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Use of Traditional and Complementary Medicine as Self-Care Strategies in Community Health Centers

Cross-Sectional Study in Urban Pearl River Delta Region of China

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Abstract: In China, Community Health Centers (CHCs) are major providers of primary care services, but their potential in empowering patients' self-management capacity has not been assessed. This study aims to describe self-care practice patterns amongst CHC attendees in urban China.

In this cross-sectional quantitative study, 3360 CHC patients from 6 cities within the Pearl Delta Region were sampled using multistage cluster sampling.

Thirty-seven per cent had used with over-the-counter Chinese herbal medicines (OTC CHMs) in the past year and majority of respondents found OTC CHMs effective. OTC CHMs were more popular amongst those who needed to pay out of pocket for CHC services. Less than 10% used vitamins and minerals, and those with a lower socioeconomic background have a higher propensity to consume. Although doubts on their usefulness are expressed, their use by the vulnerable population may reflect barriers to access to conventional health care, cultural affinity, or a defense against negative consequences of illnesses. About 25% performed physical exercise, but the prevalence is lower amongst women and older people. Taiji seems to be an alternative for these populations with promising effectiveness, but overall only 6% of CHC attendees participated.

These results suggest that CHCs should start initiatives in fostering appropriate use of OTC CHM, vitamins, and minerals. Engaging

community pharmacists in guiding safe and effective use of OTC CHM amongst the uninsured is essential given their low accessibility to CHC services. Prescription of Taiji instead of physical exercises to women and older people could be more culturally appropriate, and the possibility of including this as part of the CHC services worth further exploration.

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Abbreviations: CHCs = Community Health Centers, CHM = Chinese Herbal Medicine, CI = confidence interval, I-CAM-Q = International Complementary and Alternative Medicine Questionnaire, OTC = over the counter, SES = socioeconomic status, T&CM = traditional and complementary medicine.

INTRODUCTION

Defined by the World Health Organization as “the activities individuals, families, and communities undertake with the intention of enhancing health, preventing disease, limiting illness, and restoring health, self-care occupies a prominent role in the healthcare ecology of developing countries.”¹ Use of over-the-counter medication is often the first-line self-care before the use of primary care services,² especially in communities where accessibility to primary care is not high. Meanwhile, other self-care practices including usage of vitamins and mineral supplements, and participations in physical activities could serve as key strategies for primary and secondary prevention. Potential of benefits of self-care would not be maximized unless appropriate empowerment and guidance is provided by health systems.³ In China, accessibility of primary care services provided by Community Health Centers (CHCs) has been increasing,⁴ thanks to the success in health insurance reform in the past decade.⁵ Despite higher accessibility, self-care by using over-the-counter medications remains to be a popular option amongst the Chinese population, with a prevalence of 31% in urban areas in a 2-week recall period in 2008.⁶ Although it is acknowledged that Chinese herbal medicine (CHM) should be prescribed by Chinese medicine practitioners, consumption of over-the-counter CHM (OTC CHMs) is particularly popular,⁷ because it is regarded as a traditional form of first-line lay care.⁸ The use of dietary supplements, including vitamins and minerals, is lower amongst Chinese when compared with other Asian populations.⁹ However, with increasing commercial promotion on their use in China, it is uncertain whether this pattern has changed recently.¹⁰ Both physical activities and traditional forms of exercise—Taiji (T'ai Chi) and Qigong—are practiced, but it is acknowledged that physical activity level in China has been dropping rapidly since the early 1990s.¹¹

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Improving patients' self-care capacity is a core component of high-quality primary care,¹² and its impact on patients' health status and self-efficacy has been favorable.¹³ In China, emphasizing the core role of primary care as the foundation and first point of contact to the health system has been a key policy direction. Current reform regards CHCs as major providers of basic preventative and healthcare services for common conditions.⁴ Their establishments are larger compared with other community health service organizations, with building areas larger than 1000 square meters. Each of them is designed to serve a population of 30,000 to 50,000,¹⁴ and the number of CHCs has been increasing in China during 2001 and 2008.¹⁵ Given the increasingly important role of CHCs in the provision of primary care services, there is a need for CHCs to incorporate strategies that improve patients' self-care capacity in a people-centered manner. Empowering patients in making appropriate choices in the use of OTC CHM and dietary supplements, and also promoting participation in physical activities, could be an important component of such program. A clear picture on their utilization pattern amongst urban CHC users is needed for planning purposes.

