



Original Article

Physician perspectives on traditional, complementary, and integrative medicine and the national evidence-based Japanese integrative medicine information website: A mixed-method study

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ABSTRACT

Background: The evidence-based Japanese integrative medicine (eJIM) website was launched by the Japanese government in 2014 to provide information on integrative medicine to the general public and physicians. While Japanese physicians discourage the use of traditional, complementary, and integrative medicine (TCIM), there are very few reports that explore this issue. We aimed to understand the attitudes of Japanese physicians towards TCIM and evaluate the usability of the eJIM website according to physicians.

Methods: We conducted a two-staged, mixed-method study with interviews and an internet-based survey. Face-to-face interviews were conducted with 12 physicians who worked for large-scale hospitals in two different areas of Japan. We assessed their understanding of TCIM and the usability of the eJIM website. Based on the interviews, the internet survey was developed and was conducted in February 2019.

Results: In the interviews, 12 physicians provided their opinion on TCIM and highlighted important areas, such as increasing the resources available for patients, and ensuring more information on TCIM is available. The internet survey of 231 physicians showed that 35% of the physicians used or advised on TCIM in clinical practice. Kampo medicines (87.8%) and dietary supplements (24.7%) were common. The physicians did not use TCIM primarily because of concerns regarding its efficacy, safety, and cost. Most physicians were not aware of which TCIM their patients used.

Conclusion: Physicians in Japan may not have comprehensively understood TCIM and do not actively use TCIM. The eJIM website could help physicians to gain a better understanding of TCIM if improvements are made.

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1. Introduction

Traditional, complementary, and integrative medicine (TCIM) is now used around the world.¹ According to the definition by the Ministry of Health, Labor and Welfare of Japan in 2012,² integrative medicine is a medical treatment conducted under a physician's supervision, that is based primarily on modern Western medicine that aims to further improve quality of life by combining complementary and alternative medicine with conventional medicine. There is a national institution for TCIM in the United States of

America called the National Center for Complementary and Integrative Health (NCCIH). However, Japan has no such counterpart. It is challenging for the general public and medical professionals in Japan to obtain verified information on TCIM. An evidence-based Japanese Integrative Medicine (eJIM) (<https://www.ejim.ncgg.go.jp/en/index.html>) website was launched with the support of the Ministry of Health, Labor, and Welfare (MHLW) of Japan in March 2014.² The primary purpose of this website was to ensure that credible information on integrative medicine was available for the general public and healthcare professionals. The eJIM website is not a manual or guide of TCIM, but instead contains a variety of information and evidence on TCIM for both the general public and healthcare professionals. The eJIM was launched and supported by the Japanese government (MHLW). Since the MHLW does not have a dedicated TCIM department, they simply copied and translated

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information posted on other reputable government websites such as the NCCIH.

The Japanese national health insurance system covers 148 Kampo medicines for ethical use (traditional Japanese medicines, which are prescribed by physicians and covered by national health insurance).^{3,4} Similar to Western medicines, Kampo medicines are prescribed at hospitals and clinics, and most physicians do not think of prescribed Kampo medicines as TCIM. Instead, they believe that prescribed Kampo medicines are modern dosage forms of traditional medicines, covered by the national health insurance. The core curriculum-based education of Kampo Medicine officially started in 2001 in Japan, and physicians under 40 years old would have learned about Kampo Medicine at medical school.

Physicians do not usually provide supplements at public facilities. However, supplements are sometimes used in private clinics that are not covered by health insurance.⁵

We previously reported the results of a concurrent survey of the general population in 2018 to obtain feedback on the usability of the eJIM website.⁶ The results revealed that the general public was not aware of the eJIM website.

Since the eJIM website was designed to be used by both the general public and medical professionals, feedback from the latter is also important. There have only been a few studies conducted to survey the knowledge of medical professionals, especially physicians, about TCIM and their attitude towards it.⁷⁻⁹ These reports show that physicians' attitudes are largely negative regarding TCIM. However, physician perspectives on TCIM have not been clarified, and it is not clear why physicians do not support patients using TCIM. To our knowledge, there have been no studies conducted on the usability of the eJIM website by physicians.

This study aimed to clarify the opinion of physicians on the usability of the eJIM website and to suggest solutions for any difficulties found by the physicians. We also aimed to assess physicians' use and attitude towards TCIM.

