

## Original Article

# Public Status and Prevalence of Acupuncture in Japan

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Acupuncture originated in China and is widespread throughout Asia. It is expected that a higher utilization of this remedy exists in these countries compared to Western countries. We conducted annual nationwide surveys from 2003 through 2006 on the utilization of acupuncture in Japan. Face-to-face interviews were conducted with 2000 individuals randomly chosen from the resident database. Annual utilization percentages, based on the number of respondents, from 2003 to 2006 were 6.5%, 4.8%, 6.4%, and 6.7%, respectively, while lifetime experiences determined in each surveys were estimated as 26.7, 19.4, 24.4 and 25.4, respectively. Respondents who had utilized acupuncture and/or moxibustion tended to be older than those who had no experience. Acupuncture was mainly used for musculoskeletal symptoms, and a detailed breakdown of the musculoskeletal symptoms identified in the 2005 survey showed 50.9% for low back pain, 35.9% for shoulder stiffness and 12.0% for knee pain. Reasons given for continuing therapy included the effective amelioration of symptoms, comfort of the procedure and low number of side-effects, while those who decided against continuing cited no improvement of symptoms, cost and lack of time for treatment. In conclusion, annual utilization of acupuncture and/or moxibustion was estimated at more than 6%, and the percentage of those with a lifetime experience was ~25%, thus demonstrating the relatively higher utilization of the remedy in Japan over utilization in western countries. Application of the treatment for musculoskeletal problems and utilization by the older population were specific standouts of the use of acupuncture and/or moxibustion in Japan.

**Keywords:** acupuncture – aim – Japan – prevalence – reason

## Introduction

### Backgrounds

*Acupuncture is Positioned Out of the Mainstream of the Health Care Systems in Japan*

The dawning of acupuncture and moxibustion medicine in Japan dates away back to the year 562, when a literature of

acupuncture medicine had been brought with the Buddhist literature by a Chinese monk Chiso. The traditional Chinese medicine brought to Japan, had been modified to suit with physiological constitution of Japanese and developed under the influence of European medicine. However, during Meiji Era (1868–1912), as German Medicine became official medicine in Japan, the traditional medicine had declined. After that, acupuncture and moxibustion therapy was separated from Chinese herbal medicine and positioned as occupation mainly for the people with disabled visual acuity, being placed outside of the mainstream of the health care system in Japan. The status of acupuncture and moxibustion therapy had not been improved after that, while Kampo, the Chinese herbal medicine, had later been included in the medical system in Japan.

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### Acupuncture Practice in Medical Facilities is Limited in Japan

Acupuncture practice in medical facilities in Japan is limited, which is reflecting relatively lower status of the remedy as non-official medicine in this country. Generally, acupuncture treatment is not covered by public health insurance system, except for particular kind of medical conditions; (i) low back pain, (ii) frozen shoulder, (iii) neuralgia, (iv) rheumatoid arthritis (RA), (v) cervico-brachial syndrome, (vi) neck sprain, only when the patients could get consent document by their physicians. However, not many physicians are favorable to recommend acupuncture to the patients, and consequently, it is difficult to get acupuncture treatment with support of public health insurance.

### License of Acupuncture and Moxibustion in Japan

Japanese national license for acupuncture and for moxibustion are separately issued. The status of acupuncturists and moxibustionists is guaranteed and they are allowed to have their own clinics, while the other health care providers such as physiotherapists or occupational therapists are not allowed to practice by themselves. Because right to practice acupuncture and moxibustion is under the protection of the law, any other health care providers except medical doctors are not allowed to practice acupuncture and moxibustion, while physiotherapy or occupational therapy, which is mainly provided by physiotherapists or occupational therapists, can also be provided by nurses or massage therapists. Although acupuncturists and moxibustionists have right to practice by themselves, their practical activity in the medical facilities of which health care services are covered by public insurance are strictly limited. License for acupuncture and moxibustion are national qualification and completion of 3-year program in the accredited vocational school or 4-year program in accredited university are required to be qualified for licensing exam. Although license for acupuncture and for moxibustion are separately issued, most of the schools have programs for both acupuncture and moxibustion. Therefore, those who completed the program usually are licensed for both of them and are called 'Acupuncture and Moxibustion therapists'.

