Abstract

Purpose. The purpose of this study was to examine Chinese Americans’ beliefs regarding professional Chinese medicine (CM) in diabetes management. Previous research showed substantial variations in Chinese Americans’ beliefs about the role of professional CM, such as acupuncture and herbal medicine, in diabetes management. To provide culturally sensitive care, health care providers (HCPs) need a nuanced understanding of patients’ beliefs about professional CM.

Methods. An interpretive phenomenological study was conducted. The sample included 20 informant couples (40 paired individuals) who were Chinese-American immigrants living with type 2 diabetes. Nineteen additional individuals were enrolled as respondents for member-checking. Semi-structured interviews were conducted in couple, group, and individual formats with informants and in groups only with respondents. Interviews were recorded, translated, transcribed, and coded for narrative and thematic analyses. Respondent responses validated informant findings.

Results. Participants reported five concerns about professional CM: low product quality and safety; questionable provider qualifications, ethics, and motives; a lack of scientific evidence for professional CM products and methods; adverse interactions of professional CM products with Western medicine drugs; and cumbersome preparation requirements.

Conclusion. Chinese Americans express skepticism about professional CM and are thoughtful when deciding whether it is a viable treatment option. Some concerns appear well-founded. HCPs are encouraged to become familiar with these concerns and to be prepared to discuss them with patients. They are encouraged to support research on CM, thus advancing the knowledge needed for determining the role of CM in diabetes care and improving collaboration with Chinese patients.

In China, Chinese medicine (CM) has been used as a system of healing to treat diabetes for thousands of years.1 Studies in the United States have shown that CM is used by Chinese Americans to manage diabetes2–4 and other health conditions.5,6 In a study conducted in eight major cities throughout the United States,7 almost 70% of Cantonese-speaking and ~ 55% of Mandarin-speaking Chinese Americans reported having ever used complementary and alternative medicine, including CM, such as herbs and acupuncture.

Some Chinese individuals consider CM to be superior to Western medicine because they believe that CM treats the underlying cause of a disease3,8 and has fewer negative side effects than Western medicine.8,9 Reported weaknesses of CM are relatively minor and focus on cumbersome preparation and bitter taste of herbal remedies.3,8 As a result, it is possible that some health care providers (HCPs) may mistakenly assume that Chinese patients tend to embrace CM without questions.
Such a misunderstanding would undermine the diabetes care provided to a large number of patients, given the higher risk for diabetes among Chinese individuals when compared to whites\textsuperscript{10,11} and the significant projected Chinese population growth rate. The Asian-American population, of which Chinese is the largest subgroup, has grown at a faster rate (45.6%) than the total U.S. population (9.7%) from 2000 to 2010.\textsuperscript{12} Globally, China had the most cases of diabetes worldwide in 2011 (92.3 million) and is projected to have the most cases of diabetes in 2030 (129.7 million).\textsuperscript{13} Migration from China to the United States is projected to remain high through 2030,\textsuperscript{14} thus possibly contributing to a relatively large number of Chinese Americans with diabetes in the future.

Recent research by our team (C.M.L.K., K.M.C., P.H., C.A.C., unpublished observations) revealed that Chinese Americans have varied and sophisticated beliefs about the role of CM in diabetes management. They distinguish folk from professional CM and hold distinct beliefs about the roles of each in diabetes management. For example, folk CM (e.g., dietary recipes such as soups and juices; exercise such as walking and tai-chi; and lifestyle practices such as getting enough sleep) was widely accepted as adjunctive treatment, but reactions to professional CM (e.g., treatments from acupuncturists, herbalists, or qi-gong teachers and herbal formulas or medications from CM doctors) as primary treatment ranged from rejection to endorsement. These findings make clear that not all Chinese patients accept professional CM, requiring more nuanced diabetes education and care recommendations for this ethnic group.

Here, we report specific concerns expressed by Chinese patients about professional CM practices. To our knowledge, no research to date has specifically examined perceived problems with professional CM from Chinese patients’ perspectives. HCPs need to understand these problems, and thus gain a more sophisticated and complete understanding of the range of Chinese patients’ beliefs about professional CM. Such an understanding would help HCPs avoid stereotyping, provide culturally competent supportive care, and improve their collaboration with Chinese patients.\textsuperscript{15}

**Study Methods**

**Participant information**

Twenty foreign-born, Chinese-American couples or 40 paired individuals served as informants and participated in an interpretive research project that examined the role of family and culture in type 2 diabetes management.\textsuperscript{16–18} All lived in the United States for an average of 14.71 years (standard deviation [SD] 13.44, range 0.4–51.0) and had come from mainland China (55%) or Hong Kong (45%). On average, they were 62.29 years old (SD 9.13, range 40.0–75.0) and had been married for 33.88 years (SD 13.72, range 2.5–50.0). All spoke Cantonese.

