



# Patient satisfaction with primary care: A comparison between conventional care and traditional Chinese medicine

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## KEYWORDS

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Traditional Chinese  
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Physician–patient  
interaction

## Summary

**Objectives:** The evaluation of patient satisfaction with traditional Chinese medicine (TCM) versus conventional medicine (COM) in Swiss primary care.

**Design:** A cross-sectional study was performed with questionnaires aimed at fulfilment of expectations, perceived treatment effects, and patient satisfaction.

**Setting:** Participants were 51 certificated TCM physicians, 71 COM physicians, and 2530 adult patients.

**Results:** Among patients seeking primary care in Switzerland, those who choose a conventional physician with additional certification in TCM have a higher chance of being completely satisfied with their treatment than patients who choose a physician educated only in COM.

**Conclusions:** Physicians who supply TCM in addition to COM are able to satisfy the needs of their patients more completely than solely COM-practicing physicians. Explanations for this difference include less frequent side effects in TCM, better TCM physician–patient interaction with longer duration of consultation, and different treatment expectations of patients seeking TCM.

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## Introduction

Increasing demand for complementary and alternative medicine in Europe and the USA has been well documented and similar to other western countries.<sup>1–3</sup> Traditional Chinese medicine (TCM) is also gaining importance in Switzerland.<sup>4,5</sup>

In 1998, the Swiss Federal Department of Home Affairs (FDHA) mandated the inclusion of five of the most important methods of complementary medicine in Switzerland (anthroposophical medicine, homeopathy, neural therapy, phytotherapy, and TCM—in particular, Chinese herbal therapy) in the compulsory basic medical insurance scheme. A condition set for the reimbursement of medical claims by insurance was their delivery by qualified physicians; a limitation on coverage, which was to end 30 June 2005, also was stipulated. An exemption is acupuncture, which is uncontroversial and definitively included (since 1984) in the benefits catalogue. Because of the provisional status of the inclusion of these five other complementary proce-

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dures in basic insurance, a program of various studies for the evaluation of complementary medicine (PEK) to inform a decision concerning their status was implemented.<sup>6</sup> Results of the project were published in a final report<sup>7</sup> and in various scientific publications.<sup>5,8–13</sup> After a political discussion, in June 2005 the FDHA decided to remove the five complementary methods from the basic insurance catalogue. This decision raised not only considerable media coverage and controversy<sup>6,14,15</sup> but also provoked an ongoing political initiative to re-establish the five CAM procedures in Swiss basic health insurance.

As part of this comprehensive evaluation project, it is the goal of this study to evaluate patient satisfaction by means of verifying the perceived effectiveness of TCM in primary health care. The precise investigation question is, are there differences regarding evaluation of patient satisfaction with physicians who provide exclusively conventional medicine (COM) compared to physicians who, in addition to COM, offer TCM?

## Methods

### Physicians and patients

The investigation was based on two cross-sectional studies conceptualised in terms of structure, process, and outcome quality.<sup>7</sup> Practice Study I identified differences in the structure of care between conventional and complementary medicine.<sup>16</sup> Practice Study II investigated differences in process and outcome. A graphical representation of sampling procedures and of how this study was embedded in the entire PEK project is provided in Fig. 1. A complete description of the project and its scope is given in the final report of the Federal Office of Public Health.<sup>7</sup>

### Structural aspects of care

For the structural study, all members of the Swiss Medical Association (FMH) with certification in acupuncture-TCM from the Association of Swiss Medical Societies for Acupuncture and Chinese Medicine (ASA) were asked to participate. Additionally, a random sample of general practitioners and internists without training in complementary medicine that corresponded to the regional distribution of the TCM physicians was compiled from the FMH list and invited to participate in the study. Both membership lists represent complete census data of all respective physicians providing ambulatory care in Switzerland. Assuming that conventional physicians would have less interest in this study than TCM physicians; this second group was 50% larger than the first. Both physician groups received study materials and the Practice Study I questionnaire concerning the structure of physicians' practices and patient treatment in primary health care in their own, regionally specific language. On the basis of this questionnaire, two groups of physicians were defined according to their professional qualifications and the kind of medical services they provided:

