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Evaluating Cancer Patients' Expectations and Barriers Toward Traditional Chinese Medicine Utilization in China: A Patient-Support Group–Based Cross-Sectional Survey

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Abstract

Background: Traditional Chinese medicine (TCM) is widely used among Chinese cancer patients. However, little is known about Chinese patients' expectations and barriers toward using TCM for cancer. **Methods:** We conducted a cross-sectional survey within a patient-support group, the Beijing Anti-Cancer Association. We measured the outcome, Chinese cancer survivors' expectations and barriers toward TCM utilization, using a modified version of ABCAM (Attitudes and Beliefs towards Complementary and Alternative Medicine), the ABTCM (Attitudes and Beliefs towards Traditional Chinese Medicine). We used multivariate models to evaluate the impact of socioeconomic status and clinical factors on their expectations and barriers (including treatment concerns and logistical challenges domain) toward TCM. **Results:** Among 590 participants, most patients expected TCM to boost their immune system (96%), improve their physical health (96%), and reduce symptoms (94%). Many had logistical challenges (difficulty decocting herbs (58%) and finding a good TCM physician (55%)). A few were concerned that TCM might interfere with conventional treatments (7.6%), and that many TCM treatments are not based on scientific research (9.1%). In the multivariable regression model, age ≤60 years was independently associated with higher expectation score (P = .031). Age ≤60 years (coefficient 5.0, P = .003) and localized disease (coefficient 9.5, P = .001) were both associated with higher treatment concerns. Active employment status (coefficient 9.0, P = .008) and localized disease (coefficient 7.5, P = .030) were related to more logistical challenges. **Conclusion:** Age and cancer stage were related to Chinese cancer patients' perceived expectations and barriers toward TCM use. Understanding these attitudes is important for reshaping the role that TCM plays in China's patient-centered comprehensive cancer care model.

Keywords

traditional Chinese medicine, cancer patients' attitudes, cross-sectional survey, expectations and barriers, TCM utilization

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Introduction

With increasing incidence and mortality, cancer has become a major public health problem in China.[1-3] In addition to conventional treatments such as surgery, chemotherapy, and radiotherapy, Chinese cancer patients use traditional Chinese medicine (TCM) extensively during and after active cancer treatments. Several studies found that 75% to 80% of Chinese cancer patients had used TCM since their cancer diagnosis.[4-6] The most frequently used TCM were Chinese herbal medicine (55%-75%), Tai Chi/Qi Gong (7%), and acupuncture (1%-5%).[4,5]

The wide utilization of TCM among cancer patients is deeply rooted in Chinese culture and largely supported by Chinese governmental policy. With a history that is thousands

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of years old, TCM has long been part of Chinese cultural heritage and daily life.[7] According to a 2015 Chinese national image survey, 62% of Chinese participants regard TCM as one of the most representative national symbols.[8] In 1991, China established a national health policy to place equal emphasis on Chinese and Western medicine.[9] Most TCM treatments, including herbal medicine, acupuncture, and massage, are covered by major medical insurance systems in China and the country is currently home to 3966 TCM hospitals. Most of these hospitals have oncology departments where physicians offer TCM treatments in addition to chemotherapy and radiotherapy.[9] Chinese cancer patients usually receive TCM concurrently with or after undergoing radical cancer treatments.

As a unique and integral component of comprehensive cancer care in China, the quality of TCM services is closely related to Chinese cancer patients' well-being, with some studies suggesting that TCM treatments may have a direct impact on cancer patients' physical and psychological health.[10,11] Some clinical studies have shown that the combination of TCM and conventional medicine may be associated with improved survival outcomes.[12] However, there are still many problems with TCM services that must be improved, including cost and limited resources. Furthermore, patients' own attitudes and experiences toward TCM treatments are critical to their satisfaction and to their ability to benefit from these services. Therefore, understanding cancer patients' beliefs and attitudes toward TCM utilization is essential for building a more patient-centered TCM comprehensive cancer care model.[13]

