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Community-research collaboration between researchers and acupuncturists: Integrating a participatory research approach in a statewide survey of licensed acupuncturists in California

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# COMMUNITY-RESEARCH COLLABORATION BETWEEN RESEARCHERS AND ACUPUNCTURISTS: INTEGRATING A PARTICIPATORY RESEARCH APPROACH IN A STATEWIDE SURVEY OF LICENSED ACUPUNCTURISTS IN CALIFORNIA

The Licensed Acupuncture Collaborative Study, a job analysis of licensed acupuncturists in California, provides a model for building community-research partnerships between university researchers and communities of non-physician clinicians. The study design used a project-management approach based on the core principles of community-based participatory research: 1) mobilizing shared expertise and resources to address issues of concern; 2) sharing power in the decision-making process; and 3) promoting mutual ownerships of resources and products derived from the collaboration. A project infrastructure involving the sharing of study responsibilities across university researchers, individual acupuncturists, and state community organizations was developed and cultivated over a three-year project period. Essential factors in the success of this project included shared objectives, addressing the concerns about collaboration among academic and community partners, inclusion of nontraditional viewpoints about healthcare policy, and participation by the acupuncturist community in performing the research. These activities helped to overcome mistrust and perceived power differences between researchers and the acupuncturist community. (*Ethn Dis.* 2006;16[suppl 1]:S1-98-S1-106)

**Key Words:** Acupuncture, Community Participation, Mistrust, Oriental Medicine

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## INTRODUCTION

Although community-based participatory research (CBPR) has been recommended by the Institute of Medicine for studying healthcare disparities and for addressing issues affecting vulnerable communities,<sup>1</sup> applying its framework in the field has been difficult.<sup>2-5</sup> University practices based on traditionalism and academic guidelines for faculty tenure and promotion continue to contribute to both researcher and community skepticism toward engaging in such collaborative endeavors.<sup>5</sup> Core principles of CBPR, such as shared decision making and mutual ownerships of resources and products derived from the collaboration, are typically not included in the management infrastructure of most research projects.<sup>6</sup> Moreover, researchers often confuse participation by an organization based in the community as synonymous with member participation, such as when the organization is a provider of services but not a representative of the community's interests.<sup>5,7</sup>

In this paper, we describe an academic-community partnership that features the application of CBPR principles to study the acupuncturist community in California, a group of non-physician clinicians with unique sociopolitical vulnerabilities.<sup>8</sup> We present a model for building a management infrastructure tailored to the talents and resources of this partnership, focusing on how community participation can be used to help shape research questions, study protocols, and strategies for overcoming perceived and real barriers between researchers and acupuncturists.

We begin our article by describing the key characteristics of the acupuncturist community, including its racially diverse clientele.

## BACKGROUND

### CAM Utilization and the Expanding Community of Acupuncturists in California

The US public's use of complementary and alternative medicine (CAM) increased substantially during the 1990s<sup>9,10</sup> and the present decade,<sup>11</sup> resulting in large out-of-pocket expenditures by the general population for alternative healthcare services. In 1997 alone, the US public spent >\$36 billion on CAM modalities such as chiropractic, acupuncture, and massage therapy.<sup>11</sup> This growing trend in the use of CAM has triggered a rapid growth in several alternative healthcare professions, including acupuncture and Oriental medicine (AOM).<sup>12</sup>

The community of acupuncturists is among the fastest growing communities of non-physician clinicians in California.<sup>12-15</sup> As of 2002, ≈5500 licensed acupuncturists had mailing addresses in the state.<sup>12,13</sup> By July 2003, this number had easily exceeded 7000.<sup>12</sup> During the past several years, ≥600 individuals have passed the state licensing examination annually.<sup>13</sup> As a result of this unprecedented growth, California now accounts for more than one third (>38%) of the total US acupuncture workforce, estimated to be ≈20,750 (total licenses issued in the United States).<sup>12</sup>

