

# Complementary medicine courses in Swiss medical schools: actual status and students' experiences

Marie Nicolao<sup>a</sup>, Martin G. Täuber<sup>b</sup>, Florica Marian<sup>a</sup>, Peter Heusser<sup>c</sup>

<sup>a</sup> Institute of Complementary Medicine KIKOM, Faculty of Medicine, University of Bern, Switzerland

<sup>b</sup> Institute of Infectious Diseases, Faculty of Medicine, University of Bern, Switzerland

<sup>c</sup> Chair for Theory of Medicine, Integrative and Anthroposophic Medicine, Faculty of Medicine, University of Witten/Herdecke, Germany

## Summary

**Background:** In line with growing public popularity of complementary and alternative medicine (CAM), courses in CAM have been implemented in Medical Schools internationally, but as yet in an uncoordinated and heterogeneous way. In Switzerland, comprehensive data about CAM education at Medical Faculties are lacking.

**Objectives:** To survey courses at Swiss Medical Schools, document medical students' attitude toward and knowledge of CAM and their experience of CAM courses at medical schools. The aim was to determine the relationship between the presence/absence of CAM courses at each medical school and students' attitude toward, knowledge of, and motivation to learn about CAM.

**Methods:** Data about current courses in CAM were collected from the websites of the five Swiss Medical Schools and from an online questionnaire addressed to the CAM teachers (n = 13). All Swiss senior medical students (n = 640) were surveyed by an anonymous online questionnaire.

**Results:** There are two chairs for CAM in Bern and Zürich, CAM familiarisation courses are provided by external teachers in Basel and Lausanne, and there was no CAM education in Geneva. 38.3% of the senior medical students replied to

the survey. 80.0% of the students who visited CAM courses stated that they have improved their knowledge of CAM. There was no relationship between the presence of CAM education and a significant elevation of the self-assessed knowledge of CAM of the students. CAM education has no significant influence on students' opinions about CAM, nor does it significantly motivate them to deepen their study of CAM. Form, frequency and content of CAM courses are similarly as heterogeneous as in other countries.

**Conclusions:** There is no coordination or standard for CAM courses in Swiss Medical Schools. Our results suggest an overall positive attitude toward and positive personal experiences with CAM of Swiss medical students', but a relationship between the absence or presence of CAM courses and students attitudes and knowledge could not be found. A coordinated policy towards the integration of CAM in medical curricula is strongly recommended.

**Key words:** medical education; undergraduate medical curriculum; complementary and alternative medicine

## Introduction

Complementary and alternative medicine (CAM) consists of a mixture of various methods, whose mode of action and effectiveness are, in part, still a matter of intensive debate [1-4]. This situation, as well as growing popularity and increasing use of CAM in many countries, makes it necessary for physicians to be knowledgeable about CAM. This has led to a gradual integration of CAM courses into medical school curricula [5]. By 2003, 83% of US primary care medical school

faculties had offered CAM courses within primary care curricula [6]. At least 40% of European Medical Schools offer courses involving CAM [7, 8]. Most medical schools in the UK offer CAM familiarisation courses [9]. In Germany, CAM has become a required subject for all medical schools since 2003 [10]. CAM is also very popular in Switzerland. Two chairs for CAM were created upon popular demand at the Universities of Zürich (1994) and Bern (1995). In May 2009, a public

vote was held in which 67% of the national population voted for the formal consideration of CAM in the national constitution.

Surveys assessing the status, prevalence, and diversity of CAM education in medical schools are available for the US, Canada, Australia, Japan, Israel, UK, Germany, and other countries. Collectively, these surveys indicate that CAM has established a significant presence in undergraduate medical curricula [7, 8, 10–15]. Surveys gauging students' attitudes toward, knowledge of and interest in learning more about CAM in several countries unanimously show positive attitudes towards, and a high level of desire to learn about,

CAM in medical schools [16–24]. In Switzerland, such data as well as a meaningful educational policy in this respect are completely lacking on a national level. Only one survey by the University of Geneva exists, showing that 64% of medical students wanted to have CAM training at medical school [25]. For this reason, we decided to conduct a national survey with the aim to investigate whether and how CAM is integrated into the medical curricula in Switzerland and to document medical students' attitudes toward, experiences with, knowledge of, and desire to learn about CAM.