Previous survey studies in Western countries have shown that patients' attitudes and beliefs toward complementary and alternative medicine (CAM) use were strongly related to its utilization.[14] Such attitudes differed based on diverse socioeconomic background and cancer disease characteristics.[15-17] Although there are a number of studies about patients' attitudes and beliefs toward CAM use in China, TCM is considered to be distinct from CAM and very few studies exist investigating patients' attitudes and beliefs toward TCM in China. Although several studies in China have investigated Chinese cancer patients' expected benefits from TCM treatments, their findings are limited due to small sample sizes, qualitative study design, and failure to determine factors affecting cancer patients' expectations.[4,18-20] To the best of our knowledge, ours is the first study to explore cancer survivors' barriers toward TCM use in China.

In the current study, we used a quantitative approach to evaluate cancer patients' expectations of and barriers to TCM use in China from a patient-support group. Such institutions play an important role in Chinese cancer patients' rehabilitation and well-being.[21] However, limited evidence existed to evaluate attitudes toward TCM use among this population. We also aimed to investigate whether socioeconomic and disease factors impact these expectations and barriers among Chinese cancer patients. We hypothesized that different socioeconomic and disease characteristics could affect both their specific expectations and barriers and their overall expectations and barriers score.

Methods

Sample

We recruited a convenience sample of cancer survivors from the Beijing Anti-Cancer Association between December 2015 and February 2016. Established in 1990, the Beijing Anti-Cancer Association is a nonprofit patient support group with 20 subgroups and more than 50 000 registered members exclusively for cancer patients in Beijing, China. Eligible study participants were aged ≥18 years, had a primary diagnosis of cancer, and a Karnofsky performance score of >60. Additional inclusion criteria stipulated the patient's ability to understand and provide informed consent in Chinese. We excluded individuals who failed to complete the questionnaire with 30% or more missing data. The investigator (first author) approached the leaders of 20 subgroups in the Beijing Anti-Cancer Association and explained the study aim and methods to ensure that all the leaders understood the intention of the survey. Then the leaders helped recruit their members to fill out the paper-based questionnaire. Informed consent on the top of the questionnaire was presented for all individual participants included in this study; because we did not collect any identifying information, participants were not required to sign consent as part of this survey study. Each participant completed a 20-minute self-report survey. The Institutional and Ethics Review Board of Xiyuan Hospital, China Academy of Chinese Medical Sciences (CACMS) approved the study protocol (2016XLA116-1).

Outcomes

Mao et al[22] developed the Attitudes and Beliefs towards Complementary and Alternative Medicine (ABCAM) instrument to evaluate cancer patients' attitudes and beliefs about CAM use. A prior study showed that this instrument has good reliability and valid scores for measuring attitudes and beliefs related to CAM use among cancer patients. We translated the ABCAM instrument into Chinese and adapted it for use in our study by forward and backward translation under the permission and supervision of the original authors. In 2015, we completed a pilot study with 20 cancer patients in Beijing, China. The finalized instrument, Attitudes and Beliefs towards Traditional Chinese Medicine (ABTCM), consists of 2 domains that include expectations and barriers about TCM use. In our pilot study, we found a significant ceiling effect in social

norm, so we deleted this domain from the ABTCM questionnaire in the finalized Chinese version.

We also edited, deleted, and added some specific expectations and barriers items from ABCAM with permission from the original author (Mao). First, we changed all mentions of "CAM" to "TCM." In the expectation domain, we combined *decrease my emotional distress* and *reduce stress* into 1 item because there is no significant differences between these 2 expressions according to Chinese language and culture. We added *Harmonize my mind and body* into the expectation domain because many Chinese patients cared about this concept. In the barriers domain, we deleted *some treatments are against my religious/cultural beliefs* and *I don't have transportation to CAM treatment*, as most Chinese patients would not encounter these problems. In this domain, we added *It is inconvenient for second appointment, I cannot tolerate the taste of TCM herbal medicine, It is hard to decoct the TCM herbs*, and *It is difficult to adhere to the long duration required for TCM treatments*, as these are 4 significant issues for Chinese cancer patients based on clinical observations. In the Chinese version, we translated the original barrier, *I have no knowledge about CAM* to *I do not have enough knowledge about TCM*. We deleted this item in the analysis phase because it might have led to a different understanding compared with the original question.

