

Traditional Medicine

Research, Education, and Medical Practice

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ABSTRACT: Three factors are crucial if oriental medicine is to maintain its role in modern medicine and continue to progress. The first is the collection of scientific evidence, which in turn will safeguard the advantages of oriental medicine. The second factor is training clinicians who understand and can practice traditional medicine, which will require a restructured model of continuous education from medical school through specialist training. The third factor is actual participation in clinical medicine, which will contribute to patient care. Physician quality and advanced clinical skills are essential in clinical medicine, and we envision two types of clinicians: one who is highly specialized in western medicine and practices traditional medicine in their specialized field and one who is specialized in traditional medicine who practices comprehensive medicine that includes western medicine. The latter will work alongside specialists in western medicine, to discuss and improve patient care.

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The two roots of traditional medicine in Asia

Asia is unique in that it is a treasure trove of traditional medicine. The traditional systems here are among the best in the world, are well systematized, and are practiced clinically in many countries. An ethnic group will have its own traditional beliefs in medicine, and while some practices remain particular to a closed circle, other practices will spread widely, to be adopted and improved in other cultures.

There are two major traditional medical systems in Asia: the India–Tibet–Mongolia system, which is based on Buddhism, and the system of China–Korea–Japan, which is based on Taoism and Confucianism. Both these systems

are rich in herbal, dietary, physical, and psychological treatments. The former is still strongly tied to religion and the practitioners are Buddhist. In contrast, the religious aspects are quite diluted in the latter system. The effects are more philosophical and incline toward materialism. The former system's psychological treatments are diverse and based in religious ideas that are a culturally receptive backdrop for its effectiveness.

The perception of the body in these two systems shares much with that of the ancient Greeks. The physiological descriptions in both draw from events and phenomena of the natural world, although there are differences in the pathological understanding of these traditional systems. The three main axes in the latter are the two systems of

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balances (cold vs heat, weak vs strong), three fluid systems, and five physiological systems (liver, lung, heart, spleen, kidney). These perceptions of the body are well within the scope of oriental medicine. However, we must focus on its consistency with the tenets of modern biomedicine.

Incorporating the traditional into modern medicine

In East Asia—namely, Japan, China, and Korea—traditional and modern medicine coexist. China and Korea have two categories of medical license, one for each of type of medicine. Japan is unique in that it has only one type of license, which allows physicians to prescribe both types of medicines. For this to work, physicians must receive education in both medical systems, which is precisely the argument we present here. Nevertheless, a physician with access to both types of treatments has an obvious advantage in providing care to patients. The benefits are augmented in an Asian populace that is more culturally accepting and familiar with traditional medicine, which is well integrated into people's lifestyles. Because some of these treatments are already covered by national health insurance, it is advantageous to actively incorporate them into modern medicine.

Further progress in traditional medicine

Three points are crucial if traditional medicine is to have a consistent role in modern medicine. First, it must be supported by scientific research and evidence. It is essential that this is achieved, to protect the benefits of the system. Traditional medicine is effective because it is woven into culture. When cultural preferences change, as in the present time, we need objective proof of the validity of ideas.

Second, education in traditional medicine should be redesigned in order to train physicians who have an understanding of traditional theory and can implement that knowledge in biomedical clinical practice. A three-tier (undergraduate, graduate, and specialty training) curriculum review is necessary.

Third, Asian medicine must make a therapeutic contribution in clinical medicine. In practice, physician quality and clinical skills are essential. Two physician models can be designed, namely, one who is highly specialized in western medicine and practices traditional medicine in their specialized field and one who is specialized in traditional medicine who practices comprehensive medicine that in-

cludes western medicine. The latter will work alongside western medicine specialists in oriental medicine to discuss and improve patient care and treatment.

Evidence regarding complementary and alternative medicine

Traditional medicine is classified as complementary and alternative medicine (CAM). East Asian traditional medicine is based on classical Chinese medicine, established 2000 years ago, and has developed into a number of forms. *Kampo* is the Japanese adaptation of traditional Chinese medicine (TCM). Although scientific evidence is necessary in order to construct a universal medical model, we believe that regional and traditional approaches should be given greater credit and recognition. In Asia, considerable wisdom has been left to us by our predecessors, and TCM and *kampo* are the most carefully studied forms of traditional medicine.

