) such as fatigue, neurological problems (10% and 12%, respectively) (eg, headaches), and psychological complaints (10% and 8%, respectively) (especially anxiety and depression). Traditional Chinese medicine (TCM) was the predominant style of acupuncture used in both states (79% and 86%, respectively). Most visits included a traditional diagnostic assessment (more than 99%), regular body acupuncture (95% and 93%, respectively), and additional treatment modalities (79% and 77%, respectively). These included heat and lifestyle advice (66% and 65%, respectively), most commonly dietary advice and exercise recommendations. Chinese herbs were used in about one third of visits. Although most patients self-referred to acupuncture, about one half received concomitant care from a physician. Acupuncturists rarely communicated with the physicians of their patients who were providing care for the same problem.

CONCLUSIONS This study contributes new information about acupuncturists and the care they provide that should be useful to clinicians interested in becoming more knowledgeable about complementary or alternative medical therapies available to their patients.

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INTRODUCTION

The use of complementary and alternative medicine (CAM) therapies, including provider-based therapies, has grown in the United States since the 1950s.¹ Although acupuncture has been available in various Chinatowns in the United States since the mid 1800s, it has been a relative latecomer to the general American health care scene, growing rapidly since the 1970s, when Nevada and Oregon became the first states to license non-physician acupuncturists.² Currently, 51 acupuncture schools are accredited or are candidates for accreditation,³ and 42 states have statutes that allow the practice of acupuncture by nonphysicians.⁴ In addition, about 3,000 physicians in the United States are believed to practice acupuncture.^{2,5}

Despite growth in the popularity of acupuncture and in the number of clinical studies evaluating its effectiveness for various conditions, little is known about the training or practices of acupuncturists. This study⁶ presents new information about the demographic and training characteristics of licensed acupuncturists, the reasons patients seek their care, the diagnostic

processes they use, and the treatments and self-care recommendations they provide.

METHODS

The data summarized in this article were collected as part of a larger study of 4 CAM professions, including acupuncture.^{6,7} The goal of that study was to obtain data on 20 consecutive visits from 50 randomly selected acupuncturists in 1 Western state and in 1 Northeastern state. Acupuncturists were randomly sampled from state licensure listings in Washington (1998) and Massachusetts (1999). We excluded acupuncturists without identifiable telephone numbers and those not currently practicing. The proportion of ineligible practitioners was 38% in Massachusetts and 13% in Washington. Almost all ineligible acupuncturists in Massachusetts lacked identifiable telephone numbers. The interview participation rate was 91% in Massachusetts and 89% in Washington.

Acupuncturists were first interviewed about their demographic, training, and practice characteristics. Those seeing at least 20 patients (visits) in a typical week were then invited to collect visit data. A sample of those seeing 10 to 19 patients per week were also invited to collect visit data. Acupuncturists seeing fewer than 10 patients per week, representing about 2% of all acupuncture visits,⁶ were not asked to collect visit data. Of the acupuncturists invited to collect visit data, 75% in Massachusetts and 82% in Washington did so.

We obtained approval from the Group Health Cooperative, University of Washington, and Beth Israel-Deaconess institutional review boards. Visit data were collected between February and October in 1998 in Washington and between May and October 1999 in Massachusetts. Acupuncturists were given visit forms with unique identification codes for recording the data on 20 consecutive visits (even if the same patient was seen more than once) and were randomly assigned weekdays to begin data collection.

The 1-page visit forms were modeled after those used in the National Ambulatory Medical Care Survey (NAMCS).⁸ Copies of these forms are available from the authors on request. Whenever possible, questions on the visit forms were identical to those in the NAMCS (eg, demographic characteristics, reason for visit, referral source, source of payment, visit disposition). New questions asked whether the patient was receiving care from a conventional medical physician for their primary problem and whether the acupuncturist had communicated with this physician. Additional special questions captured information about acupuncture diagnoses and treatments, including information on traditional East Asian medical diagnoses, styles of acu-

puncture used, types of needling, use of heat and other adjunctive treatments, and lifestyle recommendations. We asked acupuncturists to record up to 5 "complaints, symptoms, or other reasons for this visit" using the patient's own words and listing the most important complaint or reason first. These data were classified using the NAMCS Reason for Visit Classification System, which distinguishes among symptoms, diseases, diagnostic/screening/preventive interventions, treatments, and injuries.⁸ Individual reasons for visit were then clustered into larger categories corresponding to *International Classification of Diseases, Ninth Edition* (ICD-9) chapters.