The ABTCM questionnaire's expectation domain includes 9 different expectations about using TCM for cancer (Cronbach's alpha coefficient .94). Factor loading showed an eigenvalue of 6.23. The barrier domain consists of 11 different barriers to TCM use (Cronbach's alpha coefficient 0.87). Factor loading indicated that there are 2 domains within barriers toward using TCM for cancer care, "treatment concerns" and "logistical challenges" (eigenvalues of 4.55 and1.61, respectively, explained 55.2% of all the barriers) (Supplementary Table 1). The treatment concerns domain contained *Many treatments are not based on scientific research, May interfere with the conventional cancer treatments*, and *Treatments may have side effects*, which indicated cancer patients' concerns about using TCM for cancer treatment. The logistical challenges domain contained the remaining eight items, which indicated the patients' barriers to resources, expense, and issues with access to using TCM for cancer care.

None of the items in each domain showed ceiling or floor effects. We scored the degree of each expectation or barrier on a 4-point scale (1 = totally disagree, 2 = disagree, 3 = agree, 4 = totally agree). We then calculated the score of each domain respectively by summing the individual items and normalizing them to a value between 0 and 100. Higher scores indicated greater expectations or barriers. In addition, to ease interpretation of each specific type of expectations or barriers, we dichotomized the outcome with those who reported "agree" and "totally agree" as having the specific expectation or barrier.

Table 1. Participants' Characteristics (N = 590).

Characteristic	n (%)
Gender (N = 590)	
Male	87 (15.0)
Female	503 (85.0)
Age, years (N = 576)	
≤60	321 (56.0)
>60	255 (44.0)
Employment status (N = 539)	
Retired	500 (93.0)
Working	39 (7.2)
Monthly income, yuan (N = 570)	
≤5000	310 (54.0)
>5000	260 (46.0)
Education level (N = 566)	
≤High school	382 (67.0)
>High school	184 (33.0)
Cancer type (N = 579)	
Breast	320 (55.0)
Lung	48 (8.3)
Colorectal	49 (8.5)
Gynecological	67 (12.0)
Others	95 (16.0)
Time since cancer diagnosis, years (N = 563)	
≤5	138 (25.0)
>5	425 (75.0)
Cancer stage (N = 457)	
I-III	421 (92.0)
IV	36 (7.9%)
Use traditional Chinese medicine after cancer diagnosis	
Yes	530 (91.5)
No	49 (8.5)

Exposures

Exposures of the current study were cancer survivors' socioeconomic background and disease information. We obtained demographic factors, including age, gender, education level, monthly income, as those factors were previously found to have association with cancer patients' attitudes toward CAM use.[17] We dichotomized monthly income at 5000 yuan (in Chinese currency 5000 RMB is nearly equal to US$770) because it was the median monthly income of Beijing citizens in 2015, and obtained employment status through patient self-report. We also obtained clinical factors, including type of cancer, stage, and diagnostic history through patient self-report. We dichotomized cancer stage into localized (stages I-III) or metastatic (stage IV) disease at the time of the survey.

Statistical Analyses

We presented descriptive data of participants' gender, age, employment status, cancer type, time since cancer diagnosis,

cancer staging, expectations and barriers score, and specific expectations or barriers. For categorized data, we presented the numbers and proportion of each group. We calculated the mean and standard deviation for continuous data such as age, time since cancer diagnosis, and expectations and barriers score. We then used a 2-sample *t* test to determine whether the expectations or barriers score differed based on patient characteristics. We also used Fisher's exact to test for an association between specific expectations or barriers (yes/no) and patient characteristics. We used multivariable regression models to determine whether factors that showed variance in the univariate model ($P < .2$) were still independently associated with expectations or barriers scores when controlling for other factors. All analyses with a 2-sided test and a P value of less than .05 were considered statistically significant. Analyses were performed using Stata 13 (StataCorp, College Station, TX).

