Availability of acupuncture in the hospitals of a major academic medical center: a pilot study

E. S. Highfield,[1] T. J. Kaptchuk,[2] M. J. Ott,[3] L. Barnes,[4,5] K. J. Kemper[6]

[1]Acupuncture Program, Center for Holistic Pediatric Education and Research, Children's Hospital, Boston, MA, USA, [2]Osher Institute, Harvard Medical School, Boston, MA, USA, [3]Pain and Palliative Care Program, Zakim Center for Integrated Therapies, Dana Farber Cancer Institute, Boston, MA, USA, [4]Department of Pediatrics at Boston University, School of Medicine, Boston, MA, USA, [5]Department of Social and Behavioral Sciences at Boston University, School of Public Health, Boston, MA, USA, [6]Wake Forest University School of Medicine, Winston-Salem, NC, USA

SUMMARY. Background: Acupuncture is widely used by the American public, but little is known about its availability and use in academic medical settings. We performed a pilot study to compare acupuncture services provided by hospitals affiliated with a major academic teaching institution, and a parallel survey of services provided through an acupuncture school in one city in New England. Methods: Between December 2000 and July 2001, a telephone survey was conducted of the 13 hospitals affiliated with Harvard Medical School, and the clinics affiliated with the New England School of Acupuncture. Results: Acupuncture was available in 8 of the 13 hospitals. Acupuncture was provided in ambulatory clinics in all eight hospitals, but was available to inpatients in only one hospital. Six hospitals delivered acupuncture through an outpatient pain treatment service, one through a women's health center, one through an HIV clinic, and one hospital delivered acupuncture through two services; a program in the anesthesia department and a multi-disciplinary holistic program in a primary care department. In contrast, the acupuncture school clinics provided services through an on-site clinic at the school, through acupuncture departments at two community-based hospitals, and through a network of 12 satellite acupuncture-dedicated clinics operating throughout the state. Conclusion: Acupuncture is available on a limited basis in a majority of the teaching hospitals in this city. At the acupuncture school clinics, there are few barriers to care. Future health care studies will need to examine the role of acupuncture in diverse geographic settings and to examine its impact on quality of care, teaching and its role in research in academic centers.

Ellen Silver Highfield
Lic. Ac., Director,
Acupuncture Program,
Center for Holistic Pediatric Education and Research,
Children's Hospital, 330 Longwood Avenue, Boston, MA 02115, USA.
Tel: +1 617 527 4895;
Fax: +1 617 527 4895;
E-mail: eshighfield@attbi.com

INTRODUCTION

Recent survey data has documented the widespread use of complementary and alternative medicine (CAM) in the United States.[1,2] The phenomenon appears to be growing. A second version of a 1990

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national survey conducted in 1997 showed a substantial increase in the use of CAM. Specifically, the number of respondents who used at least 1 of 15 representative CAM therapies during a 7 year period increased from 34 to 42%.[3]

Acupuncture is a widely used component of CAM. According to estimates by the American Association of Oriental Medicine, 15 million Americans have tried acupuncture, and an estimated 12 million acupuncture treatments are performed annually.[4]

Both patients and physicians perceive clinical benefits of acupuncture treatments. For example, a survey of six acupuncture clinics in five states showed that respondents were highly satisfied with their care; respondents valued relief of presenting complaints as well as improvement in general physical and mental health.[5] A comprehensive literature search identified 25 surveys[2] conducted between 1982 and 1995; it found that approximately half of the surveyed physicians (51%) believed in acupuncture's efficacy across a broad range of conditions. Across surveys, acupuncture had the highest rate of physician referral (43%) and credibility among the CAM therapies.[2] The acceptance of acupuncture is also demonstrated by its recent adoption in pediatric health care environments.[6,7]

The National Commission for the Certification of Acupuncture and Oriental Medicine has approximately 9500 acupuncturists registered as Diplomates (i.e. meeting national standards for practice). National certification credentialling requires premedical studies plus 1725 h of acupuncture education including 500 h of clinical training. The 40 states that license non-physician acupuncturists primarily use the national examination as the basis for licensure.[4] There are about 3000 physician-acupuncturists practicing in the US.[8] In 41 states, physician-acupuncturists are required to have a minimum of 300 h of training. Other states have no requirements.[4,8]