## The Sociopolitical Vulnerabilities of this Community

The natural history of the acupuncturist community is best characterized by its historical vulnerabilities as a profession and by the evolving multiracial make-up of its constituents. Despite growing public support for this healing art, acupuncture did not gain legal recognition as a healthcare profession in California until the 1970s.<sup>16-18</sup> Before this time, acupuncturists were predominantly Chinese practitioners who provided health care to Chinese immigrants or to dying patients who turned to Chinese medicine as a last resort; many of these patients lacked appropriate access to conventional health services.<sup>16-18</sup> These early practitioners were essentially practicing medicine without a license and as such were vulnerable to arrest and punishment.<sup>16,18</sup> In 1972, the Board of Medical Examiners (now the Medical Board of California) began regulating AOM under provisions that the authorized practice of acupuncture be supervised by a licensed physician as part of acupuncture research in medical schools. In 1976 California became the eighth state to license acupuncturists, and in 1978 the requirement for prior diagnosis or referral by a licensed physician was eliminated — an action enthusiastically supported by many consumers in the state. This change allowed AOM to become a primary-care profession.<sup>17-19</sup> In 1982, the state legislature designated the Acupuncture Examining Committee as an autonomous body (Senate Bill 1980), removing it from within the jurisdiction of the Medical Board of California. This committee later became the California Acupuncture Board (CAB), a division of the state consumer protection agency charged with the responsibility of protecting consumers from harm due to AOM errors and unqualified acupuncturists.

Although AOM has enjoyed significant growth in popularity and market

share since its legal inception, the acupuncturist community remains susceptible to socioeconomic harm to this day, primarily as a result of ongoing internal division and external sociopolitical factors.<sup>16</sup> For example, ongoing professional infighting, overreliance on out-of-pocket payments, reluctance of most health plans to cover AOM services, lack of research to inform public policy, and intense scrutiny by the medical profession have all contributed to an increasingly unstable marketplace for this community. Additionally, a growing interest among several licensed physicians to market AOM treatments as billable commodities has triggered deep concerns among several community members, igniting turf battles between them and the medical profession.<sup>16</sup> Concurrently, the growing influx of multiracial members to the workforce since the 1990s, including greater numbers of Caucasian, Korean, and Vietnamese providers, has further divided the sociopolitical landscape of this professional community.<sup>13-15,20</sup> In 2002, for instance, CAB statistics suggest that >40% of the community is now Caucasian, while <58% is Asian; of the latter, the fastest growing group is Korean, a subgroup that has challenged and replaced some of the practice traditions of early Chinese acupuncturists.

## Disparities in Healthcare Access among Patients of Acupuncturists

The clientele of California acupuncturists typically comprises a heterogeneous mix of patient populations, many of whom lack access to effective conventional health services, primarily as a result of poverty, cultural or language barriers, or dissatisfaction with conventional medicine.<sup>8,16</sup> Many Asian acupuncturists, for example, continue to provide first contact care to poverty-stricken immigrants from China, Vietnam, and Southeast Asia, many of whom have no health insurance, job, or language skills to communicate

effectively with English-speaking physicians.<sup>16,20</sup> Additionally, evidence suggests that increasing numbers of acupuncturists are providing AOM services to chronically ill populations, including those with chronic diseases such as arthritis, HIV/AIDS, anxiety/depression, and/or other psycho-emotional disorders.<sup>8,19</sup> Conventional therapies are often insufficient to effectively manage these conditions.

## Implications for Public Policy and Consumer Protection: Why Study This Community?

In a rapidly growing profession such as AOM, in which licensing requirements and scope of practice for providers vary from state to state,<sup>21</sup> a clearer understanding of what acupuncturists do, how they are trained, and whether or not they are sufficiently prepared to practice in the larger marketplace can help policymakers make better choices and more informed decisions about educational reform and policies for protecting the public from inadvertent harm due to uncoordinated care (eg, drug/herb interactions, contaminated herbal products, needling errors). Also beyond improving legislative and public acceptance of this profession, a clearer description of professional practice and background can promote greater physician awareness of the AOM community;<sup>22,23</sup> facilitate more effective physician collaboration and referral; minimize access to unqualified acupuncturists; increase public awareness, knowledge, trust, and confidence; help translate AOM services into standardized diagnostic and therapeutic categories for billing purposes; and aid healthcare institutions or physicians interested in integrating such services with legal risk management.<sup>21,24</sup>