- (1) *COM physicians*: physicians trained and working exclusively in COM.
- (2) *Certified TCM physicians*: conventionally trained physicians with further, certified training in TCM. Training

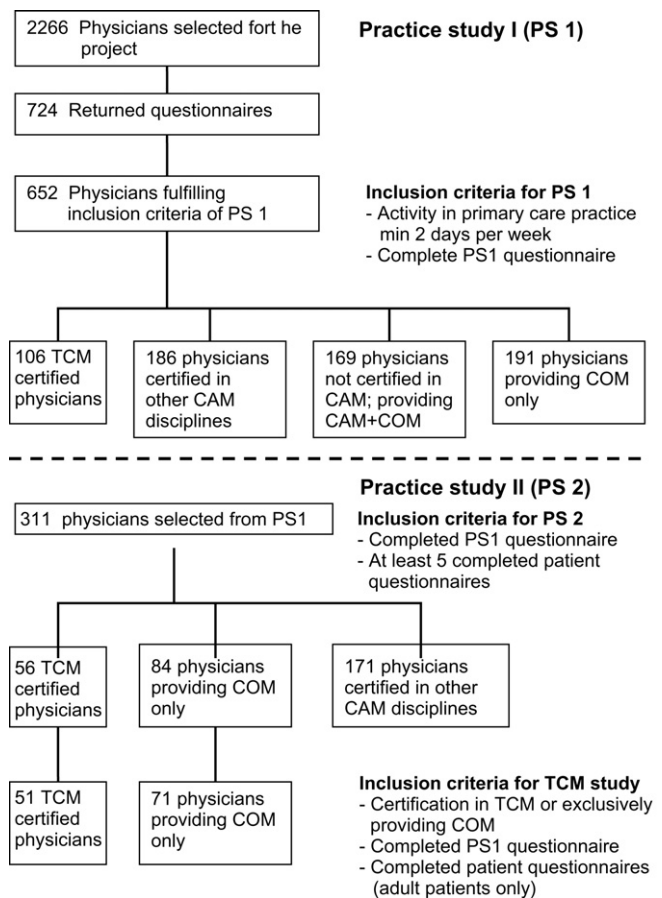


Figure 1 Flowchart of sampling procedures.

consists of 360 h of continuing education in various fields of TCM and is approved by the Swiss Medical Association. Physicians practicing in other fields of complementary medicine, whether certified or not, were excluded from this particular study (see Fig. 1).

### Process and outcome of care

Practice Study II was aimed at patients who utilized the services of COM or TCM physicians in primary care. The randomly chosen group was comprised of a sample of 2530 adult patients who were treated at least once during a 12-month period by 122 physicians throughout Switzerland. Physician participation in the study was voluntary, and each received compensation of 500 Sfr (approximately 330€).

Physicians and their office personnel were instructed to include examined patients in the study on 4 prescribed days. The specific survey days were chosen by the study group and randomly spread over 4 different week days. Patients were informed about the study by information sheets, and before seeing the physician they were asked to fill out questionnaires in the waiting room concerning their demographic and health status, and the frequency of and the reason for physician consultation. The physicians documented these same consultations with regard to symptoms, diagnosis, and length of illness, comorbidities, and diagnostic and therapeutic procedures. Data were collected from patients and physicians in such a way that physicians at no time had access to the questionnaires that patients filled out prior to

their consultation. This was achieved by asking patients to hand over their answers to the practice personnel in sealed envelopes.

Completed questionnaires were collected in a database. Three weeks after the consultation, patients were sent an outcome questionnaire, a Europep questionnaire, and an SF-36 questionnaire accompanied by a cover letter and a stamped return envelope. The outcome questionnaire was concerned with healing, taking into account alleviation of symptoms, fulfilment of expectations, and satisfaction with TCM or COM with regard to primary care (Table 2). In order to judge the quality of the doctor–patient relationship, a Europep questionnaire was included. It contained 23 extensively and internationally validated questions regarding the patient's experience,<sup>17</sup> each with five possible answers ranging from "poor" to "excellent" (Table 3). The SF-36 questionnaire was added to obtain information about the physical and mental health of the study population. The mental and physical quality of life scores were evaluated according to Ware and Kosinski.<sup>18</sup>

Questionnaires were sent to patients in their mother tongue—in either German, French, or Italian. It was considered crucial for the study population that the time between consultation and completion of the questionnaires be consistent. For this reason, no reminder letters were sent to patients who neglected to return their questionnaires. However, all questionnaires mailed back by patients to the study centre within a period of 2 months were included in the final data set.