Acupuncture has been the subject of an active research inquiry that includes randomized control trials and basic science and mechanism studies. Recent reviews have summarized the clinical evidence as still being equivocal or contradictory except for acupuncture treatment of emesis and dental pain where the evidence is substantial and consistently positive, as noted in the 1997 NIH Consensus Panel Report.[8–10] Basic science research, has begun to offer plausible mechanisms for the presumed physiologic effects of acupuncture, e.g. acupuncture activation of endogenous opioid mechanisms.[11]

Functional magnetic resonance imaging suggests that acupuncture may have regionally specific, quantifiable effects on relevant brain structures.[12–14]

Despite the widespread interest and advances on the scientific front, little is known about acupuncture's availability and patterns of use in hospitals in general, and specifically in academic medical center hospitals. Most of the survey data on the use of acupuncture do not differentiate between hospitals and freestanding clinics, or are limited to its use in private practices and outpatient services.

The objective of this pilot study was to assess acupuncture's availability in inpatient settings and ambulatory clinics in academic hospitals. A pilot study was undertaken in order to develop methodology and define relevant findings before expanding to encompass a larger sample. We also wanted to characterize the service providers, and the conditions most commonly treated as a exploratory step for a future survey that would be broader and more inclusive.

DESIGN

A cross-sectional survey of Harvard Medical School (HMS) teaching hospitals. For discussion purposes we performed a comparative survey of the ambulatory clinics associated with the New England School of Acupuncture (NESA), the only acupuncture school located in the Boston area.

METHODS

We included all hospitals affiliated with Harvard Medical School in the Boston area, excluding research facilities that do not provide direct patient care.

Between December 2000 and July 2001, a telephone survey of the 13 HMS hospitals in the greater Boston area was performed. One of the authors (E.S.H.) administered the standardized questionnaire.

We wished to survey the person in each institution who was most knowledgeable about the acupuncture services offered. Because previously there have not been studies in this area, we began with either personal contacts at each institution or calls to the hospital telephone operator.

Initial contact with the telephone operator of the hospital usually received a "did not know anything about acupuncture" or a "no acupuncture available" response. We then asked to be connected to the pain service, anesthesia department, public relations, human resources, urgent care, nursing or a hospital administrator.

We inquired in a uniform order from department-to-department when respondents indicated any uncertainty in their knowledge or when we wanted to confirm any definitive statements.

We continued this pattern until we found individuals knowledgeable about availability or its absence. We persisted until we received what was claimed to be a definitive answer.

In hospitals where acupuncture was offered, we always tried to speak directly to the practitioner. In three hospitals the acupuncturists themselves responded to the survey; in the other hospitals where

1. Does your hospital provide acupuncture services for patients?
   a. Inpatient?
   b. Outpatient?
2. Is acupuncture delivered as part of a pain service? Another service?
3. Does your hospital have provisions to provide acupuncture to pediatric patients?
   a. Inpatient?
   b. Outpatient?
      How young?
4. How many acupuncturists work or are employed at the hospital?
5. How long have these services been in place?
6. Are the acupuncturists physicians or licensed acupuncturists?
7. How many patients per week are seen for acupuncture?
8. What are the most common conditions treated by acupuncture?
9. How are patients referred to your acupuncture services?
10. How are the acupuncture services paid for?

the acupuncturist did not personally respond, an administrator in the service where acupuncture was offered answered the survey questions. Table 1 lists the questions asked of each facility.

To gain comparative information from the acupuncture school, we also conducted telephone interviews directly with the then-acting president of the school and the supervisors of the clinics.

