

Physicians Become Acupuncture Patients—Not Acupuncturists

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Abstract

Objective: The aim of this study was to investigate changes in personal and professional use of acupuncture among physicians in Norway between 1994 and 2004.

Design: Postal surveys were used.

Setting: The study was conducted in Norway.

Subjects: Proportional, stratified, random samples of working members of the Norwegian Medical Association under 71 years of age were chosen to participate. Sampling frame, sample, and, respondents were, respectively 11,728; 1466; and 1135 (77%) in 1994 and 16,462; 1646; and 962 (58%) in 2004.

Main outcome measures: The main outcome measures were personal and professional use of acupuncture, which were analyzed overall and separately for gender, age, and position within a year and between years by multivariate logistic regression analysis.

Results: The percentage of physicians having used acupuncture for own disease or complaint has more than doubled, 18% in 2004 versus 8% in 1994 ($OR\ 2.19; p < 0.001$) and half of the physicians intended to use acupuncture for own disease or complaint, 55% in 2004 and 53% in 1994 ($p = 0.245$). Four percent (4%) practiced acupuncture in both years and, in 2004, fewer intended to train in acupuncture, 5% in 2004 versus 8% in 1994 ($OR\ 0.64; p = 0.033$). In both years, more than a third recommended acupuncture for migraine, 37% and 41% ($p = 0.569$).

Conclusions: Physicians in 2004, compared to 1994, still had positive attitudes toward acupuncture as a therapeutic method, but were rather acupuncture patients than acupuncturists.

Introduction

DURING THE LAST DECADES, there has been an increasing interest in complementary and alternative medicine (CAM) among the general population, professionals, authorities, and politicians.^{1–7} Acupuncture is perceived as one of the most effective CAM modalities.^{1,5,8–13} Previous research among health personnel has mostly reported on CAM use in general and has often used small, regional, and selected samples.^{8,10,14–16} Variations in CAM use related to judicial, cultural, social, geographic, historical, and professional contexts make comparisons difficult.^{3,7,12,13,17} Few studies have assessed changes in CAM use over time. An Australian article reported no changes in attitudes toward CAM among general practitioners for the period 1997–2004.¹⁸ To our knowledge, possible changes regarding personal and professional use of acupuncture have not previously been investigated by reiterated surveys among the same population, except for surveys among medical students at the University of Tromsø,

in Tromsø, Norway.^{19,20} The aim of this study was to investigate changes in personal and professional use of acupuncture among physicians in Norway between 1994 and 2004.

Materials and Methods

Postal surveys were performed in February 1994²¹ and in November 2004²² among working physicians under 71 years old in Norway. More than 95% of physicians in Norway are members of the Norwegian Medical Association (NMA). The sampling frame was the NMA membership file. The samples were randomly selected proportionately according to distribution on occupational branches and age. In 1994, every eighth member was selected, and, in 2004, every tenth member was selected. The response rate and sociodemographic distribution of respondents and sampling frames is shown in Table 1. Both surveys were approved by the Regional Committee for Medical Research Ethics, in North Norway.

TABLE 1. PHYSICIANS IN NORWAY 1994–2004: RESPONSE RATE AND DISTRIBUTION OF RESPONDENTS AND SAMPLING FRAMES ACCORDING TO GENDER, AGE, POSITION, AND (VALID CASES)^a %^b

	1994		2004	
	Respondents n = 1135 (77%)	Sampling frame ^c n = 11,728	Respondents n = 962 (58%)	Sampling frame ^d n = 16,462
Gender (Valid cases)	(1124)		(936)	
Men	74.6	74.1	61.0	63.9
Women	25.4	25.9	39.0	36.1
Age (Valid cases)	(1113)		(936)	
<35	20.0	<45 57.6	20.3	21.0
35–44	37.7	>45 42.4	25.6	26.7
45–54	28.1		27.6	28.2
>54	14.1		26.5	24.1
Position (Valid cases)	(1099)		(940)	
Senior hospital physicians	34.7	31.3	35.1	32.0
Junior hospital physicians	18.4	21.6	21.7	30.8
General practitioners	29.8	26.6	23.8	23.1
Other physicians	17.2	20.5	19.4	14.1

^aCases with missing answers on the variable in question are excluded.

