

Improving the Quality of Postgraduate Education in Traditional Japanese Kampo Medicine for Junior Residents: An Exploratory Survey Conducted in Five Institutions in the Tohoku Area

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Traditional Japanese (Kampo) medicine has been widely applied in general medicine in Japan. In 2001, the model core curriculum for Japanese medical education was revised to include Kampo medicine. Since 2007, all 80 Japanese medical schools have incorporated it within their programs. However, postgraduate training or instruction of Kampo medicine has not been recognized as a goal for the clinical training of junior residents by Japan's Ministry of Health, Labour and Welfare; little is known about postgraduate Kampo medicine education. This exploratory study investigated attitudes about Kampo medicine among junior residents in Japanese postgraduate training programs. A questionnaire survey was administered to junior residents at five institutions in the Tohoku area of Japan. Questions evaluated residents' experiences of prescribing Kampo medicines and their expectations for postgraduate Kampo education and training. As a result, 121 residents responded (response rate = 74%). About 96% of participants had previously received Kampo medicine education at their pre-graduate medical schools and 64% had prescribed Kampo medications. Specifically, daikenchuto was prescribed to prevent ileus and constipation after abdominal surgery and yokukansan was prescribed to treat delirium in the elderly. Residents received on-the-job instruction by attending doctors. Over 70% of participants indicated that there was a need for postgraduate Kampo medicine education opportunities and expected lectures and instruction on how to use it to treat common diseases. In conclusion, we have revealed that junior residents require Kampo medicine education in Japanese postgraduate training programs. The programs for comprehensive pre-graduate and postgraduate Kampo education are expected.

Keywords: Japan; Kampo medicine; postgraduate education; survey; traditional medicine

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Introduction

In 2001, the Japanese Ministry of Education, Culture, Science, Sports and Technology revised the model core curriculum for Japanese medical education to include tradi-

tional Japanese (Kampo) medicine training as an essential part of the curriculum (Ministry of Education, Culture, Sports, Science and Technology-Japan 2001). Consequently, as of 2007, Kampo medicine has been incorporated into medical education in all 80 Japanese medical schools and

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universities (Sato 2008). The World Federation for Medical Education Global Standards for Quality Improvement evaluates the education of complementary and alternative medicine or traditional medicine in each university in Japan (Kitamura et al. 2015). The current status shows that Kampo medicine education has been necessary in the clinical medical education of Japan.

While medical care was highly specialized in recent years, the requirement of comprehensive and holistic medical care has been gradually increasing. All doctors who obtain medical licenses must receive clinical practice for at least 2 years to learn comprehensive and general medicine. Although almost all medical residents received some pregraduate Kampo medicine education, postgraduate training or instruction of Kampo medicine has not been recognized as a goal for the clinical training of junior residents by Japan's Ministry of Health, Labour and Welfare. Thus, Japan lacks a continuous Kampo medicine program that begins during medical school and continues into actual clinical medical practice. Because Kampo medicine is widely applied for general health or for specific conditions and diseases, it seems that residents have several opportunities to prescribe Kampo preparations to patients.

Is Kampo medicine education necessary for resident doctors? Because investigation about Kampo medicine education in Japanese resident programs is lacking, we have no clear answer to this question. Therefore, we conducted this exploratory study to investigate attitudes toward Kampo medicine among junior residents in Japanese postgraduate training programs.

Methods

Subjects and institutions

All participants were enrolled from five academic and teaching hospitals in the Tohoku area of Japan, as these hospitals were those that Tohoku University had collaborated with regarding medical education. The survey was conducted with junior residents (postgraduates, first and second year) in one session from March 1 to 31, at Tohoku University Hospital, Yamagata University Hospital, Aomori Prefectural Central Hospital, and the Japanese Red Cross Ishinomaki

Hospital in 2015 and, at Yamagata Prefectural Central Hospital in 2016. The location of these five institutes is shown in Fig. 1, and the characteristics of the institutions and the number of participated residents are listed in Table 1.

