

# Australian Journal of Acupuncture and Chinese Medicine

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# Editorial

A journal run by a professional association serves three main purposes: providing an outlet for reporting research, providing a forum for discussion of clinical practice, and guiding policy-making. These are also what we, at the AJACM, try to achieve.

Pulse diagnosis, though one of the four diagnostic techniques in Chinese medicine, is difficult to teach and to learn because one has to rely solely on one's sense of touch without the assistance of other senses. Unlike other senses, the sense of touch is not commonly used and we lose our 'inner touch'. Consequently the reliability and usefulness of pulse diagnosis is sometimes questioned. Researchers from the University of Technology, Sydney, have tried to solve the problem. In the study titled 'Investigating the Reliability of Contemporary Chinese Pulse Diagnosis', Bilton and colleagues introduced a system called Contemporary Chinese Pulse Diagnosis and found good to high agreement within and between practitioners on 70 to 80% of pulse types. The result is encouraging.

Most of us have had some experience in treating Workcover patients and dealing with the Workcover Authority in our own state. Some of us have mixed feeling about this system as Chinese medicine practitioners. And we are not alone in this. In the recently released 'Draft National Pain Strategies', promoting interdisciplinary practice and pain-management training of independent medical examiners of Workcover or Third Party patients is listed as a priority.<sup>1</sup> In this issue, Choy and colleagues reported the results of a survey of 500 Australian acupuncturists and Chinese medicine practitioners and identified a low referral of Workcover patients receiving Chinese medicine treatments and the perceived reasons for this. Despite the difficulties, a majority of us want to treat more, not less, Workcover patients. A survey like this provides essential data for any organisation that wants to address the issue of Workcover, and guides policy-making. I am sure that you have many stories to tell and I am interested to know your views on this issue through letters to the editor.

Another article related to policy is a case reported by Murray and Hall from Queensland. This paper, titled 'Acupuncture Point Injection in the Treatment of Midportion Achilles Tendinopathy: A Case Report', not only addresses the therapeutic effect of this modality, but will also generate new

interest in this practice and discussion of associated policy. For instance, point injection is not mentioned in the 'Guidelines on Infection Prevention and Control for Acupuncturists',<sup>2</sup> which includes the risk assessment of almost all other modalities of acupuncture. Furthermore, as mentioned by the authors, most professional indemnity does not automatically cover this practice as part of acupuncture. It is timely that this issue is raised and discussed, given the advent of national registration.

We continue to bring you debates on Chinese medicine practice in countries where Western medicine dominates the mainstream healthcare system. Integrative medicine has been a popular topic and is considered a way to incorporate our profession into the healthcare system. In the paper titled 'Integrative Medicine: Combining the Practice of Orthodox & Alternative Medicine', Edin urged us to consider this term carefully and differently. The author argued that the term implied enhanced health practice on the face of it, but in reality was a 'politico-economic entity'.

We continue to provide you with current research reports, snapshots, book reviews and a conference report. In this issue's report, Davenport offered his view as a rehabilitation physician on a systematic review of acupuncture on the function of patients with spinal cord injuries. Also reported is an analysis of newly published workforce data of registered Chinese medicine practitioners in Victoria.

We hope you enjoy reading this issue and again, we would like to learn your thoughts on the items discussed.

## References

1. National Pain Summit Initiative. Draft National Pain Strategy. March 2010 [cited 18 April 2010]. Available from: <http://www.painsummit.org.au/strategy/Strategy-NPS.pdf/view>.
2. Chinese Medicine Registration Board of Victoria. Guidelines on Infection Prevention and Control for Acupuncturists. March 2009 [cited 18 April 2010]. <http://www.cmr.vic.gov.au/information/p&c/practiceconduct/gipca.html>.

**Zhen Zheng**  
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# Investigating the Reliability of Contemporary Chinese Pulse Diagnosis

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## ABSTRACT

There have been few studies that evaluate the reliability of the clinical use of pulse diagnosis despite it being a fundamental part of Oriental medicine diagnostics. The objective of this study was to determine the levels of intra-rater and inter-rater reliability of practitioners using an operationally defined method, Contemporary Chinese Pulse Diagnosis (CCPD), to evaluate the radial pulse of volunteer subjects. The study utilised a real-life design to investigate CCPD in a clinical setting. Fifteen volunteer subjects and six testers skilled in the CCPD method were recruited. Two episodes of data collection were conducted 28 days apart as a practical test and retest. For each subject, 30 pulse categories defined by the CCPD system were assessed and reassessed by the same four testers during both phases of testing. All assessments were conducted according to the CCPD method. Intra-rater reliability was measured by comparing individual tester results on day one with day two, while inter-rater agreement and reliability were determined by comparing all testers across both days. The data were analysed using Cohen's kappa coefficient. Kappa values were interpreted according to recommendations from previous clinical studies and parameters considered acceptable when using a tool such as CCPD to assist in clinical diagnosis. Results for intra-rater reliability showed excellent agreement in 43.2%, moderate to good agreement in 42.5% and poor agreement in 14.3% of the raw kappa calculations. Inter-rater agreement demonstrated excellent agreement in 23.5%, moderate to good agreement in 46% and poor agreement in 30.5% of the raw kappa calculations. In conclusion, when the system of pulse diagnosis is operationally defined, acceptable levels of reliability can be achieved. Disagreement was either intrinsic to the subject or indicative of ambiguity within the CCPD system. Accordingly, review of the terminology of the appropriate pulse categories and their clinical reliability is recommended.

**KEYWORDS** pulse diagnosis, intra-rater reliability, inter-rater reliability, Chinese medicine, acupuncture, Cohen's kappa coefficient, Contemporary Chinese Pulse Diagnosis.

## Introduction

### PULSE DIAGNOSIS AND CLINICAL PRACTICE

The practice of pulse diagnosis is obfuscated in the modern context due to a range of commonly accepted assumptions that have little basis in clinical fact,<sup>1</sup> the most notable being the 'correctness' of the historical pulse literature as a reliable means

for the diagnostic interpretation of pulse findings within clinical practice.<sup>2-5</sup> The classics have been shown under a range of experimental conditions<sup>6-10</sup> to be inadequate for this task therefore discounting this long held supposition. Accordingly, Ramholz<sup>5</sup> describes the classics as 'the starting point for study and research, not the accumulation or final arbiter of what can be known.'

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## PULSE DIAGNOSIS – THE RESEARCH

There have been too few studies undertaken to assess the reliability of pulse diagnosis, which is surprising, given there remains a questionable validity to the results obtained from any study on acupuncture or Chinese medicine using untested methods of assessment. Using pulse diagnosis as an example, without demonstration of the clinical dependability of the pulse-taking procedure, it is not possible to have confidence in any assertions concerning information gained from the pulse.<sup>11</sup>

Of the studies undertaken in English, Cole<sup>7</sup> was the first to report upon pulse diagnosis reliability. Studying four practitioners feeling the pulse of several subjects, Cole reported that low levels of agreement found between pulse assessors reflected the conflicting and confusing nature of information available in the literature. Krass<sup>8</sup> and Craddock<sup>9</sup> have also reported similar findings. Separately they each concluded that inter-rater reliability decreases with increasing levels of complexity of pulse qualities being measured. Together, the findings of these studies support the assertion that variation of definitions and pulse terms in the literature has limited the reliability of manual pulse measurement.<sup>6,11,12</sup> In response, King and Walsh<sup>10,11</sup> undertook a series of studies assessing the reliability of manual pulse diagnosis. Using a standardised evaluation procedure and concrete operational definitions<sup>10,11</sup> they demonstrated that high levels of inter-rater reliability can be achieved under these conditions.

## CONTEMPORARY PRACTICE

Practitioners depend upon the literature to assist and guide their classification of a pulse as healthy or not, thus contributing to their process of diagnosis.<sup>7-10</sup> Given the current state of the literature and the subjective nature of pulse diagnosis overall, it is not surprising to find reports in the literature, anecdotal and otherwise, of practitioners' reduced confidence in pulse assessment to contribute meaningful information to diagnosis.<sup>11,13</sup> For this reason, there has been a resurgence in systems of pulse diagnosis based on traditional texts and theoretical knowledge that have been further developed to clarify the problems of ambiguity contained in the classics, while still remaining clinically relevant to current methods of practice.<sup>15,14</sup> One such system is *Contemporary Chinese Pulse Diagnosis (CCPD)*.

## CONTEMPORARY CHINESE PULSE DIAGNOSIS

CCPD is a trademarked method introduced by Dr John HF Shen,<sup>14</sup> a prominent modern practitioner who trained with the Ding family physicians, one of three influential lineages in Menghe medicine.<sup>15</sup> It is believed the vast body of Chinese medical knowledge possessed by the traditional family lineages influenced his development of this pulse system. CCPD is ostensibly standardised or operationally defined in the text

*Chinese Pulse Diagnosis, A Contemporary Approach*.<sup>16</sup> Although using different definitions than those fixed by King and colleagues,<sup>11</sup> feasibly, a rigorous standard of testing to measure agreement levels between practitioners using this system can be applied. In this context, high levels of reliability should be achievable if the definitions of pulse characteristics, and how these are assessed, are being replicated every time.

CCPD incorporates six *principal* positions, 22 *complementary* positions, 80 pulse qualities, and eight depths.<sup>16</sup> The radial arteries are palpated bilaterally with differing amounts of pressure to assess pulse qualities at three main depths (termed the qi, blood, and organ depth).<sup>16</sup> Pulse qualities are described by sensation and defined using fixed terms in an attempt to eliminate the metaphoric ambiguity of the classical literature. In addition, each pulse term is given a specific diagnostic interpretation. Individual pulse positions are described using standard anatomical terms and the procedure for evaluating and identifying pulse qualities is clearly explained.<sup>16</sup> As the methods, terminology and interpretation are allegedly definitive and consistent within the system,<sup>16</sup> theoretically it is possible to undertake testing of intra-rater and inter-rater reliability.

Within CCPD the pulse is thought to represent the state of the organs, substances, pathogens and metabolic activity, or, the health of the person.<sup>16</sup> If health remains unchanged then the founding principles of this method indicate the fundamental characteristics of the pulse readings should remain accordingly stable, thus allowing appropriate inquiry. Accordingly, a study was designed to investigate the reliability of practitioners assessing pulses with standard pulse definitions and procedures using the CCPD system.

## The Study: Materials and Methods

### AIM AND OBJECTIVES

This study aimed to determine the reliability of practitioners using CCPD to assess the radial pulse of patients, including the examination of (1) intra-rater reliability by measuring agreement between single testers' assessments within the same subject made on different occasions, and (2) inter-rater reliability by measuring agreement between different testers assessing a single subject on the same as well as different occasions.

### DESIGN

The study incorporated a real-life design, where testing conditions reflected clinical practice, utilising the same procedure, positioning and documentation of findings (Figure 1). Two separate episodes of data collection were conducted as a practical test and retest 28 days apart (to replicate female subjects' menstrual cycles) at the same time of day (to control for diurnal pulse variance). The recorded data were

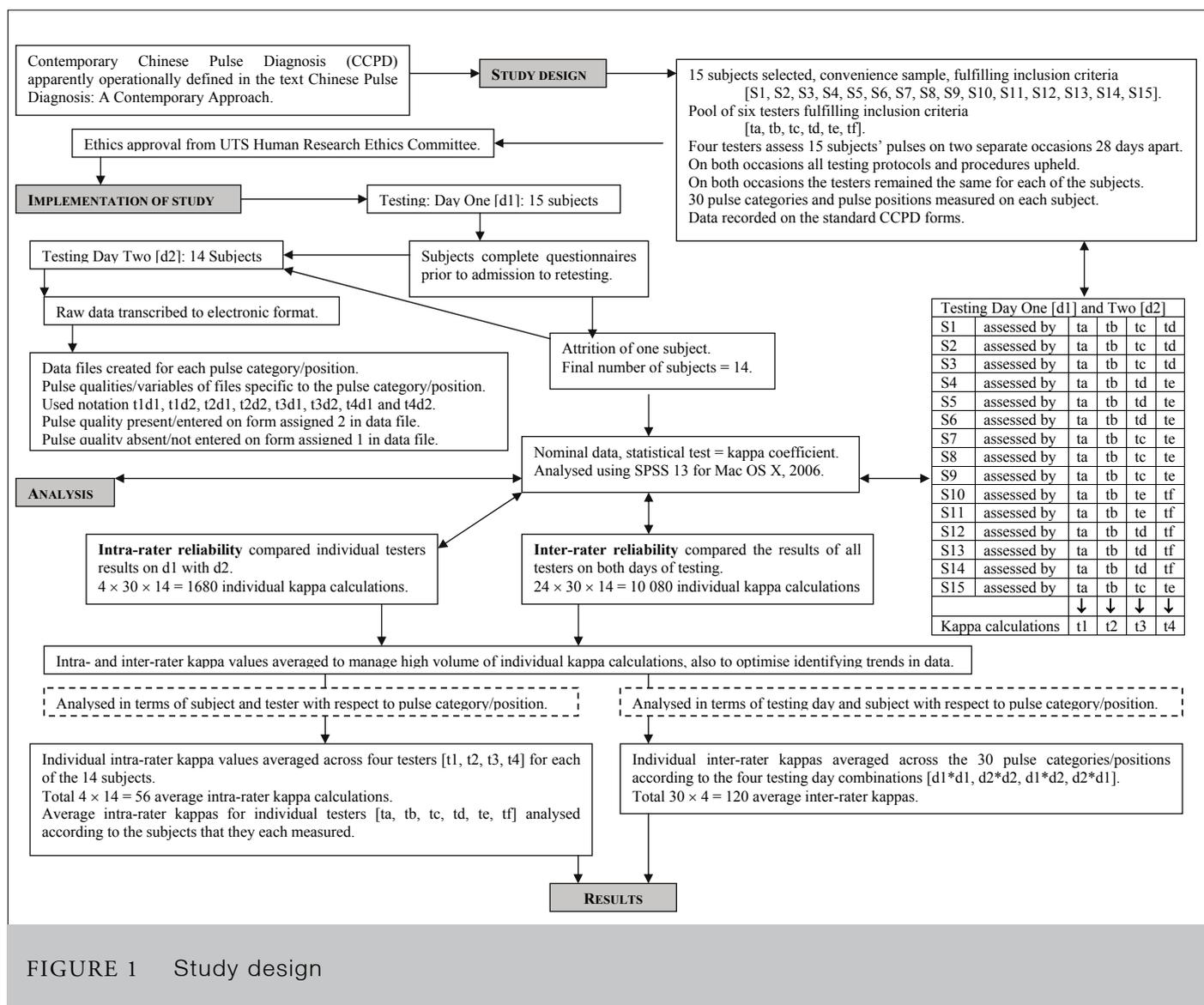


FIGURE 1 Study design

compared to determine the levels of agreement and reliability of testers using this method. All testing was conducted at Dragon Rises College of Oriental Medicine (DRCOM) in Gainesville, Florida, USA.

### PARTICIPANTS

Fifteen participants were recruited as a volunteer convenience sample from the Gainesville region. Eight of the 15 were students at DRCOM, the remaining were recruited from the local community by advertising. Inclusion criteria specified that the subjects were at least 18 years of age, had not previously completed a pulse assessment with the testers and, if receiving any form of medical intervention, it remain consistent for the duration of the testing period. Exclusion criteria included signs or symptoms of short-term acute illness (e.g., colds, respiratory and/or intestinal flu), febrile conditions, radical lifestyle

changes and modification to medical management or daily supplements. These parameters aimed to reduce influences that would alter the 'normal' pulse for the subjects and unduly affect the testing procedure.

Prior to the second stage of testing, all subjects completed a questionnaire detailing their health status at the time. No exclusion criteria were reported so all were admitted to retesting. Of the 15, one failed to return for re-assessment, reducing the final number of participants to 14.

### ETHICAL CONSIDERATIONS

Prior to data collection, ethics approval was obtained from the Human Research Ethics Committee of the University of Technology, Sydney, Australia.

## PULSE EXAMINERS

The study incorporated a pool of six testers. Inclusion criteria were that all had detailed knowledge of CCPD, had been using it clinically for more than seven years and were actively involved in maintaining familiarity with the application of the system. To fulfil these requirements, testers were recruited from Dragon Rises Seminars (DRS) instructors.

One of the testers had documented the CCPD system while the remaining had received equivalent training from that tester. Their clinical experience using the current standard CCPD definitions and procedures ranged from seven to 15 years and all had been DRS instructors for more than three years. In addition to match tester skills, each attended six-monthly workshops to ensure consistency in palpation. Four of the six testers were lecturers at DRCOM.

## METHOD

Throughout testing, four testers evaluated three subjects daily for five consecutive days. Working in pairs, testers were designated one hour to assess each subject. Testers were allowed ten minutes individual bilateral wrist palpation to assess pulse categories that constitute the *large segments* of the pulse, followed by 20 minutes for each side to assess the *small segments*, or individual pulse positions. In total four testers required two hours to evaluate each of the participants who were allowed a five-minute break between each pair of testers.

During test and retest, the combination of four testers remained the same for each subject (Figure 1). Testers employed standard CCPD operational evaluation procedures and all data were recorded on the standardised pulse forms. During testing, talking was not allowed and the testers were blinded to each other's findings. The subjects were allowed to drink water if requested.

As comparing the combination of pulse qualities entered for each category (reliability) was the exclusive interest of the study, and not diagnostic interpretation of these qualities (validity), the subjects remained in view of the testers. Immediately after the first round of testing all pulse forms were collected and secured independently to prevent untoward comparisons of findings.

## DATA MANAGEMENT

Thirty pulse positions or pulse categories were measured and recorded for each subject. Table 1 lists these along with the number of possible pulse qualities or variables for each. Table 2 presents all variables grouped according to their pulse classification.

The testers' responses were transcribed to electronic format. For each pulse position/category, a master file was constructed that defined the range of possible qualities. The results of all

testers on both days were entered into these electronic data files. If a pulse quality was present, that is, entered on the pulse form by the tester, number 2 was assigned. If a pulse quality was absent, that is, not entered on the pulse form, number 1 was assigned. For each file, the data were organised according to tester and day of testing using the notation t1d1, t1d2, t2d1, t2d2, t3d1, t3d2, t4d1 and t4d2 where t=tester, and d=day. In total, 30 separate files were created for each of the 14 subjects, an example of which is presented in Table 3.