Hospital	Acupuncture service available?	Department	Inpatient services available?	Pediatric services available?	Payment method
H-1	Yes	Pain Service	No	No	Self-pay
H-2	Yes	Pain Service	No	No	Self-pay, $125.00 first visit, $85.00 follow-ups
H-3	No	N/A	No	No	N/A
H-4	Yes	HIV Clinic	No	No	Free care
H-5	Yes	Holistic Center; Pain Service	Yes	Yes	a. Free care supported by NIH-NCCAM grant b. Office visit
H-6	Yes	Integrative Therapies Clinic	No	No	$70.00 first visit, $35.00 follow-ups
H-7	No	N/A	No	No	N/A
H-8	No	N/A	No	No	N/A
H-9	Yes	Pain Service	No	No	Office visit
H-10	No	N/A	No	No	N/A
H-11	No	N/A	No	No	N/A
H-12	Yes	Women's Health Center	By physician request	No	Self-pay and in-house grant lower pay $60.00/treatment
H-13	Yes	Pain Service	No	No	First visit billed through pain service, then self-pay $100.00/treatment
N-1	Yes	Acupuncture Clinic	No	No	$20.00–33.00/visit
N-2	Yes	Independent Acupuncture Service	No	No	$20.00 visit
N-3	Yes	AIDs Care Project	No	Yes	Free or sliding scale
N-4	Yes	Pathways to Complementary Medicine	No	No	Free or sliding scale

Hospitals (listed in different order from above, to preserve anonymity). Harvard affiliated hospitals: Dana Farber Cancer Institute, Children's Hospital, Spaulding Rehabilitation Hospital, Cambridge Hospital, Beth Israel Deaconess Medical Center, Massachusetts Mental Health Center, Joslin Diabetes Center, Massachusetts General Hospital, Brockton/West Roxbury Veterans Administration Medical Center, Massachusetts Eye and Ear Infirmary, Mount Auburn Hospital, Mclean Hospital, Brigham and Women's Hospital. NESA associated clinics: New England School of Acupuncture—Student Clinic, Dimmock Community Health Center, Winchester Hospital, Satellite Clinic in Wilmington, Health Resources Network. Please note that hospitals are denoted with an 'H' and the associated clinics of NESA with an 'N'.

Hospital	Provider	Average number of treatments/week	Common conditions treated
H-1	Lic. Ac.	8	Pain
H-2	Lic. Ac.	2	Pain
H-3	N/A	N/A	N/A
H-4	Lic. Ac.	6	HIV related: pain, neuropathy, side effects of treatment medications
H-5	Lic. Ac. and MD	16+	Anxiety, pain, headache, nausea, insomnia
H-6	Lic. Ac.	10	Pain, nausea, vomiting, anxiety, insomnia
H-7	N/A	N/A	N/A
H-8	N/A	N/A	N/A
H-9	2 MDs	16	Pain
H-10	N/A	N/A	N/A
H-11	N/A	N/A	N/A
H-12	2 Lic. Ac.	7	Nausea related to pregnancy, pain, delayed labor, breech presentation
H-13	MD	7	Pain
N-1	Supervised student	330	Pain, stress, side effects of chemotherapy
N-2	Supervised students	25	Pain, headache, back pain, detox for substance abuse
N-3	Supervised students	80	Pain, back pain
N-4	20 Lic. Ac./supervised students	200	HIV related: fatigue, neuropathy, side effects of treatment medications

For hospital list, see footnote to Table 2.

RESULTS

The results are summarized in Tables 2 and 3. Of the 13 teaching hospitals, 8 offered acupuncture in an ambulatory clinic within the hospital. Five of the hospitals provided acupuncture as an adjunct to a pain service; these included general medical institutions, specialized institutions, and a rehabilitation hospital. Several had acupuncture services as adjuncts to other specialty clinics such as the Women's Health Department and a clinic dedicated to treating persons who have HIV. Only one hospital regularly provided both inpatient and outpatient care. This last hospital had received NIH funding to provide educational for medical staff on acupuncture and other complementary services. Acupuncture providers in six of the hospitals were licensed acupuncturists. Several hospitals had more than one provider delivering acupuncture care and one hospital employed both a licensed acupuncturist and a physician-acupuncturist.

The most frequently cited problem treated in the outpatient clinics was pain, especially back, neck, and sciatic pain. The clinics with more specific populations treated conditions consistent with their mission: the HIV clinics treated patients with complaints of nausea, fatigue and depression, which often were the reported result of medication adverse effects. The symptoms most often treated at the cancer center included fatigue, pain, nausea and other symptoms associated with chemotherapy (see Table 2).