2. Methods

We conducted a two-stage mixed method study comprising semi-structured interviews with a small sample of physicians, from which the results were used to develop a nationwide internet survey of physicians across Japan.¹⁰

2.1. Interviews

From January to February 2018, we interviewed 12 physicians in Kanazawa and Tokyo (average age: 45.7 years, 6 males and 6 females). As for purposive sampling, we selected these physicians, considering their age (under 40 or over 40 years), gender, subspecialty (internal medicine or surgery), attitude towards TCIM (positive or negative), working style (hired or practicing), and place (urban or rural).

Physicians in the Kanazawa area were recruited at the Kanazawa Medical University Hospital, and those in the Tokyo area were invited by the first author (YM). Interviews were conducted face-to-face and lasted approximately one hour. The physicians' opinions were obtained by showing them various pages on the eJIM website. After knowing the attributes and conditions of the provision of TCIM, the interviewees talked freely about their thoughts on the usability, understandability, and potential improvements to be made to the website by looking at the actual webpages of the eJIM website. Utility and usability were scored from not useful at all (score: 0) to very useful (score: 10), substantiated by reasons. The interview results were analyzed using verbatim records and field notes. To improve the validity of the analysis, interviewees checked the records, and the investigators performed a peer examination of

the analyses. We utilized the Lofland et al.¹¹ method for analyzing qualitative interview results (iterative or inductive coding, descriptive, and thematic analysis). The purpose, privacy protection policy, data handling policy, and freedom of participation were explained orally as well as in writing, and informed consent was obtained. This work was carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki).

2.2. Internet survey

Based on the interviews, an internet survey was developed. We outsourced the survey to INTAGE Healthcare Inc. (Tokyo, Japan), which has expertise in medical and health care and in developing surveys for physicians. An e-mail request was sent to 2395 physicians in the INTAGE Healthcare database. A URL was individually issued to each physician, which sent them to the web-based survey. The nationwide internet survey was conducted from February 8, 2019, to February 18, 2019. We determined the sample size, considering areas of practice (urban areas such as Tokyo 23 wards and ordinance-designated cities or rural areas other than urban areas), hospitals or clinics, subspecialties, and gender. The internet survey consisted of 64 questions, including the interview items. The survey contained questions that focused on gaining an understanding of the perspective of physicians on TCIM in their clinical practice and their impression on various web pages on the eJIM website. The internet survey did not collect any personal information. The internet survey was registered on the UMIN-CTR (No. UMIN000031844).

2.3. Ethical considerations

The face-to-face interviews were approved by the institutional review boards (IRBs) of Kanazawa Medical University (No. I243), and National Institutes of Public Health (No. NIPH-IBRA#12174). The internet survey, which was nationwide, was approved by the IRB of Kanazawa Medical University (No. I276) as a representative institute.

2.4. Reporting checklists

We have selected the consolidated criteria for reporting qualitative research (COREQ),¹² and the strengthening the reporting of observational studies in epidemiology (STROBE) statement among the reporting guidelines of the EQUATOR Network (<https://www.equator-network.org/reporting-guidelines/>). We have reported all relevant information following the above reporting guidelines. Ref. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6969453/>

3. Results

3.1. Interviews

The interviewees were 12 physicians in specialized medical departments, including medical oncology, breast surgery, obstetrics and gynecology, and women's health. The mean \pm SD of the interviewed physicians' age was 41.8 ± 10.8 years. There were 6 males and 6 females (Table 1). Eleven of the 12 physicians have offered or advised on TCIM therapies to patients. The TCIM therapies included prescribed Kampo medicines, dietary supplements, aromatherapy, over the counter Kampo, and placental extracts.

The thematic analysis identified four areas, namely language, readability, information, and dissemination, that could be improved on the eJIM website. Several quotes directly highlighted the above problems (Table 2). For example, "Some of the texts do not seem well translated and are a bit unnatural; The Japanese is not natural; and Texts are also not easy to understand. I feel they were

Table 1
Attributes of interviewed physicians.