## DATA ANALYSIS

The data were analysed using Cohen's kappa coefficient<sup>17</sup> and SPSS 13 for Mac OS X, 2006. Kappa, the preferred measure of

TABLE 1 List of pulse categories or positions and associated number of variables

Pulse category or pulse position	Number of variables
Large segment of pulse (categories assessed by simultaneous bilateral wrist palpation)	
1. First impressions	41
2. First impressions (left side)	51
3. First impressions (right side)	51
4. Rhythm	4
5. Above qi depth	6
6. Qi depth	29
7. Blood depth	34
8. Organ – qi depth	31
9. Organ – blood depth	31
10. Organ – organ depth	31
11. Waveform	6
Small segment of pulse (positions assessed by unilateral wrist palpation)	
Principal positions (found on the main artery)	
12. Left distal position	39
13. Right distal position	39
14. Left middle position	43
15. Right middle position	43
16. Left proximal position	43
17. Right proximal position	43
Complementary positions (related to a principle position)	
18. Left neuropsychological position	28
19. Right neuropsychological position	28
20. Mitral valve	22
21. Left special lung position	37
22. Right special lung position	37
23. Diaphragm position	13
24. Gall bladder position	32
25. Stomach pylorus extension position	32
26. Large intestine position	33
27. Small intestine position	33
28. Left pelvic lower body position	32
29. Right pelvic lower body position	32
30. Combined complementary position	11

rater reliability for nominal data,<sup>18</sup> measures the reliability of agreement between two or more independent raters<sup>17</sup> using a rating scheme with mutually exclusive categories.<sup>17-19</sup> Kappa is an extension of simple percent agreement<sup>28,29</sup> and corrects this for the proportion of agreement that would be expected due to chance alone.<sup>18-23</sup> Kappa values lie between -1.00 and 1.00. Those approaching 1.00 represent perfect agreement, 0.00 represents agreement due to chance alone<sup>18</sup> and negative values

indicate agreement less than what is expected by chance.<sup>24,25</sup> Definitive kappa interpretations have been proposed.<sup>20,22,26-29</sup> However, for most purposes values  $\leq 0.40$  represent poor agreement, values between 0.40 and 0.75 represent moderate to good agreement and values  $\geq 0.75$  indicate excellent agreement.<sup>29</sup> Values  $< 0.00$  are a rare outcome as rater training usually results in a kappa value  $> 0.00$ .<sup>24,25</sup>

TABLE 2 List of variables or pulse qualities included in the study

Pulse quality grouping	Variable – pulse quality	Variable number	
Qi wild	Empty	1	
	Change in quality	2	
	Change in intensity	3	
	Unstable	4	
	Scattered	5	
	Minute	6	
	Leather	7	
	Intensity change side to side	8	
	Qualities shifting side to side	9	
	Volume (robust)	Hollow full-overflowing	10
	Robust pounding	11	
Volume (robust)	Flooding excess	12	
	Inflated	13	
	Volume (reduced)	Yielding qi depth	14
	Diminished qi depth	15	
	Feeble at qi depth	16	
	Spreading	17	
	Reduced substance	18	
	Reduced pounding	19	
	Diffuse	20	
	Deep	21	
	Feeble – absent	22	
	Flat	23	
	Suppressed pounding	24	
	Muffled	25	
	Dead	26	
	Depth	Floating tight	27
		Floating tense	28
Floating yielding		29	
Floating smooth vibration		30	
Floating slippery		31	
Cotton		32	
	Hollow	33	
	Width (narrow)	Thin	34
Length	Short	35	
	Restricted	36	
	Long	37	
	Shape (fluid)	Slippery	38
Shape (non-fluid-hard even)	Taut	39	
	Tense [tense-tight]	40	
	Tight [tight-tense]	41	
	Wiry	42	
	Ropy	43	
	Shape (non-fluid-hard uneven)	Choppy	44
Smooth vibration		45	
Rough vibration		46	

TABLE 2 continued List of variables or pulse qualities included in the study

Pulse quality grouping	Variable – pulse quality	Variable number	
Shape (miscellaneous)	Biting	47	
	Doughy	48	
	Amorphous	49	
	Hard-leather	50	
	Electrical	51	
	Bean ‘spinning’	52	
	Split vessel	53	
	Modifiers	Transient	54
	Separating	55	
	Rough	56	
Anomalous	Fan Quan Mai/ San Yin Mai	57	
	Ganglion	58	
Wave	Local trauma	59	
	Normal wave	60	
	Flooding deficient	61	
	Hesitant	62	
	Suppressed	63	
	{Hollow full-overflowing}		
	{Flooding excess}		
Rhythm	Change in rate at rest	64	
	Intermittent	65	
	Interrupted	66	
	Normal rhythm	67	
	Width (wide)	Blood unclear	68
	Blood heat	69	
	Blood thick	70	
Sides (amplitude-intensity)	Sides equal	71	
	Left > right	72	
	Right > left	73	
Diaphragm	Inflation equal bilateral	74	
	Inflation left > right	75	
	Inflation right > left	76	
Variables specific to the combined complimentary positions			
Associated principle position	Variable – complementary position	Variable number	
Heart	Pericardium	77	
	Large vessel	78	
	Heart enlarged	79	
	Lung	Pleura	80
Liver	Distal liver engorged	81	
	Radial liver engorged	82	
	Ulna liver engorged	83	
Stomach – Spleen	Oesophagus	84	
	Spleen special	85	
	Pancreas – peritoneal cavity	86	
	Duodenum	87	

TABLE 3 First Impressions: Subject 1 (2 = present, 1 = absent)

Possible Qualities First Impressions	t1 d1	t1 d2	t2 d1	t2 d2	t3 d1	t3 d2	t4 d1	t4 d2
<b>Qi Wild</b>								
Empty	1	1	1	1	1	1	1	1
Change in quality	2	1	1	1	1	1	1	1
Change in intensity	3	2	2	2	2	1	2	2
Scattered	5	1	1	1	1	1	1	1
Minute	6	1	1	1	1	1	1	1
Leather	7	1	1	1	1	1	1	1
<b>Volume – Robust</b>								
Hollow full-overflowing	10	1	1	1	1	1	1	1
Robust pounding	11	2	2	1	2	2	2	2
Flooding excess	12	1	1	1	1	1	1	1
<b>Volume – Reduced</b>								
Yielding qi depth	14	1	1	1	1	1	1	1
Diminished qi depth	15	1	1	1	1	1	1	1
Feeble at qi depth	16	1	1	1	1	1	1	1
Spreading	17	1	1	1	1	1	1	1
Reduced substance	18	2	2	2	2	1	2	2
Reduced pounding	19	1	1	1	1	1	1	1
Diffuse	20	2	2	1	1	1	1	1
Deep	21	1	1	1	1	1	1	1
Feeble – absent	22	1	1	1	1	1	1	1
Muffled	25	2	1	2	1	2	2	1
<b>Depth</b>								
Hollow	33	1	1	1	1	1	1	1
<b>Width</b>								
Thin	34	2	2	2	2	2	2	2
<b>Length</b>								
Short	35	1	1	1	1	1	1	1
Long	37	1	1	1	1	1	1	1
<b>Shape – Fluid</b>								
Slippery	38	1	1	1	1	1	1	1
<b>Shape – Non Fluid Even</b>								
Taut	39	1	1	1	1	1	1	1
Tense [tense-tight]	40	1	1	1	1	1	1	1
Tight [tight-tense]	41	2	2	2	2	2	1	2
Wiry	42	1	1	1	1	1	1	1
Ropy	43	1	1	1	1	1	1	1
<b>Shape – Non Fluid Uneven</b>								
Choppy	44	2	1	2	2	1	2	2
Smooth vibration	45	1	2	1	1	2	2	2
Rough vibration	46	1	1	1	1	1	1	1
<b>Shape – Miscellaneous</b>								
Amorphous	49	1	1	1	1	1	1	1
Hard-leather	50	1	1	1	1	1	1	1
Split vessel	53	1	1	1	1	1	1	1
<b>Modifiers</b>								
Transient	54	2	2	1	2	2	2	1
Separating	55	1	1	1	1	1	1	1
Rough	56	1	1	1	1	1	1	1
<b>Anomalies</b>								
Fan Quan Mai/ San Yin Mai	57	2	2	2	2	2	2	2
Ganglion	58	1	1	1	1	1	1	1
Local trauma	59	1	1	1	1	1	1	1

Intra-rater reliability or the consistency within a tester over time<sup>19</sup> to assess the pulse was measured by comparing the four testers' results on day one, with their results on day two, for example, t1d1\*t1d2, where t=tester and d=day. This method resulted in four kappa values for each of the 30 pulse positions or pulse categories in each of the 14 subjects, totalling  $4 \times 30 \times 14 = 1680$  individual kappa calculations. Each kappa value measured reliability in terms of pulse quality matches for that pulse position.

These data were then analysed in terms of tester and subject with respect to pulse position or category. To help identify trends and manage the numerous individual kappa calculations, values were averaged for four testers across the 14 subjects, resulting in 56 ( $4 \times 14$  subjects) average intra-rater kappa calculations. Average intra-rater kappas for individual testers were also analysed according to the subjects that they measured.

Inter-rater reliability, more accurately divided into inter-rater agreement (comparing testers within one day) and reliability (comparing testers over time or between days)<sup>19</sup> was determined by comparing the results of two testers at a time across both days of testing. This produced six tester combinations (t1\*t2, t1\*t3, t1\*t4, t2\*t3, t2\*t4 and t3\*t4) and four day combinations (d1\*d1, d1\*d2, d2\*d2 and d2\*d1). This resulted in 24 kappa values for each pulse position in all subjects totalling  $24 \times 30 \times 14 = 10\ 080$  individual kappa calculations.

These data were analysed in terms of testing day and subject with respect to pulse position or category. For ease of handling and reporting the vast number of calculations, individual inter-rater kappa values were averaged for each of the 30 pulse categories according to testing day combination, totalling 120 average inter-rater kappas ( $30 \times$  four day combinations).

## Results

### INTRA-RATER RELIABILITY

Of the 1680 raw intra-rater kappa scores, 43.2% (726) showed kappas  $\geq 0.75$  or excellent agreement<sup>29</sup>; a further 42.5% (713) scored kappas 0.41–0.74, indicating moderate to good agreement<sup>29</sup>; while 14.3% (241) scored kappas  $\leq 0.40$ , showing poor agreement.<sup>29</sup> In total 67% (1126) scored  $\geq 0.60$ .

The averaged intra-rater kappas for individual testers and the subjects they assessed are shown in Table 4. Four of the testers (ta, tb, tc, td) attained excellent agreement between their repeated assessments from day one to day two in at least one of the subjects they tested, and two of these testers (tb, td) obtained average intra-rater kappa values  $\geq 0.60$  for all subjects tested. One tester (tf) scored average intra-rater kappas  $< 0.60$  in all subjects tested.

The 56 averaged intra-rater kappas are presented in terms of the 14 subjects in Table 5. Excellent agreement was demonstrated in the upper limit of the kappa ranges of nine subjects. Six of the subjects (1, 3, 5, 6, 9 and 15) demonstrated average intra-rater kappa values  $\geq 0.60$  for all four testers. Intra-rater disagreement was unevenly distributed with the two lowest average intra-rater kappa values of 0.44 and 0.45 appearing within subject 13, and 0.48 in subject 10. Examination of the individual kappas for these testers and subjects showed the unusual occurrence<sup>24,25</sup> of negative values, that is, agreement less than that expected by chance, in up to seven pulse categories.

### INTER-RATER AGREEMENT AND RELIABILITY

Of the 10 080 raw inter-rater kappa scores, 23.5% (2366) showed kappas  $\geq 0.75$  or excellent agreement<sup>29</sup>; 46% (4642)

TABLE 4 Intra-rater reliability:  
Average kappa scores and kappa ranges according to tester

Tester	No. of subjects tested	Average kappa	Range of kappa
t a	14	0.66	0.44 – 0.76
t b	14	0.72	0.65 – 0.82
t c	7	0.68	0.54 – 0.78
t d	9	0.70	0.62 – 0.78
t e	8	0.62	0.49 – 0.72
t f	4	0.52	0.45 – 0.57

TABLE 5 Intra-rater reliability: Average intra-rater kappa ranges according to subject

Subject	Range of intra-rater kappas
Subject 1	0.66 – 0.76
Subject 2	0.54 – 0.76
Subject 3	0.61 – 0.78
Subject 4	0.59 – 0.77
Subject 5	0.62 – 0.75
Subject 6	0.64 – 0.77
Subject 7	0.57 – 0.74
Subject 8	0.49 – 0.78
Subject 9	0.68 – 0.74
Subject 10	0.48 – 0.70
Subject 12	0.57 – 0.70
Subject 13	0.44 – 0.78
Subject 14	0.57 – 0.82
Subject 15	0.62 – 0.73

scored kappas 0.41–0.74, indicating moderate to good agreement<sup>29</sup>; while 30.5% (3072) scored kappas  $\leq 0.40$ , showing poor agreement.<sup>29</sup> In total, 44.1% (4442) scored  $\geq 0.60$ .

The kappa values averaged by subject for inter-rater agreement and reliability are presented in Table 6. The different testing day combinations (bottom row of Table 6) showed values between 0.52–0.56, indicating moderate to good agreement.<sup>29</sup> In terms of the 14 subjects, the average kappas for all testing day combinations (the last column of Table 6) ranged from 0.42–0.63, indicating moderate to good agreement.<sup>29</sup> The two lowest scores of 0.47 and 0.42 occurred in subject 13 and subject 14, reported previously as demonstrating a higher incidence of intra-rater disagreement. The averaged 24 inter-rater kappa scores for individual pulse categories for these two subjects showed poor agreement (kappas  $\leq 0.40$ ) in seven categories common to both. Negative individual inter-rater kappa values were again noted; however, they were not skewed according to pairs of testers.

Finally, Figure 2 presents the results for intra-rater and inter-rater reliability in terms of pulse position/category. The y-axis

indicates the gross levels of agreement or kappa values averaged across all testers and subjects, while the x-axis indicates pulse position/category. The intra-rater results demonstrated moderate to good agreement or above in all but one category, the Combined Complementary Positions that scored  $< 0.50$ . The averaged inter-rater kappas were lesser and followed a similar pattern; however, in this instance, the Combined Complementary Positions was significantly lower and rated poor agreement for all d\*d combinations.

## Discussion

The study employed the kappa coefficient in such a way that the calculations determined the level of agreement in terms of pulse quality matches for one pulse position in one subject. They were used as a descriptive measure, akin but superior to reporting percentage agreement, to identify pulse positions that seem to have reliable assessments, and those that appear to exhibit lower levels of reliability. The study did not use kappa as an inferential measure, generalise values to other pulse positions or subjects, test a hypothesis or explore sampling variation. Accordingly standard errors were not reported with the results.

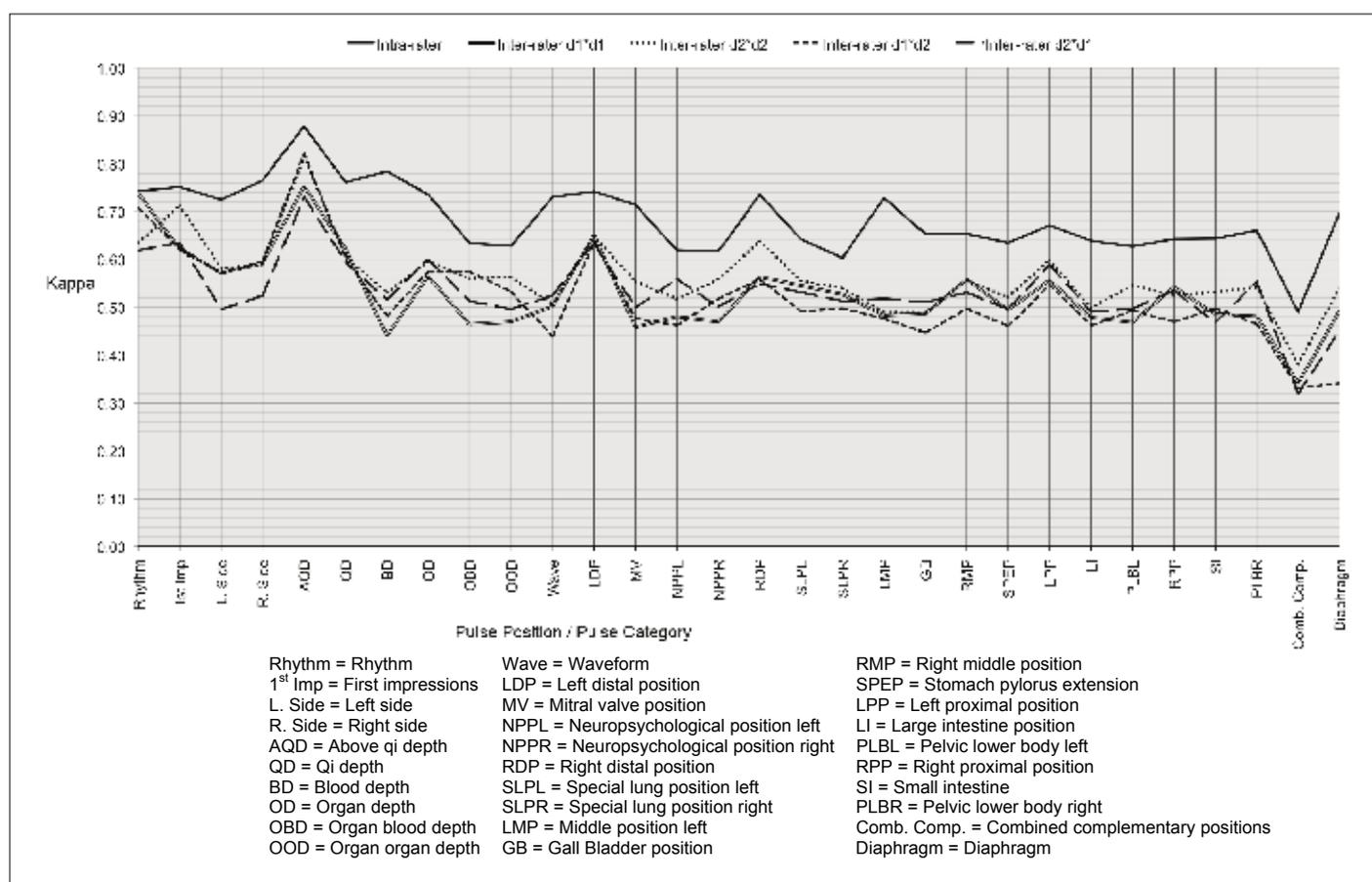


FIGURE 2 Average intra-rater and inter-rater Kappa values

The statistical literature<sup>19</sup> discusses concerns regarding the misinterpretation of kappa in studies reporting rater reliability.<sup>30-34</sup> Intra-rater reliability addresses the extent to which raters produce essentially the same score<sup>25,30,35</sup> and represents an index of proportional consistency across raters or over time.<sup>19</sup> Here lies the first caveat encountered with the application of kappa to the data. With test–retest measuring of intra-rater reliability there will always be some degree of correlation or dependence between the responses from testers over time.<sup>36,37</sup> An attempt to validate the study design was made by reducing dependence<sup>36</sup> or allowing 28 days between ratings to reduce rater memory of the previous test<sup>36</sup> and optimise the parameters of stability<sup>27</sup> defined by the female subjects' pulses.

Another caution that proved relevant to the study relates to the reporting of mean or average kappa values and kappa ranges.<sup>19</sup> Although the literature expresses some concern that these may disguise variability that might be important to the research,<sup>19</sup> the raw or individual kappa totals stated justify the method of reporting kappa. Kappa values were used as strategic markers to direct the discussion as well as to report agreement.

Values presented by Jelles et al.<sup>29</sup> were used in the study as a guide to interpret the kappa scores. However, in determining the strength of kappa there are no fixed absolutes.<sup>38</sup> Statistics cannot replace clinical judgements,<sup>37</sup> so interpretation depends on the circumstances and variables being tested.<sup>38</sup> The current

pulse diagnosis literature has no recommendations regarding kappa; however, several authors suggest values <0.40 may be unacceptable in clinical situations.<sup>36,38</sup>

From a clinical viewpoint, the results of pulse assessments are an integral part of formulating diagnoses and plans of treatment. Accordingly, the kappa values that judge the reliability of the tool should be stringent. The rating of moderate to good agreement (kappa 0.41–0.74) recommended by Jelles et al.<sup>29</sup> is too large for the purposes of patient management and further differentiation is warranted. Therefore, the findings of this study suggest that kappa values ≤0.40 (poor or unacceptable agreement), 0.41–0.59 (moderate agreement), 0.60–0.74 (good agreement) and kappa ≥0.75 (excellent agreement), are appropriate indicators with respect to pulse diagnosis.

Based on these values, intra-rater reliability proved to be good to excellent (≥0.60) in 67% of the raw kappa calculations. When kappas were <0.60, both tester and subject were implicated. Lower levels of agreement evident in one tester may have resulted from varied experience affecting how decisions are made in the face of uncertainty.<sup>39</sup> Another consideration was that two of the four subjects assessed by that tester showed the lowest averaged intra-rater kappas.

Levels of inter-rater agreement were less than that of intra-rater reliability: good to excellent (≥0.60) in 44.1%, moderate (0.41–0.59) in 25.4% and poor or unacceptable (≤0.40) in 30.5% of the raw calculations. Variability according to the combination of testers or days was negligible, yet the distribution of inter-rater disagreement was skewed in terms of pulse category/position, as well as subject, suggesting a portion of the variability was intrinsic to the participants' pulses.

Variability in both intra-rater and inter-rater reliability was found to be concentrated in three subjects, all exhibiting uncommon<sup>24,25</sup> negative individual kappa values. Investigation of the statistical literature indicates that kappa scores <0.00 may reflect disagreement, but also paradoxes termed prevalence and bias.<sup>36,40</sup> Prevalence occurs when the incidence of a variable is very high or low, increasing the agreement expected by chance and decreasing the magnitude of kappa.<sup>41</sup> Prevalence proved to be an important factor influencing the data in many of the pulse categories. Despite this, disagreement remained skewed to three subjects, each of which were recorded by all testers as exhibiting a Fan Quan or San Yin pulse quality.

Pulses that are in a constant state of flux are encountered in the clinic, and may represent either the Fan Quan or San Yin pulse quality, or the Qi Wild condition.<sup>16</sup> In the first instance, blood shunted between an anomalous divergent vessel and the true radial artery results in varying sensations where the pulse is palpated. It affects all pulse positions, and depending on the

TABLE 6 Inter-rater reliability: Average inter-rater kappa values according to subject and testing day

Subject	d1*d1	d2*d2	d1*d2	d2*d1	Average K for subject
Subject 1	0.62	0.66	0.63	0.60	0.63
Subject 2	0.46	0.53	0.47	0.50	0.49
Subject 3	0.54	0.54	0.58	0.47	0.53
Subject 4	0.56	0.58	0.58	0.57	0.57
Subject 5	0.51	0.56	0.53	0.53	0.53
Subject 6	0.59	0.62	0.51	0.64	0.59
Subject 7	0.55	0.54	0.57	0.50	0.54
Subject 8	0.51	0.57	0.52	0.52	0.53
Subject 9	0.59	0.58	0.59	0.56	0.59
Subject 10	0.47	0.49	0.53	0.47	0.49
Subject 12	0.51	0.50	0.45	0.51	0.49
Subject 13	0.44	0.58	0.40	0.43	0.47
Subject 14	0.38	0.46	0.40	0.44	0.42
Subject 15	0.56	0.56	0.52	0.58	0.56
Average K for d*d	0.52	0.56	0.52	0.53	0.55

Where d1\*d1 compares the results of day 1 with day 1; d2\*d2 day 2 with day 2; d1\*d2 day 1 with day 2 and d2\*d1 day 2 with day 1.

degree of irregularity, may render the pulse exam invalid.<sup>16</sup> In the absence of anomaly, pulses with no fixed characteristic other than the change itself are thought to represent a situation of extreme deficiency and vulnerability to disease (the Qi Wild condition<sup>16</sup>). In both situations, lower levels of intra-rater and inter-rater agreement could be expected due to the constant fluctuation in pulse qualities.