To be eligible, at least one member of a couple had to have had type 2 diabetes for at least 1 year. In four couples in which both members had diabetes, the member with a longer duration of diagnosis was designated as the person with diabetes (PWD) informant and the other as the spouse informant. PWD informants were mostly women (60%) and had been diagnosed for an average of 8.38 years (SD 5.87). To treat diabetes, one PWD used diet and exercise only, 17 used oral medications, and two used insulin. Their mean A1C was 6.93% (SD 0.86, range 4.5–8.7), indicating relatively good diabetes management.

A separate respondent group was enrolled for member-checking\textsuperscript{19} of key themes identified from informant data. Respondents met the same eligibility criteria as informants, except that respondents were not required to join the study as couples. Respondents (n = 19, including 13 PWDs and six spouses) represented 16 separate families. They had been in the United States for an average of 11.76 years (SD 12.13, range 0.5–35.0) and had come from mainland China (46%) or Hong Kong (54%). On average, they were 60.47 years old (SD 9.42, range 44.0–80.0) and had been married for 32.37 years (SD 14.15, range 5.0–54.0). All spoke Cantonese. PWD respondents were mostly men (54%) and had been diagnosed for an average of 6.15 years (SD 4.20, range 1.0–16.0). All were treated with oral medications for diabetes. Respondents’ A1C was not measured.

Both informant and respondent groups were convenience samples recruited in the San Francisco Bay area via posted flyers in public places; referrals from HCPs, community agencies, English-as-a-second-language classes, and ethnic media; and snowball sampling. The institutional review board of the University of California, San Francisco, approved the study.

**Design and procedure**

An interpretive phenomenological approach\textsuperscript{20,21} underpinned the study. Guiding interview questions and follow-up probes were open-ended and asked for reflections and narratives. Six semi-structured interviews were conducted for each informant couple, including two with couples, two with the patients in a group, and two with the spouses in a group. Triangulation via comparison of data from different sources (patient and spouse informants) and interview formats (couple, group, and individual) provided a more holistic view of the personal, family, and cultural influences on diabetes management.

Dyadic and group interviews were designed to observe couple and group dynamics in action. Observational notes were kept after each contact to buttress the interview text. A subset of informants (n = 13) was interviewed individually as their final interview if extra time was needed to complete interview questions or if nondisclosure in shared interview settings suggested a need for greater privacy. Data interpretation, guided by interpretive phenomenology, took place concurrently with data collection and was used to generate couple-specific questions for subsequent interviews.
All interviews were conducted in Cantonese. Couple and individual interviews were conducted by one female interviewer. Group interviews were conducted by two female interviewers to assist with group process and the completion of data collection. All interviews were recorded, translated, and transcribed verbatim by a bilingual (English and Chinese), bicultural (American and Chinese) transcriptionist and then checked for accuracy by a bilingual, bicultural research assistant who had conducted the interview. Translation discrepancies between original and corrected transcripts were examined by the bilingual, bicultural project director and the study principal investigator and co-principal investigator when necessary to decide on the most appropriate translation.

Data analysis consisted of two interwoven interpretive processes: analyses of each couple’s case and thematic analyses across cases. A couple summary composed of the facts of each case (e.g., age, family genogram, and immigration history) and interpretive notes on that case were developed for each couple. Thematic codes were inductively and iteratively developed, including thematic codes derived from the study’s aims and those arising naturally from the text. Once the thematic codes were finalized, all interview text in English was coded using the qualitative data analysis software Atlas-ti Version 5.2 (ATLAS.ti Scientific Software Development GmbH, Berlin, Germany).

Each interview was coded by one of the four key research team members (a research assistant, the project director, the co-principal investigator, or the principal investigator). Coded text was independently checked by another research team member. Discrepancies in coding decisions were reconciled through examination of the coded text against definitions of the thematic codes by one additional team member or through discussion by the whole team.

Text coded “Cultural Health Beliefs” (225 quotations), “Cultural Health Practices” (188 quotations), and “General Health Beliefs” (188 quotations) were retrieved for narrative and thematic analyses. Thematic analysis was iteratively informed by researchers’ knowledge of each couple’s dynamics and by patterns apparent in the case analysis.