---

## Methods

### Current CAM education at Swiss Medical Schools

Information on CAM teachers and courses in the curricula was collected from the websites of the five Swiss Medical Schools between October 2006 and January 2007. Then, an online questionnaire gathering details about the specific CAM disciplines being taught and the format of the courses was developed and submitted to CAM teachers of the Swiss Medical Schools ( $n = 13$ ). These teachers were found through the websites of the medical faculties and information obtained from the deans, who were directly contacted by mail. The purpose of this questionnaire was to complete the data collected from the websites, with the aim to obtain a full and reliable description of CAM education in Switzerland. The results were discussed in a descriptive analysis and interpreted with a qualitative approach.

### Medical students' survey

We chose sixth year students to ensure, in the universities with CAM options, that students had completed CAM courses before answering the questionnaire. After referring to a possible previous personal use, the questionnaire encompassed five questions which were sampled and adopted from earlier studies [16, 17, 19–21, 24]. The following question and answer formats were used: Question 1: "How was your personal experience with the following CAM disciplines?", click "positive", "indifferent", "negative", or "no experience" for these disciplines: acupuncture and Traditional Chinese Medicine (TCM), anthroposophy, ayurveda, homeopathy, naturopathy and phytotherapy (these disciplines figured on the websites of the Swiss universities offering CAM courses and are the most frequently applied CAM disciplines by physicians in Switzerland). Question 2: "What is your opinion about the effectiveness of the following disciplines?", click "ef-

fective", "rather effective", "rather ineffective", or "ineffective" for disciplines as in question 1. Question 3: "How is your self-assessed knowledge of the following CAM disciplines?", click "could practise", "could advise", "heard about", or "don't know" for disciplines as in question 1. Question 4: "What is your opinion about the following assertions?", assertions as stated in table 8, click "strongly agree", "agree", "disagree", or "strongly disagree". Question 5 investigated exposure to CAM, prior to learning at medical school with the question and answer format indicated in table 9. As the questionnaire was designed to be accepted by the server even if it was not complete, the number of respondents ( $n$ ) could vary in the same group for the different items of one question. Therefore the results are presented in relative frequency tables (percentages). For each question, the  $n$ -range ( $n_{\min}$ – $n_{\max}$ ) figures in brackets under the header of each group of respondents. The responses of the questionnaire were entered and analysed using OpenEpi Version 2 open source calculator. Absolute frequencies of responses to each item of each question were tabulated separately and compared between the different groups of respondents in R by C tables. Chi squares, degrees of freedom, and p-values were calculated to identify statistically significant differences between the groups of students.

The survey among CAM teachers and students was performed from February to June 2007 with permission from the five medical faculties. The teachers received a letter, and the students an e-mail, that explained the study together with a request for them to participate by completing the online questionnaires. As the questionnaires were anonymous, we sent two follow-up e-mails to all respondents providing the updated status and the response rate of our study and asking those who had not yet answered to do so.

---

## Results

### CAM teachers and courses at Swiss Medical Schools

On the websites, we found that CAM courses were offered at the medical schools in Bern, Lausanne and Zürich. Basel and Geneva did not mention CAM or any CAM discipline. We then contacted all 13 CAM teachers with formal CAM

teaching assignments, who were found by the internet or who were mentioned by deans: four in Bern, three in Zürich and six in Lausanne. Replies were received from 10 (76.9%) teachers. The qualifications of the CAM teachers reported are depicted in table 1, and the structure, content and form of CAM courses are depicted in tables 2 and 3.

**Table 1**

Qualifications of CAM teachers.

Qualifications of CAM teachers	Bern		Zürich		Lausanne	
	yes	no	yes	no	yes	no
Physicians practicing CAM	4	0	2	0	3	0
Physicians practicing conventional medicine	2	2	1	1	3	0
Representatives of societies of physicians using CAM	4	0	1	1	0	2
Non-medical health professionals practicing CAM	0	4	1	1	1	1
Researchers in the field of CAM	4	0	2	0	1	1
Researchers in the field of conventional medicine	2	2	2	0	0	2
Physicians practicing CAM and conventional physicians in a debate	2	2	1	1	2	0
Others	1	3	1	1	2	0

**Table 2**

Structure of CAM courses at Swiss Medical Schools\* in hours per year.

