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Exploring practice characteristics and research priorities of practitioners of traditional acupuncture in China and the EU—A survey

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ABSTRACT

Ethnopharmacological relevance: Acupuncture practice is based on the theoretical, historical and philosophical principles, which are part of Chinese medicine. Traditional acupuncture practitioners assess their patients' conditions using Chinese medicine diagnostic techniques, which determine clinical care and treatment. Little is known about differences in the perceptions of research evidence among practitioners in the European Union (EU) and China, given the diversity of acupuncture practice.

Material and methods: This study explored differences between practitioners of traditional acupuncture regarding perceived need for research evidence and prioritisation for future clinical trials, based on their practice within the EU and China.

A convenience sample of acupuncturists in the EU (contacted by their professional organisation) and China (from geographically dispersed hospitals) were invited to participate in a survey, which was conducted during 2010/2011. Data collected included: practitioners' demographic details, country of training, practice setting, acupuncture techniques, perceived adverse event reporting, diagnostic methods, conditions commonly treated, conditions perceived as needing more evidence and practitioner perceptions of conditions which could demonstrate benefit if investigated in clinical trials.

Results: From 1126 survey responses, 1020 (559 EU, 461 China) could be included in the analysis for direct comparison. A response rate for the EU could not be calculated but for China was 98%. Pain was the most frequently reported commonly treated condition by EU acupuncturists and neurological conditions (mainly stroke) for Chinese practitioners. The top reported priorities for research were obstetrics/gynaecological conditions in the EU and neurological problems in China.

Conclusion: The survey identified differences in practice and training between acupuncturists in China and the EU and between EU member states. These differences may inform prioritisation of health conditions for future trials. Innovative research methods are recommended to incorporate the complexity and plurality of acupuncture practice and theory. Creation of collaborative networks is crucial in overcoming these differences to facilitate international, multi-centre clinical trials.

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1. Introduction

1.1. TCM – definitions and terms

The GP-TCM collaboration, described in Uzuner et al. (2010) and Uzuner et al. in this issue, is a network initiative between EU member states and China. One of the tasks was to conduct a survey on the differences between acupuncture practitioners' research priorities and their perceived need for research evidence. In addition, opinions were ascertained regarding the diseases and conditions

on which clinical trials in acupuncture should focus in the future and to identify opportunities for future network collaborations.

This paper will mainly use the term Traditional Chinese Medicine (TCM) which has been the term commonly used since the mid 1950s and is currently used by the Chinese government (Scheid, 2002). In addition, it was also the term used for the overall GP-TCM project brief. TCM includes specific forms of Chinese medical practice, most often based on differentiation of patterns of signs and symptoms aiding diagnosis and treatment (Scheid, 2002). Individual practitioners work very differently and use practices which in themselves are diverse and may include; herbal medicine, acupuncture, cupping, moxibustion, tuina, qigong and dietary therapy. This article mainly focuses on the practise of acupuncture but other techniques are included as part of the plurality of its approach.

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Although the basic teachings of acupuncture originate from the theoretical, historical and philosophical principles which are part of Chinese medicine (Birch and Felt, 1999), there are acknowledged differences in acupuncture practice between China and the West (Scheid, 2002). TCM may either be seen as having a similar nature to biomedicine, with potential for merging into an integrative medicine, or as essentially different (Scheid and MacPherson, 2012). This survey focussed on practitioners of traditional acupuncture rather than biomedical professionals who may have a limited scope of acupuncture techniques.

As TCM originates from China and has been relatively recently imported to the West there are numerous differences in its practice, training and regulation between East and West. This study aims to begin to compare traditional acupuncture in its country of origin with an area where it is less common and less well-integrated. Although there are obvious limitations with using a heterogeneous area such as the EU, the EU is used here as a 'proxy' for the Western medical approach.

1.2. Acupuncture education and training in China and the EU

Traditional acupuncture practice is built through teaching, scholarship, experience and expert opinion, and varies depending where acupuncture study and practice takes place. There are differences in education and training in traditional Chinese acupuncture between the East and West, as well as differences within individual European countries (Stollberg, 2007) and within China (Scheid, 2002; McCarthy, 2008). In China, both Chinese medical practitioners and professional acupuncturists are taught both biomedicine and Traditional Chinese Medicine; all Western medical doctors in China spend approximately 10–15% of their time studying TCM and vice versa (Hesketh and Zhu, 1997; Xu and Yang, 2009). In European countries there are, in general, two types of acupuncture practitioners, medical practitioners who complete additional training in acupuncture, sometimes called 'medical acupuncture' and professional acupuncturists who have in-depth training and practice in traditional acupuncture and for whom acupuncture is likely to be their primary career focus (Vickers and Zollman, 1999).

1.3. Acupuncture practice in China and the EU

Chinese acupuncturists are more likely to integrate Chinese and Western biomedical approaches such as diagnosis, and both now have equal rights within the Chinese healthcare system (Han and Ho, 2011; Shen et al., 2011; Scheid and MacPherson, 2012).

Plurality is fundamental to TCM in China, which may conflict with Western biomedical approaches based on reductionism, discrete anatomical structures, diagnostic categorisation and targeted treatments (Scheid, 2002).

Also, within TCM, concurrent use of acupuncture and herbal medicine is more likely in China, with herbs being the main therapeutic TCM modality. In China both acupuncture and herbal medicine are taught during TCM training, with specialisation occurring later. In the West, only around one-third of acupuncturists use herbs (Sherman et al., 2005). This may be related to perceived safety concerns in the West and, in Europe, is increasingly influenced by EU regulation on herbal medicines.