Analyses were performed using SAS version 8 (SAS Institute, Cary, NC). Chi-square tests were used to compare proportions and Kruskal-Wallis tests were used to compare medians in the acupuncturist analyses. In the visit analyses, each visit in the sample was weighted by the inverse of its sampling probability, which reflected both the chance that the particular acupuncturist participated and the estimated proportion of that acupuncturist's annual visits included in the study.⁶ Consequently, our results represent estimates of all visits made to acupuncturists in each state, except for the 2% of visits made to providers who saw fewer than 10 patients per week. In this 2-stage sampling design, we used SUDAAN software (Research Triangle Institute, Research Triangle, NC) to calculate standard errors and confidence intervals using Taylor series linearization. Because of the large sample sizes in both states (more than 1,200), the weighted percentages presented in the tables have small standard errors, generally between 0.5 and 2.5 percentage points and rarely exceeding 3 percentage points. As a result, moderate to large differences between the states were also statistically significant. The standard errors are therefore not included in the tables.

RESULTS

Demographic and Training Characteristics of the Acupuncturists

The demographic and training characteristics of acupuncturists in Massachusetts and Washington were generally similar (Table 1). Most acupuncturists had 3 or 4 years of academic acupuncture training (57% in Massachusetts and 85% in Washington), which currently results in a master's degree. In addition, 43% in Massachusetts and 26% in Washington had formal apprenticeships, with 84% lasting 1 to 3 years. Acupuncturists receiving some training outside the United States were most likely to have trained in China and England. Sixteen percent of the acupuncturists in Massachusetts held licenses in other health professions (usually nursing) compared with 33% in Washington (most commonly massage, naturopathic medicine, or

nursing). Almost all acupuncturists in Massachusetts and two thirds of those in Washington received some additional acupuncture training (average of 2.7 topics vs 1.6 topics, respectively), most often in Chinese herbs and Japanese acupuncture (Table 1).

Characteristics of the Visits

Reasons for Visits

Musculoskeletal problems of various types were the most common reasons patients sought care from acupuncturists, representing one third to one half of all visits (Table 2). Neurological symptoms (especially headaches), general body symptoms (including fatigue and allergies), and mental health problems (especially anxiety and depression) were also relatively common in both states, as was wellness care in Massachusetts. In fact, acupuncturists treated problems associated with virtually all organ systems, at least occasionally.

Almost 75% of visits to acupuncturists in both states were for chronic problems. More than 70% of patients were self-referred. About one half of the patients were receiving concomitant medical care for their primary complaint, although only 10% had been referred by

their physicians. Acupuncturists stated that they had discussed their patients' care with the physicians of only about 50% of their physician-referred patients compared with only 12% of their other patients.

Care During Visits to Acupuncturists

Information about the styles of practice of acupuncture, diagnostic techniques, types of needling, and adjunctive treatments (including information on herbal safety) can be found as supplemental data in the Supplemental Appendix, available online only at: <http://www.annfam.org/cgi/content/full/3/2/151/DC1>.⁹⁻¹⁹

Traditional Chinese medicine (TCM) is the predominant style of acupuncture used in both states (Table 3). TCM is characterized by strong needling sensations and use of multiple adjunctive treatments, including herbs. All visits included the use of TCM diagnostic techniques, typically traditional questioning (ie, "asking diagnosis"), taking the radial pulse, inspecting the patient visually, and examining the tongue (Table 4).

Regular body acupuncture was used in nearly all visits, with other styles of acupuncture much less common (Table 5). For most visits, acupuncturists reported

attempting to "obtain qi" (*de qi*) at one or more needling sites (64% in Massachusetts and 76% in Washington). *De qi* is the characteristic dull, heavy, tingling, or warm sensation that the patient may feel after the needle is inserted and stimulated. Electrostimulation of needles was infrequent in both states (12% of visits in Massachusetts and 14% in Washington).

More than 75% of acupuncture visits included one or more adjunctive treatments (Table 6). Almost one half of the treatments included the use of heat, usually with a lamp heat or by moxibustion (the burning of the mugwort plant *Artemisia vulgaris* on or just above acupuncture points or meridians), and nearly one third included the prescription of Chinese herbs.

