ORIGINAL ARTICLES

Interdisciplinary Relationship Models for Complementary and Integrative Health: Perspectives of Chinese Medicine Practitioners in the United States

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Abstract

Objectives: The combination of biomedicine and traditional and complementary medicine (T&CM) is often referred to as integrative medicine. However, the degree to which the medical disciplines are integrated varies between medical settings, and it is believed by some to be impossible due to epistemological and paradigmatic differences. Clinicians' perspectives are important determinants of how different medical disciplines are used together. This study explores the perspectives of experienced Chinese medicine practitioners when asked about the most ethical model (opposition, integration, or pluralism) for the relationship between biomedicine and T&CM.

Design: Thirty-one Chinese medicine practitioners, undertaking a doctoral upgrade program at the Pacific College of Oriental Medicine, participated in this study. Participants were asked to read a publication discussing three models (opposition, integration, and pluralism) for the relationship between biomedicine and T&CM and then discuss, via an online forum within Moodle learning management system, the most ethical model. An inductive content analysis of the forum posts was undertaken to identify common themes, followed by member checking.

Results: The data were found to contain six major and six minor themes. There was a clear preference for pluralism. The Chinese medicine practitioners expressed reservations about the integrative model, and, above all, cared about the quality of patient care. Much dialogue occurred around issues related to a power imbalance within health care, and possible cooptation issues. Paradigmatic differences and a lack of compatibility between biomedical research models and the practice of Chinese medicine were seen as problematic to the validity of research findings. Interprofessional education was viewed as critical for the development of respect, shared patient care, and referrals between clinicians from different disciplines.

Conclusions: This study provides insight into the issues associated with combining biomedicine and T&CM that are perceived by Chinese medicine practitioners. Such insights are important for the development and management of clinical settings that provide complementary and integrative health care, especially as the provision of insurance coverage for T&CM increases.

Keywords: complementary and integrative medicine, traditional and complementary medicine, pluralism, Chinese medicine, acupuncture, qualitative, education

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Introduction

INTEGRATIVE MEDICINE HAS become an accepted new model in health care in the United States (US).¹ In this model, an expanded array of healing options is available to patients inclusive of traditional and complementary medicine (T&CM), in addition to biomedicine. Different models for the way in which biomedicine and T&CM are utilized together have been proposed.^{2–5} Some have examined the way in which teams of clinicians with differing medical training work together, and they describe degrees of integration between biomedicine and T&CM.^{2,3} Others have focused on broader epistemological, social, and philosophical barriers in considering what models could and have existed,^{4,5} and they better address the tensions and contradictions inherent in such a union.

Wiese et al.⁵ differentiate between models based on the degree of autonomy that T&CM practitioners have within biomedical settings. They differentiate between models where T&CM is delivered or prescribed by biomedical professionals (selective incorporation), where care is provided by multidisciplinary and interprofessional collaborative teams (integration), and a patient-centered model where choice of care is decided by the consumer (pluralism).

Kaptchuk and Miller⁴ also propose three models—opposition, integration, and pluralism. They discuss how the relationship between biomedicine and T&CM is moving away from opposition, which they describe as the rejection of T&CM by biomedicine, and toward integration. Integration is described as the polar opposite of opposition, in which hospitals and biomedical clinics have amalgamated biomedicine and T&CM in a holistic approach to the treatment of disease and promotion of wellness. Integration refers to an approach in which different medical systems are used together without specific regard to differences in paradigms and treatment approaches. The authors propose that the practical, epistemological, and philosophical differences between biomedicine and T&CM defy integration, and they deny patients the integrity of either. Pluralism, in which distinct health care models co-exist in parallel, is presented as a preferable model because it “encourages cooperation, research, and open communication and respect between practitioners despite the possible existence of honest disagreement, and preserves the integrity of each of the treatment systems involved.”

Many scholars believe^{4–7} that pluralism is the most likely model that will allow true integration. However, historical, social, and political factors provide significant challenges for pluralism to become a predominant model within mainstream health care.^{5–7} The issues raised by Kaptchuk and Miller,⁴ and their thesis of fundamental incompatibility between biomedicine and T&CM, have been echoed by others.^{6–9} Adams et al.,⁶ using a critical social science perspective, examined the impact of the complex power relations that occur when biomedicine and T&CM are used together, along with the interprofessional dynamics between practitioners of different medical disciplines and their adoption of inclusionary/exclusionary strategies. Based on their research findings, they conclude that the integration of biomedicine and T&CM is much more complex than is often recognized, and it is significantly hampered by fundamental incompatibilities between the paradigms of the

different medical systems. Drawing on anticolonial analysis, Hollenberg and Muzzin⁷ argue that rather than integrating, what is really happening is appropriation. Appropriation is the adoption of the intellectual property and traditional knowledge of T&CM, and its use within biomedicine without recognition and respect for the origin. They propose that biomedicine is an extension of Euroscience, which has a long history of appropriation and assimilation of indigenous knowledge. Through the devaluation of nonbiomedical knowledge, the superiority of biomedical scientific evidence, and the domination of the biomedical worldview, they conclude that biomedicine is not integrating with T&CM, but rather co-opting it.