Allowing for prevalence, the Combined Complementary Positions still exhibited lower levels of agreement for both intra-rater and inter-rater reliability (Figure 2). This category incorporated eleven complementary positions that are indicated on the CCPD pulse form as being present or absent and do not have specific pulse qualities recorded for them. These complementary positions are found in relation to a principal or main pulse position and represent yang organs or areas of the body. The sensations felt at these positions are often transient and difficult to access,<sup>16</sup> which may influence agreement; however, repeated kappa values  $\leq 0.40$ , that is, poor or unacceptable agreement, indicate other factors may be implicated.

Variance within the technique of the testers is suggested by lesser intra-rater reliability and unacceptable inter-rater agreement (kappas  $\leq 0.40$ ) for these positions. Continued ambiguity existing in the CCPD terminology or instructions for accessing these positions may be implicated, emphasising the importance of operational definitions and theoretical frameworks in determining the reliability of clinical practice.

## Conclusion

This paper reports the levels of intra-rater and inter-rater agreement of skilled practitioners employing CCPD to evaluate the pulse bilaterally at the radial artery. The results support the findings reported by King et al.,<sup>11</sup> suggesting that, when the system of pulse diagnosis is operationally defined and all that use the system understand the methods and interpret the pulse terminology in the same way, acceptable levels of reliability can be achieved.

Disagreement was found to be dependent on the skill of the tester, the stability of the subject's pulse, and the specific pulse position being assessed. In terms of pulse positions, further investigation is required to identify the source of variation demonstrated by unacceptable levels of agreement within the Combined Complementary Positions. This includes a detailed review of the terminology and instructions for techniques of palpation used to access the component positions of this category. If variation continues, then the reliability of this category within a clinical context needs to be re-evaluated entirely.

In addition, further analysis of the data needs to investigate and compare the reliability of the principal and complementary positions and the large segments (pulse categories assessed by simultaneous bilateral wrist palpation) and small segments (pulse positions assessed by unilateral wrist palpation) of the pulse. Individual pulse qualities should also be examined to isolate which qualities, if any, show unacceptable levels of agreement. This will bring to light further areas within CCPD that need to be revised.

It is essential to answer the questions regarding the diagnostic relevance of pulse diagnosis raised both within and external to the profession. To preserve the integrity of Oriental medicine these must be addressed with accepted analytical methods. Ethical and legal obligations of the profession call for responses that demonstrate the claims regarding its clinical efficacy. Future areas of investigation should include the capacity of the radial pulse to accurately indicate the state of health of the individual. This would address the claim in Oriental medicine that there are specific and predictable changes in pulse qualities that occur in the presence of dysfunction and disease, and that these changes are detectable via manual palpation of the pulse.

## Clinical Commentary

Pulse diagnosis plays an important role in OM diagnosis. Case studies encountered in texts, the clinic or otherwise usually proffer a pulse presentation described according to the traditional literature. These pulse 'pictures' are widely accepted within the profession as credible patient commentaries despite there being little proof that it is either reliable, or a valid method for accurately predicting disease states. As such, critical evaluation must persist to provide evidence that either justifies or invalidates its continued use in diagnosis. In answer this study substantiates the reliability of skilled practitioners using an operationally defined system of pulse diagnosis.

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# The Use of Acupuncture by Chinese Medicine Practitioners in the Australian Workers Compensation System: Results of a National Survey

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## ABSTRACT

Statutory recognition of Chinese medicine (CM) practitioners and their use of acupuncture in the treatment of injured workers does not exist in most workers compensation (WC) systems throughout Australia, even though they are an accepted part of that system. Consequently, there is little data available on the use of acupuncture and the engagement of the CM profession in this system. This paper reports on the first survey study designed to provide information on the CM profession's engagement with the WC systems and their perceptions of these systems. Results: Five hundred completed surveys were returned, which represented a response rate of 25%. Results indicate that over 50% of the CM practitioners across Australia were engaging with the various WC systems and despite this engagement were also reporting varying levels of confusion and difficulties with the WC system frameworks. There was a noted relationship between the demographic information collected (as part of the survey) and a practitioner's perception of the WC systems. Overall, practitioners' experiences of the WC system were overwhelmingly negative, irrespective of their state or territory of residence; yet, 67% of respondents reported they would like to increase their WC patient load in the future. Conclusions: Despite the CM workforce engagement with the various state and territory based WC systems, there remains a lack of statutory gazettement of CM practitioners as treatment providers and this may account for some of the noted confusion and negativity reported in the survey results. While there was some variance in individual practitioner's perceptions of the system, a common finding was an overall lack of knowledge about this system. This raises several issues that range from the timely provision of treatment services by CM practitioners, reporting processes to insurance companies, the subsequent assessment structures of those insurers and the assessment of the appropriateness of the acupuncture treatment provided. These issues need to be addressed in practical terms with the development of policy and protocols to assist CM practitioners and also made a priority given the consistent growth in treatment frequency reported in the decade from 1994 to 2004, and which is only projected to increase given the surveys participants' wishes to engage further with the WC systems.

**KEYWORDS** Acupuncture, Chinese medicine, Workers Compensation, demographic survey, Australia, work-related injuries.

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## Introduction

Australia's workers compensation (WC) laws are designed to protect employees who become ill or injured during the course of their employment. There are currently eleven different WC systems operating throughout Australia. An underlying key element present within each system is to ensure that workers who are suitable for cover are covered for the treatment and management of any injuries they sustain during the course of their employment.

While designed to ameliorate the impact and costs at a personal level, workplace injuries and illnesses still pose a significant cost impact to the broader Australian community which cannot be ignored. For example, nationally, there were more than 230 000 major WC claims during the 2005 to 2007 financial year periods. In New South Wales (NSW) alone there were 41 231 compensable claims amounting to a gross cost of \$812 million between July 2006 and June 2007.<sup>1</sup> The non-financial impacts to the Australian community are equally significant especially when workplace injuries and illnesses directly impact a worker's normal daily functioning, including the related indirect cost to their families, employers and the wider community.

Central to any state or territory WC system are provisions for early medical assistance aimed at promoting an injured worker's return to work in a safe, timely and durable manner.<sup>2</sup> Medical assistance covers rehabilitation costs, hospital expenses and access to therapy services, including the cost of treatment providers. Given the physical nature of most work-related injuries, treatment providers often need to have a 'physical therapy' focus as part of their treatment scope.<sup>1,3</sup> This encompasses physiotherapists, osteopaths, chiropractors, massage therapists and CM practitioners (and their use of acupuncture).

While these treatment provider groups are accepted as a part of most Australian state or territory WC systems and integral therefore in the management of the injury, contradictorily they do not all receive the same level of support to assist injured workers in this process. The difference in levels of assistance stems from whether the practitioner's related profession is gazetted (legislated within the WC system) or not gazetted. For the CM profession, this means there is a deficit of information, policy and procedures for practitioners working in the WC system (because the CM profession is a non-gazetted profession (whilst the other four professions noted above are gazetted)). The only exception is in Victoria where CM practitioners who meet the requirements of WorkSafe Victoria (the Victorian workers compensation authority) are permitted to provide acupuncture services for injured workers<sup>4</sup>. Consequently, no data exists on the level of interaction occurring between CM practitioners and the WC systems. This has bearing upon the suitable management of the WC patient and their

injury, the appropriate assessment of any treatment outcomes and reporting subsequent progress to the Scheme Agents (mostly insurance companies). Thus while acupuncture and CM practitioners are an accepted part of most WC systems in Australia, their ability to fully engage with these systems is hindered by the paucity of resources specific to the profession's needs. While this certainly disadvantages the CM practitioner, it also potentially disadvantages the injured worker and inhibits effective integration of the CM profession to work alongside other treatment providers working within the WC system.

Therefore a survey was designed to gather from members of the CM profession who use acupuncture, baseline demographic information about their interaction with and perceptions of the various WC systems. The importance of this was to provide information to regulatory authorities, educators and treatment providers on the use of acupuncture (as part of a scope of practice) by CM practitioners for the treatment of work-related injuries. Given the societal shift towards a greater inclusion of complementary and alternative medicine (CAM) as a treatment of choice<sup>5</sup> and a subsequent acceptance of acupuncture by general practitioners (GPs) (who have continued to increase their rate of referrals to CM practitioners for acupuncture treatment),<sup>6</sup> the treatment of injured workers by CM practitioners will only continue to grow.

This paper presents the first series of results from 12 of the 31 survey questions. This includes practitioner levels of involvement and their perceptions of the WC systems and a general overview of the respondents' demographic information, including age, gender, education and training, years in clinical practice, state of practice, practice type, and area of specialty. A further in-depth correlation analysis of the results has been reserved for publication in a subsequent article.

## Methods

### AIMS

The aim of this study was to obtain an overview of the CM profession's engagement with the various WC systems within Australia. To this end, a survey was designed and distributed nationally to members of the profession to determine:

- The number of practitioners providing treatment to injured workers;
- Their perceptions and views of this system;
- The frequency of treatment to claimants; and
- Demographic data (to contextualise responses received).

### SURVEY DESIGN

A comprehensive, 31-question survey tool was designed to address the four objectives listed above. The survey tool was developed by a panel of CM practitioners with expertise in

the WC system and secondary input was provided from experienced persons involved with the WC industry. The survey tool was piloted to random members of the CM profession prior to national distribution and amendments were made according to feedback received from this process. Ethics approval for the survey and distribution was obtained through the University of Technology, Sydney (UTS) Human Research Ethics Committee (HREC).

The survey questions were aligned with five categories of information. These included: experience(s) in the WC system and workplace management systems of WC patients; demographic information; clinical practice; education and training; and finally, feedback on the practitioner's thoughts for future directions they would like to see for the profession to better engage with the WC system.

#### SURVEY DISTRIBUTION

The survey was distributed using three methods over a six month period:

1. A national postal mail out (via five distributors);
2. Personal distribution at two different acupuncture and CM symposiums – one international symposium and one Australasian conference; and
3. Electronic distribution by e-mail via the membership database of the Australian Acupuncture and Chinese Medicine Association Ltd.

There was no single mail-out list. Therefore, a six month distribution period was undertaken to maximise the coverage to all possible members of the target population. To maintain UTS ethics requirements and privacy laws, mailing lists remained with the distributors. The number of surveys sent out by each distributor through the postal mail-out process was based on the figures provided from each distributor. Mail copies of the survey sent included a hard copy format of the survey, a pre-paid envelope, informed consent form, a confidentiality clause, contact details of relevant persons at UTS and the UTS HREC ethics approval number.

#### SUBJECT SAMPLE

The survey was aimed at practitioners with primary qualifications in acupuncture and/or CM. Prospective subjects were identified through membership lists of key CM professional associations and mailing lists of related industry groups affiliated with the CM profession. Key industry groups were identified as suppliers of acupuncture and CM products or suppliers of education materials to the Australian CM profession.

There were five professional associations and four industry groups approached and all supported the study. Discussions with the industry groups revealed a high probability of overlapping members and thus a waste of resources to mail

out to all four groups. Therefore, the final distribution was conducted through four professional associations and one industry group.

The subject selection criteria included practitioners with primary qualifications in CM as outlined by the Australian Guidelines for Traditional Chinese Medicine Education (2001)<sup>7</sup> and those practitioners who obtained primary qualifications in CM prior to the introduction of the Australian Guidelines for Traditional Chinese Medicine Education (2001). Practitioners also had to be in clinical practice and using acupuncture as part of their scope of practice. The exclusion criteria included health professionals who undertook a short course(s) in acupuncture to obtain their qualification (and hence claimed acupuncture as an adjunct to their practice scope) and/or whose course did not meet minimum training standards.<sup>7</sup> Also excluded were those CM practitioners who primarily used Chinese herbal medicine (CHM) and did not use acupuncture.

Exclusion criteria were applied for two reasons. First, to ensure the results depicted a true representation of members of the CM profession in Australia and their respective views on the use of acupuncture in the WC system. Second, to ensure the target respondents were suitably qualified in acupuncture, and were actively using acupuncture within their clinical scope of practice. The reason for excluding practitioners who only practiced CHM was due to the physical nature of most work-related injuries<sup>1</sup> (as they involve the musculoskeletal system) for which acupuncture (and its related scope of practice) is arguably a more appropriate treatment intervention than CHM alone.

#### ANALYSIS OF SURVEY RESPONSES

Data were entered into a Microsoft Excel spreadsheet and then analysed using the Statistical Package for Social Sciences (SPSS) for Windows, version 12. A range of descriptive analyses was applied to the data set dependent upon the level of measurement of each survey question. Hand written comments were collated and classified by themes for analysis.

## Results

The results of the survey responses are presented below in two broad sections. The first section presents the results detailing demographic characteristics of the survey respondents (to contextualise their responses within the WC system). As such, the second results section relates to the respondents' views and experiences (if any) of the WC system they noted in the survey.

#### RESPONSE RATE

Based on the figures provided by the professional CM associations and the industry group, a total of 3315 surveys were prepared for distribution nationally. To maintain

confidentiality of each group's distribution list and comply with UTS HREC requirements, the surveys were distributed by the professional CM associations and industry group themselves using their own mailing lists. The survey forms and accompanying literature were prepared centrally and bundled to the specifications of each of the organisations involved in its distribution. Each survey bundle was then sent to one of the four CM professional associations and the lone industry group for further distribution to their membership via their mailing lists. Each of the organisations involved in the survey's distribution had a unique identifying code (the mail list code) appended to each survey in their bundles. This was done for two reasons. Firstly, to identify the mailing list source of any returned and completed surveys; and secondly, to identify duplication. Duplication, where more than one copy of the survey was received by the same person was inevitable given the use of multiple mailing lists. The mail list coding thus allowed for the calculation of an accurate participant sample size and subsequent survey return rate (explained below).

There were 500 completed surveys returned for analysis. This represented an initial response rate of 15.75% (given 3315 were initially distributed). Of the 500 surveys included for analysis, some questions were missed by the respondents or were incorrectly filled; accounting for pieces of missing data (noted within the analysis results below). Given the use of various methods of distribution and multiple mailing lists, there was always the chance that some practitioners would receive multiple copies of the survey. It was necessary then to use the mail list code on the returned survey to identify where duplication occurred in order to calculate the actual sample of the population of practitioners included in the study and thus calculate the survey's actual return rate.

The process used for excluding those duplicate surveys sent to the same individual was undertaken in three ways. Firstly, surveys returned with the industry mail list code were cross referenced with any noted CM association memberships (question 9 in the survey); and where the noted CM association(s) membership was the same as one of the four CM professional associations whose mailing list was used for distributing the survey, the total survey distribution figure was reduced accordingly. Secondly, this process was repeated with surveys received with a CM professional association mail list code. Again, the association membership(s) listed at question 9 was cross referenced to the mail list code on the returned survey. The survey distribution count was reduced by the number of additional CM professional associations the respondent indicated being a member of and whose mailing list(s) were also used for distributing the survey but which did not match the unique mail list coding used on the returned survey. A final comparative analysis was also performed using the respondent's indication of their reported association

membership(s), postcode (question 3) and identical responses provided on the surveys. After accounting for duplications, the final distribution figure represented a sample of 2000 practitioners (receiving 3315 surveys, indicating that 1115 surveys were duplications). Therefore, accounting for duplications, the 500 completed surveys received for analysis represented a response rate of 25%.

## DEMOGRAPHIC CHARACTERISTICS OF SURVEY PARTICIPANTS

### AGE AND GENDER

There were more female (53%) than male respondents (47%). Respondents ages ranged from 20 to 61 years or greater. 84.3% of the respondents sampled were aged between 26 to 55 years of age while the remaining 15.7% indicated their age as less than 26 or over 55 years of age. When a respondent's age was compared with their sex, there were differences noted between the proportional representation of males and females. For example, there were a higher number of females aged 20–30 years (23.6%) compared to males of the same age range (7.8%). There were comparatively more males aged 41–45 (21.4%) than females (10.5%), and more males represented in the 56+ age group (15.8%) than females (5.0%). It is likely that this reflects national education trends with more women entering tertiary education than men in recent years. In comparison, the decline in women aged between 35 and 45 years of age was seen as a reflection of women leaving the workforce and having children later in life. (The Australian Bureau of Statistics<sup>8</sup> reported the increase in the median age of all women who gave birth in 2005 was 30.7 years).

In contrast, the survey results indicated more women responders aged between 46 and 55 which may suggest women re-entering the workforce after childrearing. The data showed proportionally more men in the workforce aged 56 and older than women and this likely reflects historical workforce trends from previous decades where men had higher work participation rates than women. Results are presented in Table 1 with a diagrammatic representation of these presented in Figure 1.

### HIGHEST LEVEL OF FORMAL EDUCATION IN CM/ACUPUNCTURE

There were 493 responses to this question and seven non-responses. Over two thirds of respondents reported gaining a tertiary level qualification (68.9%) in CM. Over half of the respondents (55%) indicated this as a bachelor degree qualification, while 13.9% indicated a postgraduate qualification (in addition to a bachelor degree) as their highest qualification. Postgraduate qualifications in CM were listed as doctorates (PhD) (1.4%), professional doctorates (2.0%) or masters (by coursework and/or research) (10.5%). The remainder of respondents reported attaining either an advanced diploma or diploma qualification (29.2%). Refer

to Table 2 for details. These respondents were most often in practice for more than ten years. This reflects the historical emergence of these qualifications.

PLACE OF TRAINING

Respondents were asked whether they had received their CM training within Australia or overseas. Three quarters of the respondents (76.5%) reported Australia as their sole place of

training, whilst 11% reported an overseas location only. The remaining 12.5% of respondents indicated they had received training in both Australia and also from an overseas location. The responses to this question were likely skewed. The actual number of respondents who had both Australia and overseas study was in fact less than that indicated once courses with appended overseas study components were considered as primarily occurring in an Australian locale. Results are also presented in Table 2.

TABLE 1 Respondents' age and gender

Gender					Respondents (n) (subtotal n = 487)	Valid percentage (%)
Male					229	47.0
Female					258	53.0
Missing					13	
Total					500	
Age distribution	M		F		(subtotal n = 492)	
	n	%	n	%		
20-25	6	2.6	21	8.1	27	5.5
26-30	12	5.2	40	15.5	52	10.6
31-35	31	13.5	40	15.5	71	14.4
36-40	27	11.8	31	12.0	58	11.8
41-45	49	21.4	27	10.5	76	15.4
46-50	41	17.9	46	17.8	89	18.1
51-55	27	11.8	40	15.5	69	14.0
56-60	15	6.6	7	2.7	23	4.7
61+	21	9.2	6	2.3	27	5.5
Subtotal	229		258			100%
Missing					8	
Total					500	

Subtotal numbers differ as five respondents who provided their age did not provide details of their gender.

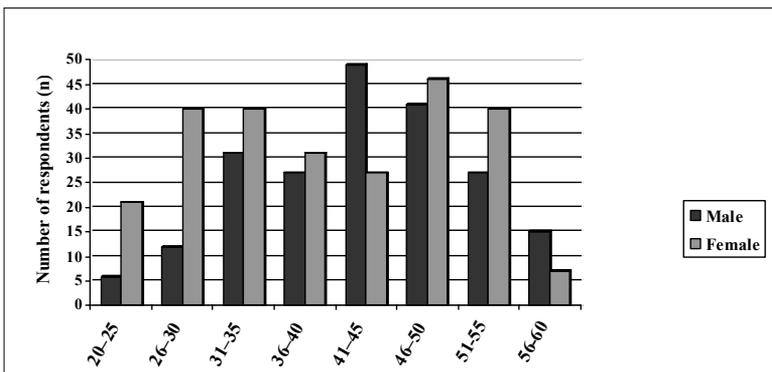


FIGURE 1 Diagrammatic representation of age and gender comparison of respondents

NUMBER OF YEARS IN CLINICAL PRACTICE

Respondents reported a range of years in clinical practice from less than one year to over 36 years. Just over 40% of respondents indicated a practice duration of ten years or more; 27.9% indicated a practice length of less than four years, while 30.3% indicated a practice length of between four and ten years. Results are presented in Table 3.

At face value, the survey results portray a relatively young professional group with over half of the respondents indicating a practice length of less than 10 years. However, there were likely several factors which contributed to a 'skewing effect'. For example, the year of availability of degree programs and the related educational institution were two such factors. That is, there was a burgeoning of the availability of CM courses in the mid-1990s when CM education moved into the tertiary education system. Another factor influencing the young age of the CM professional group is the fact that bachelor programs gave some level of acceptance of CM as a legitimate treatment option and so more enrolments may have been forthcoming in recent years reflecting a change in societal attitudes towards CAM.<sup>5</sup>

AREA OF PRACTICE

Respondents were asked to detail their primary area of practice by providing postcode details with respect to their practice location(s) and this was then matched to their state or territory of residence. There were 471 responses to this question, with the majority of respondents (96%) indicating New South Wales (NSW), Queensland (QLD) or Victoria (VIC) as their primary place of practice. The remainder of respondents indicated their place of practice as South Australia (SA) (2.3%), Western Australia (WA) (1.1%), Tasmania (TAS) or the Northern Territory (NT) (0.6% combined).