Medical curriculum	Bern	Zürich	Lausanne	Basel
1st year	20 hours electives with 2 half-day practices	110 hours lectures (also for students of other faculties who choose the topic Naturopathy)	–	4 hours lectures
2nd year	20 hours electives with 2 half-day practices		–	–
3rd year	20 hours elective with 2 half-day practices		–	–
4th year	48 hours seminars (for students of all years)	–	12 hours lectures (familiarisation courses)	In project: 72 hours courses (elective, “learning with the patient”)
5th year	8 hours lectures	–	24 hours lectures; 16 hours seminars (also for students of other faculties who choose the topic TCM°)	
6th year	Clerkship 1 month	Clerkship	–	–

\* There is no CAM education at the Medical School of Geneva.

° TCM: Traditional Chinese Medicine.

**Table 3**

Content and form of CAM education at Swiss Medical Schools\*.

Content	Bern	Zürich	Lausanne	Basel
Acupuncture/TCM°	Yes	yes	yes	no
Anthroposophy	Yes	yes	yes	yes
Ayurveda	No	no	yes	no
Homeopathy	Yes	no	yes	no
Naturopathy	No	yes	no	no
Neural therapy	Yes	no	no	no
Phytotherapy	No	yes	no	no
Others	No	no	popular medicine, osteopathy, healing	no
Form	Bern	Zürich	Lausanne	Basel
Required	No	no	no	no
Elective	Yes	yes	yes	yes
Preclinical years	Yes	yes	no	yes
Clinical years	Yes	yes	yes	yes
ECTS-credits	Yes	no	no	in project
Faculty lectures	Yes	yes	yes	in project
Seminars	Yes	yes	yes	in project
Problem-based	No	yes	no	no
Patient presentation	Yes	no	yes	in project
Clerkship	Yes	yes	no	no
With examination	No	no	no	no
CAM thesis	Yes	yes	yes	no
Public lectures	Yes	yes	no	no

\* There is no CAM education at Medical School of Geneva.

° TCM: Traditional Chinese Medicine.

At the *Medical School of Bern*, all four CAM teachers responded to the questionnaire. The Institute of Complementary Medicine (KIKOM: Kollegiale Instanz für Komplementärmedizin) is responsible for CAM education for the undergraduate medical curriculum. Four disciplines are covered: TCM and acupuncture, anthroposophic medicine, homeopathy, and neural therapy. Most courses are electives and most of these are credit-rewarded. The teaching formats are lectures, seminars, problem-based learning and patient presentations.

At the *Medical School of Zürich*, two out of three CAM teachers filled in the questionnaire. The Institute of Naturopathy (Institut für Naturheilkunde), which is affiliated to the Department of Internal Medicine, offers CAM courses during

the undergraduate medical curriculum. The disciplines are: TCM/acupuncture, anthroposophic medicine, naturopathy and phytotherapy, taught by lectures, problem-based learning and seminars. All courses are electives and none of them are credit-rewarded.

At the *Medical School of Lausanne*, four of the six CAM teachers returned the questionnaire. Two departments organise CAM courses: the Department of Pharmacology and Toxicology offers elective, non-credit-rewarded familiarisation courses (lectures and patient presentations) in acupuncture, anthroposophic medicine, homeopathy, ayurveda, osteopathy, healing and popular medicine, and the Institute of History of Medicine and Public Health gives elective, non-credit-rewarded lectures and seminars on TCM.

Although the website of the *Medical School of Basel* does not mention CAM, some CAM courses are offered, as one of the Bern CAM teachers is regularly invited to lecture in Basel. A compulsory CAM lecture and a credit-rewarded elective within a program called “learning with the patient” were offered.

### Medical students' survey

We contacted all 640 sixth year medical students in Switzerland; 245 (38.3%) of them replied to the survey. Of the respondents, 136 (55.5%) were women and 109 (44.5%) were men. The re-

**Table 4**

Response rates of the students' survey.

	Bern	Zürich	Lausanne	Geneva	Basel	Total
Contacted students	148	186	100	84	122	640
Responding students	65	57	47	32	44	245
Response rate (%)	43.9	30.6	47.0	38.1	36.1	38.3

For this table  $p = 0.03954$ ; the difference between the response rates is not significant.

