

# THE ATTITUDES OF PHYSICIANS, NURSES, PHYSICAL THERAPISTS, AND MIDWIVES TOWARD COMPLEMENTARY MEDICINE FOR CHRONIC PAIN: A SURVEY AT AN ACADEMIC HOSPITAL



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**Objective:** To assess the attitudes of physicians, nurses, physical therapists, and midwives toward complementary medicine (CM) at a Swiss academic hospital and toward its use for treating chronic pain.

**Design:** The cross-sectional survey took place from October to December 2013.

**Setting:** An e-mail sent to 4925 healthcare professionals (1969 physicians, 2372 nurses, 145 physical therapists, and 111 midwives) working at Lausanne University Hospital, Switzerland, invited them to answer a web-based questionnaire.

**Results:** The questionnaire was answered by 1247 healthcare professionals (response rate: 25.3%). Of these, 96.1% strongly agreed or agreed that CM could be useful for the treatment of chronic pain, with more nurses (96.7%) and midwives (100%) than physicians (93.8%) agreeing that CM could be useful ( $P < .001$  for both comparisons). Women had more positive

attitude toward CM than men (97.8% versus 91.2%;  $P < .001$ ). Of the respondents, 96.9% were strongly in favor or in favor of offering CM, especially hypnosis (89.8%), osteopathy (85.5%), and acupuncture (83.4%), at the hospital for treating chronic pain. Respondents listed migraine (74.7%), tension headaches (70.6%), and low back pain (70.1%) as three main conditions for which they would refer patients for acupuncture. The three therapies with which respondents were the most unfamiliar were neuraltherapy (57.2%), mindfulness-based stress reduction (MBSR) (54.1%), and biofeedback (51.9%). Over half of respondents, 58.3%, had never referred a patient to a CM practitioner. A total of 84.3% of the respondents felt that they lacked the knowledge to inform their patients about CM.

**Key words:** Complementary therapies, health knowledge, practice, attitude of health personnel, chronic pain

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## INTRODUCTION

Chronic pain is a major health issue that affects up to 20% of the European population.<sup>1</sup> Chronic pain is challenging to manage, and some patients experience difficulties with conventional therapies.<sup>2,3</sup> Accordingly, 52% of patients with

chronic pain report using complementary medicine (CM).<sup>2</sup> Notably, chronic pain is the most commonly reported condition for CM use.

The National Center for Complementary and Integrative Health (NCCIH) defines CM as "a group of diverse medical and healthcare systems, practices and products that is not presently considered to be part of conventional medicine."<sup>4</sup> CM use has increased in recent decades in Europe and the United States.<sup>5-7</sup> At the Mayo Clinic, 44% of physicians would refer a patient to a CM practitioner if CM was available.<sup>8</sup> In another study, 53% of physicians stated that they would consider acupuncture for themselves if they had health problems in which acupuncture could be an alternative treatment.<sup>9</sup> Furthermore, 38% of them recommended acupuncture to their migraine patients.

A study showed that many physical therapists (46.9%) frequently used acupuncture to treat low back pain.<sup>10</sup> They also believed that acupuncture, massage, osteopathy, chiropractic, and yoga were effective for the treatment of

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low back pain. A Swedish study at university hospitals found that significantly more physical therapists than physicians and nurses practiced CM ( $P < .001$ ).<sup>11</sup>

The aim of this survey was to evaluate the attitudes of physicians, nurses, physical therapists, and midwives at an academic center toward CM for the treatment of chronic pain and toward the potential use of CM. Health practitioners' opinions and attitudes toward a specific treatment have an effect on patient outcome.<sup>12</sup> Therefore, understanding and evaluating healthcare professionals' attitudes toward CM therapy is important. Moreover, few studies have evaluated the attitudes of health professionals toward CM at an academic center.

## METHODS

### Study Population and Setting

A cross-sectional survey was conducted among all physicians, nurses, physical therapists, and midwives working at Lausanne University Hospital, Switzerland. An invitation to complete an anonymous, web-based survey was e-mailed in October 2013 to 4925 healthcare professionals, including 1969 physicians, 2697 nurses, 148 physical therapists, and 111 midwives. A reminder was sent one month later. To facilitate recruitment, every fifth respondent was given a voucher for a local bookshop.