### Number of Acupuncturists and Moxibustion Therapists in Japan

The total number of those who are listed as acupuncturists and moxibustionists as of September 2005 in Japan are 127 018 and 125 868, respectively (a statistics by Toyo Ryoho Kensyu Shiken Zaidan (Foundation for Training and Licensure Examination in Amma-Massage-Acupressure, Acupuncture and Moxibustion) (1). Although actual number of the active practitioners is not precisely investigated, a statistics by Ministry of Health, Labour and Welfare (2) estimated that approximately

**Table 1.** The number of facilities that provides acupuncture and/or moxibustion

Kind of license	Year						
	1992	1994	1996	1998	2000	2002	2004
Acupuncture and moxibustion	12 055	12 481	13 166	13 455	14 216	14 008	14 993
Amma, massage, shiatsu and, acupuncture and moxibustion	28 624	29 451	30 850	31 434	32 024	32 722	33 601

76 643 acupuncturists and 75 100 moxibustionists were active as of the year 2004. Since the statistics provided by the Ministry of Health, Labour and Welfare are based on the number of acupuncturists or moxibustionists who are registered at regional public health center, it probably includes the practitioners who have already retired. According to a report by Fujii *et al.* (3), ~26.5% of the registered practitioners is not actively practicing. The number of facilities that provides acupuncture and/or moxibustion are 14 993 and those that provides acupuncture and moxibustion and/or amma, massage, shiatsu are 33 601 in 2004 (2) (Table 1). According to these statistics, the number of the facilities that provides acupuncture and/or moxibustion estimated in the report by Fujii *et al.* was 48 594, and likewise, the number of active practitioners for acupuncture and moxibustion was estimated to be 55 000 as of the year 2004.

### Use of Acupuncture and/or Moxibustion Therapy and Characteristics of the Patients in Recent Years in Japan

Despite long history and knowledge of the medicine in the country, little is known about the popularity and the characteristics of the patients who use acupuncture and/or moxibustion in Japan. The most reliable information about popularity of acupuncture in Japan was presented in 2002 by Yamashita *et al.* (4), which summarized the results from a nationwide telephone survey conducted in 2000. The result of the report indicates that ~6.7% of the population had used acupuncture and moxibustion in the past 12 month.

### Purpose of the Present Study

Although the statistics presented by Yamashita *et al.* provides important information on utilization of acupuncture in Japan, there were some limitations in the study as the author described. Furthermore, because their study was conducted focusing not specially on acupuncture users but on all CAM therapy users, specific information on acupuncture users are limited. Therefore, more reliable and specific information on acupuncture users who represent the population of the country is desired. In the present study, we report results from nationwide, population-based survey on utilization of acupuncture and/or

moxibustion and characteristics of users, which were conducted annually between 2003 and 2006.

## Methods

### Subjects, Sampling Methods

The data in the present study were collected as part of omnibus surveys which were conducted by a research company (Central Research Services, Inc. Tokyo, Japan) every March between 2003 and 2006 with the support of Foundation for Training and Licensure Examination in Amma–Massage–Acupressure, Acupuncture and Moxibustion (Toyo Ryoho Kenshu Siken Zaidan) The subjects of the study were individuals whose age was  $\geq 20$  years and who were randomly selected from Japanese population. The data were collected as a part of omnibus questionnaire that was brought to the individuals by interviewers. The subjects were then asked to answer closed-ended questions of which the maximum number of options was 10. Subjects were allowed to ask questions to the interviewer whenever they wanted. The sample size of the survey was fixed as 2000, which enable the research to obtain approximately 1400 (70%) random samples. Sampling method of the survey was as following: All municipalities in Japan were divided geographically into 12 blocks, which was further stratified into 30 areas according to the city scale (major cities, cities, and towns or villages). From the 30 areas stratified, approximately 160 local points are selected in the random manner according to the population size to obtain 10–14 samples from a local point, which will be a total of 2000 samples.