The size of the study dataset was determined by two participation criteria for the physicians: provision of primary medical care for at least 2 days per week, and complete documentation of at least five consultations over the 12-month duration of the study. Two requirements for participation applied to patients: age over 16 years, and completion of an outcome questionnaire (Fig. 1). Patients were divided into two groups according to the classification of the physicians.

All procedures were presented to the Cantonal Ethics Commission of Bern (KEK). After examining the documentation, the Commission expressed no fundamental concerns regarding data confidentiality and concluded that the investigation did not fall within the scope of its oversight.

## Data collection and analysis

All major diagnoses and comorbidities were coded according to the International Statistical Classification of Diseases and Related Health Problems, ICD-10. Data analysis took place in two steps: the first employed tables and graphs in descriptive analyses, while the second applied analytical methods. Continuous variables (age, length of consultation, SF-36 data) were analysed with multivariate linear models. Ordinal target variables were reduced to a two-point scale in which the best possible answer was given a one, and all other nonmissing answers were notated as zero. These data were analysed with the help of multivariate logistic regression models. Covariables of multivariate models were defined in advance and were employed to adjust for demographic factors of patients.

The statistical models had the following structure:

Type of variable	Description
Outcome variables (individual models for each outcome)	
Continuous (linear models)	Duration of consultation
	Physical health score (SF-36)
	Mental health score (SF-36)
Dichotomized (logistic regression)	General health prior to consultation
	Severity of symptoms
	Chronicity of symptoms
	Expectations for healing
	Expectations for symptom relief
	Emergency consultation (yes/no)
	Unfit for work attestation issued
	Symptom resolution at follow-up
	Fulfilment of expectations at follow-up
	Overall satisfaction at follow-up
	Presence of side effects at follow-up
	Europep questions 1–23 at follow-up
Explanatory variables (constant for all outcome variables)	Group (TCM or COM)
	Patient gender
	Patient age

Analytical procedures accommodated the case of hierarchically grouped data, which means that individual patient data from one physician's practice could not be treated as independent observations. For this reason, hierarchically mixed models were used to analyse the data.<sup>19,20</sup> 95% confidence levels for means and odd ratios were calculated accordingly. The level of significance was set at  $p < 0.05$  throughout the study, and SAS 9.1 (SAS Institute Inc., Cary, NC) was used for all calculations.

## Results

### Patient questionnaires prior to the first consultation

The 71 COM and 51 TCM physicians who participated respectively recruited 1395 and 1135 adult patients. The proportion of female patients is significantly higher in TCM than COM (70.2% vs. 56.3%). A statistically significant difference in patient age also was observed: TCM patients are on average three years younger than COM patients. TCM patients show a significantly higher level of education than COM patients (29.5% with university or college graduation in TCM vs. 24.7% in COM).

Patients were asked to rate their general state of health on a five-level scale from "excellent" to "poor". It appeared that TCM and COM patients rated their health status equally.

Patients recorded the duration of their main medical problems. The fraction of patients with chronic ailments (of more than 3 months), after controlling for age and gender, was significantly higher in TCM than in COM practices (64.8% in TCM, 46.2% in COM).

Patients further specified the severity of their main health problems according to a three-level scale (minor, moderate, serious). The difference in the proportions of patients who chose "serious," again allowing for demographic factors, is statistically significant and higher for TCM (30.1%) than for COM (19.8%).

Patient expectations of treatment also were recorded. Taking into account age and gender, patients in TCM practices expected a cure for their medical problems significantly more often than those in COM practices (TCM, 59%; COM, 56%). Likewise, expectations of alleviation of symptoms differed significantly (TCM, 47%; COM, 42%).