ID	Age	Sex	Clinical experience (years)	Subspecialty	Insurance Ins: Insured treatments only Ins & self: Mainly insured treatments, but includes self-paid treatments	Provision of TCIM ^a	Types of TCIM
#T1**	50	F	20	General internal medicine	Ins	Yes	Kampo Medicine
#T2	50	F	26	Orthopedic surgery, plastic and cosmetic surgery, Kampo Medicine	Ins & self	Yes	Acupuncture, diet therapy, dietary supplements, aromatherapy, Kampo Medicine, placental extract
#T3	50	M	26	Respiratory medicine, cancer genome medicine	Ins & self	Yes	Kampo Medicine
#T4	40	M	13	General internal medicine, oncology	Ins	Yes	Kampo Medicine
#T5	40	F	15	Breast surgery	Ins	Yes	Dietary supplements, Kampo Medicine
#T6	30	M	6	Respiratory medicine	Ins	Yes	Kampo Medicine
#K1***	60	M	36	Gynecology	Ins & self	Yes	Diet therapy, Kampo Medicine, placental extract, immunotherapy
#K2	50	M	20	Anesthesiology	Ins	Yes	Kampo Medicine
#K3	50	F	24	Plastic and cosmetic surgery	Ins & self	No	Nothing particular
#K4	30	F	5	Respiratory surgery	Ins	Yes	Kampo Medicine
#K5	30	F	6	General internal medicine, Women's health	Ins	Yes	Diet therapy, dietary supplements, aromatherapy, Kampo Medicine
#K6	30	M	4	Medical oncology	Ins	Yes	Kampo Medicine

^a TCIM = traditional, complementary, and integrative medicine.

** T = Tokyo (urban) group.

*** K = Kanazawa (rural) group.

Table 2
Remarks received in the interviews^a.

Category	Remarks
Language	Natural Japanese ("I would like intelligible, but not word-for-word, Japanese translation").
Readability	Easy to read Easy to understand Large letters, illustration, and videos
Information	"There are too many letters", "Less words and more colors", "Videos for acupuncture and pulse diagnosis would be very helpful". Kampo medicine Materials for patients Therapies for each disease New and detailed information, updated website Scientific evidence
Dissemination	"Kampo medicines should be mentioned at the beginning of the website", "It will be easier to search by diseases". Idea for increasing awareness of the website "We need to increase its publicity, for example, placing posters near the consultation room or waiting room", "Please write in a way that is interesting to users".

^a More quotes are available in the supplementary files.

literally translated from English to Japanese. The solutions proposed by interviewees are as follows: Instead of describing information from other institutions, this website should have its own standards and definitions, which will be easier to understand (#K5), and the country's traditional Kampo medicines should be mentioned at the beginning of the website (#T2).

In the interviews, physicians provided specific remarks on the eJIM website and highlighted important points, such as increasing the resources available for patients and increasing the information available on TCIM in Japan (Supplementary files #1–4).

3.2. Internet survey

Valid answers were obtained from 231 physicians among 2395 physicians sent the survey (response rate: 9.6%).

1) Attributes of the respondents

The average clinical experience was 22.4 years. The most common specialties were general internal medicine (17.3%; n = 40/231), followed by dermatology (8.7%; n = 20/231) (Table 3).

2) TCIM use and attitudes

Thirty-five percent (n = 81/231) of the physicians offered or had advised on TCIM therapies to patients. Fifty-six percent (n = 130/231) of the physicians provided only insured medical treatments, whereas 43% (n = 99/231) provided treatments not covered by health insurance.

The physicians were asked about the type of TCIM therapies they offered to their patients. The most common response was prescribed Kampo medicines (87.7%; n = 71/81) (Table 4).

Physicians who did not offer TCIM therapies (64.9%; n = 150/231) were also asked a number of questions. The reasons why the physicians did not use or advise on TCIM therapies were as follows: they lack knowledge and expertise, "they are uncertain of efficacy and

Table 3
Attribute of participants.

		n	%
Gender	male	129	55.8
Age	30s	60	26.0
	40s	58	25.1
	50s	65	28.1
	60s	48	20.8
Specialty ^{a)}	general internal medicine	40	17.3
	dermatology	20	8.7
	gastroenterology	18	7.8
	pediatrics	18	7.8
	general surgery	17	7.4
	ophthalmology	17	7.4
	otorhinolaryngology	17	7.4
	cardiology	16	6.9
	endocrinology/ metabolism (diabetes)	15	6.5
	abdominal surgery	15	6.5
	obstetrics and gynecology	15	6.5
	cardio-vascular surgery	12	5.2
	orthopedic surgery	11	4.8
	neurosurgery	11	4.8
plastic and cosmetic surgery	10	4.3	
Area	urban	104	45.0
	rural	127	55.0
Beds	0	102	44.2
	1–500	91	33.9
	500 <	38	16.5

Table 4
Traditional, complementary, and integrative medicine (TCIM) used or advised by physicians (multiple answered were allowed).