### Questions Analyzed

Common questions in all four surveys included utilization of acupuncture and/or moxibustion within the past 12 month, lifetime experience and basic characteristics

of the respondents such as age, gender, education level and occupation. Other questions regarding the main symptoms for which acupuncture was applied, reasons or expectations for the use of acupuncture treatment, the respondents' inclination to utilize the remedy in the future, satisfaction with conventional medicine and use of other CAMs were also included in various years.

### Statistical Methods

Percentages were indicated with the 95% confidence intervals. Fisher's exact test or chi-square test were performed to detect significant differences between proportions. Differences were considered statistically significant when type I error ( $\alpha$ ) was  $< 5\%$  under null hypothesis. All the computation was performed with commercially available PC software, SYSTAT 11(SYSTAT Inc., San Jose, CA, USA).

### Results

Of the 2000 subjects visited, 1420(71.0%), 1338(66.9%), 1337(66.9%) and 1346(67.3%) were eligible to fill the questionnaire of the survey in 2003, 2004, 2005 and 2006, respectively. Table 2 shows the percentage of the subjects who saw acupuncture practitioner(s) in the past 12 months, which is further stratified by age group and sex. Total percentage of the subjects who saw practitioner(s) were 6.5, 4.8, 6.4 and 6.7 at the survey in 2003, 2004, 2005 and 2006, respectively. As shown in the table, female subjects are more likely to visit acupuncturists in most survey years indicating statistically significant in the 2003 survey. Table 3 shows percentage of the subjects who had answered to have experience of acupuncture and/or moxibustion in their lifetime. The percentage of the subjects who experienced acupuncture at sometime prior to the survey periods were, 26.7, 19.4, 24.4, 25.4 at the survey in 2003, 2004, 2005 and 2006, respectively, which indicated statistically significant differences between males and females in 2003

**Table 2.** Percentage of the subjects who saw acupuncture practitioner in the past 12 months, by age and sex

Age group (years)	Survey year							
	2003		2004		2005		2006	
	Percentage (95% CI)	M/F	Percentage (95% CI)	M/F	Percentage (95% CI)	M/F	Percentage (95% CI)	M/F
20–39	3.4 (1.6–5.9)	3.1/3.6	2.8 (1.2–5.3)	4.1/2.0	4.1 (2.1–6.9)	4.2/4.0	3.9 (1.9–6.8)	4.8/3.1
40–59	6.6 (4.4–9.3)	5.6/7.4	3.4 (1.8–5.6)	2.8/3.8	5.7 (3.5–8.4)	5.3/5.9	6.9 (4.6–9.8)	7.5/6.4
60≤	9.5 (6.4–12.9)	4.3/13.6 <sup>a</sup>	8.5 (5.6–12.2)	6.5/10.3	9.3 (6.4–12.8)	6.9/11.8	8.6 (5.8–11.9)	9.1/8.0
<i>P</i> -value <sup>b</sup>	0.001	–	$< 0.001$	–	0.006	–	0.027	–
Overall	6.5 (5.1–8.2)	4.4/8.3 <sup>a</sup>	4.8 (3.5–6.3)	4.4/5.0	6.4 (5.0–8.0)	5.7/7.0	6.7 (5.2–8.3)	7.4/6.0

Total number of the respondents (denominator) except who answered to the question as 'Do not Know' were, 1405, 1316, 1330 and 1335 in the survey year 2003, 2004, 2005 and 2006, respectively; <sup>a</sup> $P < 0.01$  (Differences in the proportion between male and female subjects according to the Fisher's exact test); <sup>b</sup>Probabilities of difference between age groups according to chi-square test with 1 df.