## METHODS

We provide a case study description of the development of the infrastructure

used to conduct The Licensed Acupuncture Collaborative Study (the LAC Study)—a job analysis of a representative sample of licensed acupuncturists in California.<sup>8</sup> This interorganizational project infrastructure was created for the purpose of collecting and disseminating research on job preparedness and health-services delivery by the acupuncturist community. To advance this goal, researchers from the University of California–Los Angeles (UCLA) Department of Family Medicine and leaders from the California State Oriental Medical Association (CSOMA), the largest professional society of acupuncturists in California, formed a research partnership based on core CBPR principles: 1) mobilizing shared expertise and resources to address issues of concern; 2) sharing power in the decision-making process; and 3) promoting mutual ownerships of resources and products derived from the collaboration.<sup>5,6</sup>

The infrastructure was developed with its primary focus centered on promoting community participation. The initial phase of this building process included the cultivation of individual and institutional relationships within the community, requiring the organization of AOM leadership and identification of acupuncturist champions over a three-year project period. Fundamental to our approach is the desire to pool talent and resources from both sides (academia and the acupuncturist community) to explore integrative medicine, requiring a representative description of the AOM profession as the first step. The leadership at CSOMA shared university researchers' desire to form a working partnership that facilitates member input from every level of the profession, including external stakeholders with vested interests in the community (eg, the CAB, legislators, AOM educators). The CSOMA leadership and university researchers also shared common concerns about perceived and real barriers to collaboration.

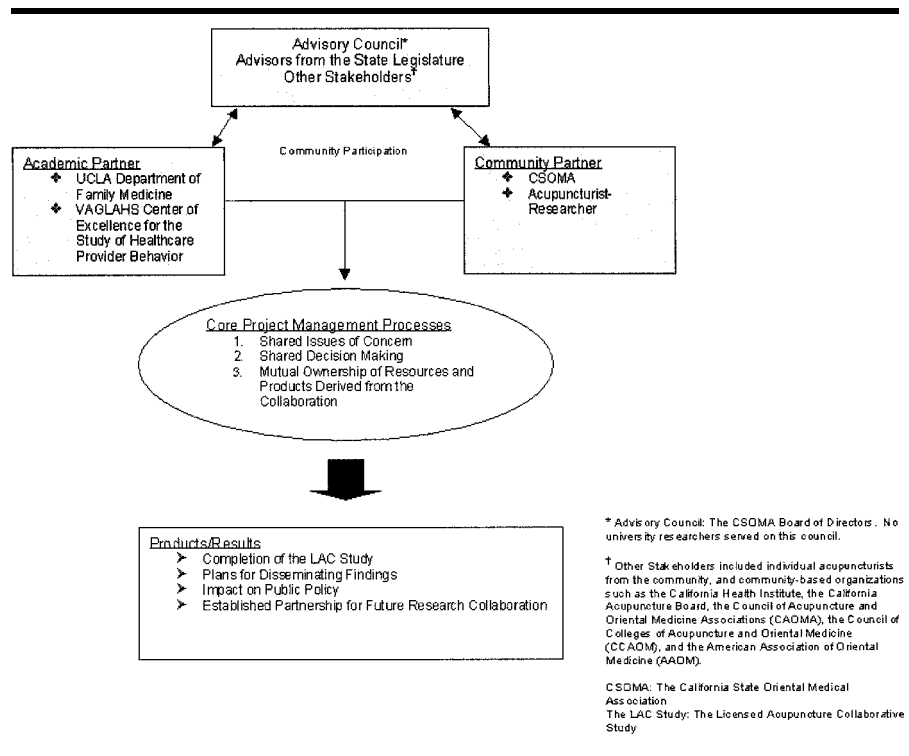


Fig 1. The LAC project infrastructure

Mistrust and perceived power differences between the two groups, for example, were two barriers that the partnership worked diligently to improve throughout the research process.