This study aims to describe the utilization patterns of various self-care practices amongst patients attending CHCs. Considering self-care as an umbrella term, we investigated the following practices: the prevalence of OTC CHM usage; dietary supplements usage; and the practice of Qigong, Taiji, and other physical exercises. Then, reasons for choosing to do so and patients' perceived effectiveness of these modalities were explored. Finally, demographic and health-related characteristics associated with their use were described.

METHODS

Sampling and Data Collection

In this study, multistage cluster sampling was applied to select participating CHCs in 6 major cities in the Pearl River Delta: Guangzhou, Shenzhen, Dongguan, Zhuhai, Foshan, and Zhongshan. Four districts in each city were randomly selected in the first stage. One neighborhood in each of the 4 districts was randomly selected in the second stage. One CHC was randomly selected in each of the 4 neighborhoods in the third stage. In other words, a total of 24 CHCs were sampled and included. According to the requirement for conducting multivariate analyses, a sample size of 3360 requirement is estimated.¹⁶ Data collection continued until the sample size of 480 was reached for each city, except for Guangzhou. We collected data from Guangzhou until a larger sample size of 960 was achieved, given its larger population and geographical size. The whole process was conducted during November 2010 to April 2011.

Invitation for attending a face-to-face interview was provided to all patients ≥ 18 years, during business period of each CHC. Patients were invited to join the interview until we reached the target sample size.

For participants who completed the questionnaire, a cash incentive of RMB ¥25 (USD \$4.07) was offered. Before the interview, written informed consent was obtained from patients. Ethics approvals were obtained from the Survey and Behavioral Research Ethics Committee of the Chinese University of Hong Kong (reference number: TB106179) and the Research Ethics Committee of Guangzhou Medical University (reference number: BKZZ2011047).

Questionnaire Design

Questionnaire used in the interview consisted of 3 parts. The first part aimed to collect data on the respondents' demographic and health-related characteristics, including their sex, age, household registry status (Hukou and residency), education level, household income, occupation, insurance status, self-perceived health status, and chronic disease status. For household registry status, respondents were classified into 3 categories:^{17,18}

1. Resident with Hukou: Permanent residents of the city who are entitled to a full package of social and health benefits provided by the city government.
2. Resident without Hukou: Temporary residents without local household registration, but lived in the city ≥ 6 months. These residents may be offered temporary residence cards, permitting them to receive limited social and health benefits.
3. Nonresident without Hukou: Temporary resident without local household registration, and lived in the city < 6 months. These residents are not entitled to any social and health benefits provided by the city government.

In the second part, we assessed the use of OTC CHMs and vitamins/minerals, including tablets, capsules, liquids, and other formulations, using a modified International Complementary and Alternative Medicine Questionnaire (I-CAM-Q).¹⁵ The original I-CAM-Q is developed by a group of experts from diverse background, with a goal of standardizing measurement of traditional and complementary medicine (T&CM) use in surveys. It records T&CM usage data in 4 parts:

1. Visiting of conventional and T&CM healthcare providers
2. T&CM treatments received from conventional physicians
3. Use of herbal medicine and dietary supplements
4. Self-care practice.

The I-CAM-Q is found to be useful in recording T&CM utilization in population-based surveys.¹⁹ The full original version of I-CAM-Q can be found elsewhere.²⁰ For the current study, we have only used selected sections from parts (3) and (4). To reflect established culture of T&CM use in China, we have specified "herbs/herbal medicine" as CHMs, and removed homeopathic remedies in part (3). For part (4), we have removed all options except Qigong and Taiji, and added physical exercise as a new option. These changes have enhanced the content validity of the questionnaire. To ensure its face validity and acceptability before the full-scale survey, we have piloted the modified Chinese version of this amended questionnaire with 10 CHC attendees successfully.