When ABS figures (ending 2005) on national population distribution by state and territory were compared to respondents' practice location, it was apparent there were discrepancies in the representation of the survey responses received. There was an over-representation of respondents returning their surveys in NSW, QLD, and VIC, while the remaining states and territories were under-represented, only accounting for a total of 4.0% of the returned surveys. ABS figures also ranked NSW, VIC and QLD as the three most populated states in Australia (in that

TABLE 2 Highest level of formal education obtained in TCM and place of training

Highest level of formal education in TCM/acupuncture	Respondents (subtotal <i>n</i> = 493)	Valid percentage (%)
PhD	7	1.4
Professional doctorate	10	2.0
Masters (research)	12	2.4
Masters (coursework)	40	8.1
Bachelor degree	271	55.0
Advanced diploma	62	12.6
Diploma	82	16.6
Other	9	1.8
Place of training		
Australia only	377	76.5
Overseas only	54	11
Both Australia and overseas	62	12.5
Missing	7	
Total	500	100%

TABLE 4 Area of practice

Area of practice	Respondents (subtotal <i>n</i> = 471)	Valid percentage (%)	Australian population for period ending June 2005 (%) <sup>*</sup>
New South Wales	184	39.1	34.9
Queensland	155	32.9	19.5
Victoria	113	24.0	24.7
South Australia	11	2.3	7.6
Western Australia	5	1.1	9.9
Tasmania	2	0.4	2.4
Northern Territory	1	0.2	1.0
Subtotal	471	100%	100%
Missing	29		
Total	500		

TABLE 5 Practice type

Practice Type	Respondents (subtotal <i>n</i> = 492)	Valid percentage (%)
Sole practitioners	263	53.5
Work with other TCM practitioners	91	18.5
Work with CAM practitioners	90	18.3
Work with allied health practitioners	41	8.3
Work with general practitioners (GPs)	7	1.4
Missing	8	100%
Total	500	

TABLE 3 Number of years in clinical practice

Years in practice	Respondents (subtotal <i>n</i> = 495)	Valid percentage (%)
0–3.9 years	138	27.9
4–6.9 years	89	18.0
7–9.9 years	61	12.3
10+ years	207	41.8
Subtotal	495	
Missing	5	
Total	500	100%
Mean = 10.21		SD = 8.27

order), followed by WA, SA, TAS and NT,<sup>9</sup> but the combined population of WA, SA, TAS and NT (as a proportion of the total population) was more than five times that of the survey result. The result was seen as reflecting not only the population distribution but also the availability of acupuncture and CM courses. Refer to Table 4 for details.

#### PRACTICE TYPE

Over half (53.5%) of the 492 respondents to this question indicated their practice type as 'sole practitioner'. The remainder of respondents indicated their practice type as 'group practice': 18.5% indicated this was with other CM practitioners while a further 18.3% indicated working with CAM practitioners in their practice. Respondents also indicated allied health practitioners and registered medical doctors and/or GPs as part of their practice; 8.3% indicated they were in 'group practice' with allied health practitioners and 1.4% with GPs. Refer to Table 5 for details.

#### AREA OF SPECIALTY

For the purposes of the survey, 'practice scope' was termed 'CM specialty'. This was the first of three multiple response questions in the paper and results may be read in the same manner in each instance. As a multiple response question, respondents were permitted to make more than one selection as their response. As such, there were a total of 993 selections made by 492 respondents, (and on average two selections were made by each respondent). As a multiple response question the results show both the percentage of total responses and the overall valid percent from respondents. For example, 489 of the responses were for acupuncture. Thus 99.4% of respondents selected acupuncture (489 of 492 respondents) and acupuncture constituted 49.2% (489 of 993) of all responses made. A combined score from 'manual therapy' (inclusive of *tuina* and *other massage* such as shiatsu or western remedial massage) rated second highest of all responses (26.6%). Interestingly, while 48.8% of respondents selected

TABLE 6 Area of speciality

Area of speciality	Responses		Respondents (subtotal n = 492)
	Number of responses	Total percentage of responses (%)	Total percentage of respondents (%)*
Acupuncture	489	49.2	99.4
Chinese herbal medicine	240	24.2	48.8
Chinese remedial massage (Tuina)	140	14.1	28.5
Other massage	124	12.5	25.2
Total	993	100%	

\* Total add to more than 100% due to multiple response choices.

TABLE 7 Practitioners who have treated patients within the workers compensation system

Have you treated patients in the workers compensation system?	Respondents (subtotal n = 496)			
	YES	Valid percentage (%)	NO	Valid percentage (%)
	286	57.7	210	42.3
If 'YES' (n = 284)				
Number of patients treated in year	2003	2004	Refer to Table 7a	
Total number of patients treated	186	275		
Breakdown of number of patients treated	1-5	126	208	
	6-10	33	36	
	11-15	15	16	
	16-20	3	3	
	21-25	5	1	
	>26	4	11	

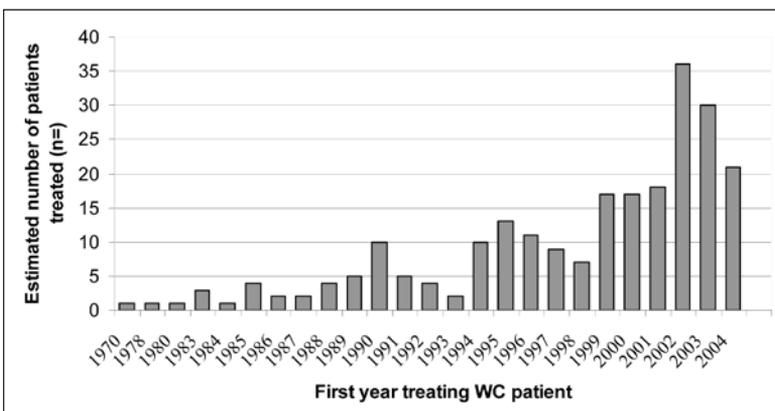


FIGURE 2 First year breakdown of when CM practitioners commenced treating workers compensation patients

CHM as their area of specialty, this was less than the number of respondents (53.7%) who chose manual therapies (tuina and other massage combined). Results are detailed in Table 6.

PRACTITIONERS WHO HAVE TREATED PATIENTS WITHIN THE WC SYSTEM

Respondents were asked to indicate whether they had previously treated patients within the WC system. There were 496 valid responses to this question of which 286 said 'yes' whilst 210 said 'no'.

'Yes' respondents

The 286 respondents who answered 'yes' were directed to a further series of three questions. These additional questions sought to establish when the respondent had first treated WC patients (which year) and also the estimated number of WC patients they had treated overall during the 2003 and 2004 calendar years. Respondents estimated a total of 186 WC patients were treated in 2003 and a further 275 WC patients were treated in 2004, a relative increase of 47.85%. (Note that this figure is not the same as the number of individual acupuncture treatments performed.) Overall, from the subjects' responses, it is apparent that the number of WC patients being treated has steadily increased. Further findings of respondents who *have* treated WC patients are detailed in Table 7 and Figure 2.

'No' respondents

Respondents who indicated they *have not* treated WC patients were asked to select from a list of six options a reason why they had not done so. Respondents were also given the option of selecting more than one response and also writing further additional comments if their reasons did not match the six statements listed. Each 'no' respondent made an average of two selections with a total of 428 selections made.

The two most selected reasons for never having treated WC patients were 'never received referral' and 'never had the opportunity'. Practitioners additionally identified their own lack of knowledge as a reason. Table 7a presents the results of respondents who *have not* treated WC patients.

There were also an additional 27 comments made by respondents detailing their reasons for not having treated WC patients. Comments were overwhelmingly negative and varied depending upon the practitioner's state of practice. For example, comments from QLD practitioners (57.69%) were reflective of the situation faced by CM practitioners where acupuncture treatment provided by a CM practitioner is not recognised by the WC authority in that state. Comments arising from NSW and VIC practitioners were in relation to monetary issues and a perceived lack of adequate remuneration for their services.

TABLE 7a Reasons respondents indicated as not having treated workers compensation patients

If "NO", reason	Responses		Respondents (subtotal n = 210)
	Number of responses	Total percentage of responses (%)	Total percentage of respondents (%)*
Never had opportunity	120	28.0	57.1
Never received referral	128	29.9	61.0
Not interested	31	7.2	14.8
Don't know enough about the system	78	18.2	37.1
WorkCover system too difficult	48	11.2	22.9
Other reason	23	5.4	11.0
Total	428	100%	

\* Total add to more than 100% due to multiple response choices.

TABLE 8 Practitioners' perceived difficulties of the workers compensation system

Perceived difficulties	Responses		Respondents (subtotal n = 485)
	Number of responses	Total percentage of responses (%)	Total percentage of respondents (%)*
GPs lack of knowledge of acupuncture and its application to work injuries related injuries	332	29.3	68.5
Lack of knowledge of acupuncture and its application to work related injuries by allied health practitioners	207	18.3	42.7
Your own lack of knowledge on the workers compensation system	216	19.0	44.5
Lack of referrals	245	21.6	50.5
Other reason	134	11.8	27.6
Total	1134	100%	

Dichotomy group tabulated at value 1.

\* Total add to more than 100% due to multiple response choices.

TABLE 9 Practitioners actively seeking to treat workers compensation patients and future workers compensation patient workload preferences

Respondents		YES		NO	
		Valid percentage	Valid percentage	Valid percentage	Valid percentage
Do you actively seek to treat workers compensation patients?	n = 493	33	6.7%	460	93.3%
Would you like to increase your workers compensation patient load in the future?	n = 491	335	68.2%	156	31.8%

### PRACTITIONERS' PERCEIVED DIFFICULTIES OF THE WC SYSTEM

There were 1134 responses made by 485 respondents reporting their perceived difficulties with the WC system. Over two thirds of respondents (68.5%) identified the 'doctor's lack of knowledge of acupuncture and its application to work-related injuries' as the primary difficulty with the WC system, while 'a lack of referrals' (50.5%) rated the second most commonly selected option. Approximately one in five responses equally rated their 'own knowledge shortcomings' and 'lack of knowledge from allied health practitioners' as the perceived difficulty. Further results are noted in Table 8.

### DO YOU ACTIVELY SEEK TO TREAT WC PATIENTS AND WOULD YOU LIKE TO INCREASE YOUR WC PATIENT LOAD IN THE FUTURE?

Respondents were asked if they actively sought to treat WC patients and whether they would like to increase their WC patient load in the future. The results highlighted an overwhelming 93.3% of respondents reporting they did not actively seek to treat WC patients, yet interestingly, over two thirds of respondents (68.2%) indicated they would like to increase their WC patient numbers in the future. These results are presented in Table 9.

## Discussion

### STRENGTHS AND LIMITATIONS OF THIS STUDY

This study surveyed a large sample of practitioners who identify as members of the CM profession and use acupuncture as part of their practice scope. There is no existing literature that reports on the perceptions and involvement of CM practitioners in the WC system in Australia and the survey results therefore represent the first data of an important and growing area of CM practice in contemporary Australia not previously studied in any major national or state-based survey.

The study used a number of mailing lists sourced from both CM professional associations and an industry group in order to best capture the greatest number of participants at a national level who identified as part of the CM profession. While there was no method of confirming whether all eligible members of the target population received a copy of the survey, the authors are confident that, by using mailing lists from only nationally based CM professional associations, the majority of the eligible population of practitioners received the survey. Despite this assumption, there was always the possibility that eligible practitioners could still be excluded from participation due to a different professional association membership to one of the four listed CM associations, and it was necessary therefore to include an industry supplier's mailing list to limit potential extraneous variation due to subject selection method

bias. Overall, three quarters of the targeted population sample did not respond to the survey and this may have introduced a skewing bias into the reported results.

The WC responses from the survey are specific to the CM profession, while the survey study itself is the first in Australia to focus on this topic. Replication is then necessary to determine whether it is truly representative of the targeted population's thoughts and perceptions of the WC system and correctly reflects WC patient case loads reported by the survey respondents. In contrast, it may be possible to check a state-based subset of the collected demographic data for accuracy and validity with data from other studies where this exists in an appropriate form<sup>10,11</sup>, but this is beyond the scope of this paper.

The negative impact of using multiple mailing lists meant that a high number of duplicated surveys were sent to the same practitioner, a potential source of response bias, masking the calculation of the actual sample size and response rate. This was anticipated prior to distribution and unique identifying mail list codes were applied to correctly identify where distribution duplication occurred. Despite this strategy, until a national database of CM practitioners is established there will be no clear way to overcome this issue when undertaking national surveys.

Given the national aim of the survey study, it was also necessary to collect demographic information to contextualise the WC responses received due to the differences that exist between WC systems and associated legislated frameworks in the various states and territory, as they relate to CM and acupuncture as a treatment intervention. The survey also had a strong focus on CM practitioners' perceptions, involvement and opinions of the WC system (relevant to the state or territory in which their practice was located). The results of this study therefore represent opinions specific to this professional group and cannot be accurately extrapolated to other professional groups' experiences and perceptions of the WC system, but can, however, be used for comparative purposes.

Given the target population, there were no obvious implications of selection bias with the possible exception of limiting the survey distribution to only members of those organisations (CM professional associations and industry group) which we thought would reflect best the national membership of the CM profession. In relation to recall bias, people remember better their negative experiences<sup>12</sup>; and so the survey questions were designed as a series of open-ended questions to allow respondents to fully detail their experiences of the WC system, regardless of whether they were positive or negative. Yet there was still a notable leaning towards documenting more negative experiences and any future survey needs to include questions that specifically target positive experiences as well.

The last known national survey conducted on the CM profession<sup>10</sup> is well over a decade old, a decade that has seen many changes to the CM professional landscape. Beyond a lapse in time, the Bensoussan and Meyers study was a broad-based review of the practice of CM within Australia and overseas; it was inclusive of all practitioners (such as physiotherapists, osteopaths, naturopaths, chiropractors, nurses and shiatsu therapists) and not necessarily restricted to those who identified with the CM profession alone. Therefore, a comparison of the demographic data could not be validly undertaken against population characteristics reported in their study and there is need for current data that better reflects the contemporary demographic characteristics of the national CM workforce. Their review additionally lacked any assessment of the relationship or involvement of CM practitioners in the treatment of WC patients, (if only because this was not an overriding priority or objective of their study). There was also no analysis or cross comparison undertaken to check the validity of the survey responses of the WC related data and, therefore, replication of the current survey study is required to be undertaken to verify findings in this respect.

#### CM PRACTITIONER INVOLVEMENT AND PERCEPTIONS OF THE WC SYSTEM

The survey was most interested in gaining an understanding of the respondents' involvement in the WC system and their perceptions of this system. As such, the results for this question were very surprising, given that only half of the respondents reported they had previously treated patients presenting with a WC claim. In contrast, other allied health professions (e.g., physiotherapists) actively target involved parties in the WC system to expand patient numbers, and it would be uncommon for only half of practitioners to report treatment of such patients (depending upon their state of practice).

Despite low numbers of respondents reporting treatment of patients in the WC system during the decade from 1970 to 1980 (largely reflecting the relatively small number of respondents who were in practice at this time and a lack of data), recent reported estimates by respondents show a consistent growth from 1999, with a significant doubling of WC patients treated in 2002. This increase occurred in spite of 90% of respondents indicating they did not actively attract WC patients to their practice.

Overall, the results showed one in two survey respondents had treated WC patients and the frequency of this has been consistently increasing over time. The continued attraction from WC patients to acupuncture appears to be beyond the practitioner's control and a result of external influences given the practitioner's lack of targeted marketing to this group. Whether this reflects greater acceptance of CM in society or not, or whether other factors are at work, is not known. Other factors may include an increasing number of CM graduates entering

the workforce and subsequently a greater availability of CM services to the public; the continued popularity of CM within the community<sup>13</sup> and changes to the health care system;<sup>14</sup> CM practitioners establishing/or working in partnership with CAM group practices and the subsequent increased frequency of inter-referrals; group practice opportunities with medical and/or allied health professions, resulting in more networking opportunities and direct referrals from GPs; and finally, injured workers themselves seeking out a viable physical therapy where conventional therapy and treatment approaches have failed to provide a desired treatment outcome or where conventional therapy is simply not their first treatment of choice. The degree to which these factors interact and impact is unknown and would also likely vary with respect to a practitioner's state of practice, age and level of education. The survey figures can be projected to predict a continual rise in the number and proportion of WC patients being treated by CM practitioners in the short to medium term.

Why do nine out of ten CM practitioners not actively seek WC patients? Could it be a simple knowledge deficit in this area hindering practitioners from seeking these patients, or could the perceived difficulties of the WC system be deterring practitioners instead? Other allied health professionals, including physiotherapists and chiropractors, actively seek work in this area, as demonstrated by WorkCover NSW spending \$54 742 000 during the 2004/05 financial period on these two therapies combined.<sup>15</sup> The place of training would likely influence these figures as CM practitioners who undertook their primary training overseas were unlikely to have received training or education on the Australian healthcare system (including the WC system). Therefore, the lack of knowledge base may be hindering CM practitioners in actively pursuing patients in this area.

Extrinsic issues reported by respondents as inhibiting the referral of WC patients included perceived knowledge deficits in the broader healthcare system regarding acupuncture's scope of practice and its application to treat workers' injuries. This is likely further hindered by Australia's fragmented WC system and also accounts for the response theme variation received from practitioners from different states. CM practitioners also frequently reiterated a lack of referral from medical practitioners and allied health practitioners (e.g., physiotherapists and chiropractors). Lack of forthcoming referrals from allied health professionals is understandable (given their scope of practice crossover with CM practitioners) and competition factors are likely inhibiting referrals. Yet there are no such issues with medical practitioners and the lack of referrals is likely due to poor networks or poor knowledge of the CM practitioner's skill range and practice scope. In other instances, the lack of referrals stems from the exclusion of acupuncture or CM practitioners from respective state and territory WC

systems, where exclusion is often due to failure of relevant authorities to gazette acupuncture and CM practitioners within relevant legislation. The fragmentation of Australia's WC system additionally means there is no consistent direction or information on where and how to apply acupuncture for work-related injuries or even details on identifying a suitably qualified CM practitioner. Confusion results for all parties involved in the claims and injury management process, which only raises further ethical and legal issues.

Even with all the issues facing CM practitioners detailed above, and an apparent lack of active pursuit to target WC patients, results show two out of three CM practitioners would like to increase the number of WC patients treated in the future. Here, the major impediment for this to occur is again identified by respondents as a knowledge deficit.

#### DEMOGRAPHIC DATA AND PRACTITIONER PERCEPTIONS OF THE WC SYSTEM

While the survey was interested in practitioners' perceptions and engagement with the WC system, the respondents' demographic data was also collected. This was done to try to account for any variation in responses that might have occurred due to within-subject variability (such as individual clinical experience, years in practice and education) and which were not specific to the related WC system itself. Saying that, given the variations in the WC system within each Australian state and territory, there was always the chance that responses may vary between collective groups of practitioners but which were not reflected in all practitioners. While correlation analysis of the demographic data and the respondents' perceptions of the WC system were beyond the scope of the current article (and have been reserved for discussion in a subsequent paper), some relationship between these factors was noted in the reported results. In particular, a respondent's education, year of graduation, years in clinical practice and state of residence had some relationship to their perceptions of the WC system and these are discussed in further detail below.

Approximately 55% of respondents reported obtaining a bachelor degree qualification. This reflected the current minimum requirements for Australian primary qualifying courses in CM as recommended by the National Academic Standards Committee for Traditional Chinese Medicine<sup>7</sup> and a relatively recent addition to the qualification framework for Chinese medicine. Given this, and the generally increased engagement of practitioners in treating patients with work-related injuries, as reported in the survey results, it is also possible that bachelor degree students were given greater levels of knowledge than occurred in 'older' degree pathways. For example, prior to the emergence of bachelor degree level programs in CM, there existed diploma and advanced

diploma qualifications. Given the related year of graduation of practitioners with a diploma it was also unlikely that the WC system was specifically discussed as a general part of professional practice issues in these courses and so diploma graduates' levels of knowledge would have been generally low when they graduated. However, their relatively low knowledge would have been countered by their greater clinical experience, with more years in practice than recent bachelor degree graduates, who are subsequently disadvantaged in the system by their limited clinical experience and limited referral networks that 'older' established practitioners have. This may account for some of the perceptions and discrepancies noted in the results. Yet, while it was anticipated that the increase in CAM acceptance<sup>5</sup> as a legitimate treatment option for injuries would result in a response from course providers to increase the level of information on CAM integration into the broader health system (inclusive of the WC system), the overall feedback by respondents indicated that this was not the case. Further in-depth analysis is required of the data to determine whether a relationship exists (and the strength of this) between year of graduation, education undertaken and the level of WC knowledge reported.

In addition to the locality of practice, respondents were asked to indicate their type of practice. Many noted sole practice as their practice type. This was not an unexpected result given that acupuncture (when provided by CM practitioners) is not integrated into the public health system, which consequently eliminates an important potential source of employment for CM practitioners which other health professions in Australia are dependent upon. This also hinders networking opportunities for CM practitioners with other health professionals and limits an important source of referrals of WC patients.

A large proportion of respondents also reported practising with other CAM practitioners in group practice. This was also not surprising given that group practice can provide a supportive business network and additionally assists in abrogating the financial costs of running a practice. However, it remains unknown the proportion of CM practitioners who were operating as independent practitioners within a group practice setting or employed directly by the practice as an employee and whether 'practice type' had a relationship to WC knowledge levels and/or participation. Of most interest in the respondents' feedback on practice type was the number of practitioners who reported working in a group practice with GPs and allied health practitioners. A preliminary analysis of the data indicated that CM practitioners in multidisciplinary practices did report higher levels of WC patients than those respondents in sole practice.