Most programs offered acupuncture services only one or two times a week, either as morning or afternoon sessions, with each acupuncturist seeing as few as 1 patient per week or as many as 12. The hospital providing inpatient and outpatient services reported a much higher volume of visits (20 sessions per week) because having two acupuncturists allowed for much greater access (5 days a week).

Acupuncture at the hospital's ambulatory clinics was billed either as self-pay, usually for visits with licensed acupuncturists, or as an office visit when the service was provided by a physician. One hospital provided low-cost and subsidized care through their Center for Integrative Therapies. The dedicated HIV clinic provided free care. Two hospitals had grant support to provide clinical services for some patients.

In contrast, the local acupuncture school, NESA has four teaching clinics: one on the grounds of the school, two associated with community hospitals and one comprising a network of clinics dedicated to treating persons with HIV.

The NESA on-site school clinic has 90 students per semester working in a supervised clinic, providing acupuncture 6 days per week and treating approximately 330 patients per week. One off-site clinic at a community hospital provides acupuncture to the general public at a sliding scale, and offers acupuncture at no charge 1 day per week. Eight supervised student interns provide the services, treating approximately 60 people per week. In addition, at this same site, a once per week specialty clinic for the treatment of substance abuse, saw approximately 12 patients per week. The off-site clinic at the other community hospital offers low-cost treatment, where student interns see 80 people per week on average.

The fourth off-site unit is actually a network of 13 different ambulatory clinics dedicated to treatment of people with HIV. This network has 20 licensed acupuncturists, assisted by 12 student interns per semester. Supported entirely by donation, the HIV treatment service provides approximately 200 treatments per week.

DISCUSSION

A majority of the Harvard affiliated teaching hospitals (8 of 13) in this city provide at least some acupuncture services. Somewhat peculiarly, even with the large number of major hospitals providing acupuncture services, the actual number of patients seen and treatments provided at the academic centers was surprisingly low. In terms of health practitioner academic training centers, the acupuncture school, with its smaller resources and smaller number of clinical sites, provides a much larger amount of the acupuncture in the community.

Despite its nominal presence in hospitals, acupuncture seems significantly less utilized compared to use patterns in the acupuncture school clinics. While acupuncture may be available in name at the academic hospitals, it seems that intra-hospital referral for acupuncture is minimal and acupuncture's practice remains de facto marginalized. At the time of our survey, hospital operators were usually unable to identify where, if any, acupuncture services existed in the institution, and only after prompting to be connected to further departments was the interviewer able to get definitive answers. It might be inferred that acupuncture is not well advertised, promoted, or referred to within the hospitals themselves. Specific departments may utilize one practitioner associated with their unit, such as a pain unit, but cross-referrals, at least in the year 2000–2001, were low. Acupuncture services seem peripheral to the central mission of biomedical academia. This academic medical center did not appear to reflect the survey data that indicates a high physician interest in acupuncture.[2]

Only one hospital that we know of had patient information sheets on acupuncture (in both English and Spanish), has promoted the availability of their acupuncture services and patient acceptance of such services in hospital information bulletins.[17] One hospital had a restriction on advertising in-house acupuncture, as the hospital had a previous formal agreement to refer to an outside clinic (per phone conversation).

The cost of services, in all likelihood, has an impact on where the public goes to obtain acupuncture. Most acupuncture procedures require treatment to be repeated between one and two times per week, for a period of several weeks, resulting in a fairly costly choice of care. In our survey the hospital-based acupuncture was most usually fee for service, with the cost being paid out of pocket by the patient. The range of cost was from $50.00 to $100 per visit in the hospitals that were not subsidizing treatments. The two hospitals that were able to offer reduced fees did so, and their usage numbers were at the time of this survey, not substantially higher than the other institutions. The NESA associated clinics on the other hand, offered free or low-cost, $30.00 per visit of acupuncture services. While a hospital-based service may carry more perceived validity to the lay person, the higher cost might restrict their usage of the service.