### Physician consultation records

COM physicians see significantly more emergency patients (10.1%) than TCM physicians (3.9%), and COM physicians treat more accident-related conditions (7.9%) than TCM physicians (4.9%).

Table 1 lists the main diagnoses in both groups of patients (according to ICD-10 definitions) and their frequency of occurrence. The Table 1 itemization of specific diseases shows that in TCM, headache (excluding migraine) is the main health problem, followed by depression, lower back pain, neck pain, and migraine. In contrast, the COM list reveals, in descending order of occurrence, the diagnosis of high blood pressure, depression, acute respiratory tract infection, lower back pain, and diabetes.

In agreement with patient responses, TCM physicians treat a significant higher proportion of chronically ill patients than COM physicians (61.7% vs. 37.4%). TCM physicians also see a statistically significant higher percentage of patients with more serious health problems than COM doctors (20.1% compared to 9.8%, respectively).

Another aspect of the severity of medical conditions is the simultaneous existence of comorbidities. No statistically significant difference could be observed between the two groups in the number of comorbidities. The mortality risks of comorbidities were examined further, though, with the help of the ICD-10 modified Charlson index. On the basis of this classification, it is clear that the age and gender adjusted number of patients suffering from illnesses with a higher mortality risk is significantly greater in conventional than in TCM practices (patients with Charlson index > 0: COM, 11.4%; CAM, 5.3%).

The comparison of therapeutic practices used in the two study groups yielded substantial differences. TCM physicians employed only acupuncture in 30.1% of their consultations;

**Table 1** Distribution of main diagnoses (ICD-10) in percent

		COM	TCM
ICD-10 chapter			
M00-M99	Diseases of the musculoskeletal system and connective tissue	17.5	25.2
I00-I99	Diseases of the circulatory system	17.7	5.4
J00-J99	Diseases of the respiratory system	9.9	11.3
F00-F99	Mental and behavioural disorders	8.2	9.1
S00-T98	Injury, poisoning and certain other consequences of external causes	7.6	3.8
K00-K93	Diseases of the digestive system	6.3	5.1
R00-R99	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	3.5	7.6
G00-G99	Diseases of the nervous system	2.6	7.6
E00-E90	Endocrine, nutritional and metabolic diseases	5.8	2.7
N00-N99	Diseases of the genitourinary system	3.1	4.6
Z00-Z99	Factors influencing health status and contact with health services	5.2	2.2
L00-L99	Diseases of the skin and subcutaneous tissue	3.4	3.9
	No diagnosis	2.2	3.2
H60-H95	Diseases of the ear and mastoid process	1.8	2.3
A00-B99	Certain infectious and parasitic diseases	1.7	2.2
C00-D48	Neoplasms	2.1	1.3
H00-H59	Diseases of the eye and adnexa	0.6	0.9
D50-D89	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	0.4	0.6
Q00-Q99	Congenital malformations, deformations and chromosomal abnormalities	0.1	0.5
O00-O99	Pregnancy, childbirth and the puerperium	0.1	0.3

in 6.2% they used other TCM methods exclusively, and in 13.7%, purely conventional procedures. In the remaining consultations, different combinations of conventional and complementary treatments were used, or no therapy was performed. COM physicians employed exclusively conventional treatments in 88% of consultations, while in 9.4% no treatment was carried out, and in the remainder other treatments such as physiotherapy were used.

Analysis of the use of medication reveals a statistically significant difference between TCM and COM: combinations of treatments with and without medication clearly are more frequently employed by TCM than COM physicians. Referrals to other doctors are considerably more frequent among COM physicians (10.5%) than TCM physicians (5.3%). Both groups most often refer their patients to a radiologist.

A substantial difference between the two groups regarding the length of consultations can be established in a general linear model after statistical adjustment for age and gender of patients: a consultation with a TCM physician lasts on the average 8.4 min longer than a consultation with a COM physician (25.3 min vs. 16.9 min).

The proportion of patients certified by physicians as unfit for work due to illness (only patients aged 16–56) differs between the two groups. The statistical model clearly shows that TCM doctors issue significantly fewer such attestations than COM doctors (4.7% vs. 13.2%, respectively).