**Table 3.** Percentage of the subjects who had answered to have lifetime experience of acupuncture and/or moxibustion, by age and sex

Age group	Survey year							
	2003		2004		2005		2006	
	Percentage (95% CI)	M/F	Percentage (95% CI)	M/F	Percentage (95% CI)	M/F	Percentage (95% CI)	M/F
20–39	16.3 (12.4–20.8)	14.9/17.6	12.3 (8.8–16.5)	9.0/14.3	13.7 (10.0–18.0)	13.2/14.1	16.1 (11.9–20.9)	16.4/15.9
40–59	29.0 (24.7–33.5)	28.1/29.7	17.0 (13.5–21.0)	18.5/16.0	25.5 (21.1–30.1)	25.4/25.5	24.0 (19.8–28.5)	28.3/20.6 <sup>a</sup>
60≤	33.7 (28.6–39.0)	28.2/38.0 <sup>a</sup>	29.4 (24.3–34.8)	30.8/28.2	33.0 (28.0–38.2)	34.2/31.8	34.0 (29.1–39.1)	31.8/36.4
Overall	26.7 (24.1–29.4)	24.1/28.8 <sup>a</sup>	19.4 (17.0–21.9)	20.1/18.8	24.4 (21.8–27.1)	25.9/23.5	25.4 (22.7–28.1)	26.5/24.4

Total number of the respondents (denominator) except who answered to the question as ‘Do not Know’ were, 1405, 1316, 1330 and 1335 in the survey year 2003, 2004, 2005 and 2006, respectively; <sup>a</sup> $P < 0.05$  (Differences in the proportion between male and female subjects according to the Fisher’s exact test).

**Table 4.** Percentage of the subjects who visited acupuncture clinic within the past 12 months, by age and city scale

Age group	Scale			$P^a$	Overall
	Major city	City	Town/village		
2003					
20–39	6.7	1.4	3.6	0.036	3.4
40–59	7.1	4.3	12.0	0.014	6.6
60≤	17.9	8.5	5.7	0.007	9.5
Total	9.7	4.9	7.6	0.010	6.5
2004					
20–39	2.9	3.1	1.6	0.816	2.8
40–59	4.5	3.0	3.4	0.746	3.4
60≤	7.1	8.1	10.5	0.690	8.5
Total	4.4	4.6	5.6	0.763	4.8
2005					
20–39	5.7	3.6	3.0	0.597	4.1
40–59	6.9	5.8	3.9	0.632	5.7
60≤	10.8	8.1	10.7	0.649	9.3
Total	7.6	5.9	6.3	0.571	6.4
2006					
20–39	4.2	4.5	1.6	0.591	3.9
40–59	7.4	4.6	14.5	0.007	6.9
60≤	10.2	8.0	8.3	0.787	8.6
Total	7.4	5.8	8.8	0.257	6.7

<sup>a</sup>Probabilities according to the chi-square test between different city scales.

(overall subjects and those who were  $\geq 60$  years,  $M < F$ ) and in 2006 (those whose age was between 30 and 49 years,  $F < M$ ). Table 4 shows percentage of the subjects who visited acupuncture clinic within the past 12 month by city scale, which is stratified by age group. Although significant differences between city scale was found in the survey in 2003, which indicates the relatively higher utilization in major city and town/village, no significant differences were found between city scale in further surveys. Table 5 indicates differences in the percentage of the utilization of acupuncture in the past 12 month between groups divided

**Table 5.** Percentage of the utilization of acupuncture in the past 12 months, by age and education level

Age group	Education			$P^a$	Overall
	Junior high	High	College or higher		
2003					
20–39	0.0	2.5	4.3	0.544	3.4
40–59	13.5	6.7	4.5	0.076	6.6
60≤	9.5	9.4	10.4	0.903	9.5
Total	10.1	6.3	5.1	0.037	6.5
2004					
20–39	0.0	3.0	2.8	0.923	2.8
40–59	2.9	3.6	3.2	0.968	3.4
60≤	10.7	8.6	3.3	0.216	8.6
Total	9.0	4.7	3.0	0.006	4.8
2005					
20–39	0.0	5.0	3.6	0.589	4.1
40–59	0.0	5.8	6.0	0.357	5.5
60≤	9.0	8.4	13.3	0.502	9.3
Total	7.0	6.4	5.9	0.859	6.4
2006					
20–39	0.0	4.3	3.7	0.710	3.9
40–59	6.3	8.1	5.3	0.508	6.9
60≤	7.1	9.5	9.0	0.709	8.6
Total	6.4	7.6	5.3	0.322	6.7