Response rates of the students of different medical schools did not vary to a statistically significant extent (table 4).

*Students' personal experience with CAM (table 5)*

Only homeopathy had been experienced by more than half of the total students (61.8%). Naturopathy had been experienced significantly

more by students from Zürich (37.0%) than by any of the other groups of students. The personal experience with CAM was rather positive for the majority of students (mean value 74.3%). Homeopathy was the only discipline to show a statistically significant disparity: 75.9% of the students in Lausanne versus 29.3% in Bern stated it had been a rather positive experience.

*Students' perceived effectiveness of CAM (table 6)*

Acupuncture/TCM and phytotherapy were rated as the most effective, whilst ayurvedic and anthroposophic medicine and homeopathy were rated lowest. The results for homeopathy were, again, not homogeneous: in Zürich, Lausanne, Geneva, and Basel the perceived effectiveness of homeopathy was more than 50.0%, versus 25.0% in Bern.

**Table 5**

Students' personal experience with CAM.

Experienced CAM discipline (% yes)	Bern (n = 57-63)	Zürich (n = 46-55)	Lausanne (n = 38-46)	Geneva (n = 26-30)	Basel (n = 38-44)	Total (n = 205-238)
Acupuncture/TCM*	33.3	51.9	26.7	36.7	34.1	36.9
Anthroposophy	19.0	13.0	7.0	6.9	4.5	11.2
Ayurveda	6.5	9.4	13.6	27.6	6.8	11.2
Homeopathy	63.5	65.5	60.9	66.7	52.3	61.8
Naturopathy	17.5	37.0	20.5	13.8	13.6	21.4 #
Neural therapy	9.5	5.7	0	13.8	9.1	7.3
Phytotherapy	23.8	28.3	32.6	44.8	29.5	30.2
Other CAM	7.0	13.0	18.4	26.9	10.5	13.7

If yes, % positive personal experience with CAM:

Experienced CAM discipline (% positive experience)	Bern (n = 5-41)	Zürich (n = 3-33)	Lausanne (n = 0-29)	Geneva (n = 3-21)	Basel (n = 3-23)	Total (n = 18-147)
Acupuncture/TCM*	70.8	81.5	84.6	81.8	85.7	79.8
Anthroposophy	50.0	57.1	100	66.7	66.7	60.7
Ayurveda	60.0	83.3	66.7	100	66.7	78.6
Homeopathy	29.3	57.6	75.9	57.1	69.6	55.1 #
Naturopathy	83.3	75.0	77.8	80.0	83.3	78.8
Neural therapy	100	66.7	-	66.7	75.0	83.3
Phytotherapy	83.3	73.3	100	61.5	63.6	77.8
Other CAM	50.0	66.7	88.9	100	100	80.6

\* TCM: Traditional Chinese Medicine.

#  $p < 0.05$ : there is a statistically significant difference between the responding groups for these disciplines:

$p = 0.0261$  for Naturopathy in Zürich vs. all in all other universities;

$p = 0.0011$  for Homeopathy in Bern vs. in Lausanne.

**Table 6**

Students' subjectively perceived effectiveness of CAM.

CAM discipline (% effective + rather effective)	Bern (n = 55-64)	Zürich (n = 40-55)	Lausanne (n = 28-46)	Geneva (n = 21-31)	Basel (n = 36-43)	Total (n = 186-237)
Acupuncture/TCM*	92.2	89.1	76.1	90.3	90.7	88.6
Anthroposophy	46.8	32.0	42.0	33.3	42.1	40.2
Ayurveda	27.3	31.8	59.5	45.5	43.2	39.5 #
Homeopathy	25.0	52.8	57.1	51.7	52.4	45.5 #
Naturopathy	44.8	63.2	38.5	63.6	61.5	53.1
Neural therapy	68.8	30.0	28.6	28.6	69.4	50.0 #
Phytotherapy	61.6	71.8	65.0	73.1	71.1	67.6

\* TCM: Traditional Chinese Medicine.

#  $p < 0.05$ : there is a statistically significant difference between the responding groups for these disciplines:

$p = 0.0240$  for Ayurveda in Lausanne vs. in Bern and Zürich;

$p = 0.0037$  for Homeopathy in Bern vs. all other universities;

$p = 0.000006$  for Neural therapy in Bern and Basel vs. in Zürich, Lausanne and Geneva.