^bPercentages for respondents in 1994 and 2004 are calculated in SPSS.

^cPercentages for sampling frame 1994 as reported in Norheim & Fønnebo 1998.²¹

^dPercentages for sampling frame 2004 as given by the Norwegian Medical Association.

The surveys consisted of 13 main questions concerning personal and professional use of acupuncture and opinions on effects, side-effects, research, and incorporation of acupuncture into the health care system. To shed additional light on professional use, a question on referral for migraine was included. The phrasing of the selected ques-

tions for the present study was identical for the two years (Table 2).

To investigate the effect of the passage of time, physicians in 1994 were compared to physicians of the same age in 2004. Comparison was performed by logistic regression analyses overall and separately for gender and subgroups of age and

TABLE 2. SELECTED QUESTIONS FOR THE PRESENT STUDY, RESPONSE ALTERNATIVES IN THE QUESTIONNAIRES, AND SUMMARY OF YES RESPONSES (NUMBER),^a % WITH CI,^b ADJUSTED OR^c WITH CI, AND *p*-VALUE FOR OR^d

	1994	2004	OR	<i>p</i> -Value for OR
Personal use of acupuncture				
Have you ever visited an acupuncturist to get treatment for your own disease or complaint?	(1131) 8.3	(951) 17.6	(2010) 2.19	
yes/no	6.7–9.9	15.2–20.0	1.65–2.91	<0.001
If you ever got complaints or diseases for which acupuncture could be an alternative, would you then consider acupuncture as a real alternative?	(1118) 53.2	(937) 55.0	(1983) 1.12	
yes/no/do not know ^e	50.3–56.1	51.8–58.2	0.93–1.35	0.245
Professional use of acupuncture				
Do you practice acupuncture yourself?	(1119) 3.8	(946) 3.8	(1993) 0.95	
yes/no	2.7–4.9	2.6–5.0	0.58–1.55	0.829
If no, do you intend to learn acupuncture to use the method to treat your own patients?	(1061) 7.8	(897) 4.6	(1889) 0.64	
yes/no/do not know ^e	6.2–9.4	3.2–6.0	0.42–0.96	0.033
Do you recommend acupuncture for your migraine patients? ^f	(935) 40.5	(772) 37.3	(1658) 0.94	
yes/no	37.4–43.6	33.9–40.7	0.76–1.16	0.569

^aValid cases in the analysis when cases with missing answers are excluded.

^b95 % confidence interval (CI).

^cOdds ratio (OR), reference category 1994, adjusted for gender, age, and position.

^dSignificant *p*-values are in bold.

^eThe questions were dichotomized in the analyses to contrast the number that answered “yes” to the number that answered “no” or “do not know”.

^fThis question was introduced in the questionnaire under a heading: Referral routines.

TABLE 3. PHYSICIANS' PERSONAL USE OF ACUPUNCTURE 1994–2004 SEPARATELY FOR MEN, WOMEN, AND CATEGORIES OF AGE AND POSITION; %, ADJUSTED OR,^a *P*-VALUE FOR OR,^b AND ADJUSTED *P*-VALUE FOR DIFFERENCES BETWEEN SUBGROUPS WITHIN YEAR