Various international organizations are striving to better understand and define how best to combine biomedicine and T&CM. The WHO has developed a global strategy to foster appropriate integration, regulation, and supervision of T&CM into health care systems.¹⁰ The European Union CAMbrella project identified six needed research areas for facilitating T&CM use, one of which is research into different models for T&CM integration.¹¹ Identifying optimal models for using biomedicine and T&CM together is important because it impacts patient care, the effectiveness of biomedicine and T&CM, clinicians’ satisfaction and autonomy, and the general work environment. As insurance coverage broadens for T&CM therapies in the United States, biomedical settings will employ greater numbers of T&CM practitioners. Devising an optimal approach to combining different medical disciplines and creating an infrastructure for effective and harmonious clinician interaction, both hierarchically and regarding patient care decisions, will be critically needed.

Regardless of the chosen model for combining biomedicine and T&CM, what manifests in medical settings, and with patients independently seeking multiple approaches, depends on the attitudes, beliefs, and perspectives of clinicians and administrators. These are powerful causative factors underlying power dynamics, inclusionary/exclusionary strategies, and the tendency for appropriation and assimilation. Interprofessional education to establish a knowledge base about other health care disciplines,¹² and training in evidence-based health care¹³ to engender treatment choices based on evidence do not necessarily change perspectives, attitudes, and beliefs. Such cultural change issues are significant challenges for both biomedicine and T&CM practitioners,^{14–16} and it has been suggested that we need to find a new common language to facilitate truly integrated, interprofessional, patient-centered care.¹⁷

Studies aimed at understanding the perspectives, attitudes, and beliefs of T&CM practitioners about combining biomedicine with T&CM are lacking in the literature. These studies are necessary because they provide insight into what issues need to be addressed when bringing T&CM practitioners into mainstream medical settings. Addressing such issues will directly impact how clinicians of different health care disciplines work together, and whether their interactions function to improve patient care, or antagonistically interact to potentially confuse patients and detract from optimal care. The small number of qualitative studies in the literature indicate that significant tensions exist between biomedical and T&CM practitioners when working together in biomedical settings,^{18,19} and experiences of biomedical

dominance exist among T&CM practitioners in private practice.^{20–22}

This article presents findings from a qualitative research study of 31 experienced Chinese medicine practitioners, in private practice for an average of 11 years. They were asked to read Kaptchuk and Miller's⁴ paper, which discusses three models for the relationship between biomedicine and T&CM—opposition, integration, and pluralism. The practitioners were asked to present an argument as to which of the three approaches they thought was the most ethical model for the relationship between biomedicine and T&CM. To the author's knowledge, this is the first study to specifically examine T&CM practitioners' perspectives and opinions about different possible models for combining biomedicine with T&CM.

Methods

This study was undertaken and reported in accordance with current qualitative research quality standards and guidelines.^{23,24} The study was approved by the Institutional Review Board at Pacific College of Oriental Medicine (PCOM). Informed consent was obtained from all participants after the course was completed and students had received their grades.

Sampling and setting

A purposive sampling approach was used.²⁵ Thirty-three Chinese medicine practitioners were invited to participate in this study. These practitioners were students who were registered in the synchronous online 3-credit (42 h) course Evidence Informed Practice (EIP) in the fall 2015 trimester at PCOM. This course was part of a 15-credit academic program for Chinese medicine practitioners who had a license to practice acupuncture in the United States, and who had previously graduated from an accredited master's program at PCOM. The degree enabled them to upgrade their qualifications to the doctoral level. This particular cohort of doctoral students was chosen because there was a high proportion of very experienced Chinese medicine practitioners. This was the first cohort to undertake the doctoral upgrade program. The program is approved by the U.S. Accreditation Commission for Acupuncture and Oriental Medicine. PCOM is regionally accredited by the Western Association of Schools and Colleges.