1.4. Acupuncture integration and regulation – the health care systems in China and the EU

In China the level of integration of TCM and Western medicine surpasses that of any healthcare system in the EU (Hesketh and Zhu, 1997) with research suggesting approximately 32% of doctors practice both TCM and Western integrated medicine (Hesketh and Zhu, 1997; Xu and Yang, 2009). TCM in China is commonly

provided in hospitals. A recent survey found that 50.3% of acupuncturists practiced in a TCM hospital and 47.8% in a Western hospital (Liu et al., 2008). In China 95% of hospitals offer TCM, and this is increasing (Hesketh and Zhu, 1997; Liu et al., 2008). All provinces have at least one TCM hospital and every Western medical hospital has a TCM department (Robinson, 2006, 2011) compared to the EU, where acupuncture is often practiced privately (Xu and Yang, 2009). Clinics (equivalent to primary care) in China are often in rural areas, although TCM practitioners rarely practice at those locations (Xu and Yang, 2009). The roots of this integration are in the early People's Republic of China, when traditional medicine was 'scientised', through standardising and adapting the traditional theoretical basis of acupuncture (Birch and Felt, 1999). This was followed by further pushes towards integration in the 'Great Leap Forward' (Birch and Felt, 1999). Western medicine was also a priority for China in the new Republic (Birch and Felt, 1999). Since the 1990s, the Chinese government has continued to emphasise the importance of including high quality services integrating TCM and western medicine (Han and Ho, 2011; Robinson, 2011). China has a TCM department at the Ministry of Public Health and local Bureaus of Public Health, and TCM medical schools, hospitals, and research institutes are found in every province (Hesketh and Zhu, 1997). TCM is an integral part of China's health reforms (Birch and Felt, 1999).

In China, TCM enjoys a greater level of professionalisation than the West. TCM is standardised to include biomedical sciences (Birch and Felt, 1999) and continues under the same registration system as Western Medicine (Xu and Yang, 2009), the State administration for traditional Chinese medicine (<http://www.satcm.gov.cn>) and is regulated by law (Law of the People's Republic of China on Medical Practitioners 1998).

In Europe, each country has different regulatory processes and level of integrative provision (McCarthy, 2008). In some European countries acupuncture can be practised by both conventional biomedical practitioners and those without a biomedical qualification, involving different professional bodies and training. Many countries will only allow conventional biomedical doctors to practice acupuncture, e.g. Austria, Hungary, France and Italy, others have statutory regulation e.g. Spain, Sweden, Switzerland, Belgium and Germany, and a few remain unregulated, e.g. Greece, Ireland, Finland and UK (McCarthy, 2008). In the UK, for example, estimates suggest that of the 4 million acupuncture treatments, approximately a third are provided within the National Health Service, with education and regulation depending on the professional bodies involved, their course requirements and accreditation process (Hopton et al., 2012).

1.5. Acupuncture research

Research on all types on acupuncture is increasing (Han and Ho, 2011), with over 38 Cochrane reviews published to date. However, studies are heterogeneous and often poorly designed and the evidence gap for acupuncture remains. Prioritising areas for future research is now required, especially as funding in the West is tightened. The differences in practice, training and regulation between China and in the EU may present challenges to international collaboration on acupuncture research. In the USA, the National Institutes of Health has prioritised research funding on complementary and alternative medicine, based on five criteria: preliminary data available; public use; public health importance; feasibility and cost (Nahin and Straus, 2001; Cardini et al., 2006).

Despite awareness of these differences in acupuncture practice between the East and West, there is little published information on how this could influence research priorities. Given the differences in practice, it is important for the West to collaborate with China to facilitate incorporation of traditional theories and integrated

practice into research (Cardini et al., 2006). This study therefore used an identical questionnaire in both the EU and China to attempt to compare data on how acupuncture practitioners view research on acupuncture and its priorities.

2. Materials and methods

2.1. Aim

This study aimed to explore where practitioners of traditional acupuncture perceive more research is needed and identify opportunities for future collaborative research, in order to support the evidence base for acupuncture.

2.2. Questionnaire design and piloting

The questionnaire was designed by the authors and members of GP-TCM, including acupuncturists and other researchers from both China and the EU who had expertise in epidemiology and health service evaluation (see authors and acknowledgements). The questionnaire was piloted on 20 acupuncture EU practitioners and 20 Chinese practitioners and amended accordingly. The questionnaire was translated into Chinese and back translated by other Chinese speakers to ensure meaning was comparable. Given the diverse languages in European countries the EU questionnaire was only available in the English language.

The questionnaire included both open and closed questions: demographic details, training, practice setting, acupuncture techniques used, perceived adverse event reporting, diagnostic methods, conditions commonly treated, conditions where practitioners felt more evidence was needed and identification of conditions they perceived would show benefit if investigated in a clinical trial. The questionnaire was completed online in the EU and on paper in China, due to limited access to acupuncturists in China via Survey Monkey software (<http://www.surveymonkey.com>) was used.

2.3. Sampling methods and questionnaire distribution

Convenience and purposive sampling were used in order to access professional acupuncturists and adhere to project deadlines. 'Professional acupuncturists', practising traditional acupuncture, rather than those practising acupuncture as an 'add-on' to biomedicine were targeted. Two different approaches were used due to the differences in professional organisation of acupuncture between Europe and China.

In order to capture practitioners who practice traditional acupuncture, EU acupuncture and TCM professional groups were identified through the World Federation of Chinese Medicine society's website (<http://www.wfcm.org>). During December 2010 to May 2011 they were asked to approach their individual practitioners by e-mail providing the link to the online survey using their usual communication methods. Fifty two organisational leads were contacted in the following 23 European countries: Austria, Belgium, Bulgaria, Czech Republic, Cyprus, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Holland, Latvia, Lithuania, Poland, Portugal, Spain, Sweden, Slovakia, Slovenia and UK.