Medline citations related to CAM have increased substantially since the year 2000.¹⁾ The specialized register for CAM increased from fewer than 5000 citations of controlled trials, in 2006, to 44840 such citations, in 2011. Most citations (60%) were for the period 2000 and later. However, the most common CAM intervention type in the register was non-vitamin, non-mineral dietary supplements (*e.g.*, glucosamine, fish oil; 34%), followed by Chinese herbal medicines (*e.g.*, *Astragalus membranaceus*, *Schisandra chinensis*; 27%). Regarding clinical research, it is now possible to access all *kampo* formulation randomized controlled trials (RCTs) from the Cochrane Library (Cochrane Central Register of Controlled Trials: CENTRAL). There are 15 such reviews of *kampo* and TCM.

Studies of oriental medicine in Japan

Physicians receive objective feedback on therapeutic effects, which is used to correct diagnosis and treatment. However, in oriental medicine, diagnosis and treatment mostly depends on the physician's five senses. In Japan, where modern medicine is considered mainstream, oriental medicine is subject to objective analysis in research studies. So, how can we integrate traditional and modern understandings of medicine? Here are four proposals:

- (1) Diagnostic methods should be objective;
- (2) Original pathophysiology should be "translated" into modern medicine;
- (3) Herbal formulations and interactions should be specified in component analysis, pharmacological studies,

physiological studies, etc.;

(4) Clinical research should be conducted.

Proposals (1) to (3) are complex undertakings and require development of suitable analytical methods. For proposal (4), Japan has an advantage because high-quality standardized extracts are already marketed by pharmaceutical companies and are covered by national health insurance. Compound analysis of herbal interactions can be clarified by using readily available *kampo* medicines, which is consistent with good research design. We can use a complex compound combination as a single drug prescribed for a modern biomedicine-specific disease. The pharmacological profile of a compound can be described in terms of its main herbal efficacy.

Watanabe discussed applications in clinical research. Oriental medicine diagnostics, although much discussed, must establish an objective approach.²⁾ Tongue diagnosis is one such method. It is suited to objective analysis because it involves observation of tongue coloring and coating. Still, subtle differences in evaluation could result from ambient light or personal experience. This could be addressed by using photographic image diagnosis with standardized lighting. One such study reported a correlation between luminosity and the condition of the mucous membrane of the digestive tract. Tongue color was reassessed as a diagnosis, to indicate inflammation of the mucous membrane in other parts of the body.³⁾

The Japan Society for Oriental Medicine

Clinical research is the most viable of the four above-mentioned proposals for integration. Two thousand years of experience has yielded a collection of effective herbal compounds with specific efficacy. This information can be clinically applied by translating its purpose into modern medical terms for diseases and symptoms. Studies can assess outcomes, with respect to modern and traditional medicine, of *kampo* prescribed for a symptom. When enough cases have been accumulated to ascertain a significant difference, an RCT could be conducted. Collection of these data will require the cooperation of specialist physicians from multiple centers where the target disease or symptoms are treated.

The Japan Society for Oriental Medicine (JSOM) has archived such reports, categorized by department. These reports are available through the JSOM list of evidence reports on *kampo*. These are referred to as an Evidence Reports of *Kampo* Treatment 2014 (EKAT 2014) ([http://](http://www.jsom.or.jp/medical/ebm/index.html)

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Integration with basic medicine is essential. It is important to determine how modern medicine should evaluate traditional medical conditions and which analytical methods to use. The following are examples of *kampo* compounds that have been tested and proven effective in RCTs.