Data source

In week 10 of the 14-week EIP course, the students (experienced Chinese medicine practitioners) were required to engage in an online forum as one of the assessment items worth 5% of their overall course grade. The assignment required the students to read Kaptchuk and Miller,⁴ titled *What is the most ethical model for the relationship between mainstream and alternative medicine: opposition, integration or pluralism?* Via an online forum in the learning management system Moodle, the students were asked "to present an argument as to which approach—opposition, integration or pluralism—you think is the most ethical model for the relationship between mainstream and alternative medicine." The assignment required them to post an initial response of two or more paragraphs in length. They

then were required to respond to at least two posts of their classmates, and to respond to classmates who responded to their initial posts. Only the students participated in the forum; the professor (B.A.) did not participate or discuss the forum with the students until after the completion deadline.

Thirty-one of the 33 students in the EIP course gave informed consent to be included in this study. All were given participant codes (PC) for the purposes of identifying their contributions in this publication. Twenty were female, and 11 were male. Their average length of time as licensed acupuncturists was 11.4 years.

Data analysis

An inductive content analysis was undertaken by B.A. and S.J. to identify themes and summarize forum content following the phases outlined by Braun and Clarke.²⁶ Although students were provided with a paper outlining possible models for the relationship between biomedicine and T&CM, B.A. and S.J. were not deducing themes based on the perspectives presented in this article or other papers relevant to this general topic, but rather identifying themes that emerged from the student's discourse around this topic.

The data were analyzed through a pragmatic worldview inclusive of a mixed-methods strategy.²⁷ Themes that emerged from the data were transformed into quantitative data by counting the number of times a theme was mentioned, and the number of students who mentioned each theme. This was undertaken to permit both a qualitative description of the themes and the identification of major and minor themes according to how frequently they were mentioned by the students in the online forum. Summation of theme frequency permitted verification of the relative importance of the different themes, which guided the discussion of relative theme importance for this group of acupuncturists, and appropriate connection to existing related literature.

At the time this research was undertaken, S.J. was a Chinese medicine master's degree student at PCOM undertaking this research as part of a 3-credit research elective course that was supervised by B.A. B.A. was the professor of the EIP course. At the time of the study, she was Academic Dean at the PCOM New York (NY) campus for 10 years, and she was also an active researcher and Chinese medicine practitioner. The EIP course is part of the doctoral upgrade program offered by the PCOM San Diego campus, where B.A. had no administrative or Dean-related activities because her Dean role was specific to the NY campus. B.A. had worked closely with 9 of the 33 students taking the EIP course as either faculty or administrators on the NY campus, and had engaged in numerous conversations with them, and many other students and faculty at PCOM-NY, about integrative medicine and the types of issues raised in these forums.

Initially, all forum posts were read by B.A. and S.J., who then discussed the content and emergent themes. B.A. and S.J. then independently reread the forums and each created a list of theme categories. Microsoft Word was used to manage the themes and data analysis. S.J. cut and pasted direct quotes from the forums into a table arranged per her chosen themes. B.A. highlighted quotes on a hard copy print out of the forum discussions and identified reoccurring themes, which she wrote in the margins. B.A. and S.J. then

met and discussed the themes they had identified. Based on this discussion, B.A. condensed this into six major themes and six minor themes, and allocated forum content into these thematic categories. S.J. examined this and conferred as to its accuracy with her interpretation and categorization of the forum data.

B.A. then examined her forum hard copies and counted the number of times themes were mentioned in total, and by individual students. All comments belonging to a theme were included and counted toward the total number per theme, except where more than one very similar comment was mentioned as belonging to the same theme in a single post by one person. B.A. then cut and pasted all forum comments that represented the 12 themes into a table. All forum comments were then examined by B.A. and S.J., and a shorter list of forum comments for each of the six major themes that was representative of all comments was created for inclusion in this study. Member checking,²⁷ a method to determine the validity of the identified themes with study participants, was undertaken by sharing data tables with nine of the students in the class who verified that the data analysis accurately reflected their interpretation of the forum dialogue.

Results

Six major and six minor themes emerged from the analysis of the forum discussions. Later, we describe each theme and provide examples that appropriately illustrate the nature of the discussion. In terms of the amount of forum discussion that occurred—there were 33 initial posts, with an average of 428 words per post, and 127 response posts, with an average of four responses per initial post. The average length of the response posts was 108 words.