Questionnaire

The questionnaire was developed by a medical education and Kampo specialist (S.T.), a Kampo education specialist (S.K.), and a medical education specialist (M.T.). The three doctors had developed a draft version referring to a previous questionnaire (Muramatsu 2012) on Kampo medicine developed by the reviewing of attending doctors. The questionnaire is presented in Table 2.

Ethical considerations

The study conformed to the principles of the Helsinki Declaration and was approved by the Institutional Review Board of the Tohoku University Graduate School of Medicine (Approval Number: 2014-1-634). Informed consent was obtained from all individual participants included in the study. Prior to the questionnaire survey, all residents were assured that their participation was volun-

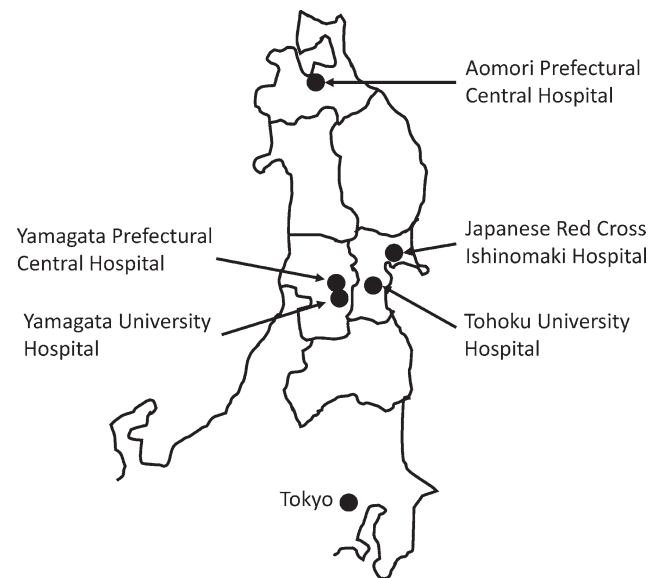


Fig. 1. Location of the five institutions selected from the Tohoku area.

Table 1. Basic characteristics of five institutions and the number of the participated residents.

Institution, City	Clinical departments	Beds for admissions	Outpatients per day	Participated residents (N: first-year, N: second-year)	Total response rate (%)
Tohoku University Hospital, Sendai	57	1225	> 3000	(16, 15)	89
Yamagata University Hospital, Yamagata	20	637	1235	(23, 9)	60
Aomori Prefectural Central Hospital, Aomori	23	694	1262	(16, 12)	70
Japanese Red Cross Ishinomaki Hospital, Ishinomaki	26	464	1132	(9, 7)	76
Yamagata Prefectural Central Hospital, Yamagata	29	660	1168	(7, 7)	42

Table 2. Continued.

No

Q3-4. What was the reason? (multiple responses were allowed)

- Do not understand Kampo medicine
- Do not understand application of Kampo medicine
- Do not like Kampo medicine
- Others (_____)

Q4. What do you expect in terms of the instruction or practice of Kampo medicine in a junior resident program? (multiple responses were allowed)

- Kampo medicine advantages, disadvantages, and application
- Kampo medicine diagnostic methods
- Kampo medicine physical examinations
- Side effects of Kampo medicine
- Treatment of common diseases using Kampo medicine
- Combination of general and Kampo medicine disease treatment

Q5. Is Kampo medicine education necessary in junior resident programs?

- Yes No

Thank you for your cooperation. This survey will be used for improving junior resident programs. The results will also be presented to congress and in reports.

tary, anonymous, and confidential, and that a decline in participation would not lead to a negative impact on their training evaluations.