	<i>Have used</i>				<i>Intend to use</i>			
	1994	2004	<i>Between years</i>		1994	2004	<i>Between years</i>	
			OR	<i>p</i> OR			OR	<i>p</i> OR
Gender								
Men	7.2	13.2	2.00	<0.001	49.8	50.4	1.09	0.439
Women	11.3	24.7	2.62	<0.001	63.2	62.8	1.14	0.457
Adjusted <i>p</i> within year	0.058	<0.001			0.030	0.001		
Age								
<35	9.0	21.1	2.49	0.004	63.6	57.9	0.73	0.148
35–44	8.3	17.5	1.95	0.011	56.7	60.4	1.13	0.501
45–54	8.7	17.5	2.13	0.005	50.0	54.4	1.09	0.627
>54	5.7	15.7	2.77	0.009	35.9	49.2	1.64	0.023
Adjusted <i>p</i> within year	0.484	0.691			0.058	0.458		
Position								
Senior hospital physicians	5.0	15.5	3.26	<0.001	37.3	51.5	1.81	<0.001
Junior hospital physicians	11.4	21.1	2.09	0.011	62.9	56.2	0.66	0.056
General practitioners	8.3	18.3	2.29	0.003	64.9	63.8	0.96	0.850
Other physicians	10.6	16.5	1.18	0.631	52.4	50.0	0.89	0.604
Adjusted <i>p</i> within year	0.038	0.747			<0.001	0.015		

^aOdds ratio (OR), reference category 1994, adjusted for gender, age, and position when appropriate.

^bSignificant *p*-values are in bold.

position. To investigate the effect of physician aging, physicians in 1994 were compared to physicians 10 years older in 2004 by grouping respondents according to year of birth instead of according to age. Logistic regression analyses could only be performed for cohorts born before 1970, as younger participants were only represented in 2004. To explore possible changes in differences between subgroups over the years, analyses were performed separately for each survey. When multivariate analysis was not appropriate, Fisher's exact test and Pearson's chi-square were used and *crude p* was reported. Possible differences regarding distribution of gender, age, and position between the two populations and between respondents and respective population were tested by Fisher's exact test, two-sided, for 2×2 tables, and Pearson's chi-square, two-sided for larger tables. No correction was made for repeated measure, as the samples were independent. Statistical software used was the Statistical Package for the Social Sciences.²³ Level for statistical significance was set to *p*=0.05, two-sided. The databases MEDLINE,® PubMed, and EMBASE were searched for literature on acupuncture, doctor, attitude, and use.

Results

Use of acupuncture for own disease or complaint

The percentage of physicians having used acupuncture personally has more than doubled from 8% in 1994 to 18% in 2004 (OR 2.19; *p*<0.001; Table 2). The increase was seen in every subgroup of gender, age, and position; however, this was not at a significant level for the category Other Physicians (Table 3). The increase was seen among physicians born between 1940 and 1970 (*p*<0.050) but not among those born before 1940 (*n*=197; *p*=0.204). Significantly more female than male physicians used acupuncture for own disease

or complaint in 2004 (*p*<0.001). In 1994, no gender difference was detected. Differences between positions were no longer significant in 2004. Neither in 1994 nor in 2004 were there any differences between age groups (Table 3).

In both 1994 and 2004, half of the physicians reported that they intended to use acupuncture personally (Table 2), with significantly more female than male physicians (*p*=0.030) reporting this and general practitioners to a greater extent than physicians in other positions reporting this (*p*=0.015; Table 3). There was no change for any cohort. Intentions for personal use were more common among physicians who had been acupuncture patients, compared to those who had not had such treatment; this was 75.5% versus 24.5% in 1994 and 74% versus 26% in 2004 (*p*<0.001 for both years).

Use of acupuncture in clinical practice

The percentage of physicians practicing acupuncture was 4% for both years (Table 2), with no change in any subgroup or cohort in nonadjusted analyses (*crude p*>0.109). In 1994, significantly more male than female physicians practiced acupuncture (*p*=0.012). Ten (10) years later there was no gender difference. There were no differences between age groups in 1994. In 2004, physicians older than 54 practiced acupuncture more often than younger ones (*p*=0.022). General practitioners still treated patients with acupuncture more often than other physicians did (*p*=0.001; Table 4).