For member-checking, respondents met in separate PWD and spouse groups for two 2-hour interviews to review themes presented in this article for adequacy and to add personal variations. Respondent responses corroborated and validated informant findings.

**Study Results**

Participants reported a wide range of reactions from rejection to endorsement of professional CM as primary treatment for diabetes (C.M.L.K., K.M.C., P.H., C.A.C., unpublished observations). Regardless of whether a participant rejected or endorsed professional CM, five concerns about professional CM were identified: 1) low product quality and safety; 2) questionable provider qualifications, ethics, and motives; 3) a lack of scientific evidence for professional CM products and methods; 4) adverse interactions of professional CM products with Western medicine drugs; and 5) cumbersome preparation requirements.

**Low product quality and safety**

Concerns about the quality and safety of professional CM products were pervasive and strongly expressed. For example, regarding herbal prescriptions in which one batch of multiple kinds of raw medicinal ingredients is made to be a decoction (e.g., liquid medicine resulting from the boiling of herbal materials), participants were, as one said, “afraid the ingredients are not put together correctly.” A participant described his distrust of the people and processes involved in the supply chain of herbal prescriptions as follows: “I don’t have confidence in the people who dispense the medicinal herbs. I also don’t have confidence in the people who go out and pick the medicinal herbs. I don’t even have confidence in the people who grow the medicinal herbs. What if there are poisonous herbs growing next to the medicinal herbs? If you go up to the hills to pick medicinal herbs, you might pick poisonous herbs together with the medicinal herbs.”

CM products that had undergone standardized processing, namely, tablets or capsules that were made according to CM formulas (hereafter referred to as “CM medications”), elicited similar quality and safety concerns. Participants questioned product authenticity. Some said they doubted “whether they [the tablets or capsules] are real or not” and felt that they were “fake” and “dangerous.”

Concerns about inferior quality assurance in the production process were noted. For example, a patient expressed dissatisfaction with hygiene in the production process. “A lot of times, I see the Chinese medication in tablet form. I have seen a person rolling it between his palms. Wow! Are his hands clean?”

In a related vein, deceptive practices in CM product production and marketing raised concerns. Participants reported that manufacturers of CM medications abused people’s trust and sold Western medications under the guise of CM. In general, many believed that the market was full of unregulated, potentially harmful products that contained questionable ingredients. One participant complained that Western medications were added as secret ingredients in some CM medications for diabetes, leaving open the possibility of significant harm to patients. “There is a kind of Chinese medicine medication for diabetes, but it’s all Western medications inside. There are two or three Western medications inside, and they are all medications to lower blood sugar. When [these Western medications are] used together, it’s very dangerous.”

**Questionable provider qualifications, ethics, and motives**

Provider qualifications and motives raised additional concerns. Participants believed that many CM providers in the United States did not go through proper training or meet any licensing requirements and therefore were unqualified and incompetent. One participant said, “I
fundamentally do not trust the doctor . . . because some CM doctors did not really, truly study for a degree . . . and they don’t have to go through tests for a license.” Another patient commented on the importance of finding a qualified and competent CM provider, as follows: “I believe that for Chinese medicine, you really need to find a good Chinese medicine doctor. You need to find one that is licensed. Some say they are, but they aren’t. When you believe them, you will be in trouble.”

Participants additionally felt that many providers were fraudulent, driven by monetary interest, and had no concern for patient welfare. They believed these providers made false claims about curing diabetes only to increase business. For example, a patient discussed a CM doctor who claimed that his herbal medicine was a cure for diabetes. She did not believe him and felt that his real motivation was to gain her patronage. In another example, a patient sought care from a qi-gong master for diabetes but saw no improvement. In retrospect, she felt personally embarrassed and was teased by her family for having been cheated financially. “[The master] moved back and forth a few times, and I lost a few thousand dollars.”

For some participants, concerns about CM products and providers were compounded by the belief that they themselves had little knowledge about professional CM. They believed they lacked the background knowledge to be critical and informed consumers. Given the perceived prevalence of problematic products and providers, they feared they might be harmed unknowingly. Avoiding professional CM altogether was viewed as a logical way to avoid harm and minimize risk. As one participant said, “You can’t figure out these things clearly. I don’t know how these medicinal herbs work, nor do I know their medicinal functions. Only the Chinese medicine doctors know, and we don’t know, right? So, if you mix and boil a few kinds together to make a drink, I’m really against that.”