Results

The questionnaire was administered to 164 junior residents, and 121 completed it (total response rate = 74%): 71 1st-year residents and 50 2nd-year residents. Table 1 shows the numbers of the participants in the first and second-year residents in each institution. The response rate varied from 42% to 89% cross the five institutions. Although 96% (116 of the 121; 70 1st-year and 46 2nd-year residents) junior residents received Kampo medicine education and training in their pre-graduate medical schools (Fig. 2), 59% (68 of the 116; 42 1st-year and 26 2nd-year residents) answered that the education was not useful in clinical practice. A total of 64% (78 of 121; 36 1st-year and 42 2nd-year residents) of the residents had prescribed Kampo medicines to patients. Further, 73% (57 of the 78) participants received on-the-job training (OJT) instructed by attending doctors (Fig. 3). Kampo preparations were prescribed in cases that included constipation, common cold, and ileus (Fig. 4). Specifically, daikenchuto (DKT) was prescribed to prevent ileus and constipation after abdominal surgeries and yokukansan

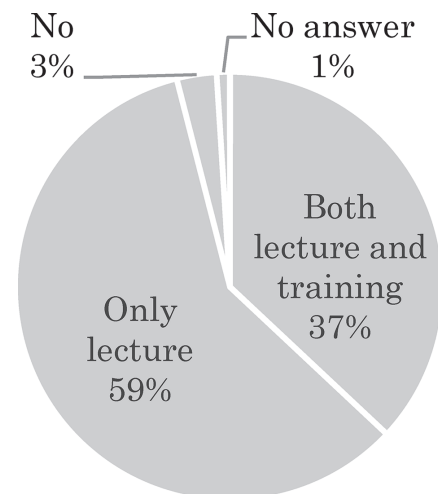


Fig. 2. Pre-graduate Kampo medicine education. The data were obtained from 121 residents.

(YKS) was prescribed to treat delirium in the elderly (Fig. 5). Participants also indicated that opportunities to prescribe Kampo preparations depended on instruction by attending doctors. However, the reason why they could not

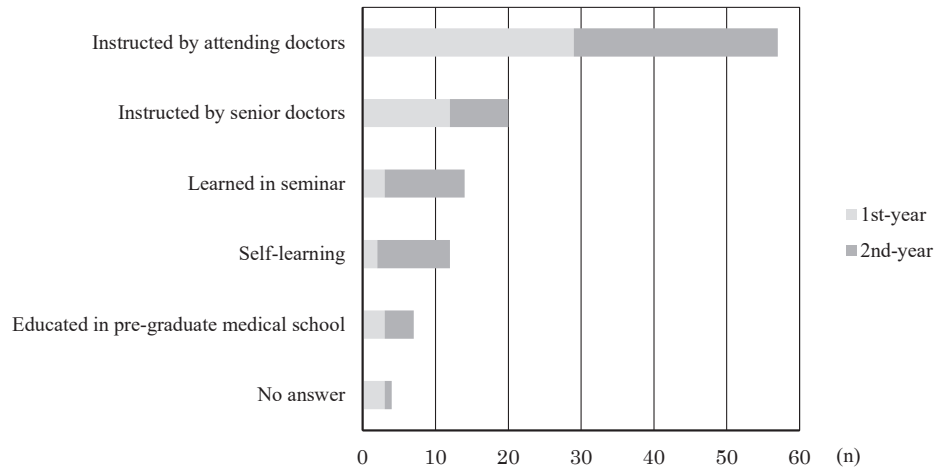


Fig. 3. Opportunities to prescribe Kampo medication.
The data were obtained from 78 residents, with multiple responses allowed.