Results

Patients Characteristics

Among the participants, 503 (85%) were female and 87 (15%) were male. The mean age was 60 ± 9 years. Most of the cancer patients were retired (93%) at the time of survey, while 54% of them reported a monthly income of ≥5000 yuan. A total of 184 (33%) of the participants had at least a college education. The major primary cancer types were breast (55%), lung (8.3%), colorectal (8.5%) and gynecological (12%). In all, 75% of the participants had been diagnosed with cancer for more than 5 years, while 7.9% of them were stage IV at the time of the survey. A total of 530 (91.5%) had ever used certain type of TCM treatments, including herbs, diet therapy, or acupuncture, and so on after cancer diagnosis (Table 1).

Expectations Toward TCM Use and Impact Factors

Among all participants, the mean (SD) score of perceived expectations of using TCM for cancer care was 76.1 (18.3) out of possible 100. In univariate regression models, cancer patients ≤60 years had higher expectation scores than patients >60 years old (78.0 ± 17.7 vs 73.9 ± 18.8, difference in means 4.1, 95% CI = 1.1-7.1, $P = .007$). There was no evidence that other patients' characteristics were associated with expectation score (Table 2). In the multivariable model controlled by gender and monthly income, patients >60 years old had a 3.4 lower expectation score than younger patients (coefficient −3.4, 95% CI = −6.4 to −0.3, $P = .031$) (Table 3).

As for specific perceived expectations, 96% of participants believed that TCM could help boost their immune system or improve their physical health, 94% believed that TCM could reduce their symptoms, and 92% believed that TCM could help them cope with the experience of having cancer. The relatively least common expectations were the beliefs that TCM could help cure cancer (83%) (Figure 1).

Barriers Toward TCM Use and Impact Factors

Regarding barriers, the mean (SD) score of the treatment concerns and logistical challenges domains were 39.08 (16.10) and 50.53 (19.46), respectively, out of a possible 100.

Within the treatment concerns domain, cancer patients ≤60 years old had significantly higher concerns than patients >60 years old (41.82 ± 15.39 vs 36.01 ± 16.30, difference in means 5.81, 95% CI = 3.21-8.41, $P < .001$). In addition, cancer patients with stage I-III disease had higher treatment concerns than patients with stage IV (39.98 ± 15.93 vs 31.25 ± 16.35, difference in means 8.73, 95% CI = 3.29-14.18, $P = .002$, Table 2). In the multivariable model adjusted by gender, education level, and time since cancer diagnosis, age >60 years old (coefficient −5.0, 95% CI = −8.2 to −1.7, $P = .003$) and stage IV cancer disease (coefficient −9.5, 95% CI −15.3 to −3.8, $P = .001$) were independently related to lower treatment concerns (Table 4).

Within the logistical challenges domain, cancer patients with stage I-III disease had higher logistical barriers than patients with stage IV disease (50.80 ± 18.83 vs 44.27 ± 21.18, difference in means 6.5, 95% CI = 0.04-13.02, $P = .049$, Table 2). Adjusted by age, working status was related to a higher practical problem score (coefficient 9.0, 95% CI = 2.4-15.6, $P = .008$) than retired status, while stage IV cancer disease was related to a lower score in this domain (coefficient −7.5, 95% CI = −14.4 to −0.7, $P = .030$, Table 4).

In general, 12.7% of patients reported treatment concerns, while 42.1% of them reported logistical challenges toward using TCM for cancer care. Within the treatment concerns domain, 7.6% expressed concerned that TCM might interfere with their conventional cancer treatments, 9.1% are concerned that TCM treatments are not based on scientific research, and 21% were concerned that TCM treatments may have side effects. Within the logistical challenges domain, 58% of the participants complained that it was hard to decoct TCM herbs, 55% found that it was difficult to find good TCM practitioners, 50% worried that TCM treatments might be too expensive, and 50% faced problem considering adhering to on the long period TCM treatments (Figure 2).

Discussion

In this study, we used a quantitative approach to evaluate Chinese cancer patients' expectations and barriers toward TCM utilization. We found that Chinese cancer patients had high expectations for using TCM as a part of their cancer

Table 2. Participants' Characteristics and Expectations and Barriers Toward Traditional Chinese Medicine.