Table 1 presents the six major and six minor themes as defined by the number of times each theme was mentioned (excluding instances where more than one very similar comment was mentioned as belonging to the same theme in a single post by the same person), and the number of students who mentioned each theme. The number of times that a theme was mentioned can exceed the number of students who mentioned the theme because a single person could

have mentioned it both in their original post and in their response to others' posts.

Major Themes

A preference for the pluralistic model

Of the 31 students, 21 clearly stated a preference for pluralism, 8 spoke of the strengths and weaknesses of integration and pluralism without a clear commitment to either, and 2 preferred the integrative model. Statements ranged from simply stating a preference for pluralism—"I choose pluralism as our best ethical option" (PC 32), to more detailed comments indicating that pluralism was seen to be more ethical, less diluting to the profession, more respectful, allowing of autonomy, and least damaging. For example, "Pluralism takes into account the strengths of each medicine and recognizes that there is validity and strength in each medicine" (PC 29), and "pluralism helps avoid a hierarchical structure within a group practice, and reduces judgment about effectiveness and ethical norms which might compromise ethical standards" (PC 32).

Opposition to the integrative model

Many of the students saw the integrative model as reducing the effectiveness of the different medical approaches, for example, "Integration may breakdown constructs to fit together, but lose valuable principles and tools" (PC 8). Concerns were expressed about the lack of research evidence to support the choice of best treatment options, for example,

"Based on the available evidence, it is difficult to vote in favor of integrative approach without sufficient integrative research which can pinpoint exactly which alternative medicine techniques are most helpful in treating certain conditions or complimenting the existing mainstream medicine practice" (PC 3).

Some of the students felt that integrative medicine was more of a concept, rather than reflecting the real ability to truly integrate very different medical practices. For example,

TABLE 1. SIX MAJOR THEMES AND SIX MINOR THEMES

<i>Themes</i>	<i>Total No. of comments</i>	<i>Total No. and % of students who mentioned^a</i>
Major themes		
A preference for the pluralistic model	23	21 (68)
Opposition to the integrative model	21	15 (48)
Importance of patient centeredness	18	17 (55)
Power imbalance and co-option issues	23	12 (39)
Importance of interprofessional education	13	10 (32)
Issues about scientific research methodology and paradigms	10	7 (23)
Minor themes		
Pluralism requires patients to be able to advocate for themselves	6	4 (13)
Prior education focused on the integrative model/unaware of pluralism	5	5 (16)
Against the opposition model	5	5 (16)
Pluralism maintains the integrity of Chinese medicine	3	3 (10)
Importance of thousands of years of anecdotal evidence	3	2 (6)
Pluralism is also in Chinese medicine	3	2 (6)

^aOut of the 31 acupuncturists who participated in this study.

“The limitations of homogenizing two incongruous perspectives do a disservice to both. Interpreting a completely different system using a singular language is at best incoherent, and at worst, ineffective or harmful” (PC 23).

Importance of patient centeredness

There was a distinct patient-centered theme throughout the forums. Many of the students stressed that what really mattered in the choice of models was what was best for the patient. For example, “The goal above all else is that the patient gets the best care” (PC 17), and “In the bigger picture, incorporating both modalities as legitimate options for care is one way that our health care system can improve and truly serve the patient, physically, mentally and spiritually” (PC 21). Some of the students felt that pluralism allowed patients to have more choice between the various medical approaches, and to be able to engage with medical approaches that were more authentic, for example,

“Pluralism allows for respecting patients who say they are receiving a clinical benefit from a particular treatment, not standing in their way if they feel it is helping and you do not see a specific harm, but at the same time, allowing each discipline to speak their mind to the patient” (PC 28).

Power imbalance and cooptation issues

A lot of forum discussion centered around the theme of power imbalance and co-optation issues. Many of the students saw themselves and their profession in a less powerful position compared with biomedicine—“Western Medicine is in charge of our destiny, and that is due to their social, economic and political influences” (PC 6). Profit and politics were mentioned frequently as issues that determined the hierarchy in U.S. health care, for example, “Medicine like many other institutions is ultimately going to be guided by power holders and their indigenous sense of ethical right and wrong—possibly with motivations all too influenced by profit” (PC 24). Comments about prejudice against T&CM were frequent, and some of the students expressed concern that Chinese medicine could be co-opted by biomedicine—

“there is a lot of interest by the Western medical community to incorporate Eastern medicine into their programs...The demand for it has increased and they are taking advantage of this opportunity to financially benefit/profit by opening integrative medicine departments in house vs referring out” (PC 34).

There appeared to be a general sentiment of resignation to the truth of these issues and the difficulty of changing this current reality.