### The Project Infrastructure

The opportunity to develop an infrastructure for research collaboration between both partners arose as a result of two convergent priorities. In 2001, researchers from the UCLA Department of Family Medicine were seeking to establish new links within communities outside the university. Among its research priorities was the growing desire to study and understand community access to conventional and alternative healthcare services among ethnic minorities and other disfranchised populations. Concurrently, recent state legislation (Assembly Bill 1943)<sup>25</sup> and the emerging debate over educational reforms<sup>20</sup> led several leaders in the acupuncturist community to conclude that health services research could be used to better inform policymakers,

plan AOM service delivery, and improve AOM training. The practical needs of both sides provided the foundation for crossdisciplinary dialogue. The interorganizational infrastructure that emerged from this process included a three-phase approach to promote community participation. Figure 1 depicts this infrastructure, showing the relationships between each of the relevant stakeholders in the process.

### The Three-Phase Approach

In an effort to solidify the community-research partnership and the infrastructure, the executive director of CSOMA and the university team implemented a collaborative approach that included three phases: phase 1, an outreach effort to educate the community about health-services research and to help address concerns about research; phase 2, an expansion of the research team to include co-investigator(s) and mentor(s) from the acupuncturist community; and phase 3, identification of

community advisors and formation of an advisory council to oversee the affairs of the community members who were recruited to participate in the study. The latter (advisory council) also served as a potential conduit for disseminating research findings in the future.

Each phase of this approach was further divided into subcomponents. The outreach phase, for example, included a determined effort by the principal investigator (PI) and his research staff to visit some of the offices of practicing acupuncturists in the community and to speak about health services research at local and state conferences sponsored by CSOMA and other AOM organizations.

Likewise, the expansion of the research team involved a labor-intensive search for qualified community representatives to serve as co-leader(s) of the project. During the first six months of this process, for instance, multiple candidates came and went, some because of lack of time, others because of differences in opinion with the group consensus. The final choice of co-leader from the community was ironically an acupuncturist-researcher who was initially skeptical about the project because of his concern that the data would not be available to the acupuncturist community and that they might be used to discredit the AOM profession.

Finally, community advisors were identified, and an advisory group was formed with working guidelines to oversee the welfare of study participants, providing assurances to the community leadership (ie, CSOMA and non-CSOMA leadership) that participants would be protected.

In the following section, we describe these community stakeholders' roles in this three-phase process. We also provide relevant information about their contributions to the overall project infrastructure. Lessons learned from implementing this three-phase approach are listed in Table 1.

### *Partners*

#### *Academic Programs.*

- The Department of Family Medicine in the David Geffen School of Medicine at UCLA conducts research on patient-centered care, health policy, and under-served populations, including access to care among vulnerable communities. Among its research priorities is a commitment to improve physician practices through the translation of evidence-based research to practice-based solutions. The research unit within the department houses six physician-researchers, three health-services research fellows, and one experienced program evaluator from the Pacific AIDS Education and Training Center (PAETC). The PI of the LAC Study was a physician-researcher from this unit. He co-led the effort to build and sustain an academic-community partnership using CBPR principles. Another physician-researcher from this same unit provided expertise on research models for studying healthcare access among vulnerable communities.
- The Veterans Affairs Greater Los Angeles Healthcare System (VAGLAHS) Center of Excellence for the Study of Healthcare Provider Behavior also contributed to the project infrastructure. Under the supervision of its director, the VAGLAHS center provided helpful resources to support the LAC Study. Its theoretical model on provider behavior provided the project with a framework for establishing productive relationships and enhanced communication between university researchers and the acupuncturist community.

#### *Community Organization.*

- The California State Oriental Medical Association (CSOMA) is a professional organization of licensed acupuncturists dedicated to the pres-

ervation and advancement of the art, science, and practice of this healing tradition. Although other regional AOM societies and organizations exist in the state, CSOMA is the largest and one of the most influential. With its headquarters in Sacramento and a dedicated full-time staff, CSOMA provides representation on behalf of the acupuncturist community at many levels of the state and local government. Their multiracial membership is representative of the community's overall makeup. It includes individuals involved in AOM practice, research, college administration and instruction, and students of AOM colleges.<sup>8,20</sup> Among the various supporters of the LAC project, the executive director of CSOMA emerged as one of the most influential members of this partnership. She facilitated the collaboration between university researchers and acupuncturists. As the former national director of the LANDTECH program in the US Department of Energy (DOE), the executive director brought extensive knowledge and experiences in public policy and infrastructure building to the team. She provided the partnership with important guidance and mentorship on leadership styles, community capacity building, and effective strategies for communicating with policymakers.