Participants' Characteristics	Expectations		Barriers			
			Treatment Concerns		Logistical Challenges	
	Mean (SD)	P^a	Mean (SD)	P^a	Mean (SD)	P^a
Total	76.1 (18.3)		39.1 (16.1)		50.5 (19.5)	
Gender (N = 590)						
Male	73.6 (20.1)	.2	36.4 (15.6)	.092	48.3 (18.6)	.2
Female	76.5 (18.0)		39.6 (16.2)		50.9 (19.6)	
Age, years (N = 576)						
≤60	78.0 (17.7)	**.007**	41.8 (15.4)	**<.001**	51.7 (19.1)	.2
>60	73.9 (18.8)		36.0 (16.3)		49.4 (20.0)	
Employment Status (N = 539)						
Retired	76.1 (17.9)	.6	39.3 (15.7)	.7	50.2 (19.3)	.14
Working	77.7 (21.5)		40.4 (18.4)		55.0 (20.3)	
Monthly income, yuan (N = 570)						
≤5000	77.4 (18.2)	.094	38.7 (15.6)	.5	51.1 (20.1)	.5
>5000	74.9 (18.1)		39.6 (16.7)		50.1 (18.7)	
Education level (N = 566)						
≤High school	75.9 (18.8)	.6	39.8 (16.9)	.14	50.5 (19.6)	.8
>High school	76.7 (17.9)		37.6 (14.2)		50.1 (19.3)	
Cancer type (N = 579)						
Breast	76.7 (18.3)	.6	40.1 (16.2)	.2	52.0 (20.0)	.4
Lung	75.3 (16.5)		38.9 (15.0)		47.5 (15.5)	
Colorectal	72.6 (18.5)		36.7 (16.1)		49.5 (20.1)	
Gynecological	77.1 (21.2)		40.3 (18.4)		48.7 (20.1)	
Others	75.0 (17.2)		36.2 (14.9)		49.3 (18.8)	
Time since cancer diagnosis, years (N = 563)						
≤5	76.6 (20.1)	.7	40.4 (16.9)	.2	49.6 (20.7)	.5
>5	75.8 (17.9)		38.5 (15.9)		50.8 (19.3)	
Cancer stage(N = 457)						
I-III	76.6 (17.5)	.7	40.0 (15.9)	**.002**	50.8 (18.8)	**.049**
IV	77.9 (21.5)		31.3 (16.4)		44.3 (21.2)	

Abbreviation: N, number; SD, standard deviation;
[a]Boldfaced *P* values indicate statistical significance.

Table 3. Multivariable Regression Model for Expectation Score.[a].

	Expectation Score		
	Coefficient	95% CI	P^b
(Constant)	76.3	71.7, 80.8	—
Age, years			
≤60	0	0	
>60	−3.4	−6.4, −0.3	**.031**
Gender			
Male	0	0	
Female	3.2	−1.1, 7.4	.15
Income, yuan			
≤5000	0	0	
>5000	−2.4	−5.4, 0.6	.12

[a]As age, gender, income showed variance to expectation in Uni-variable model in table 2, we adjusted these three factors in multivariable model.
[b]Boldfaced *P* value indicates statistical significance.

care, including realistic beliefs (TCM could relieve symptoms) and unrealistic beliefs (TCM could cure cancer). Younger patients had stronger expectations. Regarding barriers, cancer patients had more logistical challenges than treatment concerns related to using TCM for cancer care. Younger patients had more treatment concerns, while working-class participants had more logistical challenges; stage IV cancer patients had more barriers in both domains. To our knowledge, this is the largest quantitative survey study on Chinese cancer patients' expectations and barriers toward TCM utilization.