For the Chinese sample, as the vast majority of Chinese acupuncturists practice in hospitals, a purposive sample of institutions and hospitals were selected to capture professional TCM acupuncturists. The questionnaire was sent to: Beijing Traditional Chinese Medicine Hospital ($n=93$), Shanghai Research Institute of Acupuncture and Meridians ($n=90$), Guangdong Hospital of Traditional Chinese Medicine ($n=100$), Tianjin Academy, TCM affiliated hospital ($n=24$) Acupuncture and Meridian department, Second TCM

affiliated hospital (Tianjin University of TCM) ($n=24$), Acupuncture and Meridian department, TCM affiliated hospital (Chengdu University of TCM) ($n=83$), Jiangsu Province hospital of TCM (Nanjing) ($n=33$), Yunnan Provincial hospital of TCM (Kunming) ($n=32$). These were agreed as valued representative institutions by consensus within the Chinese survey management team. For example, the first affiliated teaching hospital of Tianjin TCM University was established in 1954 and ranked the largest general TCM hospital in China (<http://www.tjtcn.cn/english/>). To avoid potential regional bias, other equivalent sites were selected representing the highly populated regions of the northern, southern, southeastern and southwestern localities in China. At each of the 8 selected sites, the professional acupuncturists and the TCM doctors employed at the institutional acupuncture department were the principal targets of the survey.

For the Chinese sample, a trusted academic collaborator was invited as the local organizer to help with the distribution and collection of the questionnaires (printed in Chinese and mailed to the survey sites).

2.4. Statistics

In China, data were manually entered into the "surveymonkey" electronic online database. Data was coded, downloaded and entered into SPSS v18. Frequency data and crosstabs were generated, and chi-squared tests used to identify any correlations between variables and between the two locations.

3. Results

3.1. Response rate

A total of 1126 responses were received. The response rate for EU practitioners could not be calculated as it was a convenience sample; however for the Chinese sample, which was purposive, there was a 98% completion rate. One hundred and six questionnaires were excluded as they were: from countries other than the EU or China; incomplete (most of these had only completed the first question); or only used TCM herbs and did not practice acupuncture. This left 1020 (559 EU, 461 China) questionnaires for analysis which allowed comparisons of acupuncture practitioners between EU and China.

At least one response was obtained from 14 different European countries. Of the 559 completed responses, 438 provided their current country of residence: 202 from UK; 69 Spain; 51 Switzerland; 40 Italy; 36 Germany; 14 Netherlands; 9 Belgium; 6 Slovenia; 4 Cyprus; 2 Portugal; 2 Ireland; 1 Sweden; 1 Czech republic; 1 Finland. Given the small number of responses from many countries, subanalysis by country was not carried out.

3.2. Differences between practitioners in EU and China

Chinese practitioners were significantly younger ($p<0.001$), with nearly 80% in the 18–39 age groups compared to only 26% in the EU sample (Table 1). In the EU sample there were slightly more females (60% vs 55%) but this was not significant.

Practitioners in China were significantly more likely to report using both Chinese and Western biomedical diagnostic methods, compared with EU who were more likely to use Chinese methods only ($p<0.001$). Chinese practitioners were more likely to be report having a specific biomedical qualification (i.e. Western medical doctor, nurse physiotherapist or dietician) (75.9% vs 46.7%) ($p>0.001$).

Current location of practice varied, with EU practitioners more likely to practice privately; however, due to the method of

Table 1
Demographic and practice details.

	EU	China
Age ^a		
18–29	3.5% (16)	40.7% (181)
30–39	22.6% (103)	38.9% (173)
40–49	40.2% (183)	16.0% (71)
50–59	27.0% (123)	3.8% (17)
Over 60	6.6% (30)	0.7% (3)
Missing	104	16
Sex [§]		
Female	59.8% (272)	55.3% (247)
Male	40.2% (183)	44.7% (200)
Missing	104	14
Current practice [*]		
Hospital	4.3% (19)	96.5% (415)
Private practice	87.9% (384)	1.2% (5)
General practice	7.8% (34)	2.3% (10)
Missing	122	31
Advice given		
Dietary advice [§]	72.6% (427)	67.2% (312)
Exercise advice [§]	49.7% (292)	48.7% (226)
Other lifestyle advice [*]	55.4% (336)	28.4% (132)
Total	559	461

^a $p < 0.001$.[§] Not significant.

sampling, Chinese respondents were exclusively in hospital practice (note, private practice may also occur in hospital) ($p < 0.001$).

Practitioners reporting using both herbal and acupuncture treatments were significantly more common in China (81.1% of acupuncturists practiced herbal medicine), compared with practitioners in the EU (55.1%, $p < 0.001$). A similar pattern was observed for practitioners' use of decoctions, herbal pills and externally applied herbs between Chinese and EU practitioners (all $p < 0.001$). Electroacupuncture was practiced by 39.7% of EU acupuncturists and 28.2% of Chinese. Only 26 practitioners (2.5%) did not practice manual whole body acupuncture (11 from EU, 15 from China). Of these practitioners, 2 used laser, 13 electro, 7 auricular and 7 trigger point acupuncture.

Massage was used as part of treatment by approximately half of practitioners in both locations. There were no significant differences between EU and Chinese practitioners regarding whether they also provided dietary or exercise advice, but EU were more likely to provide 'other advice' ($p < 0.001$). This was mainly other Complementary and Alternative Medicine (CAM) (63.2% of details given) such as massage, yoga, healing and Western herbs. Chinese acupuncturists were slightly more likely to use cupping ($p = 0.007$).

In the EU, 261 (44.4%) of practitioners self-reported a specialist area of practice. The most common were within obstetrics/gynaecology, (covering 44.0% of specialisms reported) followed by pain, covering 28.3%. In China 225 (48.5%) reported specialisms, mainly neurology (42.6%) and pain (12.2%).

