

Measuring Chinese Medical Beliefs of Chinese Adults

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Abstract. The study aims at developing an instrument measuring Chinese medical beliefs held by Chinese adults. In an online survey, participants were asked to rate their agreement with 35 Chinese medical beliefs. 257 valid responses from Chinese adults were collected. Exploratory factor analysis indicates that Chinese medical beliefs of Chinese adults are loaded onto seven factors of preventive diet, traditional health practices, preferences of TCM and western medicine, energy concept in TCM, medicated diet, pathogenic factor, and TCM hesitation. The study points out some Chinese medical beliefs held by Chinese adults.

Keywords: Chinese medical beliefs · Culture · TCM · Instrument

1 Introduction

Culture influences people's health-seeking behaviors, so we should pay attention to it in the health-care service design. In China, traditional Chinese medicine (TCM) is widely adopted among Chinese people. TCM is a unique medical system, which stemmed from ancient times [1] and thrives until today. It influences Chinese people's (even Asians') perceptions and behaviors related to health and medical service in many ways. For example, a woman needs "doing the month" after childbirth, meaning that she must observe a period of confinement and taboos and that she must not wash her hair during the period of confinement [2].

Nowadays, most doctors in China are educated under Western medical educational systems. Doctors are often unaware of the complex Chinese culture that influences their patients' responses to care [3]. Discrepancies of medical beliefs between doctors and patients would probably lead to distrust in healing process. Despite that researchers have noticed the impact of Chinese medical beliefs on Chinese immigrants' behavior [2, 4–7], there are few explicit ways to measure people's Chinese medical beliefs to our knowledge.

This study aims at developing an instrument measuring Chinese medical beliefs held by Chinese adults. The instrument will help doctors understand patients' medical beliefs, thus provide specific treatment to patients.

2 Literature Review

2.1 TCM Concepts

TCM concepts are summarized as the foundation of the instrument. The concepts include Yin-yang, Five phases, Taoism, Confucianism and Buddhism.

Yin-Yang. The yin and yang are complementary opposite forces. Everything has both the yin and yang aspects. They control the relationship between humans and environment together with the “qi” energy [8]. In the health context, an imbalance in these two forces or in the ‘qi’ results in illnesses [9]. Food has its cold or hot characteristics. Thus, Chinese patients usually take special foods and herbs according to the season to balance either yin or yang in order to enhance their energy [3].

Five Phases. According to this theory, all phenomena in the universe are the products of the movement of five qualities: wood, fire, earth, metal and water. The organs correspond to each of the phase. For example, liver corresponds to wood, heart to fire, spleen to earth, lung to metal, and kidney to water. Organs interacts each other in illness. Thus, patients would ask for medication to protect the organs related to their target organ [3].

Taoism. The Taoism philosophy advocates *non-action*, or ‘let-it-be’. According to this philosophy, one should not overdo anything [3]. Taoism emphasizes the importance of keeping harmony with nature. It is believed that being harmony with nature will provide peace of mind, and promote good health [10].

Confucianism. The Confucian philosophy plays an important role in Chinese society. It reminds people that they are destined by heaven to complete their mission. The Confucianism advocates *chung-yung*, which asks people to maintain a neutral position when examining all phenomena [3]. This belief may contribute to Chinese patients’ hesitation about receiving Western medicine surgery, since they consider Western treatments too aggressive to incorporate with the natural recovery speed [9, 11].

Buddhism. Buddhism believes fate and “inn kuo” (cause and effect) are the key factors of health [12]. Most Chinese Buddhists with malignant disease usually attributes the cause of disease to their sin, and they tend to have self-blame responses [3]. Buddhism has pessimistic thoughts, which may make the doctor and patient lack confidence.

Guided by these philosophies, people with Chinese medical beliefs may have special considerations for dietary, medicine, daily practices and so on.

2.2 Influence of Chinese Medical Beliefs

There are different aspects of Chinese medical beliefs. Lai et al.’s investigates 12 cultural health beliefs held by older Chinese in Canada, and these beliefs are loaded onto three factors about traditional health practices, beliefs about traditional Chinese medicine, and beliefs about preventive diet [7]. In a study conducted in Malaysia, researchers interviewed 50 Malaysian Chinese from the general public and 50 Chinese medical students

about 22 items. It was found that there was a discrepancy in the extent of these beliefs among the general public and Chinese medical students [2].

Chinese medical beliefs influence Chinese immigrants' utilization of health-care service like mammography screening [13, 14], cancer services [5], and mental illness services [15]. Yeo et al. found that Chinese-Australians maintained traditional Chinese beliefs about cancer, such as explaining it as karma or retribution, despite their high acculturation [5]. Another example was that Chinese were not very aware of mental illness. They interpreted it more as somatic symptoms [16]. Researchers argued that these perceptions were possible barriers to access of appropriate health service.

Though quite a few studies are conducted abroad, Chinese medical beliefs held by Chinese adults are rarely found in China, where TCM originates. So this study was carried out to measure the Chinese medical beliefs held by Chinese adults living in China.

3 Research Questions and Methods

3.1 Research Questions

The following research questions are proposed for this study.

