Medical residents’ interest in and current status of Japanese postgraduate education in acupuncture and moxibustion: a follow-up survey

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ABSTRACT

Background Japanese traditional medicine (Kampo medicine) is an important subject in Japanese medical schools. Acupuncture and moxibustion (AM), essential categories of Kampo medicine, are taught in a few medical schools today. However, the current state of postgraduate AM education is unknown.

Objective To compare medical residents’ awareness of AM before their AM education in the 4th year of medical school with that after completion of their 2-year postgraduate medical residency.

Methods We conducted a postal questionnaire survey of medical residents at the end of their 2-year residency. We required a signature on this questionnaire so that we could examine for changes in their awareness of AM with those determined by similar, signed, former questionnaire surveys conducted before and at the end of their 4th-year AM lectures in medical school (reported previously). The completed questionnaires were returned by mail or facsimile.

Results Among 93 residents, there were 72 (77.4%) effective responses. Only three residents (4%) had opportunities to learn AM during residency. Among the 68 residents who were not afforded the opportunity to do so, after completing their two-year residency, 32 (47%) stated that they would like to study AM. Interest in AM was significantly less than that of the proportion of medical students (81%) who were initially interested in AM when surveyed just before their fourth year lectures on AM.

Conclusions Postgraduate AM education for medical residents appears to be relatively scarce in Japan. Moreover, medical residents’ levels of interest in AM were lower than those demonstrated before their 4th-year AM lectures in medical school.

INTRODUCTION

Japanese traditional medicine (Kampo medicine) was uniquely developed after being introduced from China centuries ago.1 2 At that time, it consisted of five categories, namely herbal medicine, massage, acupuncture, acupuncture and moxibustion.3 4 Kampo was the primary form of medicine until the last part of the Edo period (1603–1868 AD); Western medicine gradually took over during the Meiji period (1868–1912 AD) and has continued until the present day. After a long slump, however, the core curricula of some Japanese medical schools have resumed Kampo education since 2001.

Tokai University School of Medicine (Kanagawa, Japan) began teaching acupuncture and moxibustion (AM) in 2005, as part of its core curricula, and has provided additional practical training since 2007.5 The reason we began AM education is because AM therapies were often prescribed together with herbal medicines by doctors before the Meiji Restoration. Today, while the Japanese medical licence allows doctors to practise AM, such treatments are mainly provided by licensed acupuncturists rather than by medical doctors. Therefore, conceivably, some medical doctors might not know that their licence allows them to provide AM therapies.

The purpose of AM education in our university is to allow students to learn the indications, contraindications and possible side-effects of AM and/or to know how and when to properly introduce patients to a licensed acupuncturist. We previously reported on 117 students’...
The results showed that the students’ interest in AM increased immediately after that education. However, whether their interest was sustained into later years, and whether they used AM therapies in their clinical practice, was not investigated in that particular study.

Accordingly, the aim of the present study was to collect follow-up data from the participants on the present state of postgraduate education and medical residents’ awareness of AM just after completing their postgraduate training. Our objective was to compare participants’ awareness of AM at baseline (before their 4th-year AM lectures) and at the end of their 2-year residency.

METHODS
We conducted a postal questionnaire survey of participants’ awareness of AM at the end of their 2-year medical residency (see online Supplementary file 1). Because we had previously conducted similar questionnaire surveys before and after these individuals’ 4th-year AM lectures as medical students, we required a signature on the follow-up questionnaire so that we could assess for changes in the awareness of AM compared with their previous responses. All responders gave written informed consent to participate in this study. These surveys were approved by the Institutional Review Board for Clinical Research of Tokai University School of Medicine and conformed to the principles of the Helsinki Declaration.

This follow-up survey was conducted from May 2013 through December 2014. The prior surveys, outcomes of which have been previously reported, were carried out in 2008 and targeted 117 4th-year medical students (60 male, 57 female). Previously, respondents’ awareness was compared before and after the 1 hour AM lecture that covered the history, indications/contraindications, effects/side effects and analgesic mechanisms of AM, and introduced students to the acupuncture points traditionally used. There was also a 1 hour small-group practical training session (12–14 students per group, nine groups in total) that included advanced lectures, practical presentations and actual experience of receiving needle insertion.

All students were taught by the same two instructors, one of whom was a full-time acupuncturist with 24 years’ experience and the other a medical doctor specialising in Kampo medicine.

To prepare the questionnaires for the present study, we mainly used the semantic differential method to assure their validity. Completed questionnaires were returned by mail or facsimile. To increase the response rate, those who did not return responses were asked again for their completed questionnaires. For statistical analyses, the Wilcoxon signed-rank test was used to examine the relationship between data obtained before the 4th-year AM education and after the 2-year residency. The statistical analyses were performed in pairs, excluding those with the answer ‘no idea’ if entered on one or both of the questionnaires. A value of p<0.05 was considered statistically significant.