#### *Project Co-Leader and Champion from the Community.*

- The primary investigator from the acupuncturist community currently serves as the co-director of the Institute for Holistic Healing Studies at San Francisco State University. He is an acupuncturist-researcher who conducts community research on access to AOM services in the United States and abroad. His productive tenure as the former chair of research in CSOMA and his experience in academic research provided the pro-

RESEARCH IN THE ACUPUNCTURIST COMMUNITY - Kuo et al

**Table 1. Components of the LAC project infrastructure: advantage(s) and disadvantage(s) of using them in CBPR research**

Component	Advantage(s)	Disadvantage(s)	Lessons Learned
Champion(s) from the community (acupuncturist-researcher)	Co-leads project Represents the interests of the community	Qualifications High turnover rate due to other professional commitments Frequently, research is not his/her top priority	Be patient with the process Return on investment is excellent
Advisory Council (eg, the CSOMA Board of Directors)	Provides authority for recruitment purposes Provides infrastructure for effective and timely communication with members of the community Provides valuable background information about current events, community needs, and unique idiosyncrasies	Must understand organizational bureaucracy Must understand the various agendas Must understand that much of the decision-making process is completed outside of the board/council meetings Must understand organizational culture Must understand leadership style(s) Must understand management philosophy	Upstream efforts to understand the organizational structure, management style, and culture of the advisory group provided good return on investment in terms of recruitment of participants, study response rate, problem-solving obstacles, and avoiding legal pitfalls
Legislators as advisors*	Direct input on policy relevance of research questions, hypotheses, and study outcomes; not best guesses from researchers and the community leadership	It is a political process; requires savvy and knowledge of advocacy Must be comfortable with making decisions in the face of uncertainty in the face of uncertainty	Research and regulation often focuses on different goals: research is about knowledge and discovery; regulation is about minimum requirements to ensure consumer safety and legal risk management; decisions are often made
Outreach efforts	Builds good will and relationships Important opportunities for educating the community about research Important opportunities for exchanging cross-disciplinary ideas and perspectives	Time- and labor-intensive	Important strategy for building trust
Site visits to select community sites	Observation of reality and organizational environment Opportunities to speak with various stakeholders at various levels, not just at the leadership level	Time- and labor-intensive Travel time and distance are considerations	Important strategy for verifying practice patterns, issues, and behaviors ascribed by community leadership, key informants or by the scientific literature

\* Legislators who are interested in acupuncture regulation and uncoordinated care.  
LAC=Licensed Acupuncture Collaborative; CBPR=community-based participatory research.

ject with much-needed credibility, which resonated with members of both partnering groups. His addition to the team as a co-leader of the project was seen as a critical move by the acupuncturist community because it alleviated some of the fears that research findings from the LAC Study might be used against the profession. It also indicated to the community that the study infrastructure was built to allow for shared

decision making during each phase of the study.

*Advisors*

*Advisory Council – the CSOMA Board of Directors*

- To protect acupuncturists from inadvertent harm due to the research process, the CSOMA Board of Directors was asked to oversee the welfare of study participants. This

15-member board served as the advisory council for the project. The group was highly representative of the community in the state, consisting of individuals involved in the practice of acupuncture, AOM research, AOM college administration and instruction, and students from AOM colleges. This advisory group was charged with the following responsibilities: 1) developing working guidelines to observe the

rules and regulations of human subjects research (the board adopted the institutional review board guidelines from the Office for the Protection of Research Subjects at UCLA); 2) providing advice on community needs and vulnerabilities that should be considered in the research project; and 3) establishing open channels of communication with other stakeholders in the community to help answer questions about the research process during each phase of the project. This council met on a quarterly basis (every three months), but key members were in frequent contact with the PI and the executive director of CSOMA. Because of its established reputation and track record for representing the interests of acupuncturists in California, the CSOMA Board of Directors was viewed as a natural choice to oversee the welfare of study participants from the acupuncturist community.