The overall percentage of physicians planning to be trained in acupuncture had decreased from 8% to 5% (OR 0.64; *p*=0.033; Table 2). The decrease was significant only for male physicians (OR 0.46; *p*=0.007; Table 4). In 2004, male physicians no longer reported that they intended to be trained in acupuncture to a greater extent than did female physicians, but general practitioners still had more interest in

TABLE 4. PHYSICIANS' PROFESSIONAL USE OF ACUPUNCTURE 1994–2004 SEPARATELY FOR MEN, WOMEN, AND CATEGORIES OF AGE AND POSITION, %, ADJUSTED OR,^a *p*-VALUE FOR OR,^b AND ADJUSTED *p*-VALUE FOR DIFFERENCES BETWEEN SUBGROUPS WITHIN YEAR

	<i>Practice^c</i>		<i>Intend to practice</i>				<i>Recommend referral for migraine</i>			
	1994	2004	1994	2004	<i>Between years</i>		1994	2004	<i>Between years</i>	
					OR	<i>p</i> OR			OR	<i>p</i> OR
Gender										
Men	5.0	4.9	8.4	3.4	0.46	0.007	39.9	38.0	^c	^c
Women	0.7	2.2	6.1	6.0	1.19	0.631	42.4	36.6		
Adjusted <i>p</i> within year	0.012	0.653	0.037	0.216			0.699	0.196		
Age										
<35	1.3	1.1	10.6	7.6	^c	^c	37.0	22.7	0.54	0.015
35–44	4.1	1.7	9.9	5.2			42.9	38.3	0.85	0.410
45–54	5.2	5.4	5.2	3.0			44.1	47.2	0.97	0.883
>54	4.5	6.5	3.5	3.5			31.1	40.1	1.37	0.203
Adjusted <i>p</i> within year	0.288	0.022	0.114	0.282			0.039	0.007		
Position										
Senior hospital physicians	1.6	2.4	3.5	2.2	0.66	0.401	27.8	31.6	1.18	0.417
Junior hospital physicians	0.5	1.5	6.7	5.1	0.68	0.399	33.3	24.0	0.67	0.113
General practitioners	9.6	10.8	15.2	9.2	0.60	0.110	54.7	57.6	0.96	0.817
Other physicians	2.7	0.6	5.7	2.8	0.34	0.064	40.2	31.5	0.67	0.123
Adjusted <i>p</i> within year	<0.001	<0.001	<0.001	0.004			<0.001	<0.001		

^aOdds ratio (OR), reference category 1994, adjusted for gender, age, and position when appropriate.

^bSignificant *p*-values are in bold.

^cMultivariate analyses were not appropriate because of low number of valid cases.

such training than had other physicians ($p < 0.004$; Table 4). More than one third of the physicians recommended referrals to acupuncture practitioners for migraine, with no change from 1994 to 2004 (Table 2), except for a decrease among physicians <35 years old (OR 0.54; $p = 0.015$; Table 4). There was no change for any cohort regarding intention to be trained in, or recommending referral for, acupuncture treatment.

Discussion

Principal findings

The percentage of physicians having used acupuncture for own disease or complaint had more than doubled, while the percentage practicing the method was low and unchanged from 1994 to 2004.

Selection bias

The study comprised two fairly large, national samples. Given that the sampling frames included more than 95% of physicians in Norway and that the samples were randomly drawn and proportionally stratified; it does not appear that selection bias in the sampling process had a decisive influence on the results. However, self-selection might have had an impact. The fall in response rate from 1994 to 2004 might have been a result of survey fatigue¹⁸ and, thus, perhaps physicians who were not interested in acupuncture did not reply. Different judicial, cultural, and professional contexts of

the two surveys might also have had an impact. In 1997, the Ministry of Health and Social Affairs appointed the Alternative Medicine Committee, and the Committee's report became a turning point regarding CAM in Norway.⁵ The National Research Center in Complementary and Alternative Medicine (NAFKAM) was established in 2000.²⁴ and relevant legislation was enacted in 2001²⁵ and 2004.²⁶ The lower response rate in 2004 might be a result of less controversy regarding CAM, making it less imperative to communicate opinions from physicians without a personal interest in acupuncture.^{12,13}