### Development of the Questionnaire

Our questionnaire was adapted from other surveys among healthcare professionals,<sup>8,13</sup> as none were found that specifically asked about attitudes toward CM for chronic pain. There were three parts to the questionnaire: sociodemographic data, attitude toward the introduction of CM at an academic center for the treatment of chronic pain, and general attitude toward CM. As it was inspired mainly by American questionnaires, we discussed how to adapt the questions to the reality of clinical practice and CM use in Europe. Many questions on our questionnaire came from English language questionnaires and the questionnaire we provided was in French; accordingly, we checked the correspondence of the two versions in both languages, with native French and English reviewers performing forward and backward translations. The questionnaire was pre-tested by 10 healthcare professionals to verify its quality, question formulation, and to make final corrections and adjustments. The final version included 32 closed-ended questions. Questions related to attitudes toward complementary medicine in chronic pain were rated using 5-point Likert-type scales. It took 20 min to fill in the questionnaire. The study was approved by the local ethics committee.

### Statistical Analysis

Associations between categorical variables were tested using chi-squared tests for contingency tables or Fisher's exact tests, depending on the table cell size. Associations between categorical qualitative nominal and ordinal variables were tested with Kruskal-Wallis tests. Associations between two ordinal variables were tested using Kendal's tau correlation

coefficients. The statistical analyses were performed using Stata software, version 13.1 (StataCorp LP, TX, USA).

## RESULTS

### Study Population

Of the 4925 professionals who were invited to complete the questionnaire, 1247 responded (response rate: 25.3%). Of the respondents, 320 were men (25.7%; response rate: 19.0%), 922 were women (73.9%; response rate: 28.4%), and 5 (0.4%) did not respond. The professions of the respondents were as follows: 256 physicians (20.8%; response rate: 13.0%), 879 nurses (71.0%; response rate: 35.6%), 68 physical therapists (5.5%; response rate: 46.0%), and 34 midwives (2.8%; response rate: 30.6%). Table 1 shows the following data for the respondents: gender, age, profession, main professional activity, and training in CM. The mean (standard deviation; SD) number of years of professional experience was  $13.3 \pm 9.9$ , and the mean number of years working at Lausanne University Hospital was  $8.9 \pm 8.1$  years. The number of professionals working directly with patients was 1166 (93.5%), and 948 (76.0%) respondents did work that was directly related to pain management.

Of the 1247 respondents, 196 (15.8%) were trained in a CM modality (26.5% of midwives, 20.6% of physical therapists, 16.8% of nurses, and 9.7% of physicians), with

**Table 1.** Sociodemographic Characteristics of the Survey Respondents ( $n = 1247$ )

Sociodemographic Characteristics	Number (%)
Gender	
Female	922 (73.9%)
Male	320 (25.7%)
NR <sup>a</sup>	5 (0.4%)
Age (years)	
≤ 35	357 (28.7%)
36–45	567 (45.7%)
46–55	223 (7.7%)
≥ 56	95 (18.0%)
NR <sup>a</sup>	5 (0.4%)
Profession	
Nurse	879 (71.0%), sex ratio (M/F) = 0.2
Physician	256 (20.8%), sex ratio (M/F) = 1.0
Physical therapist	68 (5.5%), sex ratio (M/F) = 0.5
Midwife	34 (2.8%), sex ratio (M/F) = 0.1
NR <sup>a</sup>	9 (0.7%)
Main activity	
Clinic	1072 (86.0%)
Management	129 (10.3%)
Research	46 (3.7%)
Training in practicing one or more CM	
No	1050 (84.2%)
Yes	196 (15.8%)

<sup>a</sup>NR, no response.



**Table 2.** Attitudes of Healthcare Professionals Toward Complementary Medicine (CM) for the Treatment of Chronic Pain ( $n = 1247$ )

Questions	Frequency (%)
Do you think that some CM modalities can be useful for the treatment of patients with chronic pain?	
Strongly agree	893 (71.6%)
Agree	306 (24.5%)
Neither agree nor disagree	43 (3.5%)
Disagree	3 (0.2%)
Strongly disagree	2 (0.2%)
If it were available at the academic hospital, would you recommend CM to a patient with chronic pain?	
Strongly agree	850 (68.2%)
Agree	336 (26.9%)
Neither agree nor disagree	51 (4.1%)
Disagree	7 (0.6%)
Strongly disagree	3 (0.2%)
Have you ever referred a patient to a CM practitioner for the treatment of chronic pain?	
No	727 (58.3%)
Yes	520 (41.7%)
Are you in favor of the introduction (not necessarily in the department in which you work) of CM that has been proven efficacious in the treatment of chronic pain in an academic hospital?	
Yes, very in favor	861 (69.1%)
Yes, in favor	347 (27.8%)
Neutral	31 (2.5%)
No, not in favor	5 (0.4%)
No, not in favor at all	3 (0.2%)

59 (30.1%) trained in reflexology, 26 (13.3%) in aromatherapy, 25 (12.8%) in massage, and 23 (11.7%) in hypnosis.