#### *Advisors from the State Legislature*

- An important element of the project infrastructure included discussions of the study with relevant state legislators. These advisors from the state legislature were needed to help better inform the team about current events and policy-relevant questions related to acupuncture regulation. Additionally, we hoped that having periodic conversations with legislators might help provide a natural conduit for communicating research findings to these policymakers in the future. To this end, the PI and the executive director of CSOMA contacted and sought advice periodically from at least three offices of assembly members and senators from the California State Legislature, including an in-person dialogue with the assembly member who introduced Assembly Bill 1943—the legislation that increased the minimum-hour requirement of AOM study to 3,000 total

hours for licensing purposes (requirement to start in 2005).<sup>25</sup> Albeit intermittently, this effort provided an informal way of communicating with policymakers interested in AOM issues during the study period. It also provided opportunities for the PI and relevant team members to learn more about the process of policymaking, much of which is foreign to many university researchers and acupuncturists.

#### *Other Stakeholders*

- The California Health Institute, a for-profit supplier of AOM supplies and equipment, also championed the project. Its director, who is an experienced acupuncturist and chiropractor, provided the collaborative team with valuable advice about community issues during the early phases of the study. Many of his ideas about community capacity building were incorporated within the project infrastructure. At his suggestion, issues of AOM educational reform were explored more comprehensively during the LAC Study. An earlier educational survey of California acupuncturists, which he conducted during 1999–2000, provided background information on the AOM education debate in the state.<sup>26</sup>
- To promote community participation from several levels of the acupuncturist community, the study team encouraged input from other AOM stakeholders whenever possible. For example, the partners had frequent dialogues with practicing acupuncturists (non-CSOMA members); the CAB; the Council of Acupuncture and Oriental Medicine Associations (CAOMA), governed by five regional professional societies of acupuncturists in California; the Council of Colleges of Acupuncture and Oriental Medicine (CCAOM), with 51 member schools nationally, 16 of which are CAB approved in California and 30 of which are CAB

approved nationwide; and select members from the American Association of Oriental Medicine (AAOM). In several instances, the PI and his co-investigators made site visits to these acupuncturists' offices and organizations to learn more about the practice of AOM in California.

## RESULTS

### **Implementation of the LAC Study**

Utilizing the talent and resources of the evolving infrastructure between academia and the acupuncturist community, the partnership began preparation for the LAC Study during the winter of 2001. During this initial phase of planning, shared issues of concern affecting the community were identified and discussed among university researchers and community leadership. The final study design and data-collection instrument reflected the collaborative nature of this effort, resulting in a mutual ownership of the research questions proposed. Priority issues identified by the partners included: 1) a need to describe the scope of practice of acupuncturists in the community as it relates to state law; 2) a need to understand issues surrounding uncoordinated care such as herb-drug interactions and acupuncturist-physician communication; and 3) a need to determine if AOM education in California is adequately preparing acupuncturists for clinical practice. Based on these priorities, the partners mutually agreed that a job analysis of acupuncturists in California, in the form of a provider survey, would be most applicable for collecting data relevant to public policy.

Carried out from November 2002 to February 2003, the LAC Study was performed with administrative resources from both sides. Using the 2002 public records from the CAB, the partnership employed a sampling strategy that randomly selected 400 practitioners

from a pool of 4914 eligible individuals. Based on study inclusion criteria, a self-administered, 29-question, dual-language (English with Chinese) questionnaire was mailed to each of these selected practitioners. The instrument collected data on provider demographics, AOM training, clinical practices, job tasks, and clientele information. It was piloted among 44 acupuncturists before field implementation. From the targeted group of 400 acupuncturists, 276 (69%) responded to the mailed survey, 60 (15%) reported that they were not in active practice, 53 (13%) did not respond, and mail for 11 others (3%) was returned because the intended recipient was either out of the country or was no longer residing in California. The survey response rate was ≈84% after adjusting for undeliverable mail and for those who were not in active practice. Respondent characteristics are summarized in Table 2.