The population of physicians consisted of relatively more women, physicians older than 45, and junior hospital physicians; there were fewer general practitioners and Other Physicians in 2004 than 1994. Respondents were not representative of their populations regarding subgroups of position. To counter these discrepancies, the study was mainly performed with multivariate analyses with adjustments for differences in distribution of gender, age, and position.

Information bias

The study focused on acupuncture, which presumably reduced information bias compared to questionnaires on CAM in general, where answers might have been influenced by the general context. By comparing data from two identical surveys, we probably avoided some bias associated with comparison of results from studies with different designs. Possible overlap between the samples was unknown. Parti-

participants might have been influenced by their own earlier answers when presented with identical questions 10 years later. This did not seem to be likely or frequent or likely to bias the results systematically in one direction. The study addressed actual behavior and behavioral intentions, using questions that were less prone to information bias than questions on attitudes and feelings would have been. It is not known to what extent different understanding of questions; recall bias; forced response alternatives; or different judicial, cultural, and professional contexts in 1994 and 2004 might have influenced the answers.

Personal use of acupuncture

The increase in personal use of acupuncture was seen in every age group when physicians in 1994 were compared to physicians of the same age in 2004. This seemed to point toward underlying factors related to the passage of time. The increase was also seen when physicians in 1994 were compared to physicians 10 years older in 2004; however physicians 54 and older in 1994 aging to 64 and older in 2004 did not increase their personal use of acupuncture. This seemed to point away from aging as an important additional underlying factor. The possibility that the increase in personal use was more an effect of passage of time was also strengthened by the fact that no other results in the study were related to aging. An important factor related to the passage of time from 1994 to 2004 in the Norwegian context is the new legislation following the official report on CAM in 1998.⁵ After this legislation, research in CAM and acupuncture has been well-positioned in Norwegian medical society.^{9,27}

There was no overall change regarding intentions for personal use. However, both in 1994 and 2004, more than half of the physicians reported that they intended to use acupuncture personally, and the intention for future use was strengthened by former use. In 2004, female physicians had used and intended to use acupuncture personally to a higher extent than did male physicians. This might be explained by the fact that acupuncture was offered in 85% of Norwegian maternity wards by 2003.²⁸

The increase in personal use of acupuncture rose by ~50% in the general Norwegian population during this period. In 1995, 19% of the general population had tried acupuncture treatment²⁹ and, in 2006, 28% had tried it.³⁰ The more than doubling from 8% to 18% among physicians thus seems to reflect a profession-specific phenomenon. In the following portion of this discussion, the results from other studies are mentioned; however, it is important to bear in mind that crude comparison of percentages is methodologically dubious.

The percentage of general practitioners who used acupuncture for own disease or complaints was the same as for the respondents overall; 8% in 1994 and 18% in 2004. Others researchers reported percentages for general practitioners as 11% in Germany and 2% in the United Kingdom in 2000,¹⁷ and 12% in Australia in 2004.¹⁸ The difference between Germany and the United Kingdom is explained by the differences in medical health care systems and medical education.¹⁷ However, acupuncture is not a compulsory part of the medical curriculum in Norway, and differences in education might not explain why the percentage in Norway is closer to

the percentage in Germany than to the one in the United Kingdom. The seemingly lower percentages in Germany and the United Kingdom in 2000 compared to the data for this study, which occurred 4 years later, might be related to passage of time.