Yokukan-san

Yokukan-san was originally used for treatment of pediatric neurosis. Adult use is quite common in Japan, especially to treat nocturnal restlessness in elders with dementia. When the traditional definition of a symptom can be matched with the definition of a modern medical disease, it is easier to analyze outcomes and conduct RCTs. The main ingredient of *Yokukan-san* is the alkaloid rhynchophylline, found in *Uncaria rhynchophylla*, which acts as a sedative but does not involve dopamine.⁴⁾

Rikkunshi-to

Rikkunshi-to is a basic compound used to treat all forms of stomach weakness. It endogenously increases ghrelin, which increases appetite and acts on gastric adaptive relaxation. It has thus been included in the functional dyspepsia guideline.⁵⁾

Daikencho-to

Daikencho-to was originally used for patients with decreased bowel movements attributable to a “cold” digestive tract. It is used to prevent postoperative intestinal obstruction. “Cold” is an oriental medicine idea but is becoming more relevant since the report of a correlation between heat stimulus and transient receptor potential cation channel subfamily V member 1, which has roles in the detection and regulation of body temperature.⁶⁾

Goreisan

Goreisan is widely used to treat fluid dysfunction (e.g., uneven distribution of fluid metabolism, such as in edema), control fluid absorption in vomiting and diarrhea, and stabilize blood vessel volume. After a report of a correlation with aquaporin 4, which has a role in water-selective channels in the plasma membranes of many cells and explains its integrated mechanism, the indications now include cerebral edema.⁷⁾

Medical education for medical students at Toho University

In our 6-year medical curriculum, oriental medicine is allocated five class periods (70-minute classes) in the core curriculum, in the second and fourth years. There are also

15 class periods (60-minute classes) of an elective course, which is offered during the first and fourth years. During bedside training in the fifth and sixth years, practical education including a 1-month outpatient clinical rotation is mandatory. As part of an early exposure program, first-year students are given a chance to observe clinics, and two or three students do so each year.

The minimum target of the core curriculum is to dispel the suspicion surrounding oriental medicine by highlighting scientific evidence of its clinical benefits. Such education should increase understanding of the safe and effective use of *kampo* drugs listed in the modern medical guidelines. A second goal is to develop physicians who understand the different frameworks of oriental and western medicines and are thus capable of selecting the most beneficial individualized treatment. Regardless of the field they enter after residency, *i.e.*, general medicine or specialty medicine, they will be equipped with a larger armamentarium and can either adhere to modern medical treatment or choose integration with traditional medicine, whichever is more beneficial. In our lectures, we introduce both such cases, to illustrate their respective benefits. In our discussion of integrated cases, we further describe drugs used in oriental medicine and provide evidence from research.

The third goal is to encourage specialization in oriental medicine. These students will become the practitioners who extend and advance the field of oriental medicine. To appreciate the merits and depth of oriental medicine and increase understanding of its theory is a considerable contribution to expanding both oriental and western medicine. To achieve this, 15 class periods in the elective course are devoted to practical study, including study of the herbs used in *kampo* compounds, acupuncture, and experiencing tai chi.

Postgraduate medical training

During their 2-year postgraduate training course, residents take part in a 1- to 3-month practice rotation in the Department of Oriental Medicine. They may then advance to general or specialized medicine but will be able to select a more beneficial treatment for patients, as they have practiced both. Training focuses on understanding the different frameworks of oriental and western medicine, so that physicians are capable of integrating the two as part of individualized treatment.

Specialists in traditional medicine

The future education and training program should be part of a framework for developing physicians with a deep understanding of the theory of oriental medicine. The JSOM *Kampo* Specialist Certificate can be earned after a physician completes several years of training in a conventional medical field such as internal medicine, surgery, obstetrics/gynecology, pediatrics, or psychiatry. They must also undergo 3 years of outpatient clinic training in a department of traditional medicine. The Toho University Department of Traditional Medicine certifies such specialists and actively promotes dual or multiple specialty certificates, to allow physicians to increase and refine their knowledge of oriental and western medicine.

The outpatient department at Toho University

We have two main approaches in the outpatient department at Toho University: herbal medicine and acupuncture. In addition, we collaborate with practitioners in western medicine at our university hospital. Patient visits include direct visits to our department and referrals from other departments. Approximately 250 patients/year present for first visits and approximately 10000 patients/year are seen in repeat visits. Most outpatients have multiple appointments between departments. The age range of patients is 0–90 years.

The main complaints are shown in Table 1 and include chronic fatigue, sleeplessness, and neurosis, followed by digestive symptoms. One complaint, sensitivity to cold, is specific to *kampo*. The complaints are diverse, and treatments require experience in both internal medicine and the basic therapeutic methods of various fields, to determine how to complement each treatment course with traditional medicine.