Importance of interprofessional education

Many of the students discussed the critical need for interprofessional education to improve the understanding of what Chinese medicine is, and the way in which it is practiced. The need to understand each other's approach to medicine was also emphasized. Many saw this as critical for the development of respect, shared patient care, and referrals—

“It seems that education is key. For there to be respect and referrals among different modalities, we need to understand what each modality does, and where its strengths and limitations lie. All practitioners need to know when to refer out, and have an idea of where to refer” (PC 26).

It was also suggested that interprofessional education would foster less prejudice against T&CM by biomedicine.

Issues about scientific research methodology and paradigms

Several students wrote about the inappropriateness of scientific research models for investigating Chinese medicine due to significant paradigm differences. Students suggested the need for research approaches that are compatible with the way that Chinese medicine is practiced, for example, “The biggest victory I can foresee with a foundation of pluralism, is that not only may we all work together, but that Chinese Medicine can test its own effectiveness without the constraints of fitting into the Biomedical's paradigm of research” (PC 17). Concerns were expressed about reductionist scientific methodologies, and the randomized controlled trial in particular, as being unable to adequately encompass a holistic medical system—

“Western based science looks at the world by tearing it up into very small pieces that can be analyzed. By doing this to Eastern medicine, meaning and understanding are often lost. Western medicine is interested in coming up with explanations for things, but we don't always have quick explanations for how treatments work and therefore they become easily dismissed as invalid” (PC 8).

Minor Themes

Pluralism requires patients to be able to advocate for themselves

Some students argued that with a pluralistic model, patients would need to make their own choices about which medical approach they wanted, and concerns were expressed about potential patient confusion and difficulty with this—

“Creating an environment where the patients' ability to be part of the game—and accommodate them when they are sub optimally resourced—is something our medical practices and institutions should endeavor to be nimble and responsive to without judgment, agenda or manipulation” (PC 24).

Prior education focused on the integrative model/unaware of pluralism

Students indicated that their education has focused, almost exclusively, on integration, and some had never heard of the pluralistic model before—“Most of us had no idea about this term in our medical system prior to this class. We were all stuck on integration” (PC 29).

Against the opposition model

Five of the students indicated that opposition was not a model of choice for them. For example, “I do agree that opposition (at least ongoing opposition) is unethical and unreasonable as a strategy for functional relationship” (PC 15).

Pluralism maintains the integrity of Chinese medicine

Pluralism was seen to help maintain the integrity of Chinese medicine because it did not require it to be amalgamated with biomedicine and, thus, lose its integrity—“If I had to choose, I would choose pluralism, but this choice is only chosen, as the least damaging to the integrity of our medicine” (PC 8).

Importance of thousands of years of anecdotal evidence

The thousand-year history of Chinese medicine was mentioned by several of the students, and was seen as providing a large amount of anecdotal evidence, and also, in their view, significantly legitimized its effectiveness—“heralded in the West is the newest technology or drug, while heralded in the East is a lifetime of experience treating the human mechanism” (PC 13).

Pluralism is also in Chinese medicine

Some felt that in many ways Chinese medicine itself operated under a pluralistic model because of the coexistence of many different theories and styles of practice, and the notion that there is not one single “right” approach—“this pluralistic streak in our own medicine has been integral to its continued evolution” (PC 15).

Discussion

This study identified six major and six minor themes. These Chinese medicine clinicians showed a clear preference for pluralism and were opposed to integration. Many expressed that patient care was the most important consideration, and that this was more important than choosing a model. Concerns were expressed about power imbalance issues, the possibility of co-optation, and the appropriateness of research methodology for assessing the effectiveness of T&CM therapies. Interprofessional education was seen as critical to improving the knowledge and understanding of the T&CM disciplines.

The minor themes highlighted additional important issues. The practitioners expressed concerns for the ability of patients to be able to advocate for themselves when faced with a range of choices of different therapeutic approaches. They indicated that their prior education had failed to raise their awareness of a pluralistic model. The opposition model was viewed as counterproductive and divisive. Pluralism was seen as a model that would better protect the integrity of Chinese medicine, and it helped to prevent single modalities (like acupuncture) from being used outside of the discipline of Chinese medicine and its theoretical foundations. A small number of participants spoke to the long history of Chinese medicine and the value of such a large body of anecdotal evidence, and the fact that pluralism also exists within Chinese medicine itself.