About two thirds of the visits in both states included self-care recommendations, with about 25% including multiple recommendations. Dietary or nutritional counseling from the perspective of Chinese medicine and exercise were the most common recommendations, each occurring in

Table 1. Demographic and Training Characteristics of Acupuncturists Licensed in Massachusetts (1999) and Washington (1998)

Characteristics	Licensed Acupuncturists		P Value
	Massachusetts N = 101	Washington N = 116	
Demographic characteristics			
Female, %	58.4	56.0	.72
Race, %			
White, %	81.4	77.3	.59
Asian, %	16.5	20.9	
Other, %	2.1	1.8	
Median age, years	47	43	<.001
Basic training			
US only, %	67.3	74.1	.37
US same state, %	59.4	56.0	.61*
US and foreign, %	18.8	12.1	
Foreign only, %	12.9	13.8	
Licensed in another health profession, %	15.8	32.8	.004
Median years in acupuncture practice	11	4	<.001
Postgraduate training			
At least one type, %	96.0	67.2	<.001
Addictions (NADA certification), %	32.7	19.8	.03
Chinese herbs, %	71.3	35.3	<.001
Japanese acupuncture, %	48.5	19.0	<.001
Oriental massage, %	40.6	12.9	<.001
Nogier, %	16.8	6.0	.011
Other (eg, pediatrics, qi gong), %	49.5	17.9	<.001

NADA = National Acupuncture Detoxification Association.

* For training in same state.

Table 2. Top 10 Broad and Specific Diagnostic Categorization of Reasons for Visits to Acupuncturists Licensed in Massachusetts (1999) and Washington (1998)

Massachusetts (N = 1,298 Visits)			Washington (N = 1,263 Visits)		
Categories*	Primary Reason %		Categories*	Primary Reason %	
Broad			Broad		
1. Musculoskeletal conditions	33.0		1. Musculoskeletal conditions	46.9	
2. General conditions	12.1		2. Nervous system conditions	11.5	
3. Psychological and mental health symptoms	10.4		3. General conditions	9.1	
4. Nervous system conditions	9.9		4. Psychological and mental health symptoms	7.6	
5. Respiratory system conditions	7.1		5. Digestive conditions	4.5	
6. Genitourinary system conditions	5.7		6. Respiratory system conditions	4.3	
7. Digestive conditions	4.9		7. Genitourinary system conditions	2.9	
8. Wellness†	3.9		8. Cardiovascular system conditions	2.4	
9. Cardiovascular system conditions	2.7		9. Infectious disease conditions	2.0	
10. Neoplasms	1.6		10. Skin conditions	1.7	
	Primary Reason %	Any Reason %		Primary Reason %	Any Reason %
Specific			Specific		
1. Back symptoms	11.3	17.8	1. Back symptoms	17.0	25.3
2. Anxiety or depression	7.5	16.7	2. Neck symptoms	7.3	13.7
3. Fatigue	4.8	11.8	3. Headache	6.6	11.0
4. Headache	4.0	6.2	4. Shoulder symptoms	5.6	12.7
5. Wellness†	3.9	5.3	5. Anxiety or depression	4.5	12.6
6. Neck symptoms	3.4	8.2	6. Fatigue	2.8	9.7
7. Allergies to food, milk, NOS	2.6	4.4	7. Knee symptoms	2.1	4.1
8. Shoulder symptoms	2.6	7.9	8. Abdominal pain, cramps, distention	2.0	3.4
9. Other nervous system symptoms	2.2	3.1	9. Infectious disease	2.0	3.7
10. Problems of pregnancy or fertility	2.0	2.5	10. Allergies to food, milk, NOS	1.9	3.8

* Broad categories of primary reason for visit codes correspond to ICD-9 chapters.

† Wellness was not part of the National Ambulatory Medical Care Survey reason for visit classification.

NOS = not otherwise specified.

about one third of the visits in both states. Sitting or moving meditation was recommended during 21% of visits in Massachusetts and 14% in Washington.

DISCUSSION

This study reports unique data on the demographic and training characteristics of licensed acupuncturists, on the patients they treat, and on their diagnostic and treatment methods. Unlike previous studies, our data derived from specific patient visits and not from practitioner estimates.²⁰⁻²² Other strengths of the study are the inclusion of 2 geographically separated states in parts of the country where acupuncture use is relatively common, random sampling of licensed providers, relatively high response rates, and large sample sizes. The main limitation is that we collected data from only 2 states.