RESULTS
Study population
Of 103 graduates of Tokai University School of Medicine who passed the National Medical Licensing Examination in March 2011, 93 residents with confirmed contact information were surveyed. In order to compare the participants’ awareness of AM just before lectures on AM in the 4th year of medical school with that at the end of their 2-year residency, only those who responded to both questionnaires were included (72 residents: 77.4%) in the present study.

Opportunity to learn AM during residency (n=71)
As shown in figure 1A, only three (4%) of the respondents reported having had the opportunity to learn AM during residency. Whether or not these three residents chose hospitals that provided AM education intentionally or by chance remains unknown. Two of the three disclosed having participated in voluntary study sessions, one of whom additionally attended study sessions held at the hospital independently or in cooperation with other hospitals. The third respondent reported having worked in a hospital with an AM clinical training curriculum. However, none of them was satisfied with the AM education during their residency (data not shown).

Figure 1 Results of a survey of graduating medical residents who had received education in acupuncture and moxibustion (AM) during their 4th year of medical school. (A) Proportion of respondents disclosing opportunities to learn AM (n=71). (B) Of those who answered ‘no’ to question (A), proportions of respondents who would have like to have been able to learn AM during their residency (n=68). (C) Proportions of respondents supporting incorporation of AM education into the educational curriculum for residency (n=71).

As shown in figure 1B, of the respondents who reported having been afforded ‘no opportunity’ to learn AM (n=68), 32 (47%) expressed an interest in doing so during their residency. When asked whether or not they thought AM education should be incorporated into the educational curriculum for the residency programme, 23 (32%) of respondents who answered this question approved (figure 1C).

Comparison of respondents’ awareness of AM before the 4th year and after residency

Figure 2A compares responses to a set of key questions before the 4th year medical student lectures in AM and after residency (n=68 respondents). Before the lectures, 55 (81%; figure 2A) respondents were interested in AM; however, this decreased to 32 (47%) after residency (p<0.001). As shown in figure 2B and C, respectively, similar changes were seen in response to questions regarding the necessity of AM in contemporary medicine (51 (75%) pre-lecture vs 43 (63%) post-residency; p=0.019) and value of learning AM (55 (81%) pre-lecture vs 43 (60%) post-residency; p=0.011). On the other hand, as shown in figure 2D, when questioned about their assessment of the effects of AM, there was no significant difference identified in the respondent’s answers before the 4th-year medical school lectures versus after the residency (p=0.518). Before the lectures, five (8%) of the respondents reported that they were willing to treat their patients with AM themselves, 23 (36%) would positively introduce patients to a licensed acupuncturist, and 28 (44%) would introduce patients to a licensed acupuncturist at the patient’s own request. After the residency,
as shown in figure 2E, the number of respondents who stated that they would positively introduce patients to a licensed acupuncturist decreased significantly to four (6%). Furthermore, while no one stated that they would not recommend AM before the 4th-year medical school lectures, after the residency there were 10 (16%) who would no longer consider endorsing it (p=0.002).

**DISCUSSION**

The results of the present study suggest that there are few educational programmes currently teaching AM to medical residents. Only two residents had opportunities to study AM at the hospitals where they were working, while another resident participated in voluntary study sessions. Notably, respondents’ interest in AM had significantly decreased after completion of the 2-year resident programme as compared with that before the AM education in their 4th year as medical students.

In our previous survey, we reported that students’ awareness was significantly increased after the AM lectures compared with before the lectures during the 4th year of medical school. One of the limitations of that survey was the fact that the questionnaire was completed only once, just after the lectures were given. Therefore, we were unable to determine whether or not the educational effect was temporary, long-lasting or permanent. It is possible that we may only have temporarily stimulated students’ mindsets with the education provided. Accordingly, we designed this follow-up survey to discover whether opinions change after completion of the undergraduate education and/or after the 2-year resident programme, and to examine residents’ actual desire to integrate AM into their practices. Moreover, the current state of postgraduate AM education for medical residents warrants further clarification. In our opinion, these issues have not yet sufficiently been addressed in Japan.

After approval of the integration of Japanese traditional medical education into the medical school curricula in Japan, although 100% of medical schools have begun teaching Kampo herbal medicine, education in AM is evidently still inadequate in the various undergraduate educational curricula and even more lacking in postgraduate education. Annual and lifetime use of AM therapy in Japan have been estimated at >6% and >25%, respectively, which is considerably higher than that in Western countries. Nonetheless, as the present study suggests, postgraduate AM education arguably remains insufficient and lacking in quality and substance nationwide, and there appear to be few educational programmes currently teaching AM to medical residents in Japan. One of the reasons for this could be that AM, as a medical therapeutic option, is still considered a kind of folk medicine that is provided mainly by acupuncturists, even though the Japanese national medical licence allows medical doctors to perform AM. This situation is disadvantageous for patients and often confusing; if physicians do not learn the indications for AM therapies then they may miss opportunities to introduce their patients to licensed acupuncturists. Surprisingly, even in China, which is the birthplace of oriental medicine, there is no systematic training system for resident physicians and physicians specialising in AM, as indicated by a systematic review of recently published Chinese studies. The Chinese anticipate that the situation will be unfavourable for the development of science and the country’s move toward greater internationalisation. On the other hand, according to a study by Milan et al resident education in complementary and alternative medicine (CAM) is already considered to be important in the USA. In their report, acupuncture education was included in the CAM educational programmes of the schools that they investigated in their study, and consisted of 2 hour lectures and two half-day clinical sessions in each CAM category.