**Table 7**  
Students' self-assessed knowledge of CAM (%).

CAM discipline	Bern (n = 62–63)	Zürich (n = 55–56)	Lausanne (n = 47)	Geneva (n = 29–31)	Basel (n = 43–44)	Total (n = 238–241)
<b>Acupuncture/TCM*</b>						
Don't know	1.6	0	0	6.5	2.3	1.7
Heard about	60.3	55.4	70.2	51.6	70.5	61.8
Could advise	36.5	42.9	25.5	41.9	25.0	34.4
Could practise	1.6	1.8	4.3	0	2.3	2.1
<b>Anthroposophy</b>						
Don't know	15.9	32.7	57.4	65.5	25.0	35.7
Heard about	76.2	60.0	31.9	34.5	68.2	57.1
Could advise	6.3	7.3	8.5	0	6.8	6.3
Could practise	1.6	0	2.1	0	0	0.8
<b>Ayurveda</b>						
Don't know	56.5	50.9	29.8	23.3	36.4	42.0
Heard about	40.3	45.5	66.0	56.7	61.4	52.5
Could advise	3.2	3.6	4.3	20.0	2.3	5.5
Could practise	0	0	0	0	0	0
<b>Homeopathy</b>						
Don't know	0	0	0	0	0	0
Heard about	44.4	48.2	59.6	64.5	59.1	53.5
Could advise	54.0	48.2	31.9	32.3	38.6	42.7
Could practise	1.6	3.6	8.5	3.2	2.3	3.7
<b>Naturopathy</b>						
Don't know	30.2	12.7	23.4	23.3	29.5	23.8
Heard about	58.7	74.5	61.7	63.3	52.3	62.3
Could advise	9.5	12.7	12.8	13.3	13.6	12.1
Could practise	1.6	0	2.1	0	4.5	1.7
<b>Neural therapy</b>						
Don't know	17.5	72.7	83.0	63.3	37.2	52.5
Heard about	61.9	23.6	17.0	36.7	53.5	39.5
Could advise	20.6	3.6	0	0	9.3	8.0
Could practise	0	0	0	0	0	0
<b>Phytotherapy</b>						
Don't know	25.4	29.1	8.5	13.3	18.2	20.1
Heard about	55.6	56.4	66.0	80.0	65.9	62.8
Could advise	14.3	10.9	23.4	6.7	13.6	14.2
Could practise	4.8	3.6	2.1	0	2.3	2.9

\* TCM: Traditional Chinese Medicine.

#### *Students' self-assessed knowledge of CAM (table 7)*

The best known disciplines were homeopathy and acupuncture/TCM. The two disciplines which nobody could practise were ayurveda and neural therapy, and these two disciplines have also the highest percentages of the answer "don't know". The calculated Chi squares do not meet Cochrane's recommendations in the data in this table, therefore the calculation of the statistical relevance of these results is unreliable.

#### *Students' attitude toward CAM (table 8)*

More than three quarters of all students agreed with the following three statements: (1) CAM is a useful supplement to conventional medicine; (2) CAM includes ideas and methods from which conventional medicine could benefit; and

(3) practitioners should be able to advise their patients about commonly used CAM topics. There was little agreement with the statement: CAM is a threat to public health (11.7%). The individual results for each school of medicine are relatively similar for this section.

#### *Students' experience of CAM courses at medical school (table 9)*

Of the respondents, 67.7% from Bern, 53.2% from Lausanne, 15.8% from Zürich and zero from Basel and Geneva have attended CAM courses at their medical school. 80.0% of all students state that the CAM courses have improved their knowledge of CAM. 64.0% of the students at Lausanne have felt motivated to deepen their study of CAM, versus 33.3% in Zürich and 19.0% in Bern. The

proportion of positive experience is significantly higher than the proportion of negative experience amongst the respondents of Zürich and Lausanne, as opposed to Bern, where the positive and negative proportions are approximately equivalent. Fi-

nally, it seems that the presence or absence of CAM courses have no significant influence on the students' opinion about CAM, neither in Bern, nor in Zürich, nor in Lausanne.

