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# Clinical application of traditional herbal medicine in five countries and regions: Japan; South Korea; Mainland China; Hong Kong, China; Taiwan, China



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### **KEYWORDS**

Traditional herbal medicine; Dosage; Classical formulae; Mainland China; Japan; South Korea Abstract Objective: To study the characteristics of the clinical application of traditional herbal medicine in five countries and regions where traditional medicine (TM) is widely used: Japan; South Korea; mainland China; Hong Kong, China; Taiwan, China. And to analyze, from multiple angles, the variations in the methods of TM used in each countries and regions. Methods: Fifty commonly used traditional herbs (TOP50) from classical formulae were selected, and descriptive statistics, correlation analyses, and Friedman test were used to compare methods of clinical application and dosages in the countries and regions of interest based on a retrospective review of randomly-selected medical records.

Results: There were significant differences in sequencing TOP50 among the five countries and regions (P < .01). The adherence to the classical formulae, from strong to weak was Japan; mainland China; Taiwan, China; Hong Kong, China; South Korea. There were also significant differences in TOP50 dosing regimens (P < .01). Overall dosages of TOP50 from high to low were: mainland China; Hong Kong, China; Taiwan, China; South Korea; Japan. Finally, there were

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significant differences in the dosage intervals (P < .01), with dosage intervals from maximum to minimum as follows: mainland China; Taiwan, China; Hong Kong, China; South Korea; Japan. *Conclusions*: The clinical dosages of traditional herbal medicine used in the mainland China are relatively large compared with those prescribed in the other four countries and regions, and the range of dosages in mainland China is more flexible. On the other hand, clinical dosages of TOP50 are the lowest in Japan, where the dosage range is also the narrowest, supporting the idea that Doctors of Kampo medicine are highly cautious and are likely to adhere strictly to classical formulae, while Hong Kong, China and Taiwan, China are in the middle. The dosage of TOP50 in South Korea is significantly lower than that used in the mainland China; Hong Kong, China and Taiwan, China where the adherence to the classical formulae was the lowest, albeit slightly higher than that in Japan. The methods of clinical application of traditional herbal medicine in the five countries and regions were affected by multiple factors, including history, geography, climate, and culture.

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### Introduction

Traditional Chinese medicine (TCM) thrives in the mainland China and is also widely used in Hong Kong, China; Taiwan, China; Japan; South Korea. For historical reasons, Hong Kong, China and Taiwan, China have been greatly influenced by Western medicine, but TCM has remained deeply rooted in these regions. In an opinion survey in 2010, 75% of the residents living in Hong Kong, China received TCM therapy, and 20% regularly visited TCM doctors. Likewise, in Taiwan, China, TCM has been a long-trusted mode of health care. When communications between China and Korea were established around the 2nd century AD, TCM was introduced to Korea. Over the long term, it has evolved to Korean medicine (KM). 3,4 By about the 5th and 6th century AD, TCM had spread to Japan via Korea or directly from China, and it went on to be the foundation for Kampo medicine (KPM).<sup>5,6</sup> There were 12,639 KM hospitals and 20,668 licensed physicians in South Korea in 2012.7 In Japan, more than 200 KPM formulations are covered by the social medical insurance plan, and 80 medical schools offer KPM courses.<sup>8</sup> Thus, both KM and KPM have important positions in their medical systems. Traditional medicine (TM) in each of the five countries and regions included herein is essentially the same as TCM, but it has its own diagnostic and therapeutic characteristics in each area, and these differences are also embodied in the methods of application of traditional herbal medicines.

The classical formulae (CF), which are those that were initially recorded in the classical medical literature before the Han Dynasty, are mainly represented by the Zhang Zhongjing's formulae in the Shanghan Zabing Lun (Treatise on Cold-induced and Miscellaneous Diseases). These classical formulae, also known as the inaugural ones, have proven to be effective for more than 2000 years, and have been accepted by doctors of future generation. They are widely used in the mainland China; Hong Kong, China; Taiwan, China; Japan; South Korea.

Here, we have selected 50 commonly-used classical Chinese herbs (TOP50) in order to further clarify the characteristics of their clinical application and dosage in the

five countries and regions, and to better understand the methods of use of traditional herbal medicines as well as the reasoning behind the local formulations in each region.

### Materials and methods

### Herbs

The TOP50 were identified according to the traditional frequency of use accorded by Zhang Zhongjing, the frequency of use in contemporary clinical settings, and the results of a questionnaire survey that was sent to randomly chosen well-known long-term doctors of TCM. Fig. 1 shows the flow diagram for the selection of the TOP50 herbs.

Finally, 50 herbs that were commonly used by Zhang Zhongjing and still commonly used in modern practice were identified, and defined as the TOP50 (Table 1).

### Herbs data

Clinical data on the oral administration of herbs were collected from medical records in mainland China; Hong Kong, China; Taiwan, China; Japan; South Korea. Eleven TCM hospitals in 8 provinces (autonomous regions and municipalities) in mainland China were chosen and herbs for oral administration were collected from the outpatient medical records. In order to avoid discrepancies in prescribing methods resulting from different diseases, we used a stratified random sampling method. Herbs were classified according to the specialties of the prescribers and the population distributions of different departments. In this way, different types of diseases were more likely to have roughly equal representation.

### Mainland China

A totally of 10,398 prescriptions were collected from 10 specialties, including cardiology, pneumology, gastroenterology, oncology, dermatology, endocrinology, gynecology, orthopedics, nephrology, ophthalmology, and otolaryngology. The 11 hospitals were located in the

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