<sup>a</sup>Differences in the proportion between different education levels according to the chi-square test.

by education level. Overall tendency shows that the higher the education level, the lower utilization of acupuncture was found, which resulted in significant differences in the survey years 2003 and 2004. The reason for utilization of acupuncture, which was answered by 375 respondents who have had prior experience of acupuncture in the survey of 2003, is shown in Table 6. The most common reason for utilization was recommendation of family or friends (58.7%). No significant differences in the percentage between male and female respondents or those who utilized within the past 12 months and those utilized earlier except

**Table 6.** Reason to utilize acupuncture and/or moxibustion (results from survey of 2003)

Reason	Overall users		By sex			By period of utilization		
	Percentage <sup>a</sup>	95% CI	Male	Female	<i>P</i> <sup>b</sup>	Past 12 Months	More than 1 year ago	<i>P</i> <sup>c</sup>
Recommendation of family or friends	58.7	52.7–64.3	60.5	57.4	0.594	50.5	61.9	0.048
Not satisfied with conventional medicine	12.8	9.1–17.1	15.1	11.2	0.274	16.8	11.2	0.170
Do not want to use drugs	12.5	8.9–16.8	9.2	14.8	0.115	17.8	10.4	0.059
Not serious condition	11.7	8.2–15.9	7.2	14.8	0.033	15.9	10.4	0.154
Recommendation of MDs	8.8	12.6–5.8	7.9	9.4	0.712	9.3	8.6	0.841
Saw the clinic facilities	5.6	3.2–8.8	6.6	4.9	0.502	5.6	5.6	> 0.99
Saw advertisement (TV, Radio, Internet)	1.6	0.5–3.7	0.0	2.7	0.085	0.9	1.9	0.679
Others	4.8	2.6–7.8	6.6	3.6	0.221	4.7	4.9	> 0.99

Total number of the respondents = 375; <sup>a</sup>Summation of each percentage will not be 100 because of multiple answers; <sup>b</sup>Difference between males and females (Fisher's exact test probabilities); <sup>c</sup>Difference between utilization periods (Fisher's exact test probabilities).

**Table 7.** Medical condition/purposes for which acupuncture was used (results from survey of 2003)

Condition	Overall users		Sex			Period of utilization		
	Percentage <sup>a</sup>	(95% CI)	Male	Female	<i>P</i> <sup>b</sup>	≤12 Months	> 12 Months	<i>P</i> <sup>c</sup>
Musculoskeletal problems	81.6	(76.6–85.8)	84.9	79.4	0.222	78.5	82.8	0.376
Fatigue	6.9	(4.2–10.4)	6.6	7.2	> 0.99	12.1	4.9	0.022
Health promotion	5.1	(2.8–8.2)	3.3	6.3	0.236	11.2	2.6	0.001
Headache	4.8	(2.6–7.8)	4.6	4.9	> 0.99	7.5	3.7	0.178
Eyestrain	3.2	(1.5–5.8)	2.0	4.0	0.374	4.7	2.6	0.335
Digestive symptoms	2.9	(1.3–5.5)	2.0	3.6	0.536	3.8	2.6	0.517
Tinnitus/Hearing loss	1.9	(0.6–4.1)	1.3	2.2	0.706	1.9	1.9	> 0.99
Paralysis	1.3	(0.3–3.3)	0.7	1.8	0.652	1.9	1.1	0.626
Urination problems	0.3	(0.0–1.6)	0.0	0.4	> 0.99	0	0.4	> 0.99
Others	11.5	(8.0–15.6)	10.5	12.1	0.742	7.5	13.1	0.152

Total number of the respondents = 375; <sup>a</sup>Summation of each percentage will not be 100 because of multiple answers; <sup>b</sup>Difference between males and females (Fisher's exact test probabilities); <sup>c</sup>Difference between utilization periods (Fisher's exact test probabilities).