**Table 8**  
Students' attitude toward CAM.

Proposed assertions (% agree + strongly agree)	Bern (n = 62–63)	Zürich (n = 56–57)	Lausanne (n = 45–46)	Geneva (n = 28–30)	Basel (n = 44)	Total (n = 235–239)
CAM is a useful supplement to conventional medicine (COM).	77.8	75.5	82.2	83.3	95.5	82.0
CAM includes ideas and methods from which COM could benefit.	68.3	73.2	78.3	79.3	86.4	76.0
Practitioners should be able to advise their patients about commonly used CAM.	63.5	69.7	78.3	82.8	88.6	74.8 #
The results of CAM are in most cases due to a placebo effect.	71.0	55.4	62.2	50.0	50.0	59.2
CAM is a threat to public health.	15.8	12.3	15.2	10.3	2.3	11.7
CAM not tested in a scientific manner should be discouraged.	61.9	57.9	40.0	39.3	59.1	53.6

# p <0.05: the global difference between the five groups is statistically significant.

**Table 9**  
Students' experience of CAM courses at medical school (% yes).

	Bern (n = 65)	Zürich (n = 57)	Lausanne (n = 47)	Geneva (n = 30)	Basel (n = 44)	Total (n = 169)	
Did you attend CAM courses at medical school?	67.7	15.8	53.2	0	0	46.2 #	
If yes:	Bern (n = 42–44)	Zürich (n = 9–11)	Lausanne (n = 25)	Geneva (n = 0)	Basel (n = 0)	Total (n = 76–80)	
Did the CAM courses improve your knowledge of CAM?	75.0	81.8	88.0	–	–	80.0	
Did the CAM courses motivate you to deepen your study of CAM?	19.0	33.3	64.0	–	–	35.5 #	
The experience of CAM courses was ...	positive	40.9	88.9	72.0	–	–	56.4 #
	indifferent	20.5	0	16.0	–	–	16.7 #
	negative	38.6	11.1	12.0	–	–	26.9 #
Their influence on your opinion about CAM was ...	positive	22.7	44.4	20.0	–	–	24.4
	indifferent	47.7	44.4	60.0	–	–	51.3
	negative	29.6	11.1	20.0	–	–	24.4

# p <0.05: the global difference between the three groups is statistically significant.

## Discussion

In Switzerland, CAM courses in undergraduate medical education are not coordinated at a national level. The information available on the websites of the Medical Schools of Bern, Zürich, and Lausanne was easy to find, clear, and complete enough to allow students to know where and when they can attend CAM courses. The information on the web pages and the data obtained from the CAM teacher questionnaires were coherent. Quantitatively, most experiences reported by our Swiss students concerned homeopathy, acupuncture/TCM and phytotherapy. These disciplines are also the most popular ones in the EU, Canada and the US [13, 15]. Naturopathy, which is very common especially in Germany, is completely

lacking in these courses in Switzerland. This might be explained by the fact that CAM courses at Swiss Medical Schools mostly refer to CAM disciplines practiced by physicians, and that naturopathy has little tradition among physicians in Switzerland. Accordingly, it is lacking as a specific discipline in the Union of Complementary Medical Physicians Associations ([www.unioncomed.ch](http://www.unioncomed.ch)). Our students' experience with homeopathy has been less positive than their experience with other CAM disciplines, and the perceived effectiveness of homeopathy is low. Therefore, it is amazing that the students' self-assessed knowledge of homeopathy is the highest: 42.7% state they could advise their patients, and 3.7% state they could even practise ho-

meopathy. This may be due to the relatively often discussed and thus publicly known subject of homeopathy. We have no explanation why only 15.8% of the responding students of Zürich had attended CAM courses (versus 53.2% in Lausanne and 67.7% in Bern). The internet information regarding CAM in Zürich is just as easily accessible as in the other medical schools, and in Lausanne the courses are also not credit-rewarded. None of the respondents of Basel have attended CAM courses, even though the lectures there were compulsory. The explanations may be that the introduction of CAM courses in Basel was only recent and not available earlier.