Acupuncture statutes and their interpretation vary widely among states, with some permitting only acu-

puncture needling and others allowing modalities that extend beyond the boundaries of traditional East Asian medicine.²³ Unlike a few states, Massachusetts and Washington permit acupuncturists to function as independent health care practitioners. Massachusetts requires acupuncturists who prescribe herbs to have special certification in herbology, but Washington does not. Acupuncture training, however, is similar across the United States, largely because of the requirement by most states that applicants pass the national certification examination administered by the National Commission for the Certification of Acupuncture and Oriental Medicine.⁷

Most acupuncturists are not physicians, but acupuncture is also practiced by some biomedically trained providers.^{21,24,25} Although additional training for such providers is not required in most states,⁵ special training programs (usually 200 to 300 hours) have been developed for physicians, and many chiropractic colleges offer elective training in acupuncture.²⁴

Table 3. Styles of Practice of Acupuncturists Licensed in Massachusetts (1999) and Washington (1998)

Style of Practice*	Massachusetts (N = 1,298 Visits) %	Washington (N = 1,263 Visits) %
French energetic	1.1	5.1
Japanese eclectic	17.7	7.6
Japanese meridian	0.2	5.5
Traditional Chinese medicine	79.4	85.5
Trigger point/Western style	6.2	5.6
Worsley 5 element	12.2	5.0
Other styles	5.3	2.4
Two or more styles used	20.6	14.4

* Styles of practice are defined in the Appendix.

Table 4. Diagnostic Techniques Performed by Acupuncturists Licensed in Massachusetts (1999) and Washington (1998)

Diagnostic Technique*	Massachusetts (N = 1,298 Visits) %	Washington (N = 1,263 Visits) %
At least 1 diagnostic technique	99.7	99.8
Abdominal diagnosis	25.5	17.5
Asking diagnosis	89.8	93.1
Auditory diagnosis	22.7	19.3
Muscle strength	7.8	5.6
Olfactory diagnosis	17.1	16.4
Point palpation/channel diagnosis	47.6	58.3
Pulse diagnosis	90.5	81.4
Tongue diagnosis	70.5	75.0
Visual diagnosis	71.8	77.8
Other	0.9	6.6

*Diagnostic techniques are defined in the Appendix.

Why Patients Visit Acupuncturists and Evidence for Efficacy

Although musculoskeletal conditions are the most common reason people visit acupuncturists, they treat a broad range of other, mostly chronic, conditions. Generally, these are conditions for which Western medical care is often unsuccessful. Moreover, the list overlaps substantially with the most common conditions for which Americans seek CAM care in general.²⁶ Our findings that musculoskeletal pain and headaches were common reasons for visits and that acupuncturists treated a broad range of conditions, at least occasionally, are consistent with studies using data from more specialized clinical settings.²⁷⁻³⁰

More than 40 meta-analyses and systematic reviews of the effectiveness of acupuncture for a host of conditions have been published,³¹ but nearly all are inconclusive because of the poor quality and small size of the primary studies. Nevertheless, at this point acupuncture

appears to hold the most promise as an adjunct antiemetic for surgery and chemotherapy³² and for the treatment of headache.³³⁻³⁵ In addition, most studies evaluating acupuncture for temporomandibular disorders,³⁶ and shoulder pain^{37,38} have been positive.

Although results of studies of acupuncture for back and neck pain have been inconsistent,³⁹⁻⁴¹ there is growing evidence that it might be helpful.⁴²⁻⁴⁵ Considering that few conventional or alternative treatments have proved very effective for back or neck pain, acupuncture may be a reasonable option for patients, especially if they are enthusiastic about trying it. In fact, Kaluaokalani et al⁴⁶ found that patients with persistent back pain who were randomized to receive the therapy they preferred (ie, acupuncture or massage) were more likely to improve than those who received their less desired treatment. Fortunately, several large-scale randomized controlled trials are in progress that will soon provide more definitive answers about the effectiveness of acupuncture for common chronic pain conditions.⁴⁷⁻⁵⁰

Safety of Acupuncture and Related Treatments

Acupuncturists typically practiced acupuncture as a whole system of care, which included the use of traditional diagnostic techniques, acupuncture needling (typically with *de qi*), one or more

adjunctive treatments, and self-care recommendations. Chinese herbs were also often used, although no details were collected on the type of herbal preparations prescribed (eg, whether they were patent formulas or customized herbal formulations; whether patent herbs were manufactured in the United States or in China, or whether the herbs were imported directly from China or grown in the West).