During the interviews, respondents were asked to indicate whether they had consumed the following types of products in the past 12 months: OTC CHMs and vitamins/minerals. If the respondents provided a positive response, they were asked to specify whether they are current active users. To qualify as a current active user, the respondents need to be consuming OTC CHMs or vitamins/minerals 24 hours before the interview. Moreover, they were invited to indicate main reason for last use, regardless of whether they had consumed these products in the past 12 months or not. The following 4 options were included: for acute condition lasted less than 1 month; for chronic condition lasted for 1 month or more; and for

improvement of well being. Finally, patients were invited to assess their effectiveness on a scale with options of “very helpful,” “somewhat helpful,” “not helpful at all,” and “don’t know.” Similarly, respondents were invited to rate on their usefulness, regardless of whether they had consumed these products in the past 12 months or not.

In the third part, we assessed the use of self-care practices, again using modified I-CAM-Q. Specifically, respondents were asked to indicate whether they had used the following types of self-care practices in the past 12 months: Qigong, Taiji, and other physical exercises. The respondents were asked to describe how often they perform these practices in the past 3 months, if they provided a positive response. Finally, questions on main reasons for last practice, and also their perceived effectiveness were asked as in prior sections.

Data Analysis

For each type of OTC CHM, vitamins, and minerals, or other self-care practices’ usage, prevalence, frequencies of utilization, and their respective 95% CI were calculated. Multiple logistic regression analyses were applied to explore how demographics and health-related characteristics were associated with usage of each modality, with reference group being those who did not use it in the past year. For each modality, an independent multiple logistic regression analysis was performed. For main reason of utilization (using for acute conditions, chronic conditions, and well-being improvement), we presented their proportions with their respective 95% CIs. Chi-square goodness-of-fit tests were used to evaluate the equality of frequencies among different reasons for using each modality. Two categories were compared using the post-hoc 1-sample chi-square tests, providing that if significant results were present in the chi-square goodness-of-fit tests. Proportions of patient reporting degree of effectiveness and their respective 95% CIs were also presented.

RESULTS

Three thousand three hundred sixty patients were interviewed within the prespecified quota from all 6 cities. The overall response rate was 86.1%. Appendix 1 (<http://links.lww.com/MD/B8>) shows the demographic and health-related characteristics of our respondents. For these characteristics, missing data were less than 0.8% in all categories except for income, which reached 18.6%. Data from Appendix 1 (<http://links.lww.com/MD/B8>) are also presented in a publication on another related publication, which focused in the use of Chinese medicine services.²¹ There is no limitation on the use of Appendix 1 (<http://links.lww.com/MD/B8>), because the previous publication “permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.”²¹ It should be highlighted that, although the data were collected in the same survey as described in a previous publication,²¹ focus on the current study is on self-care strategies, and there is no overlapping of data presented in all remaining tables and figure.

Patterns of Over-the-counter Chinese Herbal Medicine and Vitamins and Mineral Supplements Usage

In the past 12 months, prevalence of using OTC CHM at least once is 36.93% (95% CI 35.30%, 38.57%), of which 34.17% are current active users (95% CI 31.53%, 36.80%).

Compared with respondents who were covered by government healthcare sponsorship scheme, multiple logistic regression analyses (Table 1) showed that those who need to pay out of pocket for health services were more likely to use OTC CHMs.

Prevalence of using vitamins and minerals in the past year was 9.17% (95% CI 8.19%, 10.14%), of which 44.48% are current active users (95% CI 38.93%, 50.03%). Compared with respondents who were residents with a *Hukou*, those without *Hukou* were more likely to use vitamins/minerals, regardless of their resident duration (Table 1).