The gender distribution and professions of the respondents were compared with non-respondents ( $n = 3678$ ). Men were more likely to respond than women [non-responding men,  $n = 360$  (13.4%) versus responding men,  $n = 320$  (25.8%);  $P = .001$ ]. Physical therapists (response rate: 46%) followed by nurses (response rate: 32.6%) and midwives (response rate: 30.6%) responded significantly more than physicians (response rate: 13.1%;  $P < .001$ ). The only statistically significant difference between male versus female respondents and non-respondents was that female physicians were more likely to respond than male physicians [non-responding female physicians,  $n = 725$  (42.9%) versus responding female physicians,  $n = 127$  (49.6%;  $P = .044$ )].

#### Attitudes Toward CM for the Treatment of Chronic Pain

Table 2 shows the attitudes of healthcare professionals toward CM for the treatment of chronic pain. We found that 96.1% of respondents strongly agreed or agreed that some CM

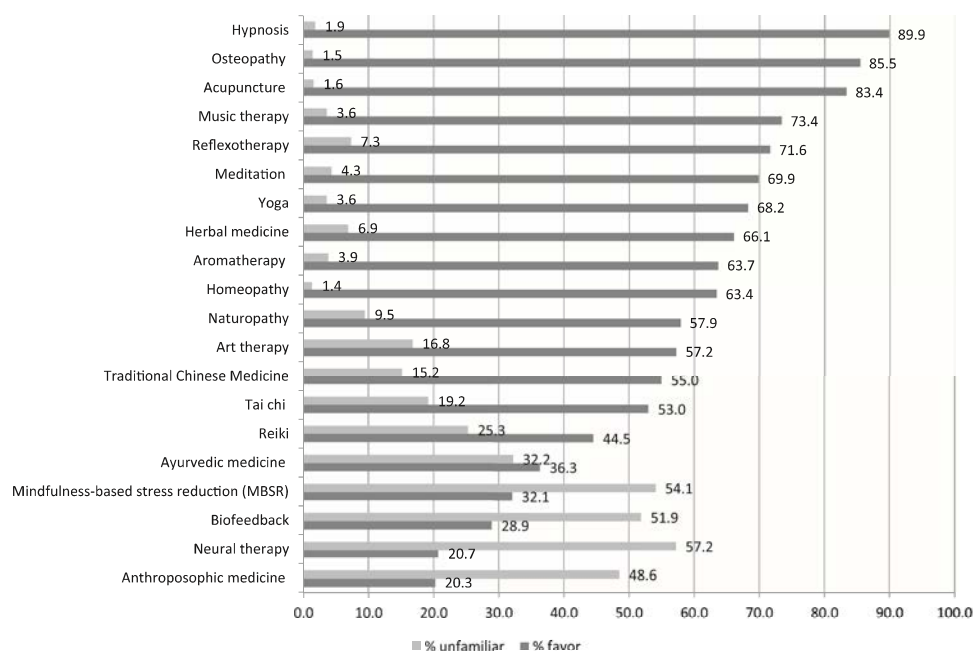
modalities could be useful for the treatment of chronic pain, with nurses and midwives finding CM more useful than physicians (96.7% versus 93.8%;  $P < .001$  and 100% versus 93.8%;  $P < .001$ ). Women had a better opinion of CM than men (97.8% versus 91.2% in favor of CM;  $P < .001$ ). Only 0.5% ( $n = 5$ , all physicians) of the entire sample disagreed or strongly disagreed that CM could be useful for the treatment of chronic pain. There were no significant differences in opinions of CM according to age in any of the professions, except for physical therapists; younger physical therapists had a significantly more positive opinion of CM than older physical therapists (Fisher's exact test,  $P = .007$ ).

Respondents trained to practice a CM modality (15.8%) were significantly more likely to talk about the benefits of CM to their patients (41.1% versus 22.4% of those who were not trained in CM;  $P < .0001$ ).