In contextualising a respondent's perception of the WC system and in particular their level of involvement in

treating claimants in this context, it was of interest to gain an understanding of the respondent's practice scope and their main treatment modalities. That is, a respondent dependent solely on the use of herbal medicine was less likely to be involved in the WC system (due to the musculoskeletal basis of most injuries occurring to patients in this system), than a practitioner who used acupuncture and/or manual therapies, arguably a more appropriate treatment intervention. Given this, it was not surprising that the survey results showed 99% of the respondents indicated the use of acupuncture as one of their specialty treatment modalities.

## Conclusion

CM practitioners in Australia have been engaging with the various state and territory WC systems for over 30 years, yet there remains an absence of statutory gazetting of CM practitioners as treatment providers. This raises several issues that range from the timely provision of treatment services by CM practitioners, reporting processes to insurance companies, the subsequent assessment structures of those insurers and the assessment of the appropriateness of the acupuncture treatment provided (as part of a scope of practice). These issues need to be prioritised and addressed in practical terms with the development of policy and protocols to assist the CM professions continuing engagement in the system.

While there was some variance in individual practitioner perceptions of the system, a common finding reported was an overall lack of knowledge about this system and this may account for some of the confusion and negativity reported in the survey results. This was primarily attributable to extrinsic factors related to the lack of statutory gazetting and subsequent paucity of resource development specific to the needs of the CM profession and levels of poor knowledge reported by respondents. However, the WC system cannot be blamed solely for this situation and the CM profession itself (both educators and associations alike) need to take some responsibility for informing practitioners about the system and how to successfully engage with it.

WC is clearly an untapped market sector for the CM profession, which is surprising given both the suitability of the CM profession's practice scope to address the physical nature of most work-based injuries and also for the opportunities it provides to develop inter-referral networks while supporting practice incomes. Even in the states and territories where CM practitioners are excluded, there remain options for them to engage with injured workers through the Commonwealth WC systems.

Overall the poor knowledge levels identified (in all relevant parties) has not hindered members of the CM profession from engaging with the WC system, with one in two respondents

reported having previously treated WC patients. Many also indicated they would like to continue treating WC patients and/or increase WC patient loads in the future. Accordingly, the WC authorities need to develop policy, guidelines and/or protocols for the use of acupuncture in work-related injuries, and in particular, gazette the inclusion of CM practitioners and their entire scope of practice (where appropriate), into their respective WC systems. This should be prioritised given the consistent growth in the proportion and frequency of treatment reported by respondents over the last several years, and this trend will likely continue given the respondents' plans to engage further with the WC system in the future.

### Clinical Commentary

The use of acupuncture by the Chinese medicine (CM) profession within the Australian workers compensation (WC) system has been poorly recognised and poorly documented. Despite this, members of the public are seeking acupuncture for the treatment of their work injuries with one in two CM practitioners previously treating this group of patients. With 50% of workplace injuries resulting in sprains or strains, there is a large potential for CM clinicians to increase their current share of WC patients. Educators and professional associations need to develop resources for clinicians, WC authorities and industry stakeholders to assist in the effective management of injured workers.

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# Integrative Medicine: Combining the Practice of Orthodox and Alternative Medicine – Inclusive of ‘Other’ or Just Another Path to Exclusivity?

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## ABSTRACT

The importance of creating static definitions of what constitutes western allopathic medicine (WAM) and complementary and alternative medicine (CAM) depends to a significant degree on the competing interests that appropriate these definitions. Terminology is and is not a semantic argument. Terminology is a sociological argument too. Words and the way we categorise hold enormous power over the human mind. Through usage and time, words are the matrix of any worldview and as such they are representative of thought, belief, action and collective consequence. What, then, is the definition and rationale behind integrative medicine (IM), is it a new paradigm as it appears to be, and how does it influence the broader healthcare landscape for practitioners of CAM and WAM alike? This article discusses the philosophical consequences of the definition and rationales of IM and suggests that ‘integrative medicine’ as a term and practice (hence, an entity) represents a worldview and agenda that is ultimately and ironically at odds with ‘alternative’ and ‘complementary’ forms of medicine, those very forms that it seeks to absorb. As practitioners of CAM modalities, we have a stake in ensuring that integrative medicine is understood as being a politico-economic entity and not the medical paradigm it suggests itself to be.

**KEYWORDS** Medicine, integrative, co-option, western allopathic, orthodoxy, CAM, traditional east Asian, narrative.

## Introduction

Integrative medicine (IM) is relatively new terminology suggestive of a new medical paradigm. Yet the rationale and the philosophical underpinnings of this purportedly ‘new’ medicine, it will be argued, are not new. IM speaks of a medicine which combines the best of the western allopathic medicine (WAM) paradigm with the benefits of complementary and alternative medicines (CAM). So, at face value, it presents itself as a layered and holistic,

all-encompassing medical approach; yet closer evaluation suggests a worldview and agenda that is ironically at odds with ‘alternative’ and ‘complementary’ forms of medicine, the very forms that it states it integrates. Before discussing and defining integration and IM, however, there must first be clarity about how WAM and CAM are defined; one first must understand what they are independently. These definitions prove useful in providing some surprising insights into what integrative

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medicine might actually be offering. A closer examination of the apparent chasm between what integrative medicine is and what it purports to be will also be considered.

## Discussion

The distinction of terminology is and *is not* a semantic argument. Terminology is a sociological argument too. Words do hold power. Through usage and time, words are the matrix of any worldview and as such they are representative of thought, belief, action and collective consciousness.

So first to definitions of what constitutes WAM and CAM. This is not as easy as it first appears. There is considerable flux in the practices that are generally understood to be western/allopathic and complementary/alternative due to differing societal attitudes, healthcare necessities, political and cultural contexts enacted upon by incremental changes across time.<sup>1,2</sup>

WAM is effectively understood as a homogenous medical model; otherwise known as 'orthodox', 'biomedical', 'mainstream', 'modern' and/or 'conventional' medicine, and claims to be firmly located within a scientific, reductive paradigm.<sup>2,3</sup> In the UK, the British Medical Association defines orthodoxy (i.e., WAM) as 'treatment delivered by a registered medical practitioner'<sup>2</sup>; however, this is an inadequate definition as many registered medical practitioners are also providers of what are considered CAM treatments such as acupuncture and homoeopathy.<sup>2</sup>

The commitment to diagnose and treat patients in the light of current scientific knowledge is according to Kaptchuk and Miller, what makes it 'fundamentally distinct from alternative medicine'.<sup>4</sup> Although this is a reasonable definition, the growing requirements for 'evidence-based medicine' across all paradigms of medicine, could make this definition seem a little less definitive. What is problematic with this definition is 'current scientific knowledge' is not well defined, and given that empirical, anecdotal or anthropological evidence<sup>1,4,5</sup> often provides a wellspring of knowledge that only over time is validated by accepted scientific procedures, it could be that WAM in practice isn't always how it's defined on paper. Indeed, as Hammerly points out, '[t]he recent medical literature is rife with examples of widely used medical therapies which have not been convincingly substantiated by our own standards. Two hundred years of using digoxin for heart failure was finally 'validated' in a 1996 study of 7,788 patients reported at the annual meeting of the American College of Cardiology'.<sup>6</sup> This definition does somewhat imply that alternative medicine isn't 'scientific' in its approach, and while the premise of the medicine is alternative, it doesn't naturally follow that the medicine itself is not based on firm scientific principles of systematic observation and experimentation. Indeed what if alternative medical practice

and 'facts' contribute to current scientific knowledge? This indeed is borne out by the current scientific and medical frenzy with the biological and psychological health benefits that mindfulness and meditation training practices (such as yoga, qi gong, meditation) provide, now being validated by scientific trials as factually true.<sup>7</sup>

Essentially though, WAM is the "model of illness based on a central notion that specific diseases exist, that they are produced by biologically aberrant functioning, and that they can be alleviated by clearly defined treatments." These treatments and diseases are ideologically underpinned by biology, biochemistry and assumptions of objectivism, determinism and positivism.<sup>3</sup>

Complementary and alternative medicine (CAM) therapies, on the other hand, are collectively referred to as 'complementary, holistic, natural, unorthodox, fringe and unconventional medicine, [and] principally assert that illness is caused by an imbalance between opposing energy forces and adhere to a holistic orientation as part of their paradigm of healthcare'.<sup>3</sup>

Quite unlike WAM, CAM is a heterogeneous medical model and many disciplines 'similar and diffuse' are grouped together under the CAM banner.<sup>4</sup> Indeed, finding the threads that unite such different (and differently perceived) practitioners of disciplines as diverse as massage, yoga, homoeopathy, crystal healing, reiki, acupuncture, herbal medicine and naturopathy, highlights the difficulty of defining what constitutes CAM. As Leckridge points out, it is often defined by what it is *not* rather than what it *is*.<sup>2</sup>

The US based National Center for Complementary and Alternative Medicine) which defines CAM as 'a group of diverse medical and health care systems, practices and products that are not presently considered to be part of conventional medicine',<sup>2</sup> for its purposes divides CAM into five domains of related complexity. Chinese medicine and naturopathy are considered alternative medical systems; then there are the mind-body interventions of yoga and meditation; biologically-based therapies such as homoeopathy; the manipulative, body-based therapies such as osteopathy, chiropractic and massage, and lastly energy therapies such as reiki.<sup>2</sup> It is worth pointing out here that within Australia chiropractic and osteopathy have redefined themselves as 'allied' healthcare providers (being as they are recognised under Medicare) and as such may not be viewed, by themselves or others, any longer as CAM.

How important it really is to create static definitions of what constitute WAM and CAM depends to a large degree on the competing interests that appropriate these definitions. Leckridge suggests that definitions of 'CAM' as well as 'orthodoxy' are culturally, historically and politically determined and because the boundaries between the two

practices “are not fixed, a CAM product or service can become *redefined* as ‘orthodox’”.<sup>2</sup> Surely, though, if the boundaries are not fixed then this redefinition works to the advantage of CAM, too? Well it does and it doesn’t.

In one sense, and somewhat ironically, the alternative medical paradigms of naturopathy and traditional East Asian medicine have (at least in Australia) over time and with continued efficacy and patient/consumer use become more ‘mainstream’. Perhaps their acceptance into ‘orthodoxy’ is only a matter of time, but for the moment they would still be considered CAM therapies, however integrated into the ‘normal’ medical fabric. So in one sense redefinition could well be said to work to the benefit of the aforementioned CAM therapies, in part because redefinition hasn’t meant complete annexation or official prohibition from practice by regulatory authorities. But orthodoxy is a way of thinking, which CAM therapies and practitioners, by their existence, have challenged in the past, and with redefinition have come challenges to paradigm integrity. The alternative medicine paradigms are still part of a vanguard that have demanded a reappraisal and adjustment of the values that inform care and cure,<sup>3</sup> the valuing of placebo<sup>8</sup> and appreciating and respecting different hierarchies of evidence.<sup>5</sup> But how far does thinking within the CAM communities that have benefitted from this ‘success’ of mainstreaming become orthodox in its own way? And with redefinition and demarcation into ‘orthodoxy’ how does ‘territorial equity’ for CAM practitioners manifest? Are practitioners of CAM, either as a group or as individuals, respected by the established orthodoxy on an equally esteemed footing?

At its heart a redefinition of orthodoxy is what co-option is all about; or put another way, ‘redefinition’ in the interests of co-option *is* orthodoxy. Precisely because WAM is the dominant healthcare paradigm, it will tend to assimilate and co-opt CAM therapies, redefining itself as integrative medicine, while CAM and CAM practitioners are unable to do the same.

It could be argued that CAM does in fact co-opt WAM, and could call itself integrative because many CAM therapies are taught and practised, incorporating western, biomedical and biomechanical knowledge and that in so doing it becomes integrative medicine. However, this is a too literal understanding of IM; integration is after all an organic process. Traditional and alternative medicines and orthodox medical paradigms themselves are not static but have incorporated and adopted materials and skills from each other’s disciplines across time.<sup>4</sup> This integration is observed socially in the way subcultures or fringe social movements often with anti-mainstream, anti-establishment values – such as organic and biodynamic farming, punk/grunge music scenes or feminism – end up becoming part of the mainstream, losing their fringe or alternative status precisely because they have become so

popular and successful.<sup>9</sup> What this serves to underline is the difference between ‘integration’ as an ongoing process of life, that part of the equation that is both inevitable and valuable and which allows human beings and communities to develop and evolve, and integrative medicine as a socio-political and economic entity that is embedded in a suspect system of values.

Dictionary definitions of the word ‘integrate’ include: ‘to bring together or incorporate (parts) into a whole’; ‘to give or cause to give equal opportunity and consideration to (a racial, religious, or ethnic group or a member of such a group)’.<sup>10</sup> Integration suggests a coming together, a synthesis; within the context of medicine, it alludes to what is presented as an ideal, an interweaving of skills, practices and perception that meld the best of all that western allopathic (WAM) and complementary/alternative medicines (CAM) have to offer.

Edzard Ernst has spoken of two definitions of IM. Firstly he calls it a ‘comprehensive, primary care system that emphasizes wellness and healing of the whole person ... as major goals, above and beyond suppression of a specific somatic disease’,<sup>11</sup> which, he goes on to say, ‘views patients as whole people with minds and spirits as well as bodies and includes these dimensions into diagnosis and treatment.’<sup>10</sup> It should be recognised here that this definition of IM symbolises a new movement of ‘holism’, a capturing (and Ernst would say recapturing) of the body-mind-spirit trinity within established medical ranks. Secondly, he says, ‘it also means the use of different therapies, including both complementary medicine and conventional medicine and different healthcare agencies and practitioners, in a co-coordinated and mutually supportive programme of care for the greatest benefit of the individual patients.’<sup>10</sup>

On the face of it, these IM definitions, particularly the second, seem entirely reasonable. After all, ‘[n]o single therapy, specialty or discipline can provide everything needed for comprehensive (mind, body, spirit) care’,<sup>12</sup> and Ernst’s definitions give us a vision of a ‘two-eyed medicine’, the interweave of clinical practice that seems to hold out the ideal of a ‘team approach’ within primary healthcare arrangements, affirming the patient-centred model, where ‘cure’ and ‘care’ are no longer in opposition or competition with each other<sup>3</sup> but rather form part of a *circle* of medical response and practice that wraps around each person. This team approach truly seems to offer an idealised vision. So where’s the problem?

It is not the act of union between CAM and the dominant culture of WAM that is of concern, although this is problematic for some,<sup>13</sup> it is the nature of the union, the nuance of the relationship between paradigms that requires comment. The main problem lies in the exclusivity and the lack of equality within integrative medicine professional bodies.

Indeed, the mission statement of the Australasian Integrative Medicine Association (AIMA) states that it is 'the peak medical body representing the doctors who integrate complementary medicines/therapies into mainstream medical practice.'<sup>14</sup> This definition seems reasonable, if a little one sided, but what is not immediately apparent is the exclusivity of AIMA. 'Our Full members consist of medical practitioners [GPs] who provide integrative and holistic health care for their patients. Associate members include allied health professionals including physiotherapists, nurses, dieticians, pharmacists, naturopaths and a wide range of other health professionals.'<sup>12</sup> Full membership to AIMA is open only to registered medical practitioners (GPs); other health practitioners can join but not on equal terms and thus without full voting rights, muting the agency of their agendas. This issue of equality and exclusivity sends a clear message that the value of the work done and the vision that CAM practitioners provide within the healthcare/wellness landscape isn't being acknowledged on equal terms. It is interesting to note here that naturopaths are being grouped with 'allied health professionals', rather than as complementary or alternative health professionals.

AIMA's mission statement certainly suggests that one person can be all things to either an individual or a community, but this 'ideal' in any other guise is abhorrent. Just as 'no single therapy, specialty or discipline can provide everything needed for comprehensive care',<sup>11</sup> so too no single person, no matter how bright, skilled or talented, can provide everything for every patient. It is an arrogant assumption that 'Someone can Practice All Medicine'<sup>11</sup> (SPAM) without compromising outcomes and providing poor patient care. The motivations for the experiences that people have and the reasons they seek different medical therapies and practitioners, are as varied as they are complex. Diversity of choice is important and may well be challenged in the longer term by IM.

The supposed ideal of one person providing and ministering to all needs of all people is a fallacy, finding ground perhaps by appealing to our very human and modern yearning for 'wholeness'. Perhaps it is desire for the illusion of control, inherent in obedience to the fascist logic buried in the nature of 'productivity'.<sup>9</sup> Or perhaps this ideal finds favour in the human failing of emulating omnipotence (as holders of power in the practitioner/patient dynamic), that as practitioners of integrative medicine they can offer more as better.

Turning our vision more broadly though, it is no coincidence that with the substantial growth in support for and use of CAM within the last decade,<sup>15</sup> interest in 'integration' for the mainstream medical establishment has become of such pressing concern. As Shuval and Mizrahi state, 'The changing orientation of major segments of the medical profession need to be seen against the growing threat that consumer demand for

alternative practitioners poses to the biomedical establishment, and the need of the latter to maintain its status and hegemony.'<sup>23</sup> So effectively have patients as consumers sculpted the medical agenda with their dollars, IM should well be viewed as the mainstream medical fraternity's response to refocusing priorities to the socio-economic and political pressures that have rapidly gained momentum within the last decade in relation to CAM.

But that is not to say that the only rationale for working co-operatively is purely economic and status quo driven. Factors such as patient-centred care, best practice, efficacy, safety, quality,<sup>16</sup> reliability and sustainability are also relevant and worthy rationales for working together. With the growth in CAM services the developing professionalisation of CAM therapists, the implicit if begrudging acceptance of it and its practitioners by the broader medical community<sup>17</sup> has meant that working together is becoming an imperative, if these values and ideals are not to be idle if good intentions. But is integrative medicine representative of co-operative medical relationships, given its exclusivity? Exclusivity is the death knell of equitable relationships among diverse communities. If we accept that IM really means SPAM,<sup>11</sup> then it holds deceptively little for patients and CAM professionals alike. Integrated services that encourage a team, with the best outcomes for patients being paramount, can only be achieved by working together, while still maintaining the pluralism of our practices.<sup>4</sup> Diversification, understanding, acceptance and respect for differences, commitment to the patient and the medicine, all these elements must be engendered within the relationships which lie at the heart of patient-centred medicine.<sup>27</sup> When there is a shared vision that enables inclusion rather than

### Clinical Commentary

Language and the way we narrate ourselves is a formative and foundational force in our existence as subjective, objective, personal and professional selves. As people, clinicians and patients, we are being continually shaped, formed, informed, developed and caught by language and narrative. It is so profound, so essential to ourselves that, like the breath, we hardly notice it until we find it's become problematic. So the language that is used by us or by others, within the broader medical and social context, affects, however subtly, communal awareness and the accepted 'real'. As members of the health and medicine profession, it is critical that the integrity of our medical wisdom, our skills and professionalism are respected and appreciated within the broader medical communities, and that the challenges and development of the roles required of us are discerned within a broader socio-political and economic framework.

exclusion, plurality rather than uniformity, intention centred in the patient/human/care axis rather than within the money/status/power axis, then working for the benefit of the one is to the benefit of all.

## Conclusion

The definitions of WAM and CAM highlight the degree of flexibility and arbitrariness of the 'orthodox' and 'other' dynamic inherent in these two medical paradigms. Given that integration as an organic process enables the absorption and utilisation of new material, each paradigm can show or can trace past degrees of such exchange, without it having ruptured the integrity of the medicine. But this is different to the co-option of particular therapies by an exclusive set of orthodox medical practitioners, marketed as a new medical paradigm, for the purpose of maintaining a position of primary healthcare provision. It may present itself as a new paradigm in medicine, but really, integrative medicine is an entity established for the hegemonic benefit of western allopathic medicine.

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# Acupuncture Point Injection in the Treatment of Midportion Achilles Tendinopathy: A Case Report

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## ABSTRACT

Midportion Achilles tendinopathy is a chronic, painful condition sometimes referred to as Achilles tendinosis or more controversially Achilles tendinitis. Considered to be one of the most common overuse injuries in participants of recreational and competitive sport, it is by no means restricted to athletes. This case presentation features the treatment of midportion Achilles tendinopathy and underlying lower-back pathology in a 46-year-old recreational runner with acupuncture and acupuncture point saline injection, following unsuccessful conventional biomedical treatment. Acupuncture was used during treatment; however, the primary intervention was the injection of saline solution BP into acupuncture points. Injection of acupuncture points is a common therapeutic technique in China. In Australia, acupuncture point injection is more commonly performed by naturopaths or homoeopaths injecting saline. The case described offers practitioners another approach using a technique which has a long history of use in Chinese medicine. The discussion also identifies that the use of saline injection is not well documented in biomedical literature and should be further investigated in prospective randomised controlled trials.

**KEYWORDS** Tendinopathy, tendinitis, Achilles, midportion, acupuncture, injection, Saline, Alfredson's, Gillet, VISA-A.