### Impact of the CBPR Approach on Study Features and Design

Table 3 outlines the evolution of the research project, detailing some of the study features that were improved by incorporating community input during the development process. Recruitment of participants in terms of response rate, for example, was greatly improved compared to prior studies in this community,<sup>26–28</sup> which did not utilize a CBPR approach. Likewise, the scope, depth, and quality of the research questions were made more policy-relevant, focusing on shared issues of concern between the academic and community partners. Some of these same issues were recently addressed by state legislation (eg, Assembly Bill 1943).<sup>25</sup>

### Dissemination of Findings

Study findings were recently shared with the Little Hoover Commission, an independent commission of policy analysts in California, contracted by the state legislature to study the impact of acupuncture regulation on patient safety

and consumer access to alternative healthcare services; the commission conducted its work from 2002 to 2004. In its published report,<sup>29</sup> distributed to state legislators, the LHC made several recommendations for improving AOM training and for testing and monitoring the proficiency of AOM school graduates before entry into the workforce. Other state legislators have subsequently made independent inquiries about the findings from the LAC Study. Plans to disseminate these and other study results are currently underway.

## DISCUSSION

Our experiences with the acupuncturist community gave us a greater appreciation for what community participation can accomplish in research. Essential factors that helped us in integrating a CBPR approach included having shared objectives; mobilizing university expertise and community resources to address issues of concern; putting the interests of the acupuncturist community on par with that of the university researchers; identifying and sustaining an ongoing relationship with community stakeholders through an evolving but well-managed project infrastructure based on shared decision making and mutual ownership of research questions; exercising patience and political savvy when engaging community members; emphasizing process- and community-oriented goals over academic outcomes; confronting concerns and misperceptions about research within the community; embracing community “expertise” and mentorship on study issues; learning from and accepting nontraditional viewpoints on healthcare policy; and promoting outreach and education about academic research within the acupuncturist community.

One of the most prominent benefits achieved through our community-research effort is that the participatory

**Table 2. Summary of respondent characteristics\* (N=276)**

Characteristic	Mean (SD, range)
Age (years)	48 (9, 29–76)
Years in practice	10 (7, 1–30)
	<u>No. (%)</u>
Gender	
Female	164 (59)
Male	112 (41)
Race	
White	172 (62)
Asian	99 (36)
Other	5 (2)
Education	
High school	6 (2)
Associate degree	6 (2)
Bachelor’s degree	16 (6)
Master’s degree†	161 (58)
Doctorate‡	68 (24)
Other professional§	13 (5)
MD in the US	0 (0)
MD not in the US	6 (3)
Foreign training	
Yes	63 (24)
No	199 (76)
Level of practice	
Full-time	157 (57)
Part-time	111 (41)
Retired	5 (2)
Gross Income	
<\$35,000	101 (38)
\$35,000–\$49,999	33 (12)
\$50,000–\$99,999	75 (28)
\$100,000–\$199,999	41 (15)
≥\$200,000	17 (7)
Practice location	
Large city	89 (32)
Suburb of a large city	82 (30)
Small city	68 (25)
Small town/rural	37 (13)

\* Total number (N) of responses in each category does not reflect the total number of respondents in the study (N=276). Some respondents declined to answer questions about gross income and level of practice.

† Master’s degree from an acupuncture and Oriental medicine (AOM) college or an academic/university program in any field of study.

‡ Doctorate degree includes, but not limited to: DDS/DMD, DC, OMD, PharmD, and PhD in any field of study.

§ Other professionals include: registered nurses (RN), physician assistants (PA), nurse practitioners (NP), physical therapists (PT), etc.