Although needling and heat are relatively safe as long as sterile needles are used,⁵¹⁻⁵³ herbal medicine presents a number of potential risks for patients,^{12,54,55} including inappropriate dosages, herb-herb or herb-drug interactions, substitution of different herbs as a result of inaccurate translation,¹³ the contamination by or addition of toxic compounds and pharmaceutical medications,^{15-17,55,56} and the potential for delay of therapeutic options known to be effective.⁵⁷ These risks can be reduced if Chinese herbs are prescribed only by acupuncturists with extensive training in herbal medicine

Table 5. Types of Needling Performed by Acupuncturists Licensed in Massachusetts (1999) and Washington (1998)

Type of Needling*	Massachusetts (N = 1,298 visits) %	Washington (N = 1,263 visits) %
None	2.1	1.8
Intradermal	8.0	5.8
Ion pumping cords	8.4	4.6
Microsystem: ear	21.4	24.7
Microsystem: hand	2.3	4.2
Microsystem: scalp	2.6	1.3
Plum blossom	0.3	0.3
Regular body	95.1	93.3
Shallow	4.9	14.0
Other	6.1	2.9
Multiple types	33.0	33.4

* Types of needling are defined in the Appendix.

Table 6. Use of Adjunctive Treatments by Acupuncturists Licensed in Massachusetts (1999) and Washington (1998)

Treatment*	Massachusetts (N = 1,298 Visits) %	Washington (N = 1,263 Visits) %
At least 1 adjunctive treatment	79.4	76.9
At least 2 adjunctive treatments	31.8	48.7
Heat	49.4	44.2
Infrared lamp	23.8	23.8
Moxibustion	27.3	21.4
Other heat	0.7	3.5
Multiple heat sources	0.2	3.4
Acupoint bloodletting	1.9	5.8
Cupping	5.5	12.8
Gua sha	1.9	1.7
Laser acupuncture	1.3	2.2
Magnets	16.7	2.6
Oriental herbs	30.6	30.3
Oriental massage	18.6	37.5
Other (eg, liniment, plasters)	3.2	14.9

* Most adjunctive treatments are defined in the Appendix.

who are aware of what other medications patients are taking and who obtain their herbs from Western sources (for more details on herbal safety, see the Appendix).

Communication Between Acupuncturists and Physicians

Acupuncture is an increasingly popular form of care used by patients who, about one half the time, are being treated simultaneously by a physician for the same problem. Yet we found that acupuncturists and medical doctors did not routinely communicate with each

other about the care of their patients. Possible barriers to such interdisciplinary communication include our observation that most patients who see both a physician and an acupuncturist for a particular condition were not referred to acupuncture by the physician, and that acupuncturists are trained to treat patients using a non-Western medical paradigm but are not always sufficiently trained to communicate their findings and treatment outcomes with conventional providers. In addition, we suspect that most acupuncturists, who are typically solo practitioners, lack office staff and appropriate record systems to assist with administrative tasks, including routine (and written) communication with other health care practitioners.

We believe that patients will benefit from increased communication between physicians and acupuncturists. Physicians can contribute to this process by asking patients about the type of care they are receiving from an acupuncturist, especially Chinese herbs. To better understand potential safety risks, including those that are due to adulterated products, dose-dependent toxicity or herb-drug interactions, physicians will benefit from conversations with acupuncturists about the nature of prescribed herbal formulas, especially when patients are taking concurrent prescription and over-the-counter medications. Physicians will also probably want to know how the acupuncturist is assessing the patient's response to treatment and whether the acupuncture treatments are helping the patient over a reasonable period. Some patients will want to try acupuncture only after consultation with their physician. In these circumstances, physicians can use the framework recommended by Eisenberg⁵⁸ to guide patients through the process of selecting a well-trained acupuncturist, jointly negotiating the treatment plan, and monitoring the effects of the treatment over time.

CONCLUSION

While substantial barriers still exist to the full integration of acupuncture into the health care system (eg, variability between states in licensure and practice regulations, variable reimbursement practices by third party payers, lack of solid studies on efficacy for many frequently treated conditions),⁵ the information provided herein should be useful to physicians and other health care practitioners interested in advising their patients about acupuncture.

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Key words: Acupuncture; office visits; professional practice; alternative medicine

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