### Patient responses after 1 month

The fraction of questionnaires returned within 2 months after sending out questionnaires to patients amounted to 43.8% for COM patients; the return rate of female patients was 46%, while that of male patients was 41%. TCM patients exhibited a significantly higher return rate of 52%; here,

too, at 55.4%, the return rate of female patients was higher than that of males, at 44.8%. Altogether, questionnaires were returned by 1363 COM patients and 1121 TCM patients.

Changes in symptoms following the initial consultation were recorded using a six-level answer scale (Table 2). In TCM practices, a statistically significant, lower proportion of patients noted complete relief from symptoms. An additional, chronologically stratified analysis yielded a similar result; TCM patients with acute or chronic health problems judged their relief of symptoms to be significantly poorer than did COM patients.

However, no statistically solid difference between the groups was apparent when the proportions of patients with complete recovery or greatly improved symptoms were pooled and analysed.

No significant difference between TCM and COM patients was observed regarding the fulfilment expectations of treatment (Table 2).

But a significant difference exists with regard to patients' general satisfaction with treatment. The proportion of patients who were completely satisfied with their treatment is statistically significantly higher in TCM patients than in COM patients (Table 2). The analysis of cofactors shows that age and gender have no significant influence upon satisfaction.

Regarding side effects, there is a clear and statistically significant difference between the two groups: the frequency of undesirable side effects suffered by TCM patients (7.7%) is half that of COM patients (15.4%). However, 27% of COM patients with side effects and 38% of the respective TCM patients rated the extent of their side effect as rather strong to unbearable.

Analysis of the physical and psychological health scores from the SF-36 questionnaire, again adjusting for age and

**Table 2** Patient evaluation at follow-up of 4 weeks

	COM			TCM		
	N	%	95% CI <sup>a</sup>	N	%	95% CI
Self-reported relief of symptoms						
Complete resolution	358	27.6	24.4–30.8	169	15.5	13.0–18.0
Considerably weaker	392	30.2	27.5–32.9	463	42.4	38.8–46.1
Somehow weaker	219	16.9	14.9–18.9	271	24.8	22.4–27.2
Unchanged	300	23.1	20.9–25.3	127	15.8	12.0–19.6
Very intense	22	1.7	0.9–2.5	16	1.5	0.7–2.3
Unsupportable	7	0.5	0.2–0.9	0	0	0
Fulfilment of expectations						
Completely fulfilled	409	32.6	29.2–35.9	336	30.8	27.4–34.3
Mostly fulfilled	578	46	42.8–49.2	606	55.6	51.4–59.8
Mostly not fulfilled	196	15.6	13.5–17.8	118	10.8	7.9–13.7
Not fulfilled	73	5.8	4.5–7.1	30	2.8	1.3–4.2
Overall patient satisfaction						
Completely satisfied	549	43.4	40.4–46.4	543	49.6	45.7–53.5
Mostly satisfied	571	45.1	42.3–48.0	463	42.3	39.0–45.7
Mostly not satisfied	119	9.4	7.9–11.0	79	7.2	4.7–9.7
Not satisfied at all	26	2.1	1.2–2.9	9	0.8	0.2–1.4

<sup>a</sup> 95% confidence interval.