Compared with previous studies, our findings specified Chinese cancer patients' expectations and barriers toward TCM use by using a comprehensive tool to evaluate this topic in a more in-depth manner. In 2012, McQuade et al[4] found that 66% of Chinese cancer patients believed that Chinese herbal medicine could cure cancer or prolong life. This proportion was even higher than cancer patients who

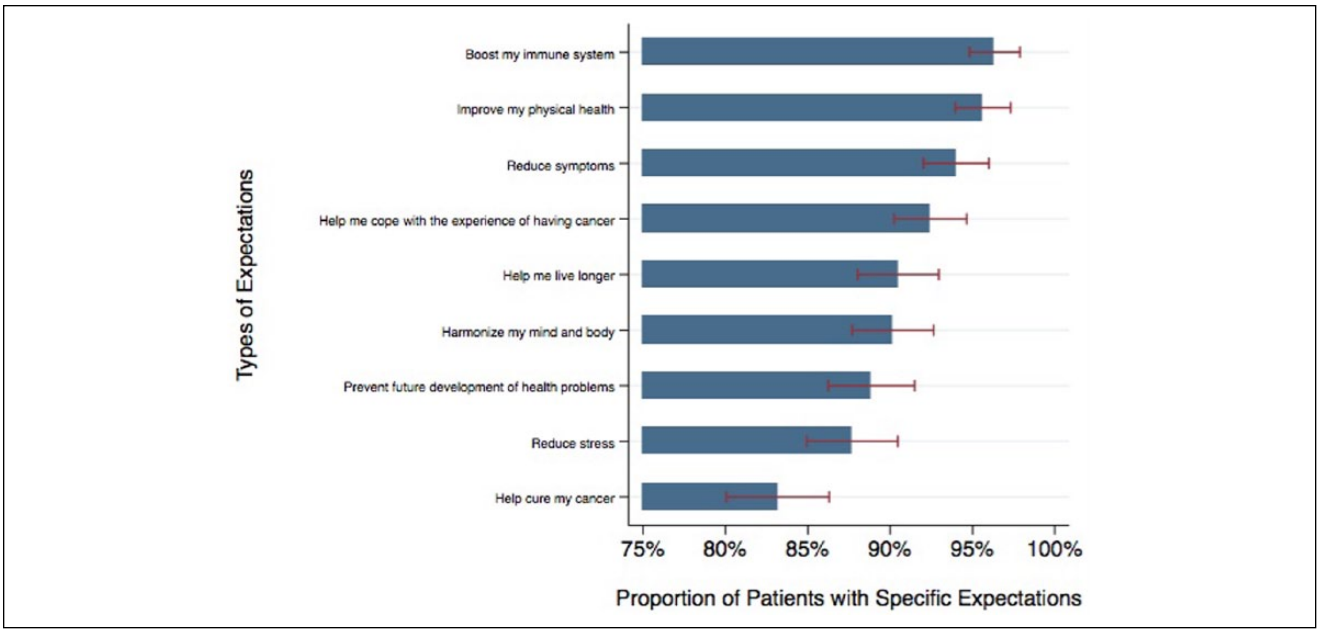

Figure 1. Proportion of participants who had specific expectations for traditional Chinese medicine (TCM).
Among all 9 specific perceived expectations, 96% of participants believed that TCM could "boost my immune system" or "improve my physical health," 94% believed that TCM could "reduce symptoms," and 92% believed that TCM could "help me cope with the experience of having cancer." The least common expectations were the beliefs that TCM could "help cure my cancer" (83%).

Table 4. Multivariable Regression Model for Barrier Scores in Each Domain.[a]

	Barrier Score					
	Treatment Concerns			Logistical Challenges		
	Coefficient	95% CI	*P*[b]	Coefficient	95% CI	*P*[b]
(Constant)	41.6	36.3, 46.9	—	47.1	41.7, 52.5	—
Age, years						
≤60	0	0		0	0	
>60	−5.0	−8.2, −1.7	**.003**	0.8	−3.0, 4.7	.7
Gender						
Male	0	0		0	0	
Female	1.7	−2.8, 6.3	.5	3.1	−2.2, 8.3	.3
Education level						
≤High school	0	0		—	—	—
>High school	−1.3	−4.6, 1.9	.4	—	—	—
Time since cancer diagnosis, years						
≤5	0	0		—	—	—
>5	−0.7	−4.4, 2.9	.7	—	—	—
Employment status						
Retired	—	—	—	0	0	—
Working	—	—	—	9.0	2.4, 15.6	**.008**
Cancer stage						
I-III	0	0		—	—	—
IV	−9.5	−15.3, −3.8	**.001**	−7.5	−14.4, −0.7	**.030**