## Introduction

Achilles tendinopathy occurs in all sections of the population, but runners are at 30 times greater risk than those who are sedentary.<sup>1</sup> Between 2 and 16% of those affected are forced to abandon their physical activity and in some settings 20–30% of patients will require surgery.<sup>2</sup> Despite these figures, the exact incidence of Achilles tendinopathy is unknown. This case report specifically involves midportion Achilles tendinopathy. It is important to differentiate between midportion and insertional Achilles tendinopathy as their treatment and prognosis differ. Midportion Achilles tendinopathy refers

specifically to the painful area of the Achilles tendon located 2–3 cm proximal to the tendon insertion.<sup>1</sup>

Midportion Achilles tendinopathy classically presents as fusiform swelling over the midportion of the tendon that is stiff and sore upon rising but improves with walking. The associated pain is often improved with activity or the application of heat, but tends to return with rest.<sup>3</sup> Classic presentations aside, the symptoms of midportion Achilles tendinopathy can vary greatly between patients. Onset may be

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sudden, gradual or insidious. Pain and touch tenderness may be minor, causing minimal disability, but can also be severe and debilitating. Swelling and nodulous lumps may or may not be present and will vary in size from one patient to the next. Symptoms can last just days or many years. The use of imaging to diagnose midportion Achilles tendinopathy is unreliable due to variations in findings from one patient to the next.<sup>1</sup>

There have been several theories as to the pathology of tendinopathy, leading to the differing terms used, including tenopathy, partial rupture, paratenonitis, tendovaginitis, peritendinitis and achillodynia.<sup>4</sup> Tendonitis, suggesting inflammation of the tendon, has long been a popular term, but histological studies of chronic tendonopathies have demonstrated that the expected inflammatory cells are usually absent or in very low numbers. Although tendinosis is often used, implying a degenerative condition without inflammation, tendinopathy is the more appropriate term as it does not attempt to define an underlying pathological process.<sup>4,5</sup>

There is much conjecture as to the cause of midportion Achilles tendinopathy. The mechanical theory suggests that continual loading of the tendon within normal parameters causes fatigue and eventually failure of the tendon structure. The vascular theory states that a compromise to the blood supply may cause degeneration of the tendon. One study by Mafulli et al. has found an association between radiculopathy and Achilles tendinopathy.<sup>5</sup> Exercise-induced hyperthermia has also been implicated in Achilles tendon cell degeneration causing tendinopathy.<sup>4</sup> Most recently, iceberg theory has been put forward, whereby, it is suggested, inflammation and degeneration combine in a type of pathogenic cascade.<sup>6</sup> The exact mechanisms leading to midportion Achilles tendinopathy are unclear.

The treatments provided for midportion Achilles tendinopathy are even more diverse than the theories of its aetiology. They include cryotherapy, NSAIDs, eccentric training, topical glycerol trinitrate patches, therapeutic ultrasound, therapeutic laser, manual therapies such as deep tissue massage, heel pads or orthotics and surgical debridement. Several substances can also be injected to treat midportion Achilles tendinopathy including corticosteroids, heparin, dextrose, calcium gluconate, autologous blood and aprotinin.<sup>1,5,7</sup>

Because the symptoms of midportion Achilles tendinopathy vary from one individual to the next, TCM diagnoses also vary. The most common clinical presentation is likely to resemble Bi syndrome, also known as Painful Obstruction Syndrome.<sup>8</sup> As Bi syndrome is an affliction of the channels, pain is caused by an obstruction to the flow of qi and blood in the channels.<sup>9</sup>

## Case History

A forty-six year-old female presents with a four-month history of Achilles tendon pain affecting her right side. The onset was gradual and was first noticed after completing her morning run. The pain worsened until she was no longer able to complete her usual running and cycling program. An ultrasound was undertaken and no significant abnormality was detected. She had no history of injury but had suffered periodic lower-back pain over a two-year period. Seeking treatment for the Achilles pain, she had tried orthotics from a podiatrist to restrict pronation and correct gait, local soft tissue manipulation, eccentric exercise in the form of Alfredson's heel-drop protocol from a physiotherapist, and glyceryl trinitrate (GTN) patches from a sports physician. The Achilles pain had now become so severe it was waking her at night and was causing her to hobble upon rising. Dissatisfied with these approaches and desperate to return to training she decided to try acupuncture.

Upon examination, the right Achilles was visibly swollen and tender to touch. Palpation revealed small tender nodule-like lumps that could be felt either side of the Achilles tendon midportion. There were no signs of visible redness and the area was neither hot nor cold to touch when compared to the unaffected Achilles tendon. There was palpable hypertonicity through the left lumbar muscles, positive Gillet test<sup>10</sup> for the right sacroiliac joint and touch tenderness deep on the right side in the region of BL 24 *Qibaishu* and BL 25 *Dachangshu*.

## TCM Diagnosis

- Damp Bi with phlegm accumulation in the bladder and kidney channels surrounding Achilles tendon.
- Stagnation of qi and blood in the bladder channels of the lower back.

## Biomedical Diagnosis

- Right sided midportion Achilles tendinopathy.
- Right sacroiliac joint dysfunction and pelvic torsion.

## TCM Treatment Principle

Relieve pain, disperse phlegm damp and promote the flow of qi in the channels of the affected areas.

## Treatment

**Soft Tissue Manipulation:** Soft tissue manipulation was performed on the lower back, psoas and external hip rotation muscles to correct the pelvic torsion. Sports massage was applied to the right calf.

Acupuncture Point Injection: Injections were performed using a 1 ml syringe fitted with a sterile single-use needle measuring 0.33 mm in diameter and 13 mm in length. A 1 ml dose of saline solution BP was injected into each point located posterior to KI 3 *Taixi* and posterior BL 60 *Kunlun* on the right leg at a depth of approximately 10 mm. Both points were located anterior to the border of the Achilles tendon and the needle was inserted in a superior and oblique direction. In a similar manner a 0.5 ml dose of saline solution BP was also injected into SP 6 *Sanyinjiao* and GB 39 *Xuanzhong*.

Acupuncture Needles: Vinco sterile single-use acupuncture needles were used on all points. Two acupuncture needles measuring 40 mm in length and 0.22 mm in diameter were inserted perpendicularly to a depth of approximately 25 mm into BL 25 *Dachangshu* bilaterally. Two acupuncture needles measuring 50 mm in length and 0.22 mm in diameter were inserted laterally and obliquely to a depth of approximately 40 mm into the two most tender Ahshi points on the right sacroiliac joint. One acupuncture needle measuring 25 mm in length and 0.20 mm in diameter was inserted superficially into GB 34 *Yanglingquan*. All acupuncture needles were retained for a period of fifteen minutes. There was no attempt to obtain *deqi* and no additional needle manipulation was performed.

The patient was instructed to continue the Alfredson's heel-drop exercise and stretch the right gastrocnemius and soleus muscles twice a day, holding the stretch for a period of ten breaths. She was also instructed to take 1800 mg of ecosopanthenoic acid in the form of omega-3 daily for the duration of the treatment, take 200mg of ibuprofen at a rate of two tablets every four to six hours with a maximum of six tablets per twenty-four hours for three days, and apply Traumeel cream to the Achilles area twice daily. The treatment plan was for the patient to return on a weekly basis until the symptoms were resolved.

The patient returned for her second treatment nine days later and reported decreased pain upon waking and she did not hobble so badly when taking the first steps out of bed. Because this treatment was with a different practitioner, acupuncture was used as the primary intervention. Returning to the author for her third treatment five days later, the patient stated she had not responded well to the previous treatment and felt there was no improvement. The initial treatment was repeated with the points SP 6 *Sanyinjiao* and GB 39 *Xuanzhong* omitted from injection. The patient was instructed to stop the Alfredson's heel drop exercise. This treatment was repeated at weekly intervals for two more weeks. At the end of two weeks the patient had no pain and the swelling in the Achilles tendon had all but gone.

A follow-up telephone conversation three months after the last treatment revealed the patient felt so good she decided further treatment was no longer required and had returned to training pain free.

## Literature Review

A PubMed search was conducted using the following MESH terms: ('Tendinopathy' AND 'Achilles Tendon') AND ('Injections, Subcutaneous' OR 'Injections, Intramuscular' OR 'Injections, Intradermal'). This search yielded five results with no full-text articles available.

A broader search using the Ebscohost database was conducted in the hope of gathering more scholarly information on the topic. The search terms 'tendinopathy' AND 'Achilles' AND 'injection' were used, yielding 32 results, including 14 full-text articles. These full-text articles were then reviewed for relevance to the case at hand.

## Discussion

This case demonstrates the incorporation of acupuncture point injection therapy in the treatment of midportion Achilles tendinopathy. Four months of conventional treatment failed to make any difference to this patient's midportion Achilles tendinopathy. After five treatments over a period of 28 days, using paratendinous saline solution BP injection as the primary intervention, the patient was pain free and able to return to training. The outcome of this case demonstrates the safe and effective use of acupuncture point injection in treating midportion Achilles tendinopathy.

Ibuprofen was recommended to minimise the possibility of inflammatory response from the initial treatment. As it was only taken for three days, we do not consider it to have had a significant influence on the outcome of the case. The intention of prescribing Traumeel and an omega-3 supplement was to reduce the effect of any inflammation occurring at the Achilles tendon. As midportion Achilles tendinopathy is thought to have little or no inflammatory component their effect on the outcome of this case is likely to be minimal.

Acupuncture point injection is a relatively new technique in acupuncture, with the earliest clinical reporting published in 1960. Injectants used include glucose solution, distilled water, vitamin, liquid extract from herbs, magnesium sulfate, procaine hydrochloride or saline.<sup>11</sup> There are also a number of acupuncture texts which contain reference to its use.<sup>12</sup> An internet search for practitioners reveals that the vast majority of those practising acupuncture point injection are naturopaths or homoeopaths. Perhaps this is because, until recently, the only training for acupuncture point injection in Australia was

focused on the use of saline injections in conjunction with oral homoeopathic solution.

Searching the literature confirmed that the use of saline injection is not well documented in current biomedical literature. The commonly studied injectants used for Achilles tendinopathy are corticosteroids, low-dose heparin, polidocanol and lidocaine.<sup>4,7,13,14</sup>

Corticosteroid use is controversial due to the current understanding that chronic tendinopathy is a degenerative condition rather than an inflammatory one.<sup>7</sup> It is noted in many of the latest reviews that inflammation may play a role early in the pathogenesis of tendinopathy, and that inflammation and degeneration are not necessarily mutually exclusive.<sup>6,7,13</sup> However, even though corticosteroid use may seem to only be appropriate in the early phases of tendinopathy, it is apparent that NSAIDs do relieve pain and may be effective in short-term pain management.<sup>4</sup> The patient in this case had asked her sports physician about the possibility of receiving corticosteroid injections for her Achilles pain. The sports physician refused citing that corticosteroid injection may cause the tendon to rupture. This may be due to several reports of tendon rupture after corticosteroid injection in the area surrounding the Achilles. However, it appears the risk of rupture may be minimised if the corticosteroid is delivered by paratendinous injection.<sup>7</sup> Intratendinous injection poses potential dangers of tendon rupture<sup>4</sup> and is classified as a contraindication.

In a recent systematic review on point injection for musculoskeletal pain, the efficacy of eight injectants was compared: sterile water, lidocaine, botulinum toxin, bupivacaine, prilocaine, dry needling, tropisetron, and saline. Even though saline was primarily used as a placebo control in most trials, the review reported improvements in all conditions treated regardless of the injectant used.<sup>15</sup> These results open the possibility that another mechanism may be involved in the relief of pain aside from the injectant's intended specific chemical interaction. Noxious stimulation of nociceptors and mechanoreceptors due to needling, the same processes involved in acupuncture, are no doubt in effect. Strudwick, Hinks and Choy found that the delivery of saline point injection at LI 4 *Hegu* delivered similar physiological responses to traditional acupuncture needling and that point injection recipients reported a greater subjective deqi response.<sup>12</sup> It is possible that point injection stimulation creates a strong healing response in the body, due to (a) greater needle width, (b) the formation of a fluid bolus that continues to provide stimulation to the tissue for a time after the needle is removed, and (c) local tissue interaction with the injectant. Saline, being pH neutral, may have its own particular effects on the acid-base balance of local connective tissues, and possibly optimising conditions for the body's self-healing mechanisms.

Studies have shown that eccentric strengthening programs can be effective in treating Achilles tendinopathy.<sup>7</sup> Although this patient did not respond to the Alfredson's heel-drop exercise program, the author has used it previously and found it to be a simple and effective tool for clinical use that should always be considered for inclusion in treatment of midpoint Achilles tendon pain.

Although not used in this case, the Victorian Institute of Sport Assessment–Achilles (VISA-A) questionnaire is a valid and reliable tool to monitor the severity of Achilles tendinopathy. It is not a diagnostic tool, nor does it indicate prognosis, but it can easily be completed by the patient in less than five minutes, providing the practitioner with a more objective tool to monitor the progress of treatment.<sup>2</sup>

### Clinical Commentary

Achilles tendinopathy occurs in all sections of the population but runners are at 30 times greater risk than those who are sedentary. Between 2 and 16% of those affected are forced to abandon their physical activity and in some settings 20–30% of patients will require surgery. This case presentation features the successful treatment of midportion Achilles tendinopathy in a 46-year-old recreational runner with acupuncture and acupuncture point saline injection, following unsuccessful conventional biomedical treatment. Point injection therapy has been a part of acupuncture practice in China for over 50 years, but is not widely used in Australia.

### Conclusion

Acupuncturists in China have used point injection as a treatment option for many conditions over the last 50 years. Acupuncture point injection seems to be an appropriate therapy if used by suitably trained acupuncturists in Australia. Given the history and apparent effectiveness of acupuncture point injection, it seems unusual that so few acupuncturists in Australia are using it, although a shortage of appropriate training opportunities may contribute to its slow uptake in the profession.

In our research we were unable to find any record of adverse reactions for paratendinous injection of saline. Current literature suggests that point injection may well share many therapeutic mechanisms with acupuncture therapy. In addition, prolonged or enhanced noxious stimulation and local tissue interaction with the saline injectant may also contribute to the effect of point injection therapy. Point injection for musculoskeletal pain can be effective regardless of the injectant used. As one of the cheapest and safest injectants, it seems reasonable to

consider normal saline point injection as a useful adjunct in clinical acupuncture practice, particularly in the treatment of midportion Achilles tendinopathy.

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# Current Research and Clinical Applications

## Acupuncture Treatment for Spinal Cord Injuries: An Analysis of a Recent Systematic Review of Randomised Clinical Trials in the Chinese Literature

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The following is a summary and analysis of a recent systematic review of acupuncture treatment in spinal cord injuries (SCI), 'Acupuncture for Spinal Cord Injury Survivors in Chinese Literature: A Systematic Review' by Shin and colleagues.<sup>1</sup>

The objective of this systematic review by Shin et al.<sup>1</sup> was specifically to review the Chinese literature regarding acupuncture treatment for SCI. They searched the China National Knowledge Infrastructure databases from their inception up until May 2008. The intention was to select randomised controlled trials (RCTs) with acupuncture, including electroacupuncture (EA).

Trials comparing needle acupuncture with various forms of rehabilitation and drugs were included, but comparisons with other forms of acupuncture, such as injection or laser acupuncture, or between two different types of acupuncture were excluded.

They identified 236 studies, with a final number of seven RCTs meeting the selection criteria. The reviewers also undertook an assessment of the appropriateness of the acupuncture treatment in each trial. None of the included trials used sham acupuncture as a control. Most of the trials included some variation of usual rehabilitation as

a control. Attainment of *deqi* was variably reported. There was a lack of reporting of adverse events in all but one study.

Five studies assessed functional recovery, and two assessed bladder dysfunction. One of the seven studies also assessed spasticity. All studies reported favourable effects of acupuncture on functional recovery or urinary function; however, methodological quality was poor in general. A pooled analysis of the two trials<sup>2,3</sup> assessing bladder dysfunction showed positive effects of acupuncture compared with conventional treatment ( $n = 128$ , RR 1.51, 95% CI 1.21–1.9). Meta-analysis of the remaining studies was not possible due to heterogeneity of study designs.

The authors concluded that overall the effectiveness of acupuncture for functional recovery and bladder dysfunction in SCI is suggestive, although with the poor quality and small number of the studies, further studies are required.

The methodological quality of the trials was assessed by using the PEDro and Jadad scales, which are both widely used. On average, the included studies had a mean PEDro score of 6/10(1.4) and Jadad score of 1.1/5(0.9). Scores below 7 and 3 respectively are indicative of poorer quality trials.

Of the seven included studies, the study with the highest PEDro and Jadad scores (9 and 3 respectively) was that of Ma.<sup>4</sup> This study of 30 subjects included 18 thoracic and 12 lumbosacral injuries, but no cervical level injuries. All subjects were classified as 'ASIA' C (sensory and motor incomplete) according to the American Spinal Injury Association Impairment Scale (AIS). It is important to note that the prognosis for ambulation at one year in incomplete injuries is substantially better than that of complete injuries, with 46% achieving community ambulation and another 14% performing household ambulation for incomplete tetraplegics, and 76% of incomplete paraplegics regaining community ambulation compared with only 5% of complete paraplegics.<sup>5</sup>

The control group received 'weight lift walking exercise' (presumably partial body-weight supported walking) for 15–30 minutes, five days per week for six months, whilst the treatment group also received EA to scalp points (5 min), plus (manual) acupuncture to arm and leg points (25 min) daily for six months. The treatment protocol was deemed appropriate and the points used included EA to scalp motor area (MS6) and equilibrium area (MS14), plus MA to LI 10, LI 11, TE 8, SI 5 in the arm, and LR 12, GB 34, GB 39, BL 54, BL 60, LR 3 in the leg.

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The outcome measures used were the Fugl-Meyer score and Lindmark score and these were assessed after six months of treatment. There were significant differences in favour of acupuncture in both measures. The outcome measures used have not been validated in spinal injuries, so use of validated measures would improve the usefulness of this study, but the positive results are encouraging and will hopefully be replicated in future. The lack of any subjects with cervical level injuries or complete injuries (ASIA A) in this study limits the interpretation of these results to patients with thoracic and lumbosacral lesions, and more specifically to motor and sensory incomplete injuries.

Although rating low in methodological quality (PEDro 5, Jadad 1), the study by Gu et al.<sup>2</sup> is of some interest. This study of 64 subjects looked at both complete and incomplete SCI patients with bladder dysfunction. There were a large number of cervical level lesions amongst this cohort. The control group received intermittent catheterisation, whilst the treatment group received catheterisation plus additional EA 30 minutes daily for two weeks per course, with up to four courses over eight weeks. Points were prescribed according to whether the patient had an excess or a deficiency syndrome. The acupuncture treatment was deemed appropriate. The points used in this trial included the Eight-liao points (EA), plus BL 23, CV 6, BL 20, BL 22 in excess syndrome, and SP 6, BL 28, SP 9, and CV 3 in deficiency syndrome.

The outcome measure was Total Efficacy Rate measured after 2–8 weeks of treatment, and demonstrated a significant difference. Nevertheless, given the fact that rehabilitation treatments for bladder dysfunction are often limited to adaptive strategies such as catheterisation, or pharmacological inhibition of bladder overactivity, any modality that potentially improves bladder function demands a closer look.

However, any studies relating to bladder function in spinal cord injuries would need to recognise the fact that the true extent of bladder dysfunction can only be accurately ascertained by urodynamic studies to evaluate the pressures that arise during bladder filling and voiding, as elevated pressures may not produce visible or subjective symptoms in the patient, but may have serious consequences for kidney function over a long period of time. Over the last few decades, a more proactive approach to the management of neurogenic bladder dysfunction after SCI has been adopted in spinal units in Australia and overseas, with a large proportion of patients requiring some form of catheterisation in the long term. Therefore, ideally this study should be repeated with a more robust methodological design, and include physiological assessments of bladder function in the outcomes to ensure the long-term safety of the subjects.

The remaining trials included in the review were poorly reported and subject to significant potential bias, and therefore cannot sufficiently prove an effect from acupuncture. Nevertheless the significant benefits in the acupuncture groups in outcome measures such as Functional Independence Measure (FIM) and ASIA classification should provide impetus for further research.

The SCI population of patients has a number of medical and functional problems that prove difficult to treat with orthodox medicine. Any modality that can be shown to improve outcomes would be welcomed by clinicians working in the field. Whilst the methodological quality of the trials included in this review overall proved poor and therefore limit the usefulness of their findings, the small study by Ma<sup>4</sup> is suggestive of a benefit from acupuncture for walking function in incomplete thoracic and lumbosacral level SCI. The study by Gu et al.<sup>2</sup> despite its shortcomings, holds some promise of benefit for bladder

functioning in both complete and incomplete SCI.

A closer look at these studies highlights several important points. Researchers embarking upon clinical trials of acupuncture should aim to satisfy current standards of both research methodology and reporting of clinical trials, and thus withstand the scrutiny of quality scales such as PEDro and Jadad. Likewise, it is important to ensure that the prescribed acupuncture treatment is not only appropriate according to the Chinese medicine paradigm, but also logistically feasible to administer. Furthermore, control group treatments should be based upon usual care in conditions such as SCI where the rehabilitation treatments are important in maximising functional outcomes. Ideally studies would include a sham acupuncture treatment as a control to overcome the potential bias of a placebo effect. In addition, safety must be assured, particularly with a condition such as SCI where the risk of inducing autonomic dysreflexia and its life threatening consequences by applying a potentially noxious stimulus such as acupuncture need to be understood by practitioners treating these patients. Also, appropriate assessment of function, as mentioned in the case of bladder dysfunction, should be employed according to usual best practice, and outcome measures validated for the particular disease in question.