Lack of scientific evidence for products and methods
The lack of scientific evidence for professional CM’s efficacy was a cause for concern and suspicion for some participants. They suggested there was “no proof that herbal medicine or Chinese medicine are effective in controlling diabetes.” They would consider accepting CM treatments only if they were proven safe and effective according to the same scientific standards used for Western medicine. They viewed scientific research methods as the authority that could provide legitimacy to CM. One participant commented, “I myself feel that [CM medications] are not like Western medicine drugs, which have all the research reports, all the ingredients listed. . . . Plus they have not done any research. They are not able to prove that they are really effective.”

Adverse interactions of CM with Western medicine drugs
Possible interactions of CM with Western medicine drugs were noted as a concern by participants who used the latter as primary treatment for diabetes or other health conditions. They were concerned that CM treatments, including food remedies (e.g., corn silk), herbal prescriptions, or CM medications, might cause “interference with the [Western medicine] medications, with the [Western medicine] doctor’s diagnosis,” resulting in unnecessary and potentially significant harm.

Cumbersome preparation requirements
Some professional CM treatments—herbal prescriptions in particular—were disliked or “dreaded” because of their cumbersome and time-consuming preparation requirements. Such preparations were considered to be incompatible with busy lifestyles. As one participant noted, “This cooking herbal tea every day is also a very troublesome task. When you take Western medications, you just get out a tablet and take it. It’s simpler. Not only that you have to cook herbal teas, you have to watch it [when it is being cooked].”

Discussion
These findings show that Chinese Americans express skepticism about multiple aspects of CM, including its products and providers, lack of scientific basis, possible drug interactions, and cumbersome preparation requirements. These concerns suggest that Chinese Americans are thoughtful and cautious when deciding whether professional CM treatments should be part of their daily diabetes management and health practices. Until Western medicine practitioners become aware of these concerns and are prepared to talk about them with Chinese patients, patients are essentially on their own in negotiating these complex issues.

Chinese Americans’ concerns about professional CM products and practitioners may be well-founded. Problems associated with herbal products, including substitution, misidentification or misbranding, adulteration or contamination, incomplete processing of toxic herbs, and interactions between CM herbs and Western medicine drugs, have been reported not only in the professional literature but also in the Asian and American mass media. News reports abound about counterfeit drugs or drug ingredients from China; CM medications containing heavy metals, pesticides, and toxic ingredients; and unlicensed, unqualified, or unethical CM practitioners.

Unfortunately, U.S. laws and regulations provide limited or fragmented quality assurance for professional CM products and practitioners. CM medications and other drug products are regulated by the U.S. Food and Drug Administration, and also fall under the jurisdiction of multiple federal, state, and local agencies. Systems of certifying, registering, or licensing acupuncturists exist in 43 states and the District of Columbia, but states vary in the degree to which other kinds of professional CM (e.g., herbal medicine) are regulated. National certification for acupuncture and Oriental Medicine is available via the National Certification Commission for Acupuncture and Oriental Medicine (http://www.nccaom.org).
Strict enforcement of the laws and regulations has been difficult. Thus, even though multiple quality assurance or regulatory systems are in place, they do not necessarily correspond to improved safety of professional CM products or effectively prevent questionable providers from practicing.26

Given these real problems, it makes sense that Chinese Americans have a heightened sense of alertness toward professional CM. Interestingly, some Chinese Americans in this study were wary of professional CM treatments only in the United States. They felt confident in finding quality products and providers in their Asian home countries because of their better local knowledge and social connections there. These patients’ country-specific CM concerns appeared to embody an acculturation difficulty in accessing professional CM products and providers that they perceive to be trustworthy after their immigration to the United States,17 the causes of which deserve further investigation.

Concerns about a lack of scientific evidence for professional CM’s efficacy are legitimate from a Western medicine perspective. Although multiple reviews of studies on the efficacy and safety of professional CM treatments, especially herbal medicine, have been published,27-30 no definitive conclusions can be drawn from a scientific perspective because of methodological weaknesses in most clinical trials. Many HCPs in the United States share this concern because of their training in Western medicine, which relies on randomized, controlled trials as the gold standard for determining treatment efficacy. We suspect that this concern, which is shared by patients and providers, may remain unresolved for some time.