We found that 95.1% of respondents would recommend CM to a patient with chronic pain if it was available at Lausanne University Hospital. Further, 96.9% of respondents were strongly in favor of or in favor of the introduction of CM for treating chronic pain, especially hypnosis (89.8%), osteopathy (85.5%), and acupuncture (83.4%). The three therapies with which respondents were the most unfamiliar were neuraltherapy (57.2%), mindfulness-based stress reduction (MBSR) (54.1%), and biofeedback (51.9%) (Figure 1).

Women were more in favor of the introduction of CM into the university hospital setting than men (98.1% versus 93.4%;  $P < .001$ ), and nurses and midwives were more in favor than physicians (98.0% versus 94.2%;  $P < .001$  and 100% versus 94.2%;  $P < .001$ ). There was no significant difference in the opinions of physical therapists and physicians in terms of introducing CM (92.6% versus 94.2%;  $P = .133$ ). Among 10 chronic pain conditions proposed in the questionnaire, the healthcare professionals responded that they would be most likely to refer patients for acupuncture treatment if they had migraine (74.7%), tension headaches (70.6%), low back pain (70.1%), cervical pain (67.2%), fibromyalgia (66.2%), or neuropathic pain (62.3%). However, the majority of respondents had never referred a patient to a CM practitioner. Women, nurses, and midwives had a better opinion about the usefulness of CM in the treatment of chronic pain than men and physicians (Table 3).

Midwives stated that they initiated discussions about CM with a patient significantly more often than the other professionals (66.7% versus 37.7% of physical therapists,  $P < .001$ ; versus 35.6% of nurses,  $P < .001$ ; and versus 26.9% of physicians,  $P < .001$ ). A total of 84.3% of the respondents felt that they lacked the knowledge to inform their patients about CM. Lack of knowledge was not significantly different between physicians (81.7%) and nurses (86%), while physical therapists (75%) thought they lacked knowledge significantly less than physicians ( $P = .003$ ) and nurses ( $P = .0001$ ). Healthcare professionals without training in a CM declared having a significantly higher lack of knowledge (89.3%) to inform their patients about CM than trained professionals (57.4%;  $P < .0001$ ). 44.2% of respondents found it difficult or very difficult to find reliable information regarding CM.



**Figure 1.** The percentage of respondents ( $n = 1247$ ) in favor of the introduction of complementary medicine (CM) at their academic hospital and the percentage who were unfamiliar with different types of CM.

## DISCUSSION

To our knowledge, this is the first study to ask physicians, nurses, physical therapists, and midwives about the use of CM for chronic pain in an academic hospital. Our results show that the vast majority of healthcare professionals (96.9%) were in favor of introducing CM, especially hypnosis, osteopathy, and acupuncture, into the academic hospital setting to treat chronic pain. These findings are consistent with a study that found that 97% of physicians had a positive attitude toward and a favorable experience with acupuncture for chronic pain management.<sup>14</sup> Moreover, 95.1% of the respondents in our study would recommend CM treatment for chronic pain if it were available at the academic hospital. This is consistent with the increasing willingness to use CM demonstrated in an 8-year follow-up study.<sup>15</sup> Of the respondents in our study, 58.3% had never referred a patient to a CM practitioner, which is consistent

with studies in which 75% (2004) and 31% (2012)<sup>15</sup> of the respondents had never referred a patient to a CM practitioner.

In our study, nurses and midwives had better opinions of CM than physicians, and women had better opinions of it than men. These findings are in accordance with those in a study of oncology professionals, which found that 4% of physicians, 33% of nurses, and 55% of clerks had positive attitudes toward CM, with women having more positive views of it than men (33% versus 14%,  $P < .0001$ ).<sup>16</sup> A literature review showed that being a young physician was more likely to be associated with having a positive attitude toward CM,<sup>17</sup> but our results showed no significant differences between younger and older respondents in terms of their opinions toward CM. The exception was that younger physical therapists had a better opinion of CM than older ones.