The majority of students who attended CAM courses in Bern, Zürich, and Lausanne state that it has improved their knowledge of CAM. However, there was no significant difference in their self-assessed knowledge of CAM when compared with the students of Basel and Geneva. The percentage of students who attended the CAM courses in Zürich is certainly too small to influence the knowledge of CAM of all the students of Zürich who replied, but in Lausanne, and even more in Bern, one could have expected an influence of the courses taken on the knowledge of the students, which is not the case. This might be due to the subjective form of self-assessment we used, whereas a more objective form of evaluation might have demonstrated an objective difference. Another explanation could be that the courses were designed to familiarise students with CAM in a general way, but not to definitively raise applicable knowledge of CAM. There are interesting local differences in the students' knowledge of anthroposophic medicine which is well known in Zürich, Basel and Bern, while only a minority of students in Lausanne and Geneva have ever heard about it. This discrepancy is likely to correspond to culture and language differences between the German-speaking (Zürich, Basel and Bern) and the French-speaking (Lausanne and Geneva) parts of Switzerland, and may mirror the strong ties of anthroposophy with German philosophy and Goethe's work.

In Zürich, CAM courses were a positive experience for the majority. Their influence on the students' opinion about CAM was rather positive and one third of the students reported a motivation to deepen their study of CAM. In Lausanne, the courses were also a positive experience for the majority, and although they have had no influence on the students' opinion about CAM, 64.0% felt motivated to deepen their study of CAM. In Bern, the experience of the CAM courses was equally positive and negative for students, and the experience did not globally influence students' opinion about CAM. However, only 19.0% of the students felt motivated to deepen their study of CAM. The high frequentation of CAM courses in Bern and the fact that most of them are credit-rewarded could imply that a higher proportion of less inter-

ested students signed up for the courses. Correspondingly, low participation in the non-credit-rewarded courses in Zürich correlated with a high motivation for further studies, which may indicate that mainly highly interested students signed up. It might also be that the higher availability of CAM courses in Bern may be felt to be sufficient, so that the majority of students felt they did not need more CAM instruction. A relationship between the presence or absence of CAM courses and the students' attitudes towards, knowledge of, and motivation for learning about CAM could not be found; however, the low response rate and the available data did not allow this study to adequately answer this question. For this purpose, an educational intervention study with a pre-post design might be useful.

A major drawback of this study is the possible considerable selection bias among responding students, given the response rate of below 40%. It might be assumed, that students with a critical attitude towards CAM did not respond to the online questionnaire. This may question the reliability of its results. However, these results with Swiss students are consistent with several aspects of comparable studies internationally. This refers to the relatively high popularity of TCM/acupuncture, homeopathy and phytotherapy mentioned above, and the overall positive attitude of medical students toward CAM [16–24]. Also, the heterogeneity of frequency, content and form of CAM courses at Swiss Medical Schools resembles that reported from other European Medical Schools [7, 8]. For this reason, this first and complete survey on CAM courses in undergraduate medical education in Switzerland and on the students' experience with them, provides a valuable first set of information about the integration of CAM in medical education at Swiss Medical Schools. Based on this data, the authors strongly recommend establishing a coordinated policy towards integrating CAM elements in medical education nationally as well as in the international context. In the US, first steps for such a policy are presently taken by the Institute of Medicine ([www.iom.edu/CMS/28312/52555.aspx](http://www.iom.edu/CMS/28312/52555.aspx)). In Europe, such steps will also be necessary, and feasible in the context of the Bologna reform. This study provides the first basic information necessary for such a process from the perspective of Switzerland.

---

*Correspondence:*

*Prof. Peter Heusser, MD MME  
Chair for Theory of Medicine, Integrative  
and Anthroposophic Medicine  
University of Witten/Herdecke  
Gemeinschaftskrankenhaus  
Gerhard-Kienle-Weg 4  
D-58313 Herdecke, Germany  
E-Mail: [peter.heusser@uni-wb.de](mailto:peter.heusser@uni-wb.de)*