This study deepens our understanding of the critical issues that act as barriers to delivering interprofessional patient-centered care by biomedical and T&CM practitioners. Considering that this assignment was only worth 5% of the course grade, the amount and texture of the dialogue strongly suggests that these practitioners felt passionately about these issues. Further, most Chinese medicine practitioners in the United States work in private practices, and therefore have control over the way that they interface with the health care system. Therefore, the perspectives of the practitioners in this study are not significantly influenced by being forced into any specific model for their relationship with biomedicine.

The main reasons that the Chinese medicine practitioners in this study preferred pluralism was because it allowed each

medical system to retain its autonomy, and it reduced the likelihood that T&CM would become diluted and devalued when combined with biomedicine. Some thought that this dilution and devaluation was caused by issues associated with the research, whereas others suggested that the vastly different paradigms and traditions prevented integration. Similar perspectives have been reported among practitioners of a range of T&CM disciplines, including Chinese medicine, in Europe, Australia, Israel, the United States, and Canada.^{5,18–22} These studies indicated that a pluralistic model was preferred because it enabled T&CM practitioners to have greater autonomy and equal standing within the health care system, as well as an ability to honor their own paradigms and worldviews.

This suggests that these are universal issues regardless of different health care systems and other possible cultural factors. The increasing awareness and concern about the deleterious aspects of the integrative model was highlighted at the recent 2017 Pan American Health Organization summit where attendees indicated a preference for the term “articulated” rather than “integrative.”²⁸ Integration, among attendees, was seen to be an extension of biomedical dominance, and associated paradigm assimilation and appropriation, in which nonbiomedical theoretical foundations are either ignored or translated into biomedical equivalents.^{7–9} Some see this as directly related to a history of colonial devaluation of indigenous knowledge.⁷

This domination by biomedicine is believed to be engendered by profit and politics.^{6,7} Thirty-nine percent of the practitioners in this study spoke about this issue and saw it as a major impediment to T&CM disciplines being permitted equal acceptance in biomedical settings. This and previous studies^{5–7,18} indicate that T&CM practitioners feel oppressed by a system that appears to unfairly question what they do, and that has the capacity to support or sanction their disciplines. Such underlying attitudes, along with associated inclusionary/exclusionary strategies,⁶ will need to be uncovered, policed, and eliminated for effective and harmonious interprofessional medical care settings to function optimally.

The Chinese medicine practitioners in this study emphasized the importance of interprofessional education, which indicates that this is not just an abstract ideal, but something that T&CM practitioners would view as a critical step toward creating an even playing field. Fortunately, there is currently concerted effort toward this goal in the development of medical education competencies^{10,29} and incorporation into medical and health care curricula.¹³ Correspondingly, there has also been significant focus and funding by the National Institutes of Health aimed at increasing the research literacy of T&CM practitioners and teaching evidence-based medicine in T&CM colleges.³⁰

The use of appropriate research methodology and evidence to validate T&CM therapies were important issues in the consideration of the best model for combining biomedicine and Chinese medicine by these practitioners. These are contentious issues within the research and T&CM communities.^{31,32} Chinese medicine is a complex intervention in which several different modalities (acupuncture, herbal medicine, cupping, moxibustion etc.) are frequently used in a single treatment. Most of the research has focused only on acupuncture in randomized controlled trials. Such

trials do not resemble real-world practice and are often inconsistent with the paradigms of Chinese medicine.³² This is because they lack Chinese medicine differential diagnosis, test acupuncture as a single modality, do not individualize treatments, and often include placebo controls. The splitting apart of complex medical interventions, and testing individual modalities outside of their theoretical foundations, often results in reduced effectiveness outcomes.^{8,33} Indeed, this is part of the argument against the use of randomized controlled trials for testing the efficacy of complex interventions.^{31,34,35} Acupuncture placebo controls are not inert,³⁶ and, consequently, many of these trials have failed to show a statistically significant difference between real and placebo treatments, leading to the conclusion that acupuncture is just a placebo.³⁷

These methodological issues have had a very detrimental impact on Chinese medicine practitioners' perceptions of the quality and value of research.^{21,38,39} Many feel that acupuncture randomized controlled trials do not provide clinically relevant information. Placebo controlled trials are also seen as a disservice to the profession. Reference to this is seen in this comment by one of the study participants—"in the mainstream media, or the journaled "evidence" of all the sham acupuncture trials that seem to me to only try to disprove acupuncture from the outset with bias due to the utilization of sham needling" (PC 14).