TCIM	Percentage (%)	Number (n= /81)
Prescribed Kampo medicines	87.7	71
Supplements	24.7	20
Diet therapy	23.5	19
Placenta therapy	16.0	13
Massage	11.1	9
Acupuncture	11.1	9
Yoga	3.7	3
Aroma therapy	2.5	2

safety (lack of evidence)", and "no physicians and staff with knowledge and skills are available". In addition, 70% of them (n = 105/150) had no intention of offering TCIM therapies in the future.

When the physicians were asked about their opinion on TCIM therapies, 45% (n = 104/231) said the therapies have no direct effect on illness, but they are effective in reducing pain caused by illness, while 33% (n = 77/231) said they are effective as supplements or complements to Western medicine".

3) Communication with patients

Fifty-six percent (n = 129/231) of the physicians said that their patients had consulted them on TCIM therapies.

When the physicians were asked if they were aware of patients' use of TCIM therapies in clinical practice (respondents: n = 59), 50.8% of them (n = 30/59) said that they did not know unless the patient consulted them, 25.4% (15/59) asked or advised about TCIM when the physicians were concerned with drug interactions or side effects, and 18.6% (11/59) did not ask their patients. Only 5.1% (n = 3/59) comprehended all the TCIM therapies used by their patients.

We asked the physicians whether they had been consulted by their patients about using TCIM therapies for cancer. In total, 29.3% (n = 17/58) of the physicians had been consulted about TCIM therapies by patients with cancer. In addition, 74.1% (n = 43/58) felt that the eJIM website would be useful for patients with cancer.

4) TCIM information sources

To collect information on TCIM therapies, 33.8% (n = 78/231) of the physicians searched "from names of TCIM therapies" or "either from diseases or names of TCIM therapies", and 29.9% (n = 69/231) said that they search from diseases. Classification of TCIM therapies for each disease was also found to be useful for website users. Physicians were asked to detail what kind of web-based information would be useful on TCIM. It was found that information such as types and characteristics of TCIM therapies (46.8%; n = 108/231), cost (41.1%; n = 95/231), and usage examples (40.7%; n = 94/231) were needed (multiple answers).

5) eJIM utilization and feedback

The highest grade (from 1 to 10, 1: not useful at all, 10: extremely useful) regarding the usefulness of eJIM was 7, which was in relation to consulting with patients (22.1%; n = 51/231). In the same way, the highest grade was 7 (22.5%; 52/231) for understanding TCIM and 5 (23.8%; 55/231) for considering the indication of TCIM. Sixty-two percent (n = 143/231) of physicians stated that the classification of organs/diseases in the Cochrane Review part of the eJIM website was appropriate, and 54.5% (n = 126/231) said that the number was appropriate. In addition, 54.1% (n = 125/231) said that it was easy to identify the target diseases. We asked 59 randomly selected individuals about the usefulness of the cancer page in clinical practice. Fifty-seven percent (n = 34/59) of the physicians said the website was clinically useful. Approximately 60% of the physicians stated that it was useful for understanding TCIM therapies (n = 35/59), their advantages and disadvantages (n = 34/59), and their usage precautions (n = 35/59) as well as determining the use of TCIM therapies by patients (n = 30/59). The percentage of Japanese-translated TCIM contents classified by organ/disease was 95.9% (888/926). Only 1.7% (n = 4/231) of physicians had accessed the eJIM website previously.