In the present study, respondents’ awareness of AM after their residency programme had significantly decreased compared with that before the education in their 4th year of medical school. More than 4 years had elapsed between their first AM education and the last questionnaire. In addition, the proportion of those with ‘no idea’ how to incorporate AM into practice increased relative to before the AM education, which in turn had temporarily decreased just after the education (as seen in our previous study). We believe that not only the time that had elapsed but also the image of AM may have affected these outcomes. In other words, because residents only experience Western medicine, on the surface AM might appear to represent quackery. Consequently, there may be a natural tendency to lose interest without effective experience of using AM therapies. In contrast, in the USA and Europe, CAM including acupuncture is often offered alongside other medical therapies. In addition, acupuncture is widely recognised as an efficacious therapy in Brazil and is sometimes performed by physicians in addition to commonly used therapies in medical specialties. If Western medical treatments are ineffective or insufficient at healing a patient’s symptoms, medical doctors who are familiar with AM may try either one (or both) of them, or introduce patients to licensed acupuncturists in conjunction with current or subsequent therapeutic strategies. Such integration of therapies could achieve greater patient satisfaction with medical services. Furthermore, public institutions such as the National Centre for Complementary and Integrative Health (NCCIH) in the USA, which recognises the importance of CAM including AM, and the National Institute for Health and Care Excellence in the UK, approve acupuncture in some cases based on the accumulated evidence. In addition, AM is widely applied in the treatment of neurological, autoimmune, orthopaedic and psychological diseases.
We suspect that, if Japanese medical doctors were made aware of the evidence base, their interest in AM may increase. Meanwhile, the deficiencies of AM clinical trials should be highlighted for future research purposes. As a case in point, sham acupuncture methods employed in certain studies in an attempt to control for the placebo effect may be inappropriate and unscientifically used.\textsuperscript{18–20} Physicians should know that sham-controlled trials may be difficult to interpret and should be conducted very carefully\textsuperscript{18–21} due to the complexity of AM as an intervention. Therefore, AM curricula for residents and physicians should be established. Millions of people visit acupuncturists’ offices in Japan, and throughout the world; therefore, physicians’ clinical understanding of AM ought to be improved.

To our knowledge, this is the first study to report on the current state of Japanese postgraduate AM education and to compare residents’ awareness of AM just before lectures on AM in the 4th year of medical school and after completion of a 2-year medical residency. There are some limitations to this study that should be acknowledged. First, the number of subjects was smaller than that in our previous study, which may have affected the statistical analyses. The reasons for this decline included lack of responses, failure to respond to the last questionnaire, and a greater proportion of respondents selecting the answer ‘no idea’. One possible reason for the latter observation may have been the fact that participants’ names were required on the questionnaires in order to obtain more accurate data from the follow-up study. The lack of anonymity could have made some residents feel self-conscious such that they answered ‘no idea’ out of shyness or to avoid the embarrassment of giving a bad impression. Finally, this survey only targeted graduates of Tokai University School of Medicine in the year 2011. To increase the target population, the same questionnaire surveys should be used to investigate graduates from other years and from other schools in the future.

In conclusion, postgraduate AM education for medical residents appears to remain scarce in Japan. Moreover, residents’ interest in AM was noted to be lower than before their 4th-year AM lectures as medical students. Postgraduate AM education programmes for medical residents should be established to help motivate them to gain more knowledge about this important form of CAM.

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In conclusion, postgraduate AM education for medical residents appears to remain scarce in Japan. Moreover, residents’ interest in AM was noted to be lower than before their 4th-year AM lectures as medical students. Postgraduate AM education programmes for medical residents should be established to help motivate them to gain more knowledge about this important form of CAM.

Contributors MA conceived the study and revised the manuscript. YN participated in the data analysis and interpretation of data and wrote the manuscript. All the authors except YN participated in the data collection.

All authors read the manuscript and approved the final manuscript for publication.

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Competing interests None declared.

Patient consent We directly explained the aim of this survey to the target residents. In addition, the purpose that we report the outcomes of this survey to scholarly paper was written in the questionnaire in Japanese. Therefore, we considered agreements with responses to the questionnaire.

Ethics approval Institutional Review Board for Clinical Research of Tokai University.

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