Clearly, challenges exist in providing acupuncture treatment in the acute stages in SCI patients in a hospital setting in Australia, but these challenges are not insurmountable. A robust evidence base would facilitate this process. The worldwide incidence of spinal cord injury is between 12.1 and 57.8 per million.<sup>6</sup> This translates to approximately 60 000 cases occurring annually in China alone, which is why it is important that research performed in China is made accessible to clinicians and researchers in the West. Hopefully, over the next five to ten years, trials will be reported in both Asian and western

publications with methodological quality closer to the standards expected in modern clinical research, and which verify the sorts of results that the trials in this review have suggested, potentially establishing this modality as a legitimate treatment option for spinal cord injuries.

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## Snapshot: Chinese Medicine Workforce – Victoria 2009

**Peter Ferrigno PhD**

Not unlike Chinese medicine researchers seeking to answer the question of who seeks out Chinese medicine treatment, the Victorian Department of Human Services sought to gain a picture of those practising Chinese medicine in Victoria. Some seven years after the registration of Chinese medicine profession commenced in Victoria, the Service and Workforce Planning Branch of the department, in collaboration with the Chinese Medicine Registration Board of Victoria (CMRB) conducted a workforce survey of Chinese medicine practitioners. Two surveys were conducted, one in 2008 and the other in 2009. Tied to registration renewals, practitioners were asked to complete the survey and the response rate was (not surprisingly) high – over 80%. What follows is a reflective comment on the data rather than a summary.

#### GENDER DISTRIBUTION

As of 2009, the workforce profile appears to be gender balanced; in contrast to other healthcare professions, females tend to be more equitably represented. What would be of interest

is whether this gender balance has been an ongoing feature of Chinese medicine practitioners in Victoria (indeed, Australia) and what the profile has been and is during training.

#### WHERE DO WE COME FROM?

Just over 41% of practitioners are Australian born and presumably Australian trained. Roughly the same proportion of practitioners is Asian born and again probably Asian trained. One would expect that in the foreseeable future the number of Australian born and trained practitioners will increase, which may offer a guide as to the increasing maturity of Chinese medicine practice in the state. It would be interesting to know whether the current Victorian profile matches with other Australian states.

#### WHAT KIND OF TRAINING?

Historically, Chinese medicine practice in Victoria began with acupuncture. Training in Chinese herbs is a later addition. In more recent times, training

in TCM appears to have moved to obtaining a dual qualification and the majority of practitioners (almost 60%) are dual trained. However, just under 40% of practitioners in Victoria are acupuncture trained and this is more than likely a reflection of the history of acupuncture training in the state. One might expect to see this pattern in other Australian states.

#### WHERE DO WE WORK?

By far the majority of practitioners work in metropolitan Melbourne. Quite likely, the distribution pattern will reflect an Australian trend of working in the major cities. In Victoria, it seems that the further one moves away from a central place like Melbourne or Geelong the less likely an activity or trend is represented. Indeed, a similar pattern is also to be noted within the Melbourne metropolitan region. How long a place like Melbourne or Geelong will be able to sustain the trend to work primarily in such settings will be noteworthy. The implication is that the profession may be nearing saturation with regard to practitioners working in Melbourne. If this is so, one obvious

challenge is to determine what this 'saturation point' is for TCM practice in the Melbourne area; there may also be a need to encourage practitioners to locate themselves in regional towns or rural areas. Indeed, it seems that there are also a number of Melbourne metropolitan areas where TCM practice is underrepresented. This issue of how to get healthcare practitioners to work in regional and rural areas of Victoria is now being considered by our biomedical colleagues.

#### HOW DO WE WORK?

Unlike many other healthcare professionals, TCM practitioners work almost exclusively on a fee for service basis. Very few are retained as employees by healthcare facilities such as community centres or hospitals. That TCM practitioners are not employed as part of the broader healthcare system probably attests to the idea that TCM is still in the process of becoming part of mainstream healthcare. Working as a sole trader also means having to develop a range of business skills and acumen that will help maintain a practice. We know that many small businesses have a very short 'use by date' and perhaps this may be one reason why so many practitioners choose to work from home, thereby minimising the business risks.

#### HOW LONG DO WE WORK?

Data tends to show that practitioners work less than the full-time equivalent. Why this is so is not clear but open to speculation and further study. Way back in the early 1980s, the late Carole Rogers said that seeing somewhere around 25–30 people a week would sustain a TCM practitioner or more particularly, an acupuncturist. Most practitioners tended to charge around \$30 per session, a session being roughly one hour. More than half of the respondents estimated that they saw less than 20 people per week, whilst also stating that, on average, they worked 31 hours and 24 hours per week, male and females respectively. Perhaps working fewer hours and seeing, it seems, a small number of clients could be a practitioner choice. If so, this choice could go part of the way to explaining why many practitioners work from home. Perhaps also the demand for TCM services is growing slowly.

#### YEARS OF EXPERIENCE:

With respect to practitioner experience, the findings suggest that, relatively speaking, TCM is a young practice. TCM practice in Victoria is not much more than 30 years old. What we do not know is how many individuals have actually trained as TCM practitioners

since the early 1980s and how many of these are still practising. Based on CMRB figures and personal observation, it seems that many have left the profession. If this is correct, why has it happened? Indeed, we could also seek to find out how many individuals have obtained TCM qualifications since 2000 and have now left the profession.

TCM practitioners in Victoria, or more accurately in Melbourne, seem to be dual trained or trained in acupuncture only. Men and women are equally represented, with a large majority of practitioners working as sole practitioners, with a sizeable number largely working from home. Most do not work a full-time equivalent week, with just over half the practitioners seeing less than 20 patients a week. TCM is a young profession, but there are signs of an increasing maturity. It would be of interest to note how the Victorian data compares with the national workforce pattern.

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# Research Snapshots

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## RELATIONSHIPS BETWEEN CONSTITUTIONAL TYPES OF TRADITIONAL CHINESE MEDICINE AND HYPERTENSION

**OBJECTIVES:** This study investigated the relationship between constitutional types of Chinese medicine and primary hypertension.

**METHODS/DESIGN:** A standardised Constitution in Chinese Medicine Questionnaire (CCMQ) was used in this cross-sectional survey of a total 21 984 people from the general public of nine cities and provinces in China. The questionnaire had nine subtypes of constitutions, including: qi deficiency type, yang deficiency, yin deficiency, phlegm-dampness, damp-heat, blood stasis, qi stagnation and special constitution. Data from 7782 subjects including healthy population and those with primary hypertension were analysed in this paper. Discriminatory analysis was used to identify individual constitutional type. The influential constitutional factors for hypertension were calculated with a multiple stepwise logistic regression analysis.

**RESULTS:** Three subtypes were identified to have a stronger relationship with primary hypertension. Those factors included phlegm-dampness constitution, yin deficiency constitution and qi deficiency constitution with the odds ratio (OR) and 95% confidence interval (CI) being 2.00 [1.58, 2.55], 1.66 [1.33, 2.08] and 1.37 [1.13, 1.66],

respectively. Furthermore, the females suffering from primary hypertension (2.80 [1.79, 4.39]) had a higher ratio in phlegm-dampness type than the males did (1.61 [1.22, 2.14]).

**CONCLUSIONS:** TCM constitution types of phlegm-dampness, yin deficiency and qi deficiency could contribute to the development of primary hypertension. This study could contribute to the constitutional theory of individual disposition to diseases.

**COMMENTS:** The study conforms to Chinese medicine understanding of aetiology of diseases. There is, however, little description of how data from mixed population (normal subjects and those with primary hypertension) were analysed. Furthermore, the subtypes presented in the study could reflect the differential syndromes of primary hypertension rather than the types of constitutions. A prospective-cohort study would be a better choice for the purpose of this study.

*Zhu YB, Wang Q, Deng QW, Cai J, Song XH, Yan X. [Relationships between constitutional types of traditional Chinese medicine and hypertension]. Zhong Xi Yi Jie He Xue Bao [J Chin Integr Med] 2010;8(1):40-45.*

*Alan Xinyu Hao*

## BUSHEN HUOXUE GRANULE IMPROVES MOTOR FUNCTION OF PARKINSON'S DISEASE PATIENTS

**OBJECTIVE:** A multicenter, randomised, double-blind and placebo-controlled clinical trial aimed at evaluating the safety and efficacy of Bushen Huoxue Granule (BSHXG) on motor function improvements in patients with Parkinson's disease (PD). BSHXG is a Chinese compound herbal formula for reinforcing kidney and activating blood circulation, including herbs such as Shanzhuyu (10 g), Heshouwu (15 g), Danggui (10 g) and other unspecified herbs.

**METHODS:** A total of 120 PD patients were randomly allocated to receive BSHXG (1 pack per day) or placebo intervention (control granules 1 pack per day) in addition to an oral intake of madopar 373-1000 mg/day. Both groups were treated for three months and followed up for one month. Drop outs and adverse events were recorded.

**OUTCOME MEASURES:** The Unified Parkinson's Disease Rating Scale (UPDRS), movement scale, exercise testing and muscle tension (musculus quadriceps femoris, musculus biceps brachii) were assessed at the baseline and at weeks 4, 8 and 12 after the treatment.

**RESULTS:** At weeks 4, 8 and 12, the UPDRS scores in the BSHXG group were statistically better than the baseline

measurement ( $F = 15$ ,  $P = 0.016$ ), and than those in the placebo group ( $P < 0.05$ ). No significant changes in UPDRS scores were observed in the placebo group before and after treatment. The rise time of BSHXG in the 10-metre back and forth movement was significantly shortened in comparison to the placebo group. Before and after treatment changes in the resting state of muscle tension of biceps brachii ( $P < 0.01$ ) and quadriceps femoris ( $P < 0.01$ ) were statistically significant in the BSHXG, whilst no significant changes were observed in the placebo group. However, in both groups, no significant improvement was observed in walking time and turn around time in the 10-metre back and forth movement, or maximal voluntary contraction of biceps brachii and quadriceps femoris. Overall, the BSHXG group showed significant improvement in motor function, shortened rise time of 10-metre back and forth test and relief of muscle tension. No adverse events were recorded.

**CONCLUSION:** Results from this trial suggest that BSHXG in addition to madopar is effective and safe in improving motor functions and quality of life for PD patients. This is a well-designed clinical trial with promising results. However, a sample size of 120 PD patients is not enough to draw on meaningful clinical conclusions; secondly, comparison of results should be made not only before and after treatments within the same group, but also between two groups. Therefore, further high-quality studies with larger sample size and better statistical analysis are warranted to test the efficacy of BSHXG on Parkinson's disease.

*Yang MH, Li M, Dou YQ, Liu Y, Luo XD, Chen JZ et al. Effects of Bushen Huoxue Granule on motor function in patients with Parkinson's disease: a multicenter, randomised, double-blind and placebo-controlled trial. J Chin Integr Med 2010;8(3):231-7.*

*Yuan Ming Di*

#### ACUPUNCTURE AND HERBAL MEDICINE PACKAGE FOR UNEXPLAINED FEMALE INFERTILITY: SAFE, BUT IS IT EFFECTIVE?

**OBJECTIVE:** The aim of this study was to determine the safety and effectiveness of a standard herbal and acupuncture therapeutic package for unexplained infertility in women who sought treatment in an integrative hospital in Korea.

**METHODS:** This was a prospective observational study of the treatment offered in an integrative care unit (Conmaul Hospital, Seoul, Korea) of 'unexplained female infertility'. The study evaluates the outcome for 104 women receiving a standard care 'package' over six menstrual cycles. The inclusion criteria of regular menstrual cycle, normal hormonal cycle, no male infertility factors, excluded all women who had a physiological basis (confirmed by laparoscopy and ultrasound) to their fertility problems, except those with mild endometriosis, who were included. Women who were planning to use other artificial reproductive technologies during the six months study period were also excluded. The standard therapeutic package included Korean herbal medicine, acupuncture and moxibustion. The women received both a decoction (administered three times a day), which was prescribed based on individual diagnosis and a standard patent pill called Song Keum Dan (a formula similar to Ba zhen tang with additions to warm yang and strengthen qi); daily moxa on CV 8 (umbilicus), except during menstruation; and herbal injection (of lu rong and zi he che) acupuncture to CV 4, BL 19 and BL 22.

**RESULTS:** Fourteen women achieved pregnancy (22.1%) resulting in ten live births and four miscarriages. When successful pregnancy is analysed in the women who completed the six month course of the study (23 in total) the

pregnancy rate of 60.9% looks more successful. Only 6% of the women reported adverse events and these were minor and responded to ceasing the herbs. The dropout rate in this study reached 80%. Most women stated 'personal reasons' for their withdrawal, which the authors suggest may have been a polite way of expressing difficulty affording the payment. The study was an observational study with participants paying for their own treatments and the authors considered this expense as a key factor in the high dropout rate. No analysis was offered of outcomes related to the differential diagnoses which guided the herbal treatments.

**COMMENTS:** The 'standard package' for unexplained female infertility was predominantly herbal. Mention of acupuncture is to some degree misleading as three points were used and only for herbal injections. The low adherence to the study protocol is a problem as it is usual to find women in this cohort keen to comply unless they were offered what they considered superior treatment elsewhere. Only a very small percentage of those who withdrew gave their reason as pursuing other treatment. The authors raise questions as to possible reasons but these are not explored in this article. The conclusion that the 'true' success rate is 60.9% for those who completed the full course is not supported by the evidence which indicated that 10 of the 14 pregnancies occurred by the fourth month of treatment. This study could be a stimulus for practitioners to undertake an observational study in their own clinics, and it raises questions for those researching female fertility problems. However, it offers little evidence for this particular treatment other than its safety.

*Park JJ, Kang M, Shin S, Choi E, Kwon S, Wee H, Nam B, Kaptchuk TJ. Unexplained infertility treated with acupuncture and herbal medicine in Korea. J Altern Complement Med 2010;16(2):193-8.*

*Suzanne Cochrane*

### ACUPUNCTURE FOR DEPRESSION DURING PREGNANCY

**OBJECTIVE:** The aim of this randomised control trial was to evaluate the efficacy of acupuncture for pregnant women diagnosed with major depressive disorder.

**METHOD:** 150 women between 12 and 30 weeks gestation were recruited from local clinics and through advertising in parent and baby publications. After meeting the criteria for a diagnosis of major depressive disorder, women were randomised to receive either: specifically individualised acupuncture treatment, control acupuncture treatment (not specifically designed to treat depression) or massage treatment. Treatment was administered twice a week for four weeks then weekly for four weeks. An attempt was made to blind the acupuncturists providing the treatment. To achieve this, for each woman a specifically individualised treatment for depression as well as a control acupuncture treatment was designed by one group of acupuncturists; another group of acupuncturists then provided the prescribed treatment, without evaluating any presenting signs and symptoms. Acupuncture needles were inserted to depth to obtain deqi and retained for 20 minutes with 7–12 points selected for each session. The massage treatment was provided by massage therapists. Instructions were also given to the treatment providers to minimise verbal communication and refrain from offering any counselling, dietary or lifestyle advice. The primary outcome was the Hamilton Rating Score for Depression, administered on entry into the study and at four and eight weeks of treatment.

**RESULTS:** 141 women completed treatment, with similar depression severity and history on entering the study for all groups. Women receiving acupuncture treatment specifically designed to treat depression experienced

a significantly greater reduction in the Hamilton Rating Score for Depression and demonstrated a significantly greater response rate than those women assigned to the control acupuncture group alone or the control acupuncture and massage group combined. Minimal acupuncture-related side effects were reported and consisted of discomfort and bleeding at the site of insertion. Ten adverse pregnancy related events occurred, including that of a premature delivery, a pregnancy loss and hospitalisation for pregnancy related events; these were found to be unrelated to treatment and were not significantly different for the three treatment groups. The attempt to blind acupuncture treatment providers through separating clinical diagnosis from acupuncture treatment was not successful, with the treatment expectations for the treating acupuncturists found to be significantly lower in the treatment not specifically designed for depression.

**CONCLUSION:** The acupuncture protocol specifically designed for depression in this study demonstrated a response rate that was clinically meaningful and comparable to that of standard care within a similar timeframe.

**COMMENT:** The attempt made by the authors of this study to blind the acupuncturists delivering treatment was an interesting approach. It is possible that acupuncture diagnosis, with its focus on patient observation, limits any attempts to create a control group in this way.

*Manber R, Schnyer R, Lyell D, Chambers A, Caughey A, Druzin M, et al. Acupuncture for depression during pregnancy: a randomized controlled trial. Obstet Gynecol 2010;115:511–20.*

*Debra Betts*

### AURICULAR ACUPRESSURE IS BENEFICIAL FOR MENSTRUAL SYMPTOMS FOR WOMEN WITH PRIMARY DYSMENORRHOEA

**OBJECTIVES:** The aim of this study was to evaluate the effects of auricular acupressure on relieving menstrual symptoms and changes in serum nitric oxide (NO) for women with primary dysmenorrhoea.

**STUDY DESIGN:** 74 female college students aged between 18 and 28 without prior internal/gynaecologic diseases or secondary dysmenorrhoea, and who had menstrual pain at least three times in the past 6 months were randomly allocated to either real auricular acupressure group (RG,  $n = 37$ ) receiving seed-pressure method on liver (CO12), kidney (CO10), and endocrine (CO18) auricular acupoints, or control group (CG,  $n = 37$ ) receiving a plain adhesive patch placed on the same acupoints without seed attached. The treatment was applied about two days before the menstrual period. Acupressure protocol included massaging 15 times on each point, three times a day, for a total of 20 days. The adhesive patches with or without seeds were renewed and reapplied every five days by the researcher. Short-form Menstrual Distress Questionnaires (MDQs) were completed and Serum NO level was assessed prior to treatment and within the first two days of their next menses after completion of 20 days of acupressure.

**RESULTS:** 71 participants completed the trial (RG  $n = 36$ , CG  $n = 35$ ). Among the four categories in MDQs (pain, water retention, autonomic reactions and negative affect), pain ( $p = 0.01$ ) and negative affect ( $p = 0.04$ ) of the RG decreased significantly after treatment when compared with those in CG. The overall menstrual symptoms in the RG improved significantly more than the CG did ( $p = 0.01$ ). No significant

difference was observed in serum NO when comparing the two groups.

**CONCLUSION:** The authors concluded that auricular acupressure by seed-pressure method effectively improved menstrual symptoms of women. It remains uncertain whether the NO pathway is involved in the action of auricular acupressure.

**COMMENTS:** The design of the control intervention could not ensure successful blinding of the subjects, and the researchers did not test the credibility of blinding. Better designed sham auricular acupressure should be developed and validated in further studies.

*Wang MC, Hsu MC, Chien LW, Kao CH, Liu CF. Effects of auricular acupressure on menstrual symptoms and nitric oxide for women with primary dysmenorrhea. J Altern Complement Med 2009;15(3):235–42.*

*Claire Shuiqing Zhang*

#### ELECTROACUPUNCTURE MAY HELP PATIENTS WITH PRIMARY INSOMNIA

**OBJECTIVES:** The objective of this study was to evaluate the short-term efficacy and safety of electroacupuncture for the treatment of primary insomnia.

**STUDY DESIGN:** 60 Chinese adult volunteers who reported having poor sleep three or more nights per week with an Insomnia Severity Index (ISI) total score at least 15 out of 28 and for at least three months were randomly allocated to receive either real electroacupuncture with a constant current, 0.45 ms, square-wave, brief-pulse stimulation of 4 Hz frequency at Yintang (Ex-HN 3), Baihui (GV 20), bilateral ear Shenmen, Sishencong (Ex-HN 1), and Anmian (EX) three times per week for three weeks, or placebo electroacupuncture at the same points using non-penetrating needles connected to the same electric

stimulator but without any electrical current being delivered.

**RESULTS:** Both groups showed statistically significant improvements compared with the baseline measurements. There were significantly greater improvements in sleep efficiency as assessed with sleep diary and actigraphy in the electroacupuncture group. The proportion of subjects having less than 30 minutes of Wake-time After Sleep Onset (WASO) and a sleep efficiency of at least 85% at the post-treatment visit was significantly higher in the electroacupuncture group when compared with the placebo group. No significant between-group differences were observed in the ISI total score and other outcome measures. All adverse events were mild.

**CONCLUSION:** The authors concluded that electroacupuncture may be effective and safe in the short-term treatment of primary insomnia. Further studies with more objective measures such as polysomnography and larger sample size are necessary to verify the effectiveness of electroacupuncture for insomnia.

*Yeung WF, Chung KF, Zhang SP, Yap TG, Law AC. Electroacupuncture for primary insomnia: a randomized controlled trial. Sleep 2009;32(8):1039–47.*

*Claire Shuiqing Zhang*

#### ACUPUNCTURE AND BREAST CANCER THERAPY

**OBJECTIVE:** The aim of study was to undertake a systematic review of acupoint stimulation for therapy-related adverse events in patients with breast cancer.

**METHODS:** A comprehensive search of eight English and Chinese databases to identify clinical trials to examine the efficacy of acupressure, acupuncture or acupoint stimulation for adverse events resulting from treatment for breast

cancer was undertaken. General terms involving acupoint stimulation (APS) and cancer treatment were included in the search, as well as six separate conditions related to anticancer therapies, including vasomotor syndrome, chemotherapy-induced nausea and vomiting, lymphoedema, post-operation pain, aromatase inhibitors-related joint pain and leucopenia. The terms searched for on APS included traditional acupuncture, acupressure, electroacupuncture, and the use of magnetic devices on acupuncture points. Inclusion criteria included: randomised controlled trials (RCTs), controlled clinical trials, or single-group studies; adults diagnosed with breast cancer at any stage and undergoing treatments such as surgery, radiotherapy, chemotherapy, hormonal therapy and experiencing treatment-induced adverse events, and the inclusion of at least one clinically related outcome. 843 titles were identified up until October 2008 and data extraction was undertaken for 26 studies. Eleven trials examined chemotherapy-induced nausea and vomiting (CINV); seven evaluated vasomotor syndrome; three, post-operational pain; two, radiotherapy or chemotherapy-induced leucopenia; one, aromatase inhibitors-related arthralgia; and one, breast cancer-related lymphoedema.