It is interesting to note that most of the acupuncture offered in this hospital system took place in pain units. This trend is consistent with the 1998 finding that 85% of chronic pain services in the UK offered acupuncture.[16]

Reasons for this under-utilization in this academic hospital might include:

1. Physicians and other allied health professionals are unaware of its presence;
2. The medical community is split as to acupuncture's acceptability and clinical utility and providers may not consider it a valid therapy;
3. Its inclusion in hospitals represents the efforts of a minority of academic physicians, or some administrative considerations (such as marketing); and
4. Acupuncture has not achieved a consensus of acceptability within the academic setting. The much higher utilization patterns of the acupuncture school clinics (even when some of these clinic are in hospitals) appears to indicate that an environment that enthusiastically endorses acupuncture as central to its mission and/or possibly reduces economic barriers will facilitate greater utilization patterns.

One interesting question is whether the pattern of under-utilization we found indicates a beginning of a new movement toward the integration and assimilation of acupuncture into mainstream medicine, an ambivalent and contradictory attitude within academic medicine toward acupuncture, or both.

Limitations of this study

This was a pilot study to examine the feasibility of undertaking a larger survey on acupuncture's utilization within hospital settings. It is limited in scope and size of the data set, and all results are preliminary. The impact of performing a telephone questionnaire versus a mail or on-site survey on the validity of the results is unclear. It is unclear to what extent recall bias contributed to the results of our study.

One question that puts an important limitation on any interpretation of this survey is whether Harvard Medical School and its teaching centers can be considered representative of a majority of academic medical institutions. This survey only included one

of a number of academic medical institutions in the city, and none of the private providers. Is the discrepancy between this survey and different types of surveys showing high physician interest in acupuncture a product of the difference between academic physicians and more community-based physicians, or is this discrepancy related to Harvard's more unique status among medical schools, which may imply a more conservative attitude towards the acceptance of CAM therapies compared to other medical schools? Our data are insufficient to suggest a conclusion. Of note, Harvard is one of the few medical schools in the country that has a Division of Research and Education in Complementary and Integrative Medical Therapies, and has earned a reputation as being in the forefront of this field.[15] This fact points to the likelihood that this academic center is not necessarily more conservative than other medical schools (at least in some sectors) and that the marginalization of acupuncture probably applies to other academic centers. Another possible difference is that Boston area has a large number of acupuncturists available in the community, which may diminish the demand for acupuncture in hospital settings.

Another serious limitation of this paper is that the field of CAM is rapidly changing. Major shifts could happen in a relatively short time, increasing or decreasing the availability of acupuncture services at academic centers. For example, the Division of Complementary and Integrative Therapies at Harvard Medical School has recently received NIH funding to set up a pilot clinic that will integrate CAM services into the academic medical center. Undoubtedly, this could cause a major shift in the perceptions and utilization of acupuncture; new scientific evidence could also tip the scales.

Our survey seeks to answer a very limited question. A survey of only one academic center is likely to introduce significant sampling bias. Unanswered questions remain. First, do our findings apply elsewhere? More information is required to understand how patients refer themselves to acupuncture and why they select certain location/providers? What are the dimensions of patient-to-patient referral? Also, which physicians, nurses, or health care providers refer to acupuncture and/or a specific location/provider and why? Does the lack of referrals indicate a lack of information or a lack of interest? What are the reasons for referral and what are their expectations? How important are reduced cost options in determining utilization patterns? Do various stakeholders (the public, health care institutions, health insurance companies, etc.) have a preference for non-physician or medical acupuncturists? What is the reason for any such preference? Acupuncture is a heterogeneous treatment modality; to what extent is the acupuncture treatments for the same condition similar between institutions? What, if any credentialling for the various levels of acupuncturists (MD's, licensed acupuncturists) exist at the hospital level? To what extent does academic acupuncture participate in scientific research? Is any money spent on marketing and does this impact utilization? To what extent are acupuncture treatment notes recorded in hospital records?

And last, understanding further patient's and clinicians' views about the availability and accessibility of acupuncture would help to elucidate what level of acupuncture care is optimal in this as well as other communities. What are the barriers and facilitators of optimal care?

CONCLUSION

Acupuncture, at least in one academic medical center, was available in select settings. Its presence is not widely known and it seems underutilized and marginal to the central focus academia. Acupuncture training centers have made their acupuncture more publicized and accessible to the community.

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