Patterns of Practicing Qigong, Taiji, and Physical Exercises

The use of Qigong and Taiji as self-care practices are low amongst CHC attendees, with a 12-month prevalence of only 1.52% (95% CI 1.10%, 1.93%) and 6.16% (95% CI 5.35%, 6.97%). Among those who have practiced in the past 12 months, the mean 3 months’ practice frequency for Qigong is 48.00 (SD = 38.87) times, and for Taiji the frequency is 61.66 (SD = 36.16) times. Compared with respondents who were residents with *Hukou*, those who were residents without *Hukou* were less likely to practice Taiji. Moreover, those who were under the new cooperative medical scheme were less likely to practice Taiji when compared with those who were entitled to government-sponsored health care. Interestingly, those who have higher income were also less likely to practice Taiji, or performing other forms of physical exercises (Table 1).

Compared with Qigong and Taiji, a relatively higher proportion of CHC patients chose to perform other forms of physical exercises, with a prevalence of 24.29% (95% CI 22.84%, 25.74%). The mean 3 months’ exercise frequency is 45.76 (SD = 42.58) times. Female and older respondents were less likely to perform physical exercises (Table 1).

Main Usage Reasons and Perceived Effectiveness of Various Self-care Practices

Figure 1 shows the main reasons for choosing to use OTC CHM, vitamins, and minerals, or to perform self-care practices. Results were stratified by usage of OTC CHM and vitamins and minerals, and also practice of Qigong, Taiji, or other forms of physical exercises. Majority of patients who used OTC CHM did so for managing their chronic or acute conditions (Figure 1). A very low proportion of respondents used OTC CHM for well-being improvement. An inverse pattern was observed for all remaining forms of self-care behaviors, where they were used by a majority of patients for well-being improvement. Most respondents found the use of OTC CHM, Taiji, and physical exercises very or somewhat helpful, with less than 10% commenting their effectiveness as “not helpful at all” or “don’t know” (Figure 2). For vitamins and minerals, 12.5% stated their uncertainty on these supplements’ effectiveness. For Qigong, 95% CI between the options of “somewhat helpful” and “don’t know” overlapped, although the numbers of respondents choosing these 2 options were small.

DISCUSSION

Use of Over-the-counter Chinese Herbal Medicines Amongst the Uninsured or Underinsured

Use of over-the-counter herbal medicines is an essential part of healthcare ecology in many developing countries. Herbal

TABLE 1. Association Between Self-help Practices and Demographic and Health Characteristics