Professional use of acupuncture

The overall proportion of physicians practicing acupuncture in 1994 (4%) is in concordance with a Norwegian study, conducted in 1995.¹¹ Our study indicated no change from 1994 to 2004. For general practitioners, the percentage is constant at ~10%. An Australian study also indicated no change regarding general practitioners' professional use of acupuncture in this period; however, this was based on crude comparison of percentages in a regional survey in 1997 (21%) and a national survey in 2004 (18%).¹⁸ Acupuncture provided by a qualified physician has been eligible for reimbursement from the Australian Medicare Benefits Schedule (MBS) since 1981 (personal communication, director David Hennessy, B.A., Grad.Dip.Pub.Law, director, Medicare Specialist Services Review, MBS Policy Implementation Branch, Medical Benefits Division, March 2008). This might partially explain the seeming difference in professional use of acupuncture among general practitioners in Australia compared to Norway. The seeming lower interest in professional use of acupuncture among hospital practitioners and specialists, might partially be explained by the modes and settings of their work compared to those of general practitioners.⁹

The proportion of physicians recommending referral for acupuncture treatment for migraine was constant ~40% in our study. The Norwegian study conducted in 1995¹¹ was cited showing a high referral rate of 65% for acupuncture in general.^{5,9,31} However, there is a misprint in the paper (personal communication, Olaf G. Aasland, M.D., M.H.A., professor, Institute of Health Management and Health Economics, University of Oslo, Oslo, Norway, and director, The Research Institute of the Norwegian Medical Association, Oslo, Norway, January 2006). The correct percentage was 32%. A review of 19 studies conducted during 1982–1995 in different industrialized countries found a variation from 1% to 24% (mean 17%) of physicians practicing acupuncture and a variation from 8% to 71% (mean 43%) regarding referral for acupuncture.¹² Differences in study design and context made it difficult to interpret the results and compare them to our study. Fewer male physicians intended to be trained in acupuncture for clinical use in 2004 compared to 1994. This could be interpreted as an adjustment between genders, given that there was no longer a gender difference in 2004.

The ratio of physicians versus nonphysicians being trained in acupuncture changed from 1:10 to 1:5 in this period. In 1995, all together 161, health personnel (of whom approximately 25% were physicians; personal communication, Bozidar Gardasevic, P.T., chairman of the board, Norwegian Medical Acupuncture Society [NFMA] March 2008) and 274 non-health personnel had been trained in acupuncture.³² In 2004 the approximate numbers were 300 physicians, 1000 other health personnel, and 600 non-health personnel.⁶

The seeming discrepancy between increased personal but not professional use could partially be explained by lack of specific reimbursement or difficulty in accommodating more

time-consuming therapies in a busy clinic.^{16,31} And, in spite of the 50% increase in use of acupuncture in the general population and the relatively higher increase in the number of physicians being trained in acupuncture compared to nonphysicians, an additional factor could be lack of patient demand. Possible underlying factors for lack of patient demand for physician-provided acupuncture could be related to the reasons why patients seek acupuncture treatment, differences regarding content of acupuncture training and therapeutic options between physicians and nonphysicians, increased availability of nonphysician acupuncturists and, again, lack of specific reimbursement for physician-provided acupuncture.

The fact that still more than one third of the physicians recommends referral to acupuncture for migraine weakened the seeming discrepancy between increased personal but not professional use. Physicians increasingly becoming acupuncture patients more than acupuncturists might be interpreted as increased acceptance of both the therapeutic method and the non-physician acupuncturists. The question of whether this also relates to non-health personnel acupuncturists was, however, left unanswered.

Conclusions

Use of acupuncture for own disease increased among physicians in Norway from 1994 to 2004, while professional use was unchanged. The reasons why physicians increasingly become acupuncture patients and not acupuncturists should be addressed by qualitative and epistemologic research methods³³ and a distinction needs to be made between traditional Chinese and Western medical acupuncture.²² This could shed light on the question of the meeting of the two medical paradigms and on possible implications for the health care system.

Disclosure Statement

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