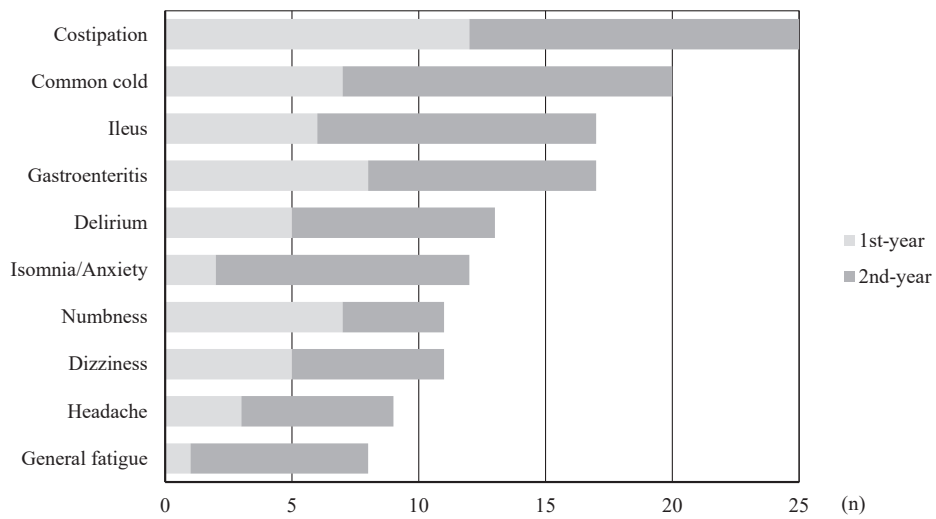


Fig. 4. Symptoms or diseases for which Kampo preparations were prescribed in the top 10 options.
The data were obtained from 78 residents, with multiple responses allowed.

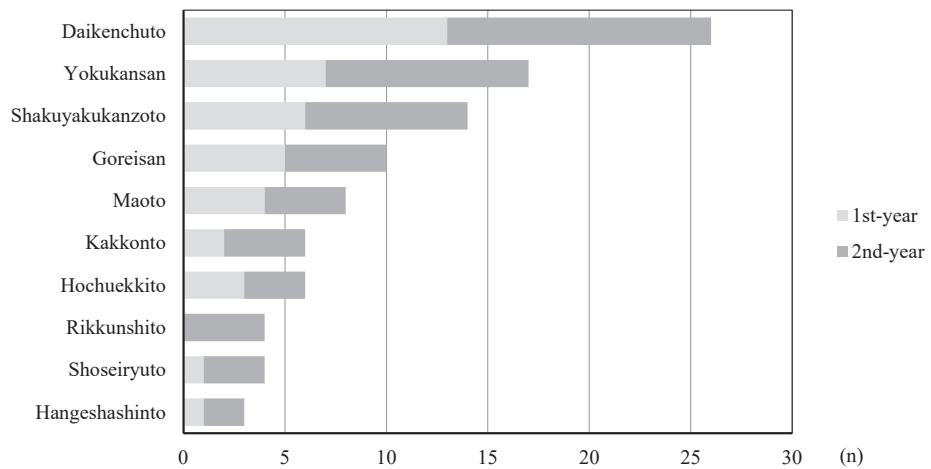


Fig. 5. Kampo preparations prescribed in the top 10 options.
The data were obtained from 78 residents, with multiple responses allowed.

prescribe Kampo preparations was, “Do not understand application of Kampo medicine” or “Do not understand Kampo medicine” (Fig. 6). They expected lectures and instruction on ways to treat common diseases using Kampo medicine (Fig. 7). Of all residents, 74% (90 of the 121) indicated that they required an opportunity for Kampo medicine training in their postgraduate education.

Discussion

The present survey showed the junior residents’ need for Kampo medicine education in postgraduate practice. Therefore, the answer to the primary question, “Is Kampo medicine education necessary for resident doctors?” was “yes.”

Although many junior residents received Kampo med-

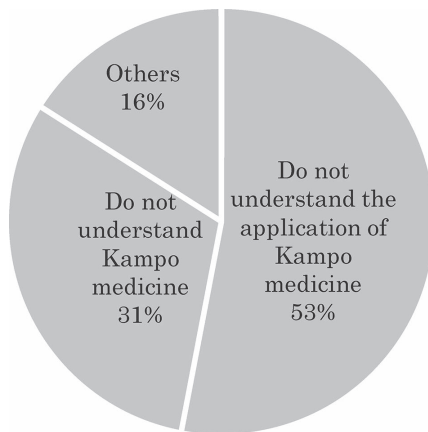


Fig. 6. Reasons for not prescribing Kampo preparations.