	Usage of									
	Over-the-counter Chinese Herbal Medicines		Vitamins and Minerals Supplements		Qigong		Taiji		Physical Activity	
	OR _{adj} (95% CI)	P	OR _{adj} (95% CI)	P	OR _{adj} (95% CI)	P	OR _{adj} (95% CI)	P	OR _{adj} (95% CI)	P
Sex										
Male (reference)	1		1		1		1		1	
Female	1.10 (0.93, 1.29)	0.257	1.11 (0.84, 1.46)	0.455	1.30 (0.67, 2.52)	0.438	1.04 (0.76, 1.43)	0.803	0.83 (0.69, 0.99)*	0.041
Age, yrs	1.01 (1.00, 1.01)	0.089	1 (0.99, 1.02)	0.607	1.01 (0.98, 1.04)	0.383	1 (0.99, 1.01)	0.954	0.99 (0.98, 1.00)**	0.009
Hukou status										
Resident with Hukou (reference)	1		1		1		1		1	
Resident without Hukou	0.88 (0.72, 1.08)	0.222	1.89 (1.34, 2.67)***	<0.001	1.74 (0.79, 3.83)	0.171	0.63 (0.42, 0.96)*	0.031	1.17 (0.93, 1.47)	0.178
Nonresident without Hukou	0.85 (0.62, 1.16)	0.306	2.18 (1.33, 3.58)**	0.002	0.88 (0.18, 4.18)	0.867	0.61 (0.31, 1.20)	0.152	1.14 (0.81, 1.60)	0.458
Education level										
Tertiary education (reference)	1		1		1		1		1	
Secondary education	0.85 (0.69, 1.05)	0.141	1.33 (0.91, 1.94)	0.143	0.72 (0.32, 1.64)	0.439	0.75 (0.50, 1.13)	0.166	1.24 (0.97, 1.58)	0.088
Primary education or below	0.81 (0.59, 1.11)	0.197	1.3 (0.74, 2.27)	0.363	0.73 (0.21, 2.50)	0.616	0.71 (0.39, 1.30)	0.269	1.36 (0.95, 1.96)	0.094
Monthly household income (¥)	1.02 (0.96, 1.08)	0.522	1.01 (0.91, 1.12)	0.843	1.02 (0.80, 1.31)	0.849	0.86 (0.76, 0.98)*	0.019	0.90 (0.84, 0.96)**	0.003
Health insurance status										
Government-sponsored care (reference)	1		1		1		1		1	
Out of pocket	1.76 (1.21, 2.57)**	0.003	0.92 (0.44, 1.91)	0.824	2.67 (0.28, 25.23)	0.392	0.63 (0.32, 1.24)	0.181	0.96 (0.60, 1.55)	0.871
Urban employee basic medical insurance	1.18 (0.84, 1.65)	0.350	1.24 (0.63, 2.43)	0.540	5.09 (0.63, 41.37)	0.128	0.69 (0.39, 1.22)	0.201	1.53 (0.99, 2.37)	0.055
Urban resident basic medical insurance	1.17 (0.81, 1.68)	0.398	1.97 (0.99, 3.92)	0.053	4.94 (0.57, 42.59)	0.146	0.62 (0.33, 1.15)*	0.131	1.45 (0.92, 2.28)	0.113
New cooperative medical scheme	1.32 (0.89, 1.96)	0.167	1.86 (0.90, 3.85)	0.093	2.77 (0.27, 28.24)	0.389	0.38 (0.18, 0.82)*	0.013	1.40 (0.86, 2.27)	0.176
Self-reported health status										
Good or above (reference)	1		1		1		1		1	
Fair	1.08 (0.91, 1.27)	0.399	0.85 (0.63, 1.14)	0.275	1.05 (0.53, 2.10)	0.883	0.93 (0.66, 1.30)	0.667	1.14 (0.94, 1.37)	0.193
Poor	1.22 (0.82, 1.82)	0.329	1.46 (0.80, 2.65)	0.216	1.18 (0.25, 5.57)	0.831	1.19 (0.59, 2.42)	0.628	0.80 (0.49, 1.31)	0.376
Number of chronic diseases										
0 (reference)	1		1		1		1		1	
1	1.10 (0.90, 1.35)	0.351	0.83 (0.57, 1.20)	0.317	1.05 (0.46, 2.36)	0.914	0.99 (0.66, 1.49)	0.954	0.99 (0.78, 1.25)	0.931
2	1.13 (0.81, 1.60)	0.470	1.18 (0.66, 2.12)	0.572	0.95 (0.24, 3.70)	0.942	0.73 (0.36, 1.49)	0.387	0.73 (0.48, 1.13)	0.155
≥3	0.93 (0.57, 1.52)	0.772	1.29 (0.58, 2.87)	0.526	0.74 (0.09, 6.40)	0.788	2.02 (0.97, 4.20)	0.061	1.19 (0.67, 2.11)	0.557

Multiple logistic regression analyses.
 OR_{adj} = adjusted odds ratio derived from multiple logistic regression.