3.3. Differences between EU countries

Given the small numbers of responses from some countries we could not compare results from different EU countries. However, within our total sample there appeared to be two groups of practitioners of traditional acupuncture, 'Group 1' who practised as professional acupuncturists and did not self-report having a specific biomedical qualification,¹ and 'Group 2' who we anticipate

also practiced traditional acupuncture but additionally reported a biomedical qualification.² Group 1 were more likely than Group 2: to be female (63.5% vs 50.4%, $p = 0.010$) and younger ($p = 0.004$); to be trained in China only (18.3% vs 7.5%, $p = 0.027$); to practice privately (93.3% vs 74%), to practice external applications, massage and cupping. In contrast, Group 2 were more likely than Group 1: to have trained in both China and Europe (13.6% vs 20.0%, $p = 0.027$); to work in general practice (13.8% vs 5.4%, $p < 0.001$); to practice laser acupuncture.

3.4. Health conditions in practice and research

Practitioners were asked to name the three conditions they most commonly treated (open question), which were then categorized. A separate question asked practitioners to select from a list those conditions perceived as best responding to TCM. There were differences between EU and China in the types of conditions (the majority of which were reported in western diagnostic terminology) that were most commonly treated and seen as responding to TCM. These are given in order of importance in Table 2, with the most commonly reported being indicated by the shaded area.

In summary, those that were both commonly treated and perceived as responding to TCM, were

- EU: pain, obstetrics/gynaecology, psychiatric, stress.
- China: neurological, pain, and gastrointestinal.

There were also differences within the EU, with 'Group 1' perceiving obstetrics/gynaecology and psychiatric problems as responding to TCM and 'Group 2' allergic, gastrointestinal and respiratory disorders.

Participants were asked to name up to 3 conditions they believed needed more research evidence (Fig. 1), and 3 conditions they felt would show benefit in a clinical trial (Fig. 2). These two figures show these responses categorised (percentages refer to number of times condition is mentioned divided by number of respondents).

Although Chinese and EU respondents agreed in terms of the main categories where research was needed (Fig. 1), 63% of Chinese respondents specifically identified neurological conditions as needing more evidence. For the EU respondents, the main areas were gynaecological (45%) and pain (40%).

Fig. 2 demonstrates that for the EU participants the same issues – pain (92%) and gynaecological conditions (38%) – were the ones which respondents felt may show benefit if investigated in a clinical trial. In contrast, fewer than 20% of the Chinese practitioners believed that acupuncture would show up well in trials for pain. They favoured gastrointestinal (58%; wide ranging examples such as stomach-ache, gastritis, constipation, diarrhoea) or respiratory conditions (37%, mainly cough or cold/flu) followed by gynaecological (29%) and neurological (28%). EU practitioners had much lower expectations of trial benefit for gastrointestinal (39%), respiratory (11%) and neurological (6%) conditions.

In summary, the priority areas for future research (where over 20% of respondents indicated where evidence was needed and also which would show benefit in a trial) were identified as obstetrics/gynaecology (infertility, dysmenorrhoea, menopause symptoms), pain (back pain, headache/migraine, neck pain and

¹ UK (70% did not report having a specific biomedical qualification); Ireland (100%); Spain (51%); Portugal (100%); Finland (100%); Switzerland (76%).

² Germany (94% have a biomedical qualification); Netherlands (79%); Belgium (78%); Italy (100%); Slovenia (100%); Cyprus (100%); Sweden (100%); Czech Republic (100%).

Table 2
Commonly treated conditions.

	Commonly treated conditions ^a n(%) ^c		Conditions likely respond to TCM ^b n(%) ^c	
	EU	China	EU	China
Pain	563 (114%)	394 (91%)	448 (80%)	303 (60%)
Neurological	23 (5%)	428 (99%)	34 (6%)	63 (12.5%)
Obstetrics/gynaecology	202 (41%)	44 (10%)	265 (47%)	191 (38%)
Stress	121 (24%)	11 (1%)	322 (57.3%)	15 (3%)
Psychiatric	161 (32%)	9	121 (22%)	51 (10%)
Gastrointestinal	53 (11%)	94 (22%)	219 (39%)	301 (60%)
Respiratory	21 (4%)	100 (23%)	63 (11%)	83 (17%)
Rheumatological	58 (12%)	7	105 (19%)	104 (20%)
Allergic disorders	29 (6%)	4	139 (25%)	109 (22%)
Blood disorders	0	0	48 (9%)	19 (4%)
Chinese diagnoses	89 (18%)	31 (7%)	N/A	N/A
Other	60 (12%)	61 (14%)	N/A	N/A
Post-viral	4 (1%)	42 (10%)	44 (8%)	41 (8%)
Well being	36 (7%)	4	128 (23%)	131 (26%)
Cardiovascular	5	14	42 (7.5%)	139 (28%)
Dermatological	9	5	86 (15%)	101 (20%)
Cancer	2	3	30 (5%)	34 (7%)
Immunodeficiency	1	0	24 (4%)	10 (2%)
Ophthalmic	1	3	12 (2%)	7
Renal	0	0	20 (4%)	37 (7%)
Total number of responses ^c	1438	1254	562	503

Percentages are not given those where the base number was less than 10.

^a This question was open-ended: answers were categorised.

^b This question was multiple choice, with up to three choices each.

^c Each respondent could name up to 3 conditions: n = total number of times condition is given; % = n divided by number of respondents.

other musculoskeletal problems), psychological (anxiety and depression), and neurological (stroke and facial paralysis) conditions.

Acupuncturists practising in China were least likely to be interested in participation in future funded trials (26.8%) compared to EU (63.7%), $p < 0.001$. Of all those respondents who expressed an interest, over a quarter (26.5%) had previous experience of being involved in trials.