Q1: What are Chinese medical beliefs held by Chinese people?

First, items that could be representative of Chinese medical beliefs should be selected.

Q2: What is Chinese adults' agreement with these Chinese medical beliefs?

Chinese adults' agreement with Chinese these items are measured to identify the degree to which Chinese medical beliefs are endorsed by Chinese adults.

Q3: What are the dimensions of the Chinese medical beliefs?

To understand the underlying structure of the items measuring Chinese medical beliefs, factor analysis could be used to identify the dimension of Chinese medical beliefs.

3.2 Questionnaire Design

Questionnaire survey was adopted as the research method. The questionnaire consisted of two parts. The first part was to collect demographic information of the participants and their experiences in using TCM, including gender, age, occupation, profession, education level, marital status, birthplace, current residence, frequency of visiting TCM last year, place of visiting TCM, causes of visiting TCM and cumulative time of taking TCM.

The second part was to measure Chinese adults' agreement with Chinese medical beliefs. In this study, the items measuring Chinese medical beliefs were selected from Chew et al.'s [2] and Lai et al.'s studies [7]. The researchers also added 5 items about Chinese medical beliefs according to life experience. The Chinese medical beliefs were about cause of disease, diet taboo, daily habit, folk prescription, and attitude towards TCM.

The items were measured by 7-point Likert scales. 1 represents strongly disagree, 7 represents strongly agree, and 4 represents neutral or never heard of this item. The translations were checked by one undergraduate student majoring in English. Then the questionnaires were pilot tested by two human factors engineering PhD students to prevent ambiguity. A few adjustments were made, such as adding the interpretation of professional word “wind” in TCM. As a result, a questionnaire is constructed with 35 items measuring Chinese medical beliefs. One of the 35 items is reverse item (Item 19).

3.3 Participants

The questionnaires were uploaded on sojump, an online questionnaire system. Then the online questionnaires were distributed via Wechat, a social media in China. RMB 2-worth of “Red Packet” was rewarded to each participant. Ultimately this study collected 293 responses, among which 257 questionnaires were valid.

The final sample consisted of 101 Chinese males and 156 Chinese females. The mean age of the participants is 25.2 years old ($SD = 5.5$). The oldest is 52 years old and the youngest is 18 years old. More than 80 % report an undergraduate education level or above. More than 80 % report that they are unmarried. The sample covers various occupation and profession.

About frequency of visiting TCM last year, 63 % report that they didn't visit TCM last year. 33.1 % visited TCM 1~5 times last year. 2.3 % visited TCM 6~10 times. 1.6 % visited TCM more than 10 times. Among the 95 participants visiting TCM last year, 40.0 % visited in large hospitals, 25.3 % in community hospitals, 38.9 % in clinic and 20.0 % in other places. Most of the participants (55.8 %) visited TCM because of chronic disease. Nearly 75 % of the participants have ever taken TCM.

4 Results

4.1 Agreement with Chinese Medical Beliefs

To identify the degree to which Chinese medical beliefs are endorsed by Chinese adults, we summarize the mean and standard deviation of each item. Table 1 presents 10 Chinese medical beliefs with highest agreement in this study. For example, “9. Eating too much deep-fried food will cause *Shanghuo*.” ($M = 5.89$, $SD = 1.32$) “*Shanghuo*” is a widely a term in TCM, with common symptoms like sore throat, feeling hot and dry, or getting pimples. This statement is highly agreed among Chinese adults. The item with second highest agreement is “1. Certain diseases are caused by ‘too much heat’ or ‘too much coldness’ in the body (disruption of yin-yang balance).” ($M = 5.67$, $SD = 1.35$) This item is the explanation of illness based on the yin-yang theory. The item with third highest agreement is “11. Soup is good for health.” ($M = 5.63$, $SD = 1.27$) This is a dietary norm to maintain health.

Table 1. 10 Chinese medical beliefs with highest agreement

Item of Chinese medical beliefs	Mean	SD
9. Eating too much deep-fried food will cause <i>Shanghuo</i>	5.89	1.32
1. Certain diseases are caused by 'too much heat' or 'too much coldness' in the body (disruption of yin-yang balance)	5.67	1.35
11. Soup is good for health	5.63	1.27
24. Drinking pear water can cure cough	5.52	1.24
27. Traditional Chinese herbal medicine can balance yin and yang in the body	5.45	1.35
14. Consuming certain food like garlic and ginger can help dispel wind from the body	5.44	1.40
18. One should avoid eating seafood after surgical operation.	5.40	1.43
26. Drinking momordica grosvenori tea can clear the lung and decrease internal heat	5.39	1.31
12. When you are not feeling well, it is better for you to have plain congee	5.24	1.48
22. One will get headache at an older age if going to bed without properly drying his or her hair after washing	5.21	1.50

The Chinese medical beliefs with lowest agreement includes: “33. If you have taken TCM prior to visiting your doctor, would you be uncomfortable to reveal to your doctor that you have taken TCM prior to the consultation?” ($M = 2.78$, $SD = 1.8$) This item is measuring the hesitation attitude towards TCM. It turns out that patients don't mind talking about TCM to their doctors, perhaps because TCM is well-known around Chinese people in China. “2. Fever is due to excessive heat inside the body” ($M = 3.19$, $SD = 1.58$) and “13. One should consume less amount of rice or totally abstain from taking rice when having fever” ($M = 3.43$, $SD = 1.63$) also receive low agreement, perhaps because these two items violate the interpretation of fever with modern medicine—fevers are commonly caused by bacterial/viral infections.