**P* < 0.05.

***P* < 0.01.

****P* < 0.001.

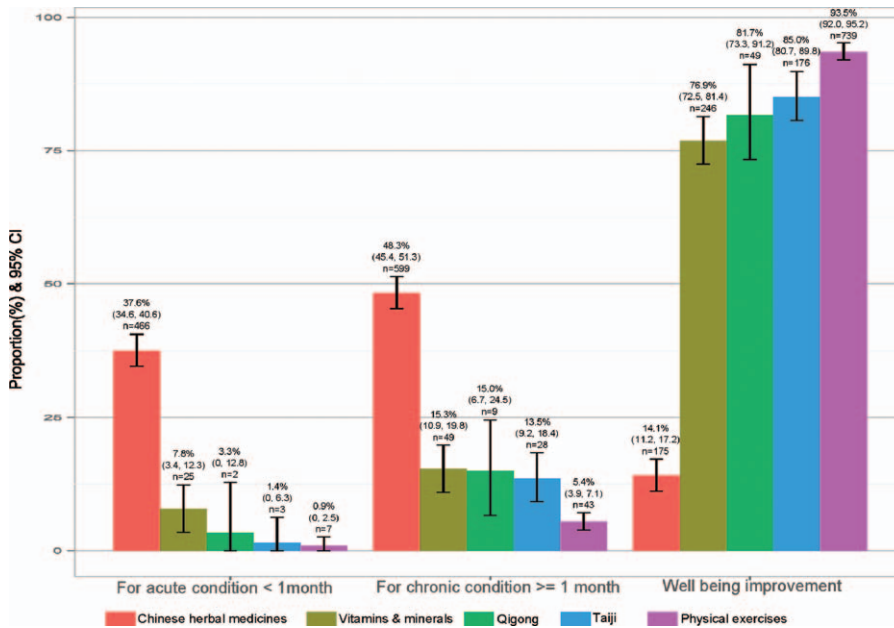


FIGURE 1. Main reasons for adapting self-care practices.

medicines are often used as a first-line therapy,^{22,23,24} or as a conjunction to conventional medications.^{25,26} China has no exception, and self-medication is regarded officially as an important supplement to formal health services. In fact, it is acknowledged that despite recent expansion of health insurance schemes, strength of current reform will not be sufficient in providing comprehensive coverage on outpatient services for all.⁶ Our results showed that more than 35% of respondents had used OTC CHMs in the past year, and the likelihood is higher amongst those who need to pay out of pocket for CHC consultation. This observation is consistent with a previous qualitative study, in which affordability is one of the most important

drivers for OTC CHM usage in urban China.²⁷ Our data also demonstrated that OTC CHM is often used to manage both acute and chronic conditions, with high satisfaction level amongst users. Although this may reflect the benefit of self-medication, its potential harm should not be overlooked.²⁸ First, ability of patients in achieving a correct self-diagnosis could be limited, and OTC CHM use may lead to delayed diagnosis of serious illnesses. Second, OTC CHM is often regarded as ‘natural and harmless,’⁸ and thus casual use of OTC CHM may lead to overdosing. Finally, additional use of OTC CHM amongst chronic disease patients who are on regular conventional medications could cause herbdrug interaction and

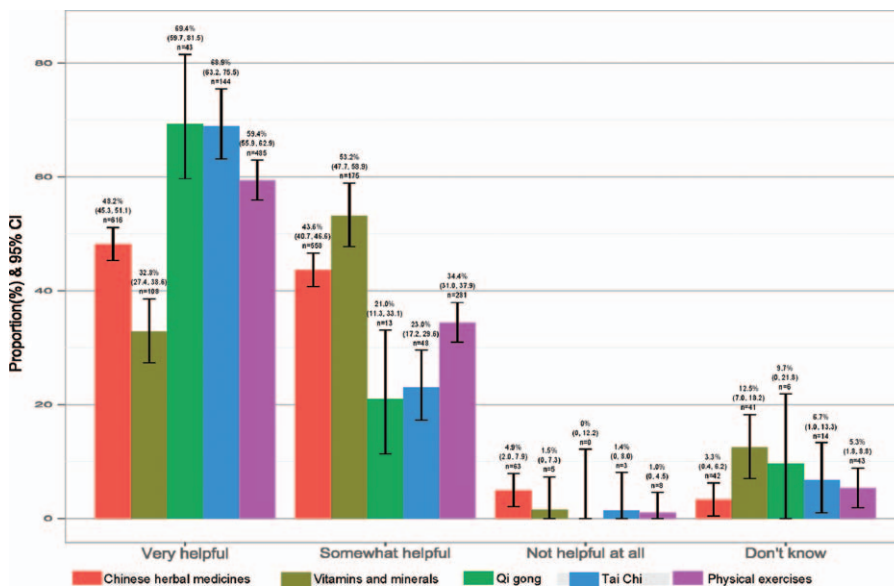


FIGURE 2. Perceived effectiveness of self-care practices.