**Table 3** Patient evaluation of COM and TCM in primary care (Europep questionnaire)

Questions/items	% of answer option "excellent"	
	COM	TCM
<b>Relation and communication</b>		
1. Making you feel you had time during consultation? <sup>*</sup>	61.7	71.2 <sup>*</sup>
2. Interest in your personal situation? <sup>*</sup>	60.3	68.4 <sup>*</sup>
3. Making it easy for you to tell him or her about your problem? <sup>*</sup>	62.9	66.9
4. Involving you in decisions about your medical care?	58.4	62.8
5. Listening to you? <sup>*</sup>	67.1	74.4 <sup>*</sup>
6. Keeping your records and data confidential? <sup>*</sup>	75.4	79.4
<b>Medical care</b>		
7. Quick relief of your symptoms?	27.6	23.5 <sup>*</sup>
8. Helping you to feel well so that you can perform your normal daily activities?	41.2	39.7
9. Thoroughness? <sup>*</sup>	56.5	68.1 <sup>*</sup>
10. Physical examination of you? <sup>*</sup>	52.6	47.3 <sup>*</sup>
11. Offering you services for preventing diseases <sup>*</sup> (screening, health checks, immunizations) <sup>*</sup>	48.7	39.6 <sup>*</sup>
<b>Information and support</b>		
12. Explaining the purpose of tests and treatments?	60.2	60.6
13. Telling you what you wanted to know about your symptoms and/or illness?	60.2	63.4
14. Helping you deal with emotional problems related to your health status? <sup>*</sup>	49.7	55.5
15. Helping you understand the importance of following his or her advice?	51.0	49.9
<b>Continuity and cooperation</b>		
16. Knowing what s/he had done or told you during earlier contacts? <sup>*</sup>	53.4	61.5 <sup>*</sup>
17. Preparing you for what to expect from specialist or hospital care?	55.7	55.9
<b>Facilities availability and accessibility</b>		
18. Getting an appointment to suit you?	66.1	69.0
19. Getting through to the practice on telephone? <sup>*</sup>	1.2	1.7
20. Being able to speak to the general practitioner on the telephone?	72.1	71.1
21. Waiting time in the waiting room? <sup>*</sup>	58.3	66.0
22. Providing quick services for urgent health problems?	38.1	58.6 <sup>*</sup>
23. The helpfulness of the staff (other than the doctor)? <sup>*</sup>	71.6	72.6

<sup>\*</sup> Significant differences between groups ( $p < 0.05$ ) in a multivariate logistic model adjusting for age and gender of patients.

gender, yielded no significant difference between the two groups.

Patient evaluations of physicians and practices via the Europep questionnaire show significant differences, which are summarized and shown in Table 3.

## Discussion

Swiss health care is characterised by a high degree of decentralisation with strong regional and cantonal influence<sup>21</sup> and consequent high cost.<sup>22</sup> Within this framework, a nationwide evaluation of CAM was performed to decide about the long-term inclusion of CAM procedures in compulsory health plans.

As part of this evaluation this study assessed and compared different aspects of patient satisfaction in TCM and conventional primary care.

Patients judged the effectiveness of both the TCM and the COM therapy they received as high. However, a contrast appears in patients' judgments regarding their satisfaction

with treatment, with a significantly better result for TCM. Patient satisfaction thus seems to depend only to a limited extent on the perceived effectiveness of treatment.<sup>23–27</sup>

Regarding a causal connection between evaluated patient satisfaction, and gender and level of patient education, no clear data exist in the literature. Higher patient age seems to be the sole sociodemographic factor in greater patient satisfaction, although in our study it does not appear to be an explanation of the higher level of satisfaction shown by TCM patients.<sup>28</sup>

However, physical and psychological health scores from the SF-36 questionnaire at follow-up point to paradoxical findings. Despite a higher load of chronic and more severe health problems, TCM patients had equal physical and psychological health SF-36 scores than COM patients. It can be speculated that these findings are associated with different mechanisms for coping with illness and disease, or that they are the result of higher mortality risks observed in COM patients.

In the literature, it is well known that experience with or anxiety about suffering undesirable side effects in COM

constitutes grounds for patients to switch to alternative medicine.<sup>29–31</sup> Our results show that about twice as many COM patients experienced undesirable side effect in comparison to those who visited a TCM physician. This less frequent occurrence of unwanted side effects seems to represent an additional reason for the very high level of patient satisfaction with TCM.

Evidence in the literature also shows that the doctor–patient relationship represents an independent, positive factor in the success of treatment.<sup>32–34</sup> It follows from Cassidy's survey data that the interpersonal aspect of the doctor–patient relationship appears to be very important for patients who go to TCM physicians.<sup>35,36</sup> The study of Beck et al. supports the positive influence that longer consultation time has on patient health.<sup>37</sup>

Our results show that the average consultation time with a TCM physician amounts to about nine minutes more than it does with a solely COM-practicing physician. Consequently, longer consultation time can be one of the reasons for the greater satisfaction expressed by TCM patients in our study. Evaluation of the Europep questionnaire corroborates these observations: responses to questions in the category "communication and relationship" were answered significantly more positively by TCM than by COM patients.