[a]As age, gender, education level, time since cancer diagnosis, employment status, and cancer stage showed variance to treatment concerns or logistical challenges barriers in the univariable model in Table 2, we adjusted these factors in multivariable models.
[b]Boldfaced *P* values indicate statistical significance.

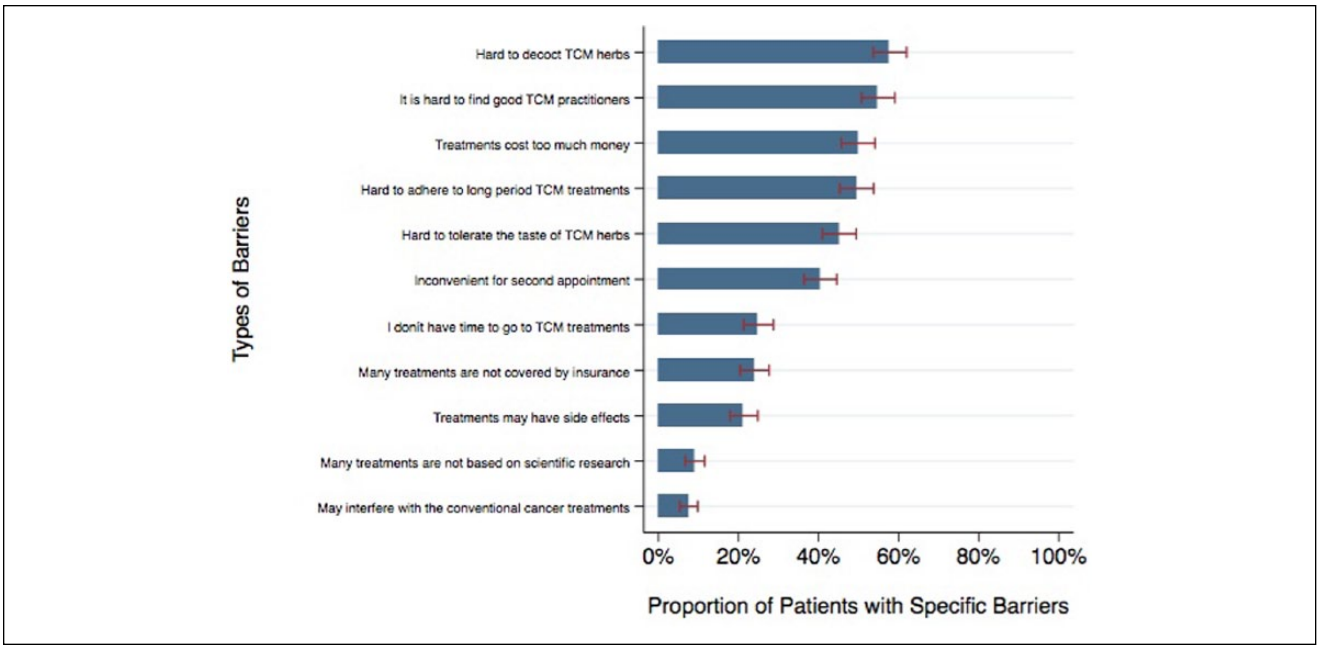

Figure 2. Proportion of participants who had specific barriers for traditional Chinese medicine (TCM).
Among the treatment concerns domain, the majority of cancer patients complained that it is "hard to decoct TCM herbs" (58%), "hard to find good TCM doctors" (55%), that "treatments cost too much money" (50%), and that it is "hard to insist on the long period TCM treatments" (50%). Among the logistical challenges domain, few participants were concerned that TCM "might intervene with conventional cancer treatments" (7.6%), "many treatments are not based on scientific research" (9.1%), and that "treatments may have side effects" (21%).