4. Discussion

4.1. Confirming that practice is different between EU and China

There were differences between acupuncturists practising within the EU member states and China in terms of their demographics, location of practice, common conditions treated, perceived need for research evidence on acupuncture and the topics

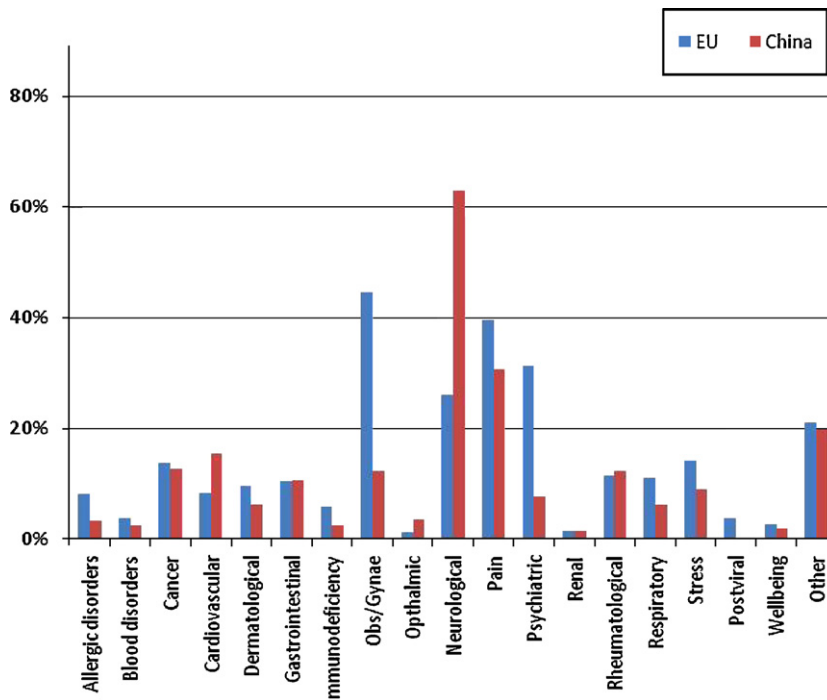


Fig. 1. Conditions which need evidence.

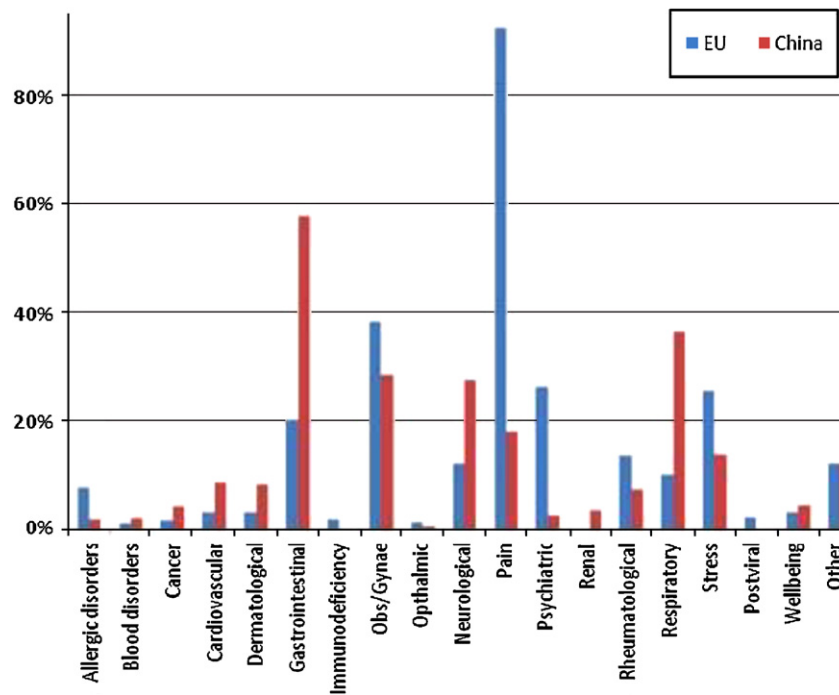


Fig. 2. Conditions which would show benefit in a clinical trial.

for future clinical trials. The EU sample showed a higher proportion of female practitioners than the Chinese sample. In the UK, the country with largest EU sample representation, professional female acupuncturists outnumber males by almost 2 to 1 (Hopton et al., 2012), but such demographic information for China is scarce. More striking was the difference in age profile. This may in part be a sampling anomaly. The high prevalence of EU acupuncturists who used other complementary medicine methods with acupuncture suggests that many of our EU respondents practiced a holistic, integrated form of medicine, rather than using acupuncture as an add-on. This may reflect that in the West acupuncture is often studied as a counter-cultural second career by people who are older and have had previous careers in other fields. Data on how acupuncture fits into individuals' careers, or details of their day to day practice such as numbers of patients seen, or degree of part/full-time working was not explored in this survey.

Chinese practitioners were more likely to use both Western and Chinese diagnostic methods (Han and Ho, 2011; Shen et al., 2011) and concurrent use of herbs and acupuncture was more common in China. The medical conditions commonly treated also differed between China and the EU: this is discussed fully in Section 4.3. EU practitioners were more likely to use other CAM techniques combined with acupuncture, although this is likely to vary between EU countries. These findings highlight how acupuncture can be practiced as part of a pluralistic medicine, either integrated with Western medicine, as in China, or with other CAM, as generally seen in Europe. Such variation in practice is not surprising given the differences in education and training available (Stollberg, 2007). The variability of TCM practice and theory can be traced back to the Asian philosophical approach which, rather than the Western 'either-or' logical theory and absolute truth, is open to multiple ideas being 'correct' (Birch and Lewith, 2008). As part of TCM, acupuncture in China is deeply embedded culturally, socially and politically. This is not true in the EU, where the Western medical model is socially and politically dominant. This inevitably leads to significant differences in who practices it and how. Acupuncture in Chinese hospitals is integrated with biomedicine to a degree that is currently largely impossible in the EU, in general.