4.2 Exploratory Factor Analysis

We used exploratory factor analysis to explore the factor structure of the remaining 34 items of Chinese medical beliefs, after removing the reverse item. The results of the Kaiser–Mayer–Olkin (KMO) test and Bartlett's test of sphericity were .893 and $\chi^2 = 3698.2$ ($p < .001$), suggesting being suitable for factor analysis.

In the factor extracting and screening phase, the following rules were adopted: extracting components with eigenvalues larger than 1 as principal component; deleting items with loadings smaller than .45 on all common factors; deleting factors containing only one item [17, 18]. 6 items were dropped according to the rules above. For example, one item about combining both TCM and modern medicine together was dropped

because it was the only item in the factor. Varimax rotation with Kaiser normalizing rotation was used to acquire a meaningful explanation of the model.

Finally, 28 items were retained. The 28 items composed of seven factors and explained 61.7 % of the total variance. The seven factors were named as preventive diet, traditional health practices, preferences of TCM and western medicine, energy concept in TCM, medicated diet, pathogenic factor, and TCM hesitation. The seven factors accounted for 17.3 %, 9.0 %, 8.4 %, 8.2 %, 7.3 %, 6.5 %, and 5.0 % of the variance, respectively.

Preventive diet describes about folk prescription and dietary restrictions during one's illness, such as "drinking momordica grosvenori tea can clear the lung and decrease internal heat" and "consuming certain food like garlic and ginger can help dispel wind from the body."

Traditional health practices describe about traditional practices that Chinese like to follow. Typical example is women's confinement in childbirth, which is commonly known as "zuo yue zi" in Chinese.

Preference of TCM and western medicine describes people's preference when facing TCM and western medicine. Items in this factor are about choosing TCM alone as the initial treatment choice and hesitation in receiving western medicine.

Energy concept in TCM describes the interpretation of energy in TCM, like "wind" or excessive heat could cause related illness.

Medicated diet consists of beliefs about Chinese herbal medicine and tonic food. It is believed homology of medicine and food, namely, choosing appropriate food can act as medicine and enhance the immunity.

Pathogenic factor describes about the cause of disease, such as "having too much cold food or drink will cause dizziness" and "exposure to rain water can cause respiratory tract infection".

TCM hesitation is vague, consisting of only two items. One is about patient's hesitation in telling doctors that s/he has taken TCM prior to the consultation. The other is consuming less amount of rice when having fever.

5 Discussion

The study aims at developing an instrument measuring Chinese medical beliefs held by Chinese adults. By exploratory factor analysis, seven factors are identified about preventive diet, traditional health practices, preferences of TCM and western medicine, energy concept in TCM, medicated diet, pathogenic factor, and TCM hesitation. Factor 1 to Factor 6 are reliable with acceptable internal consistency (Cronbach's $\alpha > .60$). However, Factor 7 (TCM hesitation) is vague, with low reliability (Cronbach's $\alpha = .396$). This factor could be revised or removed in the future.

The study points out some Chinese medical beliefs physicians should notice in medical practice and communication. The instrument will help in the following aspects. First, the instrument could serve as a way to measure the extent to which people hold Chinese medical beliefs. Physicians educated under Western medical system also need to know what Chinese medical beliefs the patients have so that they could answer

patients' questions and make appropriate treatment plan. Second, as we identify seven factors about Chinese medical beliefs, the instrument could further measure people's acceptance with TCM in different subscales, such as dietary, traditional practices. Third, the instrument could be used to identify which subscale has a good predict effect on people's medical choice.

There are a few limitations of this study, suggesting improvement direction of the instrument. First, the samples are mainly younger Chinese adults and the education level is relatively high. Since age may influence Chinese medical beliefs according to [19], sampling from more general population including different age levels and education background should be adopted in future study. Besides, the validity of the instrument is not yet verified. In-depth interview with TCM experts should be required to verify whether the items in each factor are representative enough as Chinese medical beliefs. What's more, Chinese medical believers and Western medical believers could be invited to prove the validity of the instrument. The future study could examine the impact of age, education level, overseas experience on Chinese medical beliefs.

6 Conclusion

In this study, we preliminarily develop an instrument measuring Chinese medical beliefs held by Chinese adults. Exploratory factor analysis indicates that the Chinese medical beliefs are loaded onto seven factors of preventive diet, traditional health practices, preferences of TCM and western medicine, energy concept in TCM, medicated diet, pathogenic factor, and TCM hesitation. The study points out some Chinese medical beliefs held by Chinese adults. Physicians should pay attention to these Chinese medical beliefs in medical practice and communication.

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