**Table 8.** Breakdown of the musculoskeletal problem for which acupuncture was used (survey of 2005)

Kind of the problem	Overall Users		By sex			By utilization period		
	Percentage <sup>a</sup>	(95% CI)	Male	Female	<i>P</i> <sup>b</sup>	< 12 months	> 12 months	<i>P</i> <sup>c</sup>
Low back pain	50.9	44.5–57.1	60.3	42.9	0.002	52.5	50.2	0.719
Shoulder stiffness	35.9	29.9–42.0	28.5	42.3	0.011	38.4	34.8	0.533
Knee pain	12.0	8.2–16.5	9.9	13.7	0.310	20.2	8.4	0.005
Shoulder pain	5.2	2.8–8.6	6.0	4.6	0.624	6.1	4.8	0.601
Neuralgia	4.3	2.1–7.5	4.6	4.0	0.791	5.1	4.0	0.767
Sports injury	3.4	1.5–6.3	4.6	2.3	0.357	5.1	2.6	0.319
Numbness in hands	3.4	1.5–6.3	3.3	3.4	> 0.99	3.0	3.5	> 0.99
Numbness in feet	3.4	1.5–6.3	4.0	2.9	0.760	6.1	2.2	0.096
Other joint pain <sup>a</sup>	2.5	0.9–5.1	2.0	2.9	0.729	3.0	2.2	0.703
Other	14.1	10.0–18.9	9.9	17.7	0.055	12.1	15.0	0.604

Total number of the subjects = 326; <sup>a</sup>Summation of the percentage will not be 100 because of multiplied answers; <sup>b</sup>Difference between males and females (based on Fisher's exact test probabilities); <sup>c</sup>Difference between utilization periods (Fisher's exact test probabilities).

for the primary reason when compared by utilization period and for the reason of that the condition was not serious when compared by sex. Table 7 shows the medical conditions for which acupuncture was used. More than

80% of the respondents have had answered that they sought acupuncture because of musculoskeletal problem. The other symptoms/purposes for which acupuncture was utilized includes general fatigue, health promotion,

**Table 9.** Percentage of respondents who have showed their intention to continue acupuncture and its reason (survey of 2003)

Reason	Percentage
Continue 50.4%(189/375)	
Amelioration of the Symptom	76.2
Comfortable	37.6
Low number of side-effects	21.7
Convenient	15.9
Easy to visit	9.5
Favor with the practitioner	5.8
Inexpensive	4.2
Favor with the facilities	2.1
Other	2.1
Not to continue 37.1 (139/375)	
No amelioration of the symptom	42.4
Expensive	20.9
Lack of time	13.7
Uncomfortable	10.8
Not easy to visit	8.6
Had adverse effects	3.6
Not in favor with the practitioner	1.4
Not in favor with the facilities	0.7
Other	19.4

headache, eyestrain, digestive symptoms, hearing problems, paralysis or urination problem. Further breakdown of the musculoskeletal symptoms, which was questioned later in the survey in 2005, is shown in Table 8. The most common musculoskeletal symptom for which acupuncture was utilized was low back pain (50.9%), which was followed by shoulder stiffness (35.9%) and knee pain (12.0). Significant differences between male and female respondents were found in the percentage with low back pain (60.3% in males and 42.9% in females) and shoulder stiffness (28.5% in males and 42.3% in females). Also, a significant difference between respondents who experienced acupuncture within 12 months and those who experienced more than 12 months ago prior to the survey was found with the knee pain (20.2% of those who experienced within 12 months and 8.4% of those who experienced more than 12 months ago). Table 9 shows the percentage of the respondents who have answered to or not to continue/reuse acupuncture and its reason. Approximately half (50.4%) of those who have experienced acupuncture answered to continue/reuse acupuncture while 37.1% answered not to. The most common reason to continue/reuse was because they experienced amelioration of the symptom (76.2%). The following reason includes: comfortable treatment, low number of side-effects, convenient, easy to visit and so on. In contrast, the reason for not to continue/reuse includes: no amelioration of the symptom, high cost, lack of time, uncomfortable treatment and so on.