Differences in what constitutes TCM practice reflect historical developments, as acupuncture was singled out in the import of TCM to the West and its development through the second half of the 20th century (Birch and Lewith, 2008). More recently, with the increasing number of Chinese practitioners in the West, and increasing numbers of Chinese herbal courses, there are more acupuncturists who also practice Chinese herbal medicine. TCM herbal training in the EU varies between countries, but tends to be an optional further qualification for existing acupuncturists rather than an alternative pathway at undergraduate level.

4.2. Conditions treated: influence of training and the healthcare system

The location of acupuncture practice was probably the most important difference between the EU and China, with the majority practising privately and in hospitals respectively. It is likely that many of our findings can be explained by the differences in the healthcare systems between EU (as well as within EU countries) and China, and the fact that we aimed to only include practitioners of traditional acupuncture. For example, most people will go directly to a hospital in China first whereas the GP is likely to be the first point of contact in Europe (Hongling, 2007). In China urban local community integrated health centres are now being developed, such as Zhanlanlu Community Health Centre in Beijing (Anon, 2011).

Within the EU, there were significant differences in demographics and practice characteristics between countries where acupuncturists are required to be biomedically qualified compared to those countries where they are not. Of interest is that participants from EU countries where acupuncturists are likely to be biomedically qualified and practitioners from the Chinese sample (the majority of whom had medical training) reported similar commonly treated conditions and conditions perceived as more likely to respond to TCM, namely respiratory and gastrointestinal. These prevalence patterns differed to those for acupuncturists from countries where biomedical qualification was not a requirement. This may be due to variation in treatment-seeking behaviour of patients

with these diagnoses, the appropriateness of integrated treatment for certain conditions, or variations in the acupuncture training received by biomedically qualified compared to other acupuncturists, but this requires further investigation. It is also a reflection of the differing status accorded to these two types of acupuncturists within national healthcare, scientific and academic communities. The range of conditions deemed appropriate for acupuncturists to address is limited if they are not also Western medical physicians.

4.3. Research priorities were based on conditions treated in practice

The conditions which acupuncturists considered require more evidence or would benefit from investigation in a clinical trial are very closely related to clinical experience, i.e. conditions seen in practice, whether they reported specialisation in a particular area, and also whether they reported Western biomedical qualifications.

Professional acupuncturists have tended to be generalists, equipped to treat a variety of illnesses (Vickers and Zollman, 1999), though in recent years in the EU there has been a rise in specialisation, especially for treating children and gynaecological issues (Hopton et al., 2012), as seen in the EU in this study. Although around half reported specialisation, the level of specialisation amongst the sample practitioners was not recorded. Even the generalists, though, may be limited in the conditions commonly encountered, for a variety of historical and socio-political reasons. Practice is skewed towards musculoskeletal pain and away from the more serious internal problems (MacPherson et al., 2006; Hopton et al., 2012).

Within this context the conditions commonly treated and those where research was prioritised were pain and obstetrics/gynaecology in the EU overall and neurological conditions (stroke and facial paralysis) in China. The same illnesses were perceived in the EU as most likely to show benefit in trials, whereas the Chinese practitioners downgraded pain and neurology in this respect, promoting gastrointestinal and respiratory conditions above them. The reasons for this are unclear and require further investigation.

Caution should, however be applied to these findings, as discussed in the limitations discussed later in this article. The interpretation and definition of conditions treated and successfully treated may vary between countries due to cross-cultural and semantics (Birch and Felt, 1999), for example, Chinese practitioners may classify depression as insomnia (Cardini et al., 2006). In addition there is likely to be extensive variation in prioritisation between different EU countries.

4.3.1. Pain

Overall, pain was the most frequently reported condition treated by acupuncturists practising in Europe. Consultation rates for acupuncture in the UK are highest for musculoskeletal conditions, often pain (MacPherson et al., 2006; Hopton et al., 2012). The UK's National Institute for Clinical Excellence (NICE) advocates the use of acupuncture for low back pain which resulted directly from UK research on back pain (Thomas et al., 2005). Similarly, clinical research in Germany has led to state health insurance schemes cover of acupuncture for back pain and osteoarthritis (Cummings, 2009). Other recent data from the UK suggests that this relates to conditions general practitioners acknowledge as being problematic to treat, primarily musculoskeletal conditions (Paterson and Britten, 1999).

This reflects the historical context, with acupuncture first being imported to the West, to investigate its analgesic properties and mechanisms (Birch and Felt, 1999). The belief in the West that acupuncture is useful for pain is likely to be related to the strong evidence base in this area, as well as knowledge of the pain gate

theory as a potential operating mechanism for acupuncture, one which is in line with Western medical theory (Kaptchuk, 2002).

4.3.2. Stroke

For practitioners in China the most commonly reported conditions treated were neurological (mainly stroke). Using acupuncture for stroke patients is common practice in most hospitals in China (Zhang et al., 2009). The differences between the West and China may be due to stroke treatment and rehabilitation recently being prioritised as an issue for biomedical treatment (Department of Health, 2007). There is limited evidence in the West on the number of stroke patients treated with acupuncture but it is thought to be rarely seen in usual practice. Stroke is one of the few major illnesses for which the Chinese consider acupuncture to be the treatment of choice. In the West most professional acupuncturists would have no access to hospital patients and hence to neurological conditions in the earlier stages. Also patients and their biomedical doctors would not tend to consider acupuncture as a likely therapeutic option given the emphasis on stroke in biomedicine (Department of Health, 2007).

There is also a large body of evidence in China favouring acupuncture for stroke (Zhang et al., 2009) but largely equivocal evidence in the West. Cochrane reviews conclude “no clear evidence” for stroke rehabilitation, dysphagia or acute stroke (Zhang et al., 2005; Wu et al., 2006; Xie et al., 2008), though a Canadian review with Chinese and Western data was more positive (Wu et al., 2010). The different interpretations of the evidence probably reflect cultural and political differences as well as scientific ones (Bovey, 2010). Evidence is limited for Bell's palsy, conclusions cannot be drawn (Kim et al., 2011).