The National Center for Complementary and Alternative Medicine, an institute of the National Institutes of Health, is the U.S. government’s lead agency for scientific research on complementary and alternative medicine. Rigorously designed, randomized, controlled trials with adequate sample sizes will enable better understanding and evaluation of various professional CM products and treatments. However, because CM’s complex system of theory and practices and its unique underlying concepts (e.g., “yin and yang,” “qi,” and “meridians”) are significantly different from those of Western medicine, CM presents significant challenges for scientific study.1,31

There is a great need for more innovative and better research to shed light on CM’s theory, practices, and underlying concepts. In linkage to clinical practice, increased knowledge generated from research will enable HCPs to provide evidence-based guidance to patients interested in CM.

Limitations of this study are acknowledged. All participants were Cantonese-speaking, foreign-born immigrants from mainland China or Hong Kong. Generalizability of the findings to Chinese Americans who speak other Chinese dialects (e.g., Mandarin), who were born in the United States, or who immigrated from other regions in Asia (e.g., Vietnam or Singapore) is unclear because those individuals may have different beliefs and concerns related to CM.

In addition, because this study used a convenience sample rather than a random sample, not every Chinese American had an equal chance to be selected to enroll. For example, those who were less engaged in social and health care activities in the community would have been less likely to have heard about the study and been recruited. However, recruitment of ethnic minorities, including Chinese Americans, for research is known to be difficult, rendering convenience sampling practical and necessary.

Finally, because recruitment was restricted to the San Francisco Bay area, which has a large Chinese-American population, generalizability of the findings to Chinese Americans who live in U.S. regions characterized by a different sociocultural ecology (e.g., the Midwest) is unclear. Replication studies with Chinese Americans who live in other U.S. regions will clarify this issue.

Still, these findings have important implications for diabetes care and education. The American Association of Diabetes Educators (AADE) position statement on cultural sensitivity15 states that HCPs are encouraged to “become familiar with cultural variations in . . . health beliefs . . . of the patient with diabetes and his or her family members to expose patterns of community practice as well as medical practice that enhance or undermine good diabetes management.” This study makes clear that providers should not assume that Chinese Americans accept professional CM treatments without reservation, although some were found to endorse and prefer professional CM as primary treatment for diabetes (C.M.L.K., K.M.C., P.H., C.A.C., unpublished observations).

Providers should become familiar with Chinese patients’ concerns and beliefs about professional CM. They should encourage patients to talk about their concerns openly, ask patients what folk and professional CM treatments they are using, and record their preferred treatments.4

Discussing with patients the real and perceived benefits and risks associated with professional CM can help diabetes care providers convey cultural sensitivity and will likely enhance patient satisfaction. Patient-provider discussions about CAM have been shown to improve Chinese Americans’ satisfaction with quality of care in Western medicine medical settings.31

HCPs might need to initiate these discussions proactively, given that Chinese Americans tend not to discuss their use of complementary and alternative therapies with HCPs.7 In addition, increased sensitivity to the impact of acculturation on Chinese-American immigrants’ daily diabetes management practices is warranted.37 Some Chinese-American immigrants perceive greater difficulties in finding quality professional CM products and providers in the United States than in their home countries in Asia. It is possible that they perceive additional acculturation difficulties in accessing Western medicine and standard diabetes care, given possible
language barriers and their possible lack of community ties and a sense of groundedness in the United States. HCPs should especially consider assessing these possible acculturation effects with first-generation immigrant patients.

Considering the status of professional CM practice and research in the United States, HCPs may not always have complete information or correct answers to respond to Chinese patients’ concerns about professional CM. The AADE statement on cultural sensitivity\textsuperscript{15} provides no specific guidance on how they should respond to patients’ concerns about these treatments. Until better scientific evidence and specific guidelines become available, HCPs can learn more about professional CM from their Chinese patients, relinquishing the role of “expert” and assuming the role of “student” in providing culturally humble practice.\textsuperscript{13} Consultation with primary care providers and other members of the multidisciplinary diabetes care team is warranted if patients report unusual symptoms after the use of professional CM treatments.

A sophisticated understanding of CM as a system of healing is needed for advancing practice guidelines for greater cultural sensitivity. The AADE statement on cultural sensitivity\textsuperscript{15} encourages HCPs to “participate in and/or support original research exploring the relationship among culture, health, and medicine.” Thus, providers should participate in and support innovative research related to CM principles and treatments. Increased knowledge about CM is crucial for enabling providers to determine the role of CM in diabetes care and education and to effectively collaborate with Chinese patients who are questioning whether CM is a viable treatment option.

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