The data were obtained from 43 residents, with multiple responses allowed. Others included, “it is possible to treat it by Western medicine,” “there was no opportunity to use a Kampo preparation,” “I am unsure about what contexts we should prescribe it in,” and “the use of Western medicine is within the scope of our hospital, not Kampo medicine.”

icine education and training in their pre-graduate medical schools, over 50% answered that the education was not useful in clinical practice. This means that pre-graduate Kampo medicine education did not serve the clinical need at the post-graduate level. Therefore, a curriculum needs to be developed for medical education in pre-graduate programs to help clinic practice. In other words, Kampo medicine education should be provided from pre- to post-graduation so that it can be utilized in clinical practice and side effects can be prevented. The present survey revealed that 73% of the junior residents prescribed Kampo preparations under the instruction of their attending doctors. This result means that education is necessary for both junior residents and attending doctors. Residents learned Kampo medicine throughout their OJT, and the contents and the way of OJT strongly influenced the attitude of the resident. However, because this study was exploratory, we could not ascertain the details of OJT and the related changes in their attitude. Future surveys should explore the amelioration of attitudes caused by clinical Kampo education.

This survey has also shown that many residents prescribed DKT and YKS. DKT is prescribed for abdominal pain with feeling cold and abdominal fullness. Clinical trials showed that DKT improves functional constipation in post-stroke patients (Numata et al. 2014) and improves bowel movement after total gastrectomy for gastric cancer (Yoshikawa et al. 2015). On the other hand, YKS is prescribed for neurosis, insomnia, and irritability in frailty. Many clinical trials have shown that YKS improved the behavioral and psychological symptoms of dementia, such as hallucination, delusion, agitation, and aggression (Iwasaki et al. 2005, Mizukami et al. 2009, Matsuda et al. 2013, Monji et al. 2009, Okahara et al. 2010). Subsequently, a meta-analysis was performed to examine the effect of YKS on these symptoms (Matsuda et al. 2013). These lines of clinical evidence support the use of these Kampo medicines. Kampo medicine has been applied to relieve various

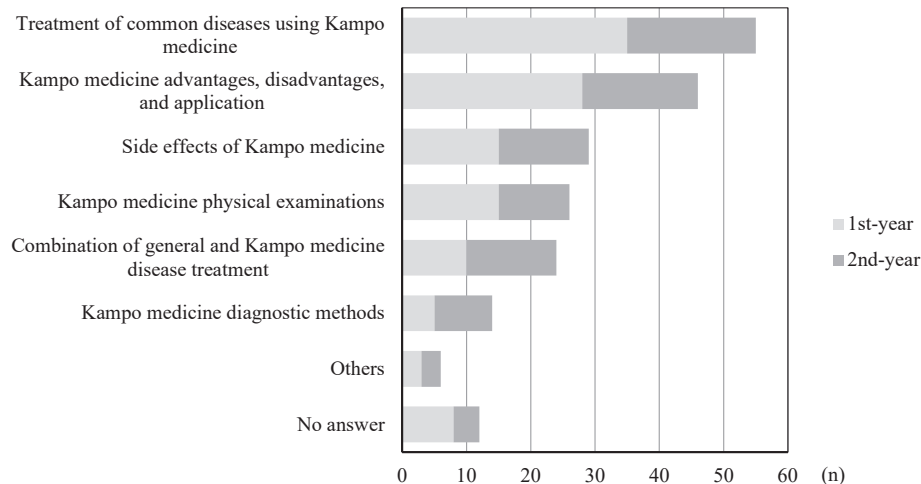


Fig. 7. Expectation regarding the instruction or practice of Kampo medicine. The data were obtained from 121 residents.

symptoms and diseases covered by the health care insurance of Japan. Indeed, over 80% of Japanese doctors used Kampo preparations (Imanishi et al. 1999; Suzuki 2004), suggesting the importance of using Kampo medicine in general practice. Recently, the Japan Geriatric Society published “Guidelines for Medical Treatment and its Safety in the Elderly,” which includes Kampo medicine (Kojima et al. 2016; Takayama and Iwasaki 2016). Therefore, appropriate prescriptions of Kampo medicine are expected to be widespread in general medicine.

In the present study, 36% of the residents had no experience of prescribing Kampo preparations, and they cited reasons such as “Do not understand the application of Kampo medicine” and “Do not understand Kampo medicine.” This may imply an insufficient understanding of Kampo medicine. However, many of them expected that instruction or lectures be provided on the treatment of common diseases using Kampo medicine or the advantages, disadvantages, and applications of Kampo medicine. These results indicate the future scope in Kampo medicine education.