polypharmacy. This problem is particularly acute as many patients perceive that OTC CHM and conventional medications do not interact with each other.²⁹ In China, adulteration of OTC CHM with undeclared pharmaceuticals poses an additional risk to patients.^{30,31}

As the prevalence of OTC medication usage is increasing in China,³² solutions to these concerns are urgently needed. These solutions would have high relevance to many developing countries given the popularity of herbal medicines. If policy makers were to incorporate OTC medication as an effective complement to formal primary care, community pharmacists should be involved in providing advice to patients. This approach is stipulated by the Guidelines for Good Pharmacy Practice,³³ and the Chinese government is actively promoting the implementation of this guideline in community pharmacies. However, such initiatives are hampered by the lack of financial incentives for pharmacists to provide such care, and also low awareness amongst patients in recognizing the availability of self-care advice from local pharmacies.³⁴

Policies to extend insurance coverage on community pharmacy-based care could incentivize its provision, but how this approach complement existing CHC service would require careful consideration. In the near future, it is likely that over-the-counter CHM will continue to be used in a completely unsupervised manner, especially amongst those who are insufficiently covered by healthcare insurance.³⁵ Raising public awareness on the potential harm of CHM, promoting clinicians' routine queries on CHM use during consultation, and strengthening regulations on CHM production will be the key issues for policy makers to tackle, especially in developing countries.

Use of Vitamins and Mineral Supplements Amongst Patients Without Hukou

Prevalence of vitamin and mineral supplement use is much lower than that of CHM, and the main purpose of using them was to improve well-being, instead of treating diseases. International literature suggests that the relationship between socioeconomic status (SES) and use of supplements is complex. In countries where health care is funded by tax or social insurance, vitamins and minerals are often used by populations with higher SES as these supplements require out-of-pocket payment.^{36,37} On the other hand, in countries where health care is financed by private insurance or out-of-pocket payment, this trend seems to be reversed. For instance, in the United States, the uninsured or disadvantaged populations are more likely to use supplements, possibly due to their decreased accessibility to conventional healthcare services.³⁸ Observations from the US concur with our observation, in which patients without a *Hukou*—those who are entitled to less welfare and healthcare security³⁹—are more likely to consume vitamins and minerals. This finding adds to the international literature on the association between supplement use and barriers to accessing conventional healthcare services. In addition, 2 more reasons may explain this phenomenon. First, many without a *Hukou* are migrants from rural areas, and international literature has suggested that cultural affiliations with holism among rural populations could partly explain their tendency in using of T&CM.⁴⁰ Second, those who are more vulnerable to the negative consequences of illnesses may be using dietary supplements to “build up” their defense against diseases.⁸ Validity of these hypotheses will require further investigations in the future.

Nevertheless, inappropriate use of these supplements could lead to adverse consequences—drug interaction—leading

to higher emergency room visits, outpatients visits, and peri-operative complications.⁴¹ Uncertainty on the usefulness of these supplements has been expressed by our respondents, and thus professional guidance on their use should be welcomed by patients. It would be useful for CHC clinicians to play a more active role in monitoring, and providing advice on the appropriate use of dietary supplements.⁴² As users of vitamins and minerals are more likely to have a lower SES background, healthcare professionals may also take the clinical encounter as an opportunity to promote targeted use of appropriate supplements. International experiences have indicated the benefit of targeted prescription of dietary supplement in reducing health inequality. For example, vitamin D supplementation is found to be effective in reducing inequality amongst US African American community on cardiovascular disease risk.⁴³ In both developed and developing countries, iron-folate supplementation targeting low-income young women can reduce incidence of anemia and neural tube defect.^{44,45} Strategies appropriate for Chinese urban primary care setting would require further health needs assessments.