The practitioners in this study expressed a preference for pluralism because it preserves the integrity of Chinese medicine by permitting it to stay as a whole discipline and not become fragmented by exclusively using one modality or aspect of the discipline. The more recent focus on whole-systems research approaches that better encompass the complexity of acupuncture therapy, such as pragmatic⁴⁰ and comparative effectiveness⁴¹ trials, has increased the relevancy of the research for Chinese medicine practitioners.^{38,39} This and other studies⁴¹ indicate that such research, along with case studies,¹⁷ will need to be recognized as legitimate evidence to justify treatment decision making in settings where biomedical and T&CM practitioners are co-treating and sharing responsibility for patient care.

The themes that arose when discussing the most ethical model for T&CM and biomedicine by this group of experienced Chinese medicine practitioners accurately encompass the key issues that need to be addressed in creating an interprofessional patient-centered health care environment. Pluralism permits different disciplines to function autonomously, but it relies on knowledge, respect, and communication between practitioners. The participants in this study identified important barriers—power struggles, the generation, and use of appropriate evidence to inform patient care and patient education. Addressing such issues through active participation of all stakeholders (practitioners, patients, administrative, and support staff) will be needed to create a health care system that offers patients the best that our health care system can provide.

This study has limitations. The forums were undertaken in the 10th week of the 14-week term, and the students taking this course would have thus been exposed to the professor's (B.A.) opinions and perspectives. This was a graded assignment (worth 5% of their total grade), and, therefore, the students may have tended to express what they thought would be agreeable to the professor. The students

were asked "to present an argument as to which approach—opposition, integration or pluralism—you think is the most ethical model for the relationship between mainstream and alternative medicine." The word "ethical" can be interpreted in many ways, and such multiplicity may have influenced the students' responses. This may have also been why many of the students mentioned the importance of a patient-centered approach. A codebook with operational definitions to identify themes was not used, which may have led to inconsistencies between B.A. and S.J., and inaccuracies in the quantitative evaluations. Identifying themes in forum dialogue and transforming qualitative forum dialogue into quantitative data involving quantifying the number of times themes are mentioned, while accounting for redundancy (repeated themes in a single forum post), involved the subjective analysis of the investigators, and could, therefore, be biased by their perspectives and interpretations.

Conclusions

This study provides insight into the perspectives of Chinese medicine practitioners toward different models for combining biomedicine and T&CM. The issues highlighted by this study will need to be addressed to provide optimal patient care as greater numbers of T&CM practitioners are employed in biomedical settings.

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References

1. National Center for Complementary and Integrative Medicine. Online document at: <https://nccih.nih.gov/health/integrative-health>, accessed November 22, 2018.
2. Boon H, Verhoef M, O'Hara D, Findlay B. From parallel practice to integrative health care: A conceptual framework. *BMC Health Serv Res* 2004;4:1–5.
3. Mann D, Gaylord S, Norton S. Moving toward integrative care: Rationales, models, and steps for conventional-care providers. *Complement Health Pract Rev* 2004;9:155–172.
4. Kaptchuk TK, Miller GM. What is the most ethical model for the relationship between mainstream and alternative medicine: Opposition, integration or pluralism? *Acad Med* 2005;80:286–290.