SD=standard deviation; MD=medical doctor; US=United States.

approach builds trust between researchers and the acupuncturist community, thereby promoting acceptability and value of health-services research within that community, helping to lay the



**Table 3. Evolution of the LAC Study: community participatory influence on the scope, quality and content of the study design**

Study Feature(s)	Initial Conceptualization by University Researchers	With Input from the Acupuncturist Community
Research questions	Types of preventive health services delivered Description of what acupuncturists do Description of the acupuncture profession in the state Attitudes and beliefs about healthcare delivery	Level of preparedness for clinical practice and training needs Minimum licensing requirements and primary care status Legal prerogatives versus actual scope of practice Acupuncturist-physician communication Knowledge of OTC and prescription drug/herb interactions
Implication of findings	Academic curiosity Knowledge and discovery Career-oriented; benefits the researchers	Policy relevant Regulatory relevance in terms of patient safety and licensure Community-oriented; benefits original research and the profession
Methods	Focus groups, small study design, convenience sampling	Quantitative design, representative sampling
Survey response rate(s)	Prior studies – typically smaller sample sizes or with lower response rates (range: 36%–62%)	Study adjusted response rate: 84% Approximately 1:12 eligible acupuncturists sampled in the state

LAC=Licensed Acupuncture Collaborative; OTC=over-the-counter.

foundation for further collaboration in the future. Based on our experience, top priority should be given to reducing perceived power differences between the partners, identifying and remedying sources of mistrust whenever possible. In the case of the acupuncturist community, mistrust had stemmed from the use of academic expertise such as testimony by medical professionals and writings from researchers to influence acupuncture regulation, which has historically been perceived as biased against the community. Mitigating this perceived power difference by appointing a highly qualified member of the acupuncturist community to act as the co-leader of the project was a first step to diffusing the misperception that physician-researchers could do real harm to the community and would do so with their academic influence.

Our CBPR approach represents an evolving model designed to engage communities of non-physician clinicians across a large geographic region. Although we were successful in implementing this approach in the LAC Study, the validity of using this model for other nonprofessional communities in a more local context is unknown.<sup>30</sup> Other CBPR approaches have been proposed for this latter purpose. Wells

et al, for example, recently described a local CBPR infrastructure — the Community Health Improvement Collaborative (CHIC), which has been designed to engage communities with more traditional vulnerabilities, such as those caused by low literacy, poverty, and race (eg, low-income patient populations).<sup>31</sup> Further research is required to better delineate the utility and appropriateness of these models for use in different community settings.

The LAC Study approach, which emphasizes participatory governance and promotes the CBPR concept of allowing community members to identify and study issues of concern affecting their own community, may not match the funding priorities of several federal agencies in the National Institutes of Health (NIH). Consequently, capable researchers may be discouraged from using this type of partnership infrastructure to conduct policy research in vulnerable communities, since NIH funding represents a source of salary support for many of these investigators. Recent changes in the NIH Roadmap, however, may challenge this perceived barrier and encourage reconsideration of these traditional assumptions about grantsmanship.<sup>32</sup> Community-based participatory research (CBPR) ap-

proaches may fit well within the spirit and intent of the shifting paradigm at NIH, which now emphasizes translational research and application of evidence-based interventions to improve the health status of vulnerable communities.<sup>32</sup> In fact, NIH has recently instituted a number of new initiatives that place top priority on projects that use CBPR approaches.

## CONCLUSIONS

Integrating a CBPR approach in health-services research is labor- and time-intensive and involves many other challenges.<sup>5,33</sup> The approach, however, can lead to successful projects that address community needs and provide actionable results for use in public policy, an important objective of most health-services research projects. Promoting community participation is a way to explore innovative research questions and policy-relevant solutions to problems about health-services utilization within a given community. To allow this process to work, university researchers must be willing to build relationships with participating members of the community, share decision-making powers, and use relevant pro-

## RESEARCH IN THE ACUPUNCTURIST COMMUNITY - Kuo et al

fessional knowledge and skills for the good of the community.<sup>2</sup> The use of a CBPR approach may not always be appropriate, but when used in the right context for the right research questions, it can provide actionable results that can be used to promote needed social change and potentially reduce health disparities within the community. These actionable results can also add to the knowledge base of the involved disciplines, support the professional promotion of researchers within the academic model, develop long-term support from the community, and empower communities to engage in policymaking and research by providing access to additional expertise and resources not previously available to them.

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