**Table 3.** Opinions Regarding the Usefulness of Complementary Medicine (CM) by Respondent Gender, and Profession

Sociodemographic Data	Strongly Agree or Agree That CM can be Useful in the Treatment of Chronic Pain	
	Frequency (%)	<i>P</i> Value
Gender		< .0001
Male	292 (91.3%)	
Female	902 (97.8%)	
Profession		
Nurse	850 (96.7%)	< .001 (compared to physicians)
Physician	241 (93.8%)	
Physical therapist	66 (97.1%)	= .050 (compared to physicians)
Midwife	34 (100.0%)	< .001 (compared to physicians)



Our results showed that the therapies that health professionals would recommend the most tended to be the ones with which they were more familiar. Hypnosis and acupuncture are among the three most recommended modalities by health professionals, and our respondents were familiar with them. This is not surprising, as hypnosis and acupuncture are already offered to chronic pain patients in the hospital. This result may be related to the increasing number of positive studies about acupuncture for the treatment of low back pain and headache as well as for chronic pain.<sup>18,19</sup> In contrast, many respondents were unfamiliar with neurotherapy (57.2%), MBSR (54.1%), and biofeedback (51.9%), three CM modalities that the majority of respondents would not recommend despite positive data for relieving pain.<sup>20–22</sup> In comparison, a 2006 US study found that only 6% of the respondents were unfamiliar with biofeedback. This difference can be explained by the availability of biofeedback devices in the US, which has resulted in more widespread use. Since the 1980s, MBSR has gained popularity in US medical settings with the development of specific programs and research.

A total of 84.3% of respondents thought they lacked sufficient knowledge to inform their patients about CM. This can be partly explained by the fact that CM is not sufficiently addressed in medical, nursing, and allied health education in Switzerland. In Germany, 73% of employees in a university clinic felt that they were not informed enough about CM to provide adequate counseling to their patients.<sup>23</sup> Another study showed that 84% of physicians thought they needed to learn more about CM to adequately address patient concerns.<sup>24</sup> Knowledge probably differs between the CM therapies, as shown in a national survey in the Netherlands where physicians stated that they had, for example, a better knowledge on probiotics (excellent or moderate knowledge: 56%) or homeopathy (47%), than on mind–body therapies (25%) or Chinese medicine (26%).<sup>13</sup> Our study showed that healthcare professionals with training in a CM declared a significantly better knowledge to inform their patients. A better knowledge is important since data showed that physicians asked patients more frequently about CM when they had a high knowledge level compared to a low level (OR = 4.2; 95% CI = 1.9–9.6,  $P = .001$ ).<sup>13</sup> The content of healthcare professionals' knowledge should also be carefully analyzed as most training programs are delivered without validated program and state exam. Although more nurses than physicians were trained in a CM in our study, both groups had about the same high lack of knowledge. Moreover, in our study, 44.2% of respondents found it difficult or very difficult to find reliable information regarding CM, compared to 62% in another study.<sup>25</sup> These results suggest that educational efforts are needed to make scientific information more accessible to clinicians. Implementing a referral service, as proposed by others,<sup>25</sup> interdisciplinary seminars about CM, and subscription to a CM database are all strategies that could be used to assist health professionals who wish to routinely include queries about CM into their clinical practice. We also suggest that when a new CM therapy is implemented at a hospital, it would be crucial to choose CM practitioners with high-

quality training who are willing to collaborate with conventional practitioners.

There are some limitations to this study. First, the survey was conducted at just one hospital, so it may not reflect the attitudes of healthcare professionals at other hospitals. However, our study was performed at a university hospital at a time at which the implementation of CM for patients was very limited. Second, professionals interested in CM may have participated more than others, resulting in potential self-selection bias and falsely positive results. To decrease this potential bias, we noted in the advertisement that participating in the survey was a good opportunity to give one's opinion about CM. Except for physicians with female physicians being more likely to respond than male physicians, our sample was representative for the gender of healthcare professionals working at our university hospital.

## CONCLUSIONS

Our results show that the majority of healthcare professionals at an academic hospital thought that some CM modalities should be offered to patients. Further, most would recommend CM to patients if it were available. These results show that professionals are not opposed to the concept of using integrative medicine for chronic pain, but most feel that they do not have adequate training or knowledge to discuss CM with these patients. There is a need to build well-designed and high-quality clinical studies in order to adopt evidence-based practices in this field.<sup>26</sup>

Chronic pain is complex and should be managed with a biopsychosocial approach. Consequently, integration of CM as part of a multidisciplinary team approach to reducing chronic pain will allow clinicians to become more familiar with these therapies, to use CM treatment at the appropriate time, and ultimately to provide better care to patients with chronic pain.

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