expected TCM herbal medicine could help relieve symptoms or improve quality of life (52%). Interestingly, our study showed that 12% more patients believed TCM could improve physical health than believed that TCM could cure cancer. This reversed result may be because our study evaluated patients' expectations by using nine specific items, compared with a limited 4 items in the study by McQuade et al.[4] Another possible explanation may be that Chinese people's opinions toward the role of TCM in cancer care have evolved in recent years. However, compared with the attitudes toward CAM use in other countries, Chinese cancer patients' expectations for TCM use were still much higher, whereas the barriers were much less.[14-16]

Whether high expectations of TCM use for cancer care among Chinese cancer patients are beneficial or harmful still remains controversial. Such expectations might represent cancer patients' willingness for a more balanced lifestyle and higher quality of life after active cancer treatments.[23] However, it is still difficult to determine whether unrealistic beliefs may decrease compliance with surgery, chemotherapy, or radiotherapy among Chinese patients. To date, there is limited evidence indicating that TCM itself could help improve cancer survival outcomes; furthermore, the mechanism behind these improved survival outcomes is still unclear.[24]

Understanding Chinese cancer patients' concerns toward TCM treatments could further explain their high expectations. According to our study, less than 10% of Chinese cancer patients expressed concerned that TCM might interfere with conventional cancer treatments or that TCM treatments may not be based on scientific research. Using TCM herbal medicine during chemotherapy is a common clinical practice in China.[25] Some studies have indicated that TCM could reduce chemotherapy-induced side effects such as vomiting and fatigue.[26] However, drug interactions between Chinese herbs and chemo agents are still unclear. For example, some herbs could affect human cytochrome P450 system (CYP450), which may affect drug metabolism and lead to either under- and/or overdose effects.[27]

A better TCM service model is needed to meet the challenges inherent in using TCM for cancer care among Chinese cancer patients. We found that the biggest barrier to TCM use among Chinese cancer patients was decoction of Chinese herbs. Among all the cancer patients who had used TCM, more than 90% had received herbal medicine therapy. Although increasingly efficient methods, including mechanical methods, exist for decocting herbs in China, most Chinese people still believe that herbs decocted by hands have better efficacy. More research and education are needed to transform such traditional opinions. Our study also found that half of Chinese cancer patients found it difficult to find experienced TCM doctors. According to the latest statistics, in 2015, there were 452 000 TCM doctors/practitioners in China, or 3000 Chinese people for each TCM doctor/practitioner.[9] In addition, the general belief that only experts (chief attending or above) can help patients cure cancer contributes to the belief that there are few "good" TCM doctors available.

Our study has several limitations. First, cancer patients from urban cities such as Beijing might have better resources and medical insurance coverage for TCM treatments than rural residents.[28] As a next step, we will launch a nationalwide survey study to investigate Chinese cancer survivors' utilization toward TCM and its association with quality of life or cancer outcomes. The current study was a patient-support group–based survey. Thus, participants might be highly representative for shared values and opinions toward cancer.[21,29,30] Furthermore, compared with the original ABCAM questionnaire, with permission from its original authors, we removed the subjective norm and adjusted some specific items for the ABTCM questionnaire. Thus, there may be some bias for direct comparison between the results of the 2 studies.

Despite these limitations, our study has some important implications. Cancer patients and their families need more evidence-based education about TCM's role in cancer care to help them develop realistic understandings and expectations for using TCM in cancer care. The aim of such education is to persuade them to complete conventional cancer treatments and to avoid possible harmful effects caused by unregulated TCM therapy. Future clinical practice could place more emphasize on TCM's role in enhancing cancer patients' quality of life and life-style modifications. In addition, innovative and convenient TCM treatments formats are necessary for cancer patients to manage chronic disease conditions. More survival outcome studies and basic research on TCM treatments, especially herbal medicine, are still necessary to meet Chinese cancer patients' significant expectations about TCM's role in curing cancer and boosting the immune system.

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Declaration of Conflicting Interests

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Supplemental Material

Supplementary material is available for this article online.

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