4.3.3. Obs/gynae

Obstetric/gynaecological conditions were prioritised in the EU, in particular in ‘Group 1’ countries, as areas for research, including infertility, dysmenorrhoea and menopause.

Obstetric and gynaecological conditions were identified as gaps in the evidence base in a review of systematic reviews by another project conducted as part of the GP-TCM initiative. A recent systematic review concluded there is “no evidence of benefit in the use of acupuncture during assisted conception” (Cheong et al., 2008), although this might depend on timing of acupuncture (Lee and Fan, 2009). There has been a rise in the last few years in practitioners providing support for fertility issues (Bovey et al., 2010) but apart from assisted conception the amount of research is sparse.

For dysmenorrhoea a Cochrane review concluded that acupuncture may help, but further well-designed trials are needed (Lee and Fan, 2009). The evidence of acupuncture for menopause is unclear due to limitations of studies (Smith and Carmady, 2010).

4.3.4. Psychological

Psychiatric conditions and stress were the third most commonly treated issue and seen as responding well to TCM, particularly in ‘Group 1’ EU countries. In fact, if conditions classified as psychiatric and stress are combined the number of acupuncturists perceiving a need for evidence for this category becomes greater than for pain in the EU. This category of conditions was rarely mentioned by Chinese practitioners, where such conditions may be socially unacceptable and labelled as something different.

4.4. Researching practice

Given the strong link demonstrated between practice and research prioritisation by acupuncturists, it is important that acupuncturists are actively involved in the research process and that research is based on, and relevant to, practice, researchers need to work collaboratively with practitioners when evaluating

traditional treatments (Cardini et al., 2006). Sherman et al. (2005) suggested that priorities should be focused on topics useful for understanding and improving practice, and questions of interest to both patients and practitioners, such as pain and emotional issues. Studies need to be of obvious importance and urgency to ensure motivation. This may mean focussing on areas of particular relevance to acupuncture's public image, but could also be looking inwards towards understanding and improving practice.

Patients in China recognise the importance of research as a valuable component of clinical practice (Liu et al., 2008). This may be less likely so in the West, although it is likely to vary between countries, which may lead to less research interest amongst practitioners. However, in this survey Chinese respondents were less likely to indicate their wish to participate in trials. This could have been due to the fact that it was described as 'collaborating in EU trials'. Only 27% of participants who identified that they were interested in future trials had research experience. Previous observation in the UK indicated that participation was facilitated if practitioners provided an initial commitment to learn about research (45). Certainly it has proved difficult to engage acupuncturists in research in the UK and probably other countries in the EU (Bovey et al., 2005; Fitter and Thomas, 2005). Lack of time when running a busy practice is usually cited as the main obstacle (Wayne et al., 2008).

Alternative approaches to the standard evidence based medicine hierarchy of approaches may be required to construct evidence which takes into account TCM's historically and culturally distinctive characteristics (Scheid, 2012a). TCM has a different conceptual and theoretical basis compared to modern medicine, and acupuncture treatment extends far beyond needling, with the practitioner being a component or contributor to the treatment (Paterson and Dieppe, 2005; Liu, 2007; MRC, 2008). This substantiates the need to include acupuncturists in the design of research but also demonstrates the need for them to understand the processes required for research. This could also ensure that their contribution, which is based in their understanding of TCM theory and on practical experience, could improve acupuncture clinical trial quality. Further knowledge is required on the role of the acupuncturist in research and the extent to which individual practitioners vary in their treatment style and effects to inform research designs (Bovey, 2010). Our findings also raise issues about whether the nature, length and style of acupuncture training affects outcome, which needs further exploration in individual countries (Witt et al., 2010).

Acupuncturists have expressed favourable views about using research and consider integration of research evidence into their clinical practice important (Stomski et al., 2008). However, professional acupuncturists are more likely to perceive experience-based evidence as important but downgrade the value of evidence produced in research trials (Hansen, 2011). Previous research in Australia indicated that professional acupuncturists' interest in research declined as they developed their clinical experience (Stomski et al., 2008).

The number of published articles in acupuncture research has been growing sharply (Han and Ho, 2011). However, this research usually considers only a narrow sector of the total evidence, and one which does not accurately reflect acupuncture practice (Liu, 2007; Paterson et al., 2008). The RCTs have been small, heterogeneous and of poor quality. There is still an overemphasis on proving efficacy, using sham-controlled designs (Paterson and Dieppe, 2005). It is perhaps not surprising that acupuncturists are suspicious of 'evidence based knowledge' and rely on their education, training experience and expert opinion to inform their practice. As warned by Zaslowski, it is important that the complexity of practice inherent in TCM is not lost through standardisation whilst practice evolves based on high quality evidence rather than expert opinion (Zaslowski and Soo Lee, 2012). New research methods are needed which account for complexity and treat TCM as a whole medical

system (Scheid, 2012a). Holism and systems theory may provide an appropriate research framework (Bovey, 2010). Research protocols based in whole systems theory which are grounded in current practice and patient experience may be useful, such as that used by Scheid (2012b). Both pragmatic and speculative research methods may also be valuable in capturing acupuncture practice in research (Bovey, 2010).

4.5. Potential for cross-cultural acupuncture research collaboration – conditions, priorities

The previous contribution and involvement of traditional Chinese acupuncture practitioners in designing randomised controlled trials (RCTs) and informing acupoint selection is unclear. One major aim of this survey was to identify practitioners who would be interested in participating in future TCM global clinical research.