In summary, Kampo medicines and dietary supplements were common TCIMs that physicians use or advise on in Japan. One-third of physicians thought that TCIM was a useful adjuvant to Western medicine. Approximately 50% of the physicians did not know whether their patients' used TCIM, and only 5% were aware of all TCIM used by their patients. We discovered the following: almost half of the Japanese physicians had a positive attitude toward TCIM, particularly in relation to relieving symptoms. Most physicians did not know about the eJIM website. However, they were able to use the eJIM website to obtain information on TCIM. The eJIM website could help to facilitate communication on TCIM between physicians and patients. As for improving the eJIM website, the participating physicians suggested that important points should be emphasized and that natural Japanese translation of overseas material should be undertaken.

4. Discussion

This study is the first to survey physicians on the eJIM website, and no studies on objective assessments of TCIM websites such as the NCCIH website in the United States of America, have been conducted previously. However, a study on assessments and requests for NCCIH activities has been published.¹³ We also clarified Japanese physicians' perspectives on TCIM. Previous reports by other researchers have primarily examined the prevalence of TCIM use by patients and physicians' awareness of their patients' use.⁷⁻⁹

Since there is little public information available on TCIM, it is necessary to increase awareness by using social media and posters in health facilities. The eJIM website could help to facilitate conversations between patients and physicians regarding TCIM. We found

that only 5.1% of the physicians were aware of all the TCIM therapies used by their patients. This shows that there is little communication on TCIM occurring between doctors and their patients.^{14–16}

The eJIM website was established to improve the awareness of TCIM for physicians or medical professionals as well as the general public.² The eJIM website could help Japanese physicians to become more knowledgeable about TCIM if its usability and readability are improved.

No significant changes have been made to the eJIM website since it was launched in 2014. More detailed information and links to other academic societies should be considered to update and enhance the contents. These are important factors for improving the usability of websites.¹⁷

Quite a few of the interviewees mentioned that the eJIM website seemed to be poorly translated and presented TCIM information in a way that had not been tailored for Japanese users. We hope that these findings will help to improve the usability of the eJIM website for both patients and physicians.

Many physicians commented that they felt that the eJIM website was useful both for learning about TCIM therapies and explaining them to patients. However, physicians generally had a negative attitude toward TCIM, mainly due to the lack of scientific evidence. Physicians did not routinely ask their patients about their use of TCIM therapies. The eJIM website could be used by physicians and patients together to promote shared decision-making and determine treatment plans.^{18,19} It is necessary to increase the awareness of the eJIM website more widely as a website supported by the Ministry of Health, Labor, and Welfare in Japan. The majority of the information in the Cochrane Review has now been translated into Japanese, making it easier for Japanese speaking people to access information on TCIM.

There were several limitations to this study. Although the interviews were primarily conducted so that the internet survey could be created, the number of interviewees was small. In addition, the number of respondents to the internet survey was also small. However, for qualitative research, reaching thematic saturation or, if purposive sampling was used, not recruiting all types of physicians that the researchers wanted to interview is more important than the total number interviewed. We think that the relatively small number of interviewees and low response rate to the internet survey was counterbalanced by all the different types of physicians represented, in terms of age, experience, specialties, and proportions who use TCIM. This supports the generalizability of the findings. The majority of TCIM used by Japanese physicians was prescribed Kampo medicines, covered by the national health insurance. Most physicians think that prescribed Kampo medicines are modern dosage forms of traditional medicines. The eJIM website could help physicians to understand TCIM better and facilitate conversations with their patients regarding TCIM use. Continuous improvement of the eJIM website is warranted.

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Author contribution

Yoshiharu Motoo: Conceptualization, Investigation, Resources, Writing - original draft, Visualization, Project administration, Funding acquisition. **Keiko Yukawa:** Conceptualization, Methodology, Software, Formal analysis, Investigation, Data curation, Writing - review & editing. **Kazuho Hisamura:** Methodology, Validation,

Investigation, Writing - review & editing. **Ichiro Arai:** Conceptualization, Methodology, Writing - review & editing, Supervision.

Conflict of interest

The authors have no conflicts of interest to declare.

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Ethical statement

This study has been approved by the institutional review boards of Kanazawa Medical University (Interview survey: No. I243, and internet survey: I276) and National Institutes of Public Health (Interview survey: No. NIPH-IBRA#12174).

Data availability

The data will be made available upon request.

Supplementary material

Supplementary material related to this article can be found, in the online version, at doi:<https://doi.org/10.1016/j.imr.2020.100454>.

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