When Arai et al. (2014) investigated the status of Kampo medicine education in 49 clinical training designated hospitals and medical schools in the Kanagawa prefecture, they reported that only 14% of the hospitals had a Kampo medicine education program. The lack of clinical instructors of Kampo medicine was the reason why hospitals could not incorporate this type of education. Consequently, the current problem is the difficulty in finding doctors who are equipped to provide Kampo medicine education. To improve this problem, it might be helpful to share the lectures of Kampo medicine using Information and Communication Technology within several institutions.

In Germany, basic information about traditional medicine is included in the medical school curriculum (Witt 2008). Furthermore, systematic training about traditional medicine occurs at the postgraduate level for medical doctors. Thus, in Germany, there is an understanding of the utility of traditional medicine, as reflected by its incorporation into pre-graduate and postgraduate programs. Over 9,000 doctors belong to the DÄGfA (Deutsche Ärztesgesellschaft für Akupunktur). This society has contributed to traditional medicine education in areas including acupuncture, moxibustion, herbal medicine, and traditional Chinese and Japanese medicines (DÄGfA 2015). The core members of this society have also conducted large-scale clinical studies on acupuncture in the last decade, further providing evidence of the establishment of traditional medicine in Germany. In addition, China has incorporated the education about traditional Chinese medicine into the medical school curriculum. Moreover, since 2005, Western medical doctors have received education about traditional medicine in Shanghai. Over 70% of them use traditional Chinese herbal medicines in practice (Iwasaki 2015). Globally, there is widespread education about traditional medicine. Consequently, Japan should follow suit and

develop a Kampo medical program for not only medical students but also for doctors. Therefore, further qualitative and quantitative evaluation of Kampo medical education will be needed.

The present study is limited in that it was conducted in five institutions in the Tohoku area of Japan. However, the enrolled residents graduated from the universities that were located in various parts of Japan. These results may reflect a part of the residents’ need for Kampo medicine in Japan. Kampo medicine education was performed in the medical university in Japan on their own curriculum (Takayama et al. 2016); thus, the program that residents received might have influenced this result. A future survey of clinical training-designated hospitals and medical schools in other areas of Japan will provide a more holistic picture of the status of Kampo medicine education.

Postgraduate Kampo medicine education includes two different standpoints, both subjective and objective needs of residents who may experience the need to prescribe Kampo medicine. The subjective need of residents is evident from the honest requests of the junior residents revealed in this study. On the other hand, the objective need can be evaluated by the frequency of residents’ prescription of Kampo medicine, and by any evidence on the use of Kampo medicine in improving the quality of life of the public. This study revealed the subjective need of junior residents, because 74% of the participants indicated that they required an opportunity to receive Kampo medicine training in their postgraduate education. The objective need for Kampo medicine education is evident from the present result that 67% of the participants already prescribed Kampo preparations, the result of a previous study that over 80% of Japanese doctors used Kampo preparations (Imanishi et al. 1999; Suzuki 2004), and the clinical evidence for the effectiveness of Kampo treatment. Therefore, it is necessary to develop an appropriate educational program in the future.

Acknowledgments

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Author contributions

Shin Takayama designed the study, constructed the questionnaire, and wrote the manuscript. Seiichi Kobayashi developed the study design and questionnaire. Masao Tabata, Shinya Sato, Keiichi Ishikawa, Saya Suzuki, and Satoru Ishibashi supported the development of questionnaire and collected data using it. Soichiro Kaneko and Tetsuharu Kamiya conducted data analysis and created the figures and tables. Hitoshi Nishikawa, Yuka Ikeno, Natsumi Saito, Ryutaro Arita, Monoru Ohsawa, Takehiro Numata, Akiko Kikuchi, Junichi Tanaka, Hitoshi Kuroda, Michiaki Abe, and Tadashi Ishii provided advice on the manuscript.

Conflict of Interest

This study was funded by the Tohoku University Hospital

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