## References

- 1 Singh S, Ernst E. *Alternative Medicine on Trial: Trick or Treatment?* Bantam Press, London 2008.
- 2 Linde K, Clausius N, Ramirez G, Melchart D, Eitel F, Hedges LV, Jonas WB. Are the clinical effects of homeopathy placebo effects? A meta-analysis of placebo-controlled trials. *Lancet*. 1997;350:834-43.
- 3 Shang A, Huwiler-Müntener K, Nartey L, Jüni P, Dörig S, Sterne JA, Pewsner D, Egger M. Are the clinical effects of homeopathy placebo effects? Comparative study of placebo-controlled trials of homeopathy and allopathy. *Lancet*. 2005;366:726-32.
- 4 Lüdtke R, Rutten AL. The conclusions on the effectiveness of homeopathy highly depend on the set of analyzed trials. *J Clin Epidemiol*. 2008;61:1197-204.
- 5 WHO, *Traditional Medicine Strategy 2002-2005*. Geneva, WHO, 2002. (doc. ref.: WHO/EDM/TRM/2002.1)
- 6 Levine SM, Weber-Levine ML, Mayberry RM. CAM practices: training, experience and attitudes of a primary care medical school faculty. *J Am Board Fam Pract*. 2003;16:318-26.
- 7 Barberis LE, DeToni M, Schiavone A, Zicca P, Ghio R. Unconventional medicine teaching at the Universities of the European Union. *J Altern Complement Med*. 2001;7:337-43.
- 8 Varga O, Márton S, Molnár P. Status of CAM in European Medical Schools. *Forsch Komplementärmed*. 2006;13:41-5.
- 9 Owen D, Lewith GT. Teaching integrated care: CAM familiarisation courses. *Med J Aust*. 2004;181:276-8.
- 10 Jobst D, Niebling W. Naturheilverfahren als Teil der akademischen Lehre und die Rolle der Allgemeinmedizin. *Forsch Komplementärmed Klass Naturheilkd*. 2005;12:272-6.
- 11 Brinkhaus B, Joos C, Willich SN, Hahn EG. Complementary and alternative medicine in German medical schools. *Med Teach*. 2005;27:180.
- 12 Brokaw JJ, Tunnicliff G, Raess BU, Saxon DW. The teaching of complementary and alternative medicine in U.S. medical schools: a survey of course directors. *Acad Med*. 2002;77:876-81.
- 13 Ruedy J, Kaufmann DM, MacLeod H. Alternative and complementary medicine in Canadian medical schools: a survey. *JAMC*. 1999;160:816-7.
- 14 Tsuruoka K, Tsuruoka Y, Kajii E. Complementary medicine education in Japanese medical schools: a survey. *Complement Ther Med*. 2001;9:28-33.
- 15 Wetzel MS, Eisenberg DM, Kaptchuk TJ. Courses involving complementary and alternative medicine at US medical schools. *JAMA*. 1998;280:784-7.
- 16 Baugniet J, Boon H, Ostbye T. CAM: comparing the views of medical students with students in other health care professions. *Fam Med*. 2000;32:178-84.
- 17 Frye AW, Sierpina VS, Boisubin EV, Bulik RJ. Measuring what medical students think about CAM: a pilot study of the CAM survey. *Advances in Health Sciences Education*. 2006;11:19-32.
- 18 Kligler B, Maizes V, Schachter S, Park CM, Gaudet T, Benn R, Lee R, Remen RN. Core competencies in integrative medicine for medical school curricula: a proposal. *Acad Med*. 2004;79:521-31.
- 19 Lie D, Boker J. Development and validation of the CAM health belief questionnaire (CHBQ) and CAM use and attitudes amongst medical students. *BMC Medical Education*. 2004;4:2.
- 20 Oberbaum M, Notzer N, Abramovitz R, Branski D. Attitude of medical students to the introduction of complementary medicine into the medical curriculum in Israel. *IMAJ*. 2003;5:139-42.
- 21 Oberbaum M, Shuval J, Haramati A, Singer SR, Halevi J, Lumpkin MD, Carmi R. CAM in medical education: has the time come? *IMAJ*. 2005;7:607-10.
- 22 Rampes H, Sharples F, Maragh S, Fisher P. Introducing complementary medicine into the medical curriculum. *J R Soc Med*. 1997;90:19-22.
- 23 Schneider CD, Meek PM, Bell IR. Development and validation of IMAQ: Integrative medicine attitude questionnaire. *BMC Medical Education*. 2003;3:5.
- 24 Yeo A, Yeo J, Yeo C, Lee CH, Lim LF, Lee TL. Perceptions of CAM amongst medical students in Singapore – a survey. *Acupuncture in Medicine*. 2005;23:19-26.
- 25 Sadowski S. Ce qu'en pensent les étudiants en médecine. *Médiatorial (Université de Genève)*. 2001;1:4.