## Discussion

### Utilization of Acupuncture and/or Moxibustion in Japan

Utilization of acupuncture and/or moxibustion in Japan was relatively higher than those reported in Western countries (5–9). Although there are many reports about CAM use and characteristics of the users in Western countries (10–12), such kind of information among Asian countries so far is rather limited (13–15). Since acupuncture is originated in China and brought to Japan more than a thousand year ago and distributed as one of the conventional folk medicine (16), utilization of the remedy in the population is considered to be higher than those in the Western countries. However, no reliable information on usage of acupuncture and moxibustion in Japan had been available until 2002, when the first nationwide telephone survey regarding popularity of CAM by Yamashita *et al.* (4) had been reported. The study reported a surprising result that 76% of the respondents had used at least one CAM therapy in the past 12 months and average annual out-of-pocket expenditure of the respondents for CAM was half as much as those for orthodox Western medicine. The kind of CAM reported in the study includes nutritional and tonic drink, dietary supplements, health-related appliances and herbs. Percentage of the respondents who used acupuncture and moxibustion in the past 12 months was reported as 6.7%. Their study is valuable as the first nationwide survey of CAM in the far-east countries. However, as the author stated, there are some limitations in the study because the eligible call rate was relatively low (23%). Furthermore, most results were not specialized for acupuncture use. We therefore conducted surveys to present more reliable data and to further clarify the characteristics of the subjects, their aim or reason for utilizing acupuncture and/or moxibustion. Results of our annual surveys showed that the utilization of acupuncture and/or moxibustion in Japan between 2003 and 2006 were almost stable at around 6.5% of the population and their lifetime experience of the remedies was ~25%. These proportions are considered to be relatively higher than those in the Western countries (5–8). A relatively lower proportion of utilization was found in the survey in 2004. This may be due to systematic bias of sampling procedure because both annual and lifetime utilization was lower than those in the other surveys. It was clear that elder people were more likely to use acupuncture than younger. This result was different from the results of the overall CAM users reported in the previous reports that relatively younger population had used acupuncture (5,7).

### Characteristics of Users of Acupuncture and/or Moxibustion in Japan

Utilization by female respondents was higher than those by male respondents in the survey in 2003 (both annual

utilization and lifetime experience among respondents whose age was 60 years or older) and lower in part in the survey in 2006 (lifetime experience among respondents whose age was 40–59 years). Although many researchers reported that females were more likely to use CAM (5,6,14,15,17), the tendency was not clear in the present study. The results may reflect difference between overall CAM users and acupuncture users or difference between Japanese users and those in the other countries. There were tendency that proportion of users was higher in the major city or town or village than those in the middle-scale city. The possible reason for this is that there may be larger number of facilities which provides acupuncture and/or moxibustion in the major city; although it is not proven because reliable statistics that indicate number of such facilities per person in each city is not available. Users of acupuncture and/or moxibustion had relatively lower education level. This tendency was same as that reported in the previous survey in Japan but different from tendency of CAM users reported in Western countries that indicated that the education level of the users are relatively high (5,7). Although present data were stratified by age group, it is still presumable that difference in age is contributing the results because education level in the elderly is generally lower than younger population. Multivariate analysis such as logistic regression of which independent variable includes age and sex may be necessary in further studies to clarify these tendencies.