The Potential of Promoting Physical Exercises and Taiji in Primary Care Settings

Less than 25% of our respondents participated in physical exercises in the past year. While it may imply a vast potential opportunity for CHCs in promoting regular physical exercise for patients, a recent systematic review has reported substantial uncertainty on the effectiveness of primary care-based exercise referral scheme on improving health outcomes.⁴⁶ Our results also show that female and older respondents are less likely to engage in physical exercises. An alternative to exercise referral would be Taiji, which is one of the most popular forms of activity amongst women and older population in urban China.⁴⁷ Overview of systematic reviews reported that Taiji is effective in preventing falls, and in improving physical and psychological well being for older people.⁴⁸ In our study, respondents' reason for practicing Taiji is concordant with current clinical evidence, and the majority found it beneficial. Nevertheless, prevalence of Taiji practice is even lower than physical exercises, and those who have no *Hukou* or limited CHC access are less likely to participate.

The feasibility and benefits of implementing Taiji referral programs targeting women and older population should be investigated in the future. If successful, such referral program could provide a useful mean for reducing exercise-related inequalities across sex and age.⁴⁹ However, alternative means of promoting Taiji amongst those who are uninsured, or on the new cooperative medical insurance scheme, should be considered separately, because their contact with the CHCs are limited.⁵⁰ Finally, the prevalence of Qigong practice is very low amongst respondents, and doubts on its benefits were also expressed. As the effectiveness of Qigong is equivocal, its applicability in CHC settings is currently uncertain.⁵¹

Strengths and Limitations of This Study

Our study has several limitations. First, its cross-sectional design does not allow us to draw causal conclusions between OTC CHM and vitamin and mineral usage, self-care practices, and various health and demographic factors. In the future, a cohort study that examines determinants of various self-care practices (eg, perceived effectiveness) based on the Andersen Behavioral Model of Health Services Use can be considered.⁵² Second, there is a potential for recall bias in reporting past self-

care patterns, and also bias originating from missing data in income level. Third, in the modified I-CAM-Q instrument, we had only focused on self-care strategies that were common in the Chinese populations. We did not collect data with regards to the use of other T&CM modalities for self-care (eg, yoga and mindfulness meditation). Although this approach would provide most relevant information for Chinese policy makers, this did not allow a comprehensive investigation of all T&CM usage in the sampled population. Finally, as this study sampled users of CHC services, it is important to compare the baseline characteristics of the current sample with census data on urban populations that use CHC services. However, we cannot locate any census report that provides sociodemographic characteristics of urban CHC users in the Pearl River Delta region. Despite the fact that representativeness of the current sample cannot be evaluated, multistage cluster sampling adopted in this study allowed us to provide a reliable picture on how self-care strategies were used among typical CHC users.

CONCLUSIONS

Results from this study indicate that CHC clinicians can take stronger initiatives in guiding appropriate self-care among patients. First, usage of OTC CHM is prevalent amongst urban CHC attendees. It is especially popular amongst those who are uninsured or underinsured. Policies to incentivize community pharmacists in giving guidance on OTC CHM for the disadvantaged may improve health outcome, and ensure timely access to healthcare services. To inform the design of surveillance programs on potential herb–drug interactions, further research on the pattern of coadministering CHM and conventional medications should be performed. Second, a lower proportion used vitamins and minerals, but interestingly they are often used by those without *Hukou*. It seems that population segment with less social and health protection from the government are more likely to use these supplements, possibly as a means to substitute conventional care, or to prevent negative consequences of illnesses. Proper counseling from CHC clinicians is needed for guiding appropriate use of vitamins and minerals, and reasons for their higher use requires further investigations.

Finally, the potential of promoting Taiji in CHC setting should be investigated, because current clinical evidence supports their effectiveness in fall prevention and general well-being promotion. Such program should target female and older population as Taiji could be a more acceptable activity option for these population segments. In the near future, promoting self-care practices will remain to be a crucial part of healthcare ecology of China, as in other developing countries. Policies to facilitate safe and effective self-care could complement primary care services, with potential to reduce inequality amongst the disadvantaged.

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