We collaborate with a number of departments. As shown in Table 2, we closely collaborate with gastroenterology, plastic surgery, pulmonology, dermatology, and otolaryngology, followed by psychosomatics. Obstetrics and gynecology, when combined, ranks fifth after dermatology. The most closely related department within the university hospital is the general medicine department, where most patients first seek treatment. We believe the role of an oriental medicine department in a university hospital setting is to improve patient quality of life and provide the best care throughout palliative care.

Table 1 Chief complaints of patients seeking treatment in the Department of Traditional Oriental Medicine at Toho University. "Sensitivity to cold" is specific to our department.

No.		
1	chronic fatigue	212
2	insomnia	200
3	neuralgia	159
4	chronic gastritis, functional dyspepsia	157
5	neurosis	145
6	chronic cough	143
7	eczema	140
8	sensitivity to cold	138
9	menopause	117
10	menstrual disorder	115
11	stiff shoulder	110
12	low back pain	101
13	dysuria	96
14	chronic headache	84
15	edema	81
16	common cold	80
17	rhinitis	66
18	chronic diarrhea	61
19	gastrointestinal weakness	48
20	abdominal distension	47

What patients does *kampo* benefit?

Patients at any life stage can be treated with *kampo*—from babies, to pregnancy, post-delivery, and menopause. *Kampo* can have a role in any medical field, from internal medicine to mental illness. All treatments can be integrated with modern medicine.

Treatment of diseases outside guidelines

Oriental medicine can be an alternative when biomedical treatments fail to achieve good outcomes. The following are examples of such cases treated in our department: age-related functional problems, chronic fatigue, fever of unknown origin, chronic inflammation, premenstrual syndrome, mild depression, chronic pain, skin problems, side effects of chemotherapy and radiotherapy, and integrated fertility treatment.

What is the future role of traditional medicine?

The following are scenarios in which oriental medicine can complement and contribute to modern medicine.

(1) *When both specialization and generalization are required in conjunction with various biomedical approaches.* Oriental

Table 2 Collaborating departments.

No.		
1	Gastroenterology	506
2	Orthopedics	263
3	Pulmonology	246
4	Dermatology	200
5	Otolaryngology	175
6	Psychiatry	161
7	Neurology	142
8	Gynecology	129
9	Urology	117
10	Nephrology	95
11	Cardiology	85
12	Endocrinology	62
13	Obstetrics	52
14	Dental surgery	50

medicine is a general medical practice. From a therapeutic perspective, its theory is beneficial for a wide range of fields.

(2) *For health promotion in an aging society.* By using anti-aging knowledge and treatment of traditional medicine, it can bridge disease and "pre-disease" states, which are treatable by *kampo*. Pre-disease refers to functional disorders that are difficult to diagnose. Intervention before onset of clinical disease will undoubtedly improve the health of a population. Promotion of a healthy lifestyle of traditional medicine will encourage self-care, prevention, and protection in an aging society.

(3) *For a population with an increasing prevalence of metabolic disorders.* Dietary knowledge includes an understanding of a healthy balanced diet. Traditional medicine can reinforce and, when necessary, redefine natural concepts in maintaining a healthy body.

Conclusions

Three crucial aspects are necessary for traditional medicine to sustain its beneficial role in modern medicine and continue to evolve. First, it must be carefully studied, to verify its merits and to be accepted and integrated into modern biomedicine. Second, training programs should focus on developing physicians who are knowledgeable, capable practitioners. The training program, from medical school education to postgraduate training and specialist training, needs to be redesigned. While the curriculum should be consistent, differences in educational content should be allowed, to encourage individual interests. Our

department has three goals: to dispel the suspicion surrounding oriental medicine by emphasizing scientific evidence and clinical benefits, to develop physicians who understand the different frameworks of oriental and western medicines and are therefore capable of selecting a more beneficial individualized treatment course, and to encourage our students and residents to seek a specialization in oriental medicine. The third goal specifically focuses on practical contributions to modern medicine. By integrating traditional and modern western medicine, we aim to promote patient health and receptiveness to treatment, which in turn will also develop a general medical perspective in all our physicians. By effectively integrating these two important systems, we hope to contribute to the development of a unique Japanese form of medicine.

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