Finally, patient satisfaction may have been affected by different levels of treatment expectation of TCM and COM patients. Educational research in this field shows that positive expectations can lead to improved outcomes,<sup>38</sup> and more specifically, psychological research provides additional evidence that expectations constitute the core of most of the placebo effects in medical therapies.<sup>39,40</sup> These concepts may have direct application to our data in the sense that interpersonal expectancy effects may also emerge when physicians confirm and support expectations of their patients. It therefore can be hypothesized from our empirical findings that positive outcomes in TCM are linked to the expectation that CAM treatments provide a better fulfilment of patients needs.

## Limits of the study

Various limitations of the study must be considered.

Low participation of physicians was a problem in this study as both TCM and COM physicians perceived the entire project as a government initiated,<sup>14</sup> which led to reservations to be involved. Furthermore, it must be assumed that the motivation among participating physicians was different, since TCM physicians were under pressure to demonstrate effective methods—which was not the case for COM physicians. It can only be speculated that the motivation of COM physicians is more attributable to a general interest in primary care research. The generalisability of our results is therefore reduced to physicians with these distinct motivations. Nevertheless, a comparison of the sample population with the general population of all Swiss primary care providers indicated no difference with reference to geographic location of practices and gender of physicians; clinical data of the project including patient perceived health status with regard to other recent research in Swiss primary care showed also no difference.<sup>8,9</sup> Based on this additional information, we have no reason to consider our

sample as well as our results as biased with regard to geographical distribution and gender of physicians or to health status of patients.

Our patients received the questionnaire 3–4 weeks after an initial consultation regardless of the diagnostic and therapeutic treatments they received, and any other consultations they may have had in the interim. Thus, our descriptions and comparisons concerning patient satisfaction may not allow for all treatment carried out later.

Other limitations are related to the fact that patient questions other than the SF-36 and the Europep questionnaire were not validated. Limited temporal and financial resources allocated to the project made a respective psychometric validation for three different languages almost impossible. The literature provides, however, evidence that patients' evaluations of care offer not only unique subjective information, which is otherwise not available, but also give valid estimates of their experiences and respective satisfaction in a primary care setting.<sup>41</sup> However, satisfied and dissatisfied patients have different compliance in completing questionnaires. It is therefore very likely that the results are positively biased because satisfied patients are more likely to return the questionnaires.<sup>42,43</sup> An additional limitation refers to the short follow-up period of the study, which prevents quality assessments of ongoing relationship-building processes between patient and physician, and the definition of therapeutic relationships.

It may be furthermore criticized in this context that results were dichotomized into the best possible and all other answer options. This approach is based on the concept that standards of excellence attained by top performers should be used as benchmarks of quality in the health care sector.<sup>44</sup>

Finally, it can be debated whether to include variables in statistical models to adjust for effects related to case mix and different levels of health status of patients. However, patient based treatment evaluations are in addition to health status determined by a wide range of other factors including treatment expectations, presence of adverse side effects, different coping mechanisms, socio-demographic status and philosophical compatibility between patients and physicians. Such analyses would require an in depth qualitative approach that was not in the scope of this project, the respective procedures were therefore omitted.

## Conclusion

Previous empirical research has underscored the importance of physician–patient relationship quality by demonstrating its association with important outcomes, including adherence to medical advice<sup>45</sup> and satisfaction with care. However, few studies have had the benefit of longitudinal data to verify the sequencing of effects between relationship quality and outcomes.<sup>46</sup> Our study therefore provides empirical evidence that the perceived effectiveness of TCM in Swiss primary care is related to higher patient satisfaction due to better patient–physician communication of certified TCM physicians. More effective communication patterns of these physicians also may play an important role in allowing patients to maintain more positive outcome expectations. Political, financial, and regulatory provisions should

therefore encourage physicians to develop supportive and interactive relationships with their patients.

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