Research on traditional medical treatments may best be conducted collaboratively, internationally, and simultaneously within their original cultures as well as testing them in new cultural contexts (Cardini et al., 2006). For acupuncture therefore it is important that the West develop health care research collaborations with China, given their unique integrated health system and traditional knowledge (Cardini et al., 2006). We have identified significant challenges to global (and in fact across countries within the EU) research, including differences in practice, different prioritisation of conditions/perception of what conditions acupuncture can treat, different combinations of treatments (acupuncture and herbs), different diagnostic methods, different levels of integration and potentially different philosophical bases (Birch and Lewith, 2008). Future research needs to explore differences between EU countries, with larger samples to enable comparison.

International, multicentre, pragmatic studies of traditional treatments should incorporate (comparative) effectiveness and safety and investigate whether these are transferable to other cultures (Cardini et al., 2006). The results of this survey suggest that neurology and obstetrics/gynaecology are priorities as over 40% of acupuncturists perceive a need for evidence in these areas (in China and the EU respectively). In this study participants were provided with the option of using either biomedical or Chinese diagnostic terms; the majority chose to provide biomedical terms. However, focusing on specific biomedically defined conditions may not be the best way forward for acupuncture research, given the international differences in prioritisation. In addition, the use of objective biomedical categories is intrinsically in conflict with TCM practice (Scheid, 2012a). Also most acupuncturists were generalists; specialisation is not common in acupuncture (Chi et al., 1996). Alternative approaches may be provided by personalised medicine, use of TCM pattern differentiation in research, genomics, and basing research in practice, as discussed above.

4.6. Limitations

The convenience and snowball sampling techniques used in this study limit the generalisability of the findings. In the EU we were dependent on whether the survey link was sent to members by the organisation's administration. The different sample size and sampling procedures used for EU and China, due to the variations in the organisation of the profession (professional bodies, where they practice, registers of practitioners, etc.), were also a potential source of bias and illustrate the problems of varying professional organisation and regulation (McCarthy, 2008). In particular grouping the heterogeneous countries of the EU may limit the generalisability of our findings. In China only TCM hospitals, rather than Western hospitals (who have TCM departments), were targeted, which may have affected the data, particularly related to acupuncture practice as well as omitting non-hospital based acupuncturists. The

Chinese sample also targeted large urban areas, so findings may not apply to rural practice. This survey provides information only on those acupuncture practitioners responding to the questionnaire. By contacting only organisations affiliated to the World Federation of Acupuncture Societies in the EU, the intention was to limit participants largely to those who have undertaken substantial training in traditional acupuncture. Given the numbers recruited from the different countries it is likely that most of the practitioners were well-qualified and following traditional approaches to diagnosis and treatment, but these will have been inevitably combined with some that did not meet these criteria. No distinction was made within the data to separate these, or other aspects of practice such as volume of patients, time spent on treatments, due to trying to keep the questionnaire short to aid completion. The low response from many EU countries meant a subanalysis comparing countries was not possible, limiting the generalisability of the findings.

The UK acupuncturists' response rate was roughly 5% (202 from a membership of 3800) from the two professional organisations contacted, the British Acupuncture Council and the Association of Traditional Chinese Medicine, who are mostly trained in China. There are at least 3 other professional organisations representing acupuncture in the UK who are biomedically qualified but only a small proportion of their membership may be fully TCM trained and were not contacted for this survey. The introductory paper by Uzuner et al., published in this issue (Uzuner et al., 2012), also used a survey monkey questionnaire and also demonstrated a higher response from UK participants compared with other EU countries. This may also be related to the number of networks either available or contacted in the UK which allowed better coverage, or the fact there were a greater number of Consortium network members in China and UK and also possibly because the questionnaire was provided only in English and Chinese. Although the questionnaire was designed collaboratively between China and Europe, the necessity of using the same questionnaire for these different geographical locations may have meant that some questions were not tailored to the local situation. For example, there were a range of acupuncture techniques which are used commonly in China but rarely in the EU which were not specifically included, such as fire needle acupuncture and plum blossom needling (Liu et al., 2008), Chinese practitioners were significantly younger, which may be due to the fact that acupuncture training occurs immediately after school, that there has been an increased focus in TCM training over the last few years (Heilig, 2009). Alternatively, the difference may have been a result of the different way EU and Chinese practitioners were recruited into the study, as a national study in 2007 found that acupuncturists in China were likely to be older (Liu et al., 2008).

This study begins to explore practitioners' perceptions of research and the need for evidence. Further research is necessary in this area to confirm our suggested ideas for future research on practice. This study has revealed insights into the differences in acupuncture practice between Europe and China and into the relationship between acupuncture practice and research. However, it also raises a number of questions for further investigation, such as: Can the evidence from surveys reliably reflect practice? Is evidence used in acupuncture practice? What is the best way to obtain practitioner input in determining the direction of future clinical trials? How can acupuncture practitioners improve the quality of research and make it relevant to their practice while satisfying the critics in the scientific community?

5. Conclusion

Historical, cultural and socio-political differences between China and the EU have shaped different healthcare systems and differences in acupuncture training and practice. Some of these

differences have been highlighted by this exploratory study. They are also evident to some degree in the practitioners' perceptions of priority conditions to investigate in clinical trials, which appear largely to follow from what they themselves see most of in practice.

Collaborative research involving acupuncturists and researchers from both China and EU could bring together complementary knowledge, skills and attitudes to produce studies that rate highly for both internal and external validity. Practitioners from both places should be involved in the design, as well as the execution, though further research is required to determine what should be the nature of this input. Priority areas for research are pain (EU), stroke (China) and obstetrics and gynaecology (both). Future research will need to attempt to incorporate the complexity and plurality of traditional Chinese acupuncture theory and practice, perhaps informed by comparative effectiveness, personalised medicine and TCM pattern differentiation.

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Glossary

EU: European Union

TCM: Traditional Chinese Medicine

GP-TCM: Good Practice in Traditional Chinese Medicine