#### **Reason to Utilize Acupuncture and/or Moxibustion in Japan**

The most common reason for utilization of acupuncture and/or moxibustion in the present survey was ‘recommendation of family or friends’, although it is significantly decreased when it was compared between users within the past 12 months and those who used more than a year ago (50.5 versus 61.9,  $P = 0.048$ ). Patients seemed to seek reliable information as much as possible, because most of them did not have much information about the remedies and might have concerns to get treatment. The second or third reason reflects dissatisfaction or distrust with the conventional medicine. Because there are several reports that indicates no significant association between CAM use and dissatisfaction with conventional medicine and most of the users also receive standard care, not relying primarily on CAM (18,19), it is important to further investigate in a newly designed survey whether these respondents use acupuncture as an ‘alternative (substitute for)’ or ‘complementary (add on)’ to the conventional medicine. The fourth common reason, ‘not serious condition’, was more likely to be chosen by female respondents (14.8 versus 7.2,  $P = 0.033$ ). Although detail of the symptom is unclear in the present

study, the fourth reason includes some kind of conditions that are specifically occurs in female subjects.

#### **Medical Conditions for which Acupuncture and Moxibustion was utilized by Japanese Population**

Musculoskeletal problem is the most common condition for which acupuncture and/or moxibustion was applied. The proportion of the subject (81.6%) was comparable with those in the previous telephone survey that was also conducted among Japanese population (4) and much higher than those surveyed in the United States (20,21). Of the musculoskeletal problems, low back pain was the most common condition for which the respondents sought acupuncture and/or moxibustion, followed by shoulder stiffness and knee pain, indicating significant differences in the proportion between female and male respondents in low back pain ( $M > F$ ) and in shoulder stiffness ( $F > M$ ). These figures represents the common symptoms of the general population that the most common symptom in male population was low back pain while those in female population was shoulder stiffness, which is presented by statistics of the Ministry of Health, Labor and Welfare as of 2004 (22).

#### **Respondent’s Intention to Reuse/Continue Acupuncture and/or Moxibustion**

Approximately half (50.4%) of the respondents were favorable to reuse or continue acupuncture and/or moxibustion in the future, while 37.1% answered not to. The most common reason for the favorable answer was that the respondents experienced amelioration of their symptom. Improvement of their symptom seems to be the most important because the most common reason for discontinue was that the respondents did not feel amelioration of the symptom. It is notable that more than one-third of the respondents who were favorable to continue had chosen the reason ‘comfortable’, which indicates one of the favorable features of these remedies. Although some of the respondents who had answered not to continue had chosen the reason ‘uncomfortable’ (painful or too hot), most of these sensations may be avoidable by improvement of the practitioner’s skill. The reason ‘expensive’ may be one of the major obstacles to continue acupuncture and/or moxibustion because less than half of the patients are benefited from reimbursement (17), while most of the conventional medicines are covered with the public insurance system. The coverage rate of health insurance may have considerable influence to visit acupuncture clinics as previously reported in CAM users (23). This hypothesis is supported by our recent statistics that 42% of the respondents who had no experience of acupuncture and/or moxibustion and 69% of those who had experience answered that they would

like to receive these treatments if it was covered by public health insurance (24).

## Conclusion

Utilization of acupuncture and/or moxibustion in Japan was relatively higher than those in the Western countries and the prevalence rate seemed to be stable in recent years. The characteristic of the users appeared to be relatively older generation, though the difference between males and females are inconclusive from the present surveys. Many users paid much regard to recommendation by their families or friends for decision of visiting acupuncture clinics. Musculoskeletal problems including low back pain, shoulder stiffness and knee pain was the most common condition for which acupuncture and/or moxibustion was applied, indicating considerably higher than those reported in US. Approximately 50% of the users were favorable to use these remedies in the future, while 37% were not. The problem claimed by the respondents for the treatment included lack of effect, relatively higher cost or uncomfortable treatment. It was suggested that improvement of the practitioner's skill as well as improvement of coverage with public health insurance is the important factor to these remedies to gain a larger market share in Japan.

## Acknowledgements

All surveys included in this study were funded every financial year between 2002–2005 by Foundation for Training and Licensure Examination in Amma–Massage–Acupressure, Acupuncture and Moxibustion (Toyo Ryoho Kenshu Siken Zaidan), Tokyo, Japan (<http://www15.ocn.ne.jp/~ahaki/index.html>).

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Received December 28, 2007; accepted April 28, 2008



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