5. Wiese M, Oster C, Pincombe J. Understanding the emerging relationship between complementary medicine and mainstream healthcare: A review of the literature. *Health* 2010;14:326–342.
6. Adams J, Hollenberg D, Lui C, Broom A. Contextualizing integration: A critical social science approach to integrative health care. *J Manip Physiol Ther* 2009;32:792–798.
7. Hollenberg D, Muzzin L. Epistemological challenges to integrative medicine: An anti-colonial perspective on the combination of complementary/alternative medicine with biomedicine. *Health Sociol Rev* 2010;19:34–56.
8. Bell IR, Caspi O, Schwartz GE, et al. Integrative medicine and systemic outcomes research. *Arch Intern Med* 2002;162:133–140.
9. Benjamin PJ, Phillips R, Warren D, et al. Response to a proposal for an integrative medicine curriculum. *J Altern Complement Med* 2007;13:1021–1033.
10. World Health Organization Traditional Medicine Strategy 2014–2023. Online document at: <http://www.who.int/medicines/publications/traditional/en>
11. Fischer F, Lewith G, Witt CM, et al. A research roadmap for complementary and alternative medicine—What we need to know by 2020. *Forsch Komplementmed* 2014;21:e1–e16.
12. Sierpina V, Kreitzer MJ. Interprofessional education and integrative healthcare. *Explore* 2014;10:265–266.
13. Kreitzer MJ, Sierpina V, Maiers M, et al. Ways of knowing: Integrating research into CAM education and holism into conventional health professional education. *Explore* 2008;4:278–281.
14. Evans R, Maiers M, Delagran L, et al. Evidence informed practice as the catalyst for culture change in CAM. *Explore (NY)* 2012;8:68–72.
15. Perlman A, Stagnaro-Green A. Developing a complementary, alternative, and integrative medicine course: One medical school's experience. *J Altern Complement Med* 2010;16:601–605.
16. Coomarasamy AI, Khan KS. What is the evidence that postgraduate teaching in evidence based medicine changes anything? A systematic review. *BMJ* 2004;329:1017.
17. Kligler B, Weeks J. Finding a common language: Resolving the town and gown tension in moving toward evidence-informed practice. *Explore (NY)* 2014;10:275–277.
18. Hollenberg D. Uncharted ground: Patterns of professional interaction among complementary/alternative and biomedical practitioners in integrative health care settings. *Soc Sci Med* 2006;62:731–744.
19. Geist-Martin P, Bollinger BJ, Wiechert KN, et al. Challenging integration: Clinicians' perspectives of communicating collaboration in a center for integrative medicine. *Health Commun* 2016;31:544–556.
20. Hsiao AF, Ryan GW, Hays RD, et al. Variations in provider conceptions of integrative medicine. *Soc Sci Med* 2006;62:2973–2987.
21. Jackson S, Scambler G. Perceptions of evidence-based medicine: Traditional acupuncturists in the UK and resistance to biomedical modes of evaluation. *Sociol Health Illn* 2007;29:412–429.
22. Wiese M, Oster C. 'Becoming accepted': The complementary and alternative medicine practitioners' response to the uptake and practice of traditional medicine therapies by the mainstream health sector. *Health* 2010;14:415–433.
23. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. *Int J Qual Health Care* 2007;19:349–357.
24. O'Brien BC, Harris IB, Beckman TJ, et al. Standards for reporting qualitative research: A synthesis of recommendations. *Acad Med* 2014;89:1245–1251.
25. Patton MQ. *Qualitative Research and Evaluation Methods*, 3rd ed. Thousand Oaks, CA: Sage, 2002.
26. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006;3:77–101.
27. Creswell JW, Creswell JD. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 5th ed. Los Angeles, CA: Sage, 2017.
28. Weeks J. Articulated Medicine: Pan America Health Organization Reengages Traditional and Complementary Medicine Efforts. *J Altern Complement Med* 2017;23:745–746.
29. Kligler B, Brooks AJ, Maizes V, et al. Interprofessional competencies in integrative primary healthcare. *Glob Adv Health Med* 2015;4:33–39.
30. Kreitzer MJ, Sierpina VS. NCCAM awards grants to CAM institutions to enhance research education. *Explore (NY)* 2008;4:74–76.
31. Langevin HM, Wayne PM, Macpherson H, et al. Paradoxes in acupuncture research: Strategies for moving forward. *Evid Based Complement Alternat Med* 2011;2011:180805.
32. Luo J, Xu H, Liu B. Real world research: A complementary method to establish the effectiveness of acupuncture. *BMC Complement Altern Med* 2015;22:15:153.
33. Craig P, Dieppe P, Macintyre S, et al. Developing and evaluating complex interventions: The new Medical Research Council guidance. *BMJ* 2008;337:a1655.
34. Richardson J. The use of randomized control trials in complementary therapies: Exploring the issues. *J Adv Nurs* 2000;32:398–406.
35. Cohn S, Clinch M, Bunn C, Stronge P. Entangled complexity: Why complex interventions are just not complicated enough. *J Health Serv Res Policy* 2013;18:40–43.
36. Zhang CS, Tan HY, Zhang GS, et al. Placebo devices as effective control methods in acupuncture clinical trials: A systematic review. *PLoS One* 2015;10:e0140825.
37. McGeeney BE. Acupuncture is all placebo and here is why. *Headache* 2015;55:465–469.
38. Kaptchuk TJ, Chen KJ, Song J. Recent clinical trials of acupuncture in the West: Responses from the practitioners. *Chin J Integr Med* 2010;16:197–203.
39. Hansen K. Attitudes to evidence in acupuncture: An interview study. *Med Health Care Philos* 2012;15:279–285.
40. MacPherson H. Acupuncture research: Time to shift from theoretical to practical questions. *J Altern Complement Med* 2006;12:837–839.
41. Witt CM, Aickin M, Cherkin D, et al. Effectiveness guidance document (EGD) for Chinese medicine trials: A consensus document. *Trials* 2014;15:169.

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