**RESULTS:** CINV (ten trials) reported APS could significantly improve emesis. All eleven trials utilised the points PC 6 and ST 36. In relation to vasomotor syndrome, four RCTs found no difference between the intervention and the control group. Three trials demonstrated an association between acupoint stimulation and lower frequency of daily hot flush. The majority of the trials used six or more points. For post-mastectomy pain, results were inconsistent: two trials showed benefit but one high quality RCT showed no significant difference. Point LI 4 was used in all three trials. For joint symptoms, only one study was included and positive

results were found for joint pain and functional ability. For lymphoedema, one study demonstrated that traditional acupuncture was effective in managing post-mastectomy oedema using a single-group design. For leucopenia, two trials found that dexamethasone injected into ST 36 was effective in preventing bone marrow suppression-related leucopenia in patients undergoing chemotherapy or radiotherapy.

**CONCLUSION:** The authors conclude that three high quality studies looking at acupoint stimulation for CINV showed benefit. The authors would

not recommend ASP for other adverse events as the quality of the trials were poor, even though many showed benefit. The major recommendation was that further high quality RCTs are needed.

**COMMENT:** Although the evidence is not strong enough for the authors to recommend acupuncture to help treat therapy-related adverse events in patients with breast cancer in a western medicine journal, I believe there is still enough evidence to treat these conditions in your clinic, saying to the patient that research has shown some benefit. I personally have treated nausea and

vomiting, fatigue, post-mastectomy pain, vasomotor symptoms and lymphoedema in cancer patients with positive results to varying degrees.

*Chao L-F, Zhang A, Liu H-E, Cheng M-H, Lam H-B, Lo S. The efficacy of acupoint stimulation for the management of therapy-related adverse events in patients with breast cancer: a systematic review. Breast Cancer Research and Treatment 2009;118:255-67.*

*Chris McKeon*

# Book Reviews

## Auriculotherapy

Raphael Nogier (Translated by Peter Beauclerk)  
Thieme, 2009  
ISBN 9783131480019

Auriculotherapy is the English translation of Raphael Nogier's 2006 French language book of the same name. Raphael Nogier is the son of the late Paul Nogier, the originator of auriculotherapy. Since Paul Nogier's death in 1996, Raphael has further developed his father's work and continues to teach auriculotherapy and practise medicine in Lyon, France. Auriculotherapy is a clinical handbook aimed at clinicians who have previously been exposed to the principles and practice of auriculotherapy. This is not a TCM book. Indeed the usual audience for this work in France are western medical doctors, and this is evident throughout the book in the way various conditions are categorised and discussed.

The first half of the book is a basic introduction to auriculotherapy. The different types of auricular points (pressure sensitive points and neurovascular points) are discussed, followed by the anatomy and innervation of the auricle. The spine and nervous system is located on the auricle followed by the mapping of tissues by their embryonic mesodermal, endodermal and ectodermal origins. Master points are identified and the methods of point detection and then treatment are outlined. Absent is any discussion of the function or indications for individual points. The first half of the book concludes with a repertoire of 25 common conditions, including tobacco addiction treatment, common musculoskeletal complaints, infertility,

anxiety and asthma. Raphael Nogier has a particular interest in food allergies and runs seminars on identifying allergens using the VAS pulse and substance test rings (not discussed in this volume). It is no surprise then that the need to identify food allergies and remove the offending foods from the diet is a frequent commentary in many of these conditions.

The second half of the book delves superficially into the intricacies of auricular medicine, which will be unfamiliar to many TCM practitioners. In 1968 Paul Nogier discovered the Vascular Auricular Sign, or VAS pulse as it is usually called. The VAS pulse led to a deeper exploration of the auricle and new diagnostic and therapeutic techniques. The use of these methods is usually referred to as auricular medicine rather than auriculotherapy.

Also in the second half of the book the three phase relationships are discussed, along with point locations on the posterior surface of the ear. Geometric point relationships, alignment of points and the prioritisation of points for treatment are explained, along with the VAS pulse. It is noteworthy that Nogier states that this is a very difficult pulse quality to master. The principles of cutaneous photoperception and their relationship to auricular diagnosis is covered next. The seven Nogier frequencies along with their roles in diagnosis and treatment are outlined.

The treatment of three conditions which draw on the intricacies of part two are then briefly considered, namely peripheral neuropathies, fibromyalgia and depressive disorders. The ability to reliably identify the VAS pulse is essential to the utilisation of the material presented in part two. Appendices include a glossary, recommendations for special equipment and supplies and recommendations for further reading.

This work's greatest strength is also its greatest weakness. The book is presented in an easy-to-follow outline style with illustrations. Indeed the first half of the book is reminiscent of lecture notes I made when attending Raphael Nogier's introductory lectures in Lyon in 2000. This outline style allows a lot of territory to be covered in a small volume and facilitates finding key information. This makes the book an ideal companion for a course on auriculotherapy. This outline style also means the work is short on detail and explanation. This lack of depth would soon frustrate a keen student who would seek further information from one of the volumes discussed later. Similarly, a novice without some hands-on instruction would find insufficient detail to make much use of the concepts of the second half.

Nogier's Auriculotherapy should be compared to Brian Frank's Auricular Medicine and Auricular Therapy: A Practical Approach (Author house, 2007), and Terry Oleson's Auriculotherapy

Manual: Chinese and Western Systems of Ear Acupuncture (3rd edition, Churchill Livingstone, 2002). Each of these books contains a preface by Raphael Nogier and both authors studied under the late Paul Nogier. Brian Frank is a Texan anaesthetist, pain management specialist and medical acupuncturist, and Terry Oleson is a Los Angeles psychologist and auriculotherapist.

Frank's text is written in a narrative style and would appeal to those seeking a more detailed explanation of the Nogier work, especially the concepts presented in the second half regarding auricular medicine. Frank gives a more thorough description of locations of points in all three phases and notes on clinical considerations for each point. A useful chapter on blockages to healing is provided and the important concept of cerebral laterality is discussed more thoroughly than Nogier. The second half of Frank's

book introduces auricular medicine, and protocols for both basic and advanced auricular medicine treatment are given. The ability to reliably identify the VAS pulse is essential to utilising the advanced ideas presented in Frank's work as well; while it fleshes out the detail, the second part of this work is also more suited to clinicians with some previous training in the European style of auriculotherapy.

Oleson's book is a compendium of western (Nogier style) auriculotherapy and Chinese style ear acupuncture. A comprehensive overview of the development of each system along with their similarities and differences are presented. The principles of auricular medicine are comprehensively addressed, offering further explanation than in Nogier's volume. The tone of Frank's and Nogier's books is very much of clinicians explaining their work.

Oleson's in contrast is more academic, ensuring that all of the territory is well documented. Arguably the most valuable feature of this book is the comprehensive repertoire which offers a good starting point for the treatment of over 250 conditions using both Chinese and European point selections.

Each of these books has a place on the shelf of the enthusiast of auriculotherapy. Nogier's is a quick reference and course companion; Frank's offers a deeper understanding of the intricacies of point indications and auricular medicine; Oleson's allows the user to dip into sections of interest, whether Chinese or European style, and find inspiration for point selection.

*Reviewed by Stephen Janz*

## Acupuncture for Musculoskeletal Injury

Shao-jie Lu

People's Medical Publishing House, 2008 (2nd edition)

ISBN 9787117102025

Acupuncture for Musculoskeletal Injury is an interesting and very practical book that is suitable for both the student and the practitioner. Printed on quality paper with a hard cover, it is a beautiful book to handle. The text describes the diagnosis and treatment of many common and not so common musculoskeletal complaints and covers all regional body areas where acupuncture can be used. It is the result of a life time of clinical experience from Dr Shao-jie Lu from the Hubei Province in China, who reports having treated over 10 000 patients since 1971. Published by the People's Medical Publishing House in Beijing, this is now the second edition.

The book itself is easy to use and offers interesting clinical information to a depth not seen in other similar books. For each musculoskeletal complaint, there is a clear explanation of the condition using biomedical terms as well as the condition's causative factors. In addition, the author identifies what population the condition commonly affects, its clinical manifestations, the

positive signs associated with a physical examination, as well as the results from other tests where appropriate (e.g. x-ray).

Following this introductory section is the Chinese medicine syndrome differentiation and an explanation of the treatment, including treatment principle, acupuncture point selection, needle technique and expected course of treatment. The reporting of details for the acupuncture treatment is very clear and the book has ample diagrams, illustrations and pictures, which are very helpful for the reader.

Perhaps the most interesting part for me personally was the 'experience and understanding' section reviewed at the end of each condition. Here Lu offers his own thoughts and reflections, which is a refreshing approach not often seen in other texts. As happens so often with books on 'how to treat a condition', the reader frequently fails to grasp the author's reasoning and perspective on the prognosis of the condition and what to do if the treatment is ineffective. This

insightful section starts off with a brief overview of the condition from the Chinese medicine perspective, followed by alternative treatment strategies that can be applied if the suggested treatment approach has failed. It also outlines how a practitioner might modify the point selection when, after a certain amount of time has elapsed, the more orthodox acupuncture treatment approach has failed. Finally, the author concludes by identifying what other options the patient can pursue if they desire.

Overall, this book is an informative addition to current texts on the treatment of musculoskeletal conditions with acupuncture. For most clinicians the 'experience' section will prove to be most useful, especially for those most difficult to treat and non-responsive patients.

*Reviewed by John Deare*

## Essentials of Electroacupuncture: Theories and Treatments of Stroke Paresis, Review of Five Element Theory

Jeung Ho Choi  
BookSurge, 2009  
ISBN 1439219273

The acceptance of electroacupuncture (EA) by acupuncturists varies greatly, with some practitioners using EA on almost every patient and others never applying it. I suspect one of the reasons for this difference is because the clinical application of EA is not well researched and hence not taught in depth during undergraduate training. Most acupuncture books have a couple of pages designated to EA, but there are very few books devoted entirely to EA when compared with the number of books published on acupuncture.

So any book about EA should be welcomed with some enthusiasm. The title of this book, *Essentials of Electroacupuncture*, was rather promising and I was keen to see how it would differ or surpass another recent book, *Electroacupuncture: A Practical Manual and Resource*, edited by David Mayor (Elsevier, 2007; reviewed by Christopher Zaslowski *Aust J Acupunct Chin Med* 2007; 2(2):38).

Dr Choi, the author of this 245-page paperback, is a medical doctor in California who specialises in pain management and has practised acupuncture alongside his medical practice for more than twenty years. To better understand acupuncture, the author also studied the I Ching, Confucianism and Taoism. He is an accomplished calligrapher of Chinese and Korean writing.

Only after I had read the book did I notice its two subtitles in smaller font: *Theories and Treatment of Stroke Paresis* and *Review of Five Element Theory*. The three titles say it all about this book: a one-stop shop for electroacupuncture.

It starts with sections on the history of acupuncture, its use in western countries, education, and modern research. The next sections explain how to prepare patients, some principles of selecting acupoints for reinforcing or reducing, moxibustion techniques and when and how to use them, as well as contraindications for acupuncture. These are then followed by acupuncture point formulae for various conditions, including head and face pain, disorders of the musculoskeletal, gastrointestinal, urological, gynaecological, and neurological systems, disorders of eye, ear and nose, stroke rehabilitation and strategies for pain management. Limited explanation is offered for the formulae. As in many other introductory acupuncture books, it provides a list of acupuncture points on the twelve regular and eight extra meridians, including their location, needling and indications. It finishes with five elements theory, its philosophy, meditation and attainment. Unfortunately, there is no index.

The book is written in simple language, like transcriptions of lectures, intelligent conversations with students, or records of Choi's thoughts without much editing.

I feel this book is for those who have limited understanding of acupuncture, but need practical advice on how to use it in the clinic without being burdened with too many theories.

So how much is about EA? Actually, the use of EA and the theory of five elements are threaded throughout the book. Choi tells us to apply EA onto bilateral points, with the negative pole on the affected side and the positive pole on the healthy side, and that low frequency is preferred. This differs from several other textbooks, which specifically state that a pair of EA electrodes should be placed on the same side of the body and should not cross the midline. This discrepancy reflects the insufficient research we have about EA. Overall, the author spent more time explaining five-element acupuncture than EA.

If you want to learn the wisdom of an experienced acupuncturist who specialises in five-element acupuncture, then this book is for you. For me, I particularly enjoyed reading the four-page section about Pain Management Strategy. However, if you want to have a comprehensive understanding about EA and a book that you can refer to now and then, then you must have the book by David Mayor.

*Reviewed by Zhen Zheng*

## Chinese Medicine in Fertility Disorders

Andreas Noll and Sabine Wilms  
Thieme, 2010  
ISBN 9783131489913

The number of fertility-related acupuncture consultations has grown significantly over the last ten years. Over a similar period of time, acupuncture as an adjunct to assisted fertility treatment has been a productive area of research and, although narrow in its focus, this has stimulated consumer interest in using acupuncture. The translation and relevance of research findings into clinical practice has been hotly debated. Text books to guide practitioners in this emerging area have overall been sparse, and this book contributes to the limited resources available within this specialty. Noll and Wilms have compiled a text that aims to address both the integration of Chinese medicine within biomedicine while also promoting its application within a broader TCM framework.

Practitioners will engage with this book, which acknowledges a holistic

model of care in working with couples experiencing infertility. The breadth of the book is reflected by content, including a historical and cultural context, TCM treatment of fertility and pregnancy, the use of other TCM modalities such as qigong, tuina, moxibustion, Chinese dietetics and the area of patient support.

As many practitioners find themselves specialising in a particular area, this book will be especially useful to those building their expertise in this field. Many chapters are authored by practitioners and provide useful case studies to guide practice. Biomedicine in the fertility field is covered to a level that enables the acupuncture practitioner to feel confident with engaging and integrating their treatment within assisted fertility treatment. The content of the book also covers the causes of infertility, with

fertility disorders covered from both a biomedical and TCM perspective. The book proceeds to guide supportive treatment during pregnancy and miscarriage, and finishes with supportive care for those successful and unsuccessful with their fertility journey.

For the more experienced practitioner, the book may offer more with respect to breadth of knowledge rather than depth. I particularly enjoyed the chapters on the historical and cultural context of fertility. This is a book for the clinician: it is easy to read, informative, and I would recommend it to practitioners working in this area.

*Reviewed by Caroline Smith*

# Conference Report

## ICTAM VII, Asian Medicine: Cultivating Traditions and the Challenges of Globalisation

Thimphu, Bhutan  
7 – 11 September 2009

**Suzanne Cochrane**

Apart from the excitement of being in Bhutan (everything you hear about it is true – it is beautiful with wonderful, gracious, welcoming people!) this conference offered the opportunity to explore what I consider one of the key issues in our work: how to hold the concepts of, and practise within, the dissonance between tradition and modernity.

The International Association for the Study of Traditional Asian Medicine (IASTAM) was founded in 1979 and IASTAM conferences have recently occurred every four years. The next is planned for Korea in 2013. At the Thimphu conference 30 countries were represented and more than 200 people of a great variety attended, including practitioners and academics, as well as private entrepreneurs and government workers. We were streamed into fairly coherent panels and at any one time there were four panel discussions proceeding in separate rooms. One stream of panels exclusively concerned Tibetan medicine and was mostly held in the Tibetan language. This provided a forum allowing for members of the Tibetan medical diaspora to meet with each other, and for Chinese Tibetans and Bhutanese practitioners and academics to share clinical insights and discuss historical texts and practices.

There were also a couple of ongoing panels that ran over several days; one titled 'Cultivating the wilds: idioms and experiences of potency, protection and profit in the sustainable use of materia medica in transnational Asian medicines' and another on 'Trade and globalisation'. One presenter, Jan Salick, a pioneering botanist who has spent years documenting changes in Tibetan medicinal herbs in the Himalayas, has found herself one of the few scientists with irrefutable evidence of climate change.

Of course, there were some disappointing papers – practitioners too light on analysis, academics too rarefied to be interesting. However, because of the setting in the Royal Institute of Management building (designed around a courtyard, completely free of air-conditioning, and freshened each day by essence of lemongrass), the excellent food, the occasional end of rainy season shower, and the range of interesting people, any irritation or disappointment did not lodge for long. Settings do matter and have an influence on discourse in a myriad of ways.

There were, of course, Chinese medicine high points: the stream managed by Hugh MacPherson, 'New frontiers in effectiveness and evidence: from past to present', included MacPherson himself

(on pragmatic trials), Claudia Witt (architect of the German RCTs into the use of acupuncture for particular conditions, speaking about effects), Iven Tao (on dilemmas in modern acupuncture research), Francesco Cardini (on research into non-conventional medicines in a region of Italy), Elisabeth Hsu (on the perspectives anthropology can bring to the practice and understanding of traditional medicines), Volker Scheid (on notions of effectiveness in his own research on menopause in the UK), and Trina Ward (on the use of a qualitative research methodology to understand differences in Chinese medicine practice). For those interested in acupuncture research, this was the place to be. Highlighted was the need to find research methods that suit our medicine, and it was helpful to have the experience of those at the research coalface reported on a scale small enough for interaction.

During the final discussion panel, someone asked, 'Why bother researching? We know our medicines work. Our patients tell us so.' Such a response could have begun the whole discussion again. It reminds me of the words of the philosopher Rosi Braidotti: 'If you do not like complexities you couldn't possibly feel at home in the third millennium!' The whole conference tried to find a common ground between those

who held to traditional certainties and those who were open to every passing academic fashion.

Another panel discussion focused on yangsheng – ‘Cultivating perfection and longevity’. The most interesting paper here was from Felicity Moir and Cinzia Scorzon on ‘The principle of yangsheng in education’, which reported on the introduction of a compulsory and assessable yangsheng or self-cultivation series of subjects in a Chinese medicine course at Westminster University. Each year TCM students must nominate a self-cultivation project that they then seek to implement with support from tutorial buddies. They must then submit for assessment a report on their progress. Most significantly Moir and Scorzon reported that the quality of these students’ interactions in the student clinic had improved. Students displayed more empathy when asking patients to implement changes in their lives. The subjects also gave students a greater exposure to the cultural traditions of their medicine by including visits to Chinatown and a discussion of lifestyle practices in Asian traditions.

My own paper, written with Jane Lyttleton, was included in a session titled ‘Women and gender in medicine

and healing across Asia.’ However, the absolute high point for me was listening to the keynote address given by the Basham Medal winner Vincanne Adams, Professor of Medical Anthropology at the University of California, San Francisco. She spoke on efficacy – the idea that a medicine or intervention works. She asked, ‘How might we sustain a platform for inquiry that situates the problem of efficacy in the broadest possible terms, and in a manner that encompasses the way in which the part (the most intimate of clinical engagements) also stands for the whole (the place of Asian medicine in the modern world).’ She sought to find social science insights into an understanding of how best to heal. By telling stories of her life and career, her main point was, ‘When it comes to questions of efficacy, it sometimes helps to read between the lines, to recognise the things that don’t make immediate sense, that are not easily explained by the logics of reason and sensuality.’ Her address highlighted for me the tremendous contribution social scientists can make to our understanding of how to practise traditional medicines in the contemporary world. By carefully translating medical documents, by broadening our understanding of the role of a medicine or style of

healing in society, by challenging our application of biomedical ‘scientific method’ to our research, and by valuing the incommensurable elements of our medicines, social scientists bring us new challenges and bright new opportunities to think and practise beyond the often standardised guidance of our institutions. As Adams emphasised, ‘The subtle and layered meanings that are visible in the events of sickness and healing are seldom overlooked by those studying Asian medicine.’

I returned to Australia convinced that some national version of IASTAM would benefit both me and, hopefully, my colleagues. Perhaps a forum that occasionally gave us an opportunity to meet and discuss common issues with other people practising other Asian medicines would be interesting. And it could be worthwhile to invite the historians and anthropologists to find out where their studies are taking them. Or, as they did in the UK, define a task and work together to achieve it and get to know each other by working together. Perhaps cross-disciplinary dialogue and engagement and joint research can become an Australian endeavour, as they were at the inception of IASTAM.

# UPCOMING INTERNATIONAL CONFERENCES

## 2010

- 11–16 May      Rothenburg, Germany  
41st TCM Kongress  
(Arbeitsgemeinschaft für Klassische Akupunktur und TCM e. V)  
Visit <http://www.tcm-kongress.de>
- 19–21 May      Tromsø, Norway  
5th International Congress on Complementary Medicine Research  
(International Society for Complementary Medicine Research)  
Visit <http://www.iccmr2010.com>
- 21–23 May      Adelaide, Australia  
AACMAC 2010  
(Australian Acupuncture and Chinese Medicine Association Annual Conference)  
Visit <http://www.acupuncture.org.au>
- 25–27 June      Wellington, New Zealand  
NZRA Annual Conference  
(New Zealand Register of Acupuncturists)  
Visit <http://acupuncture.org.nz>
- 1–2 October      The Hague, The Netherlands  
WFCMS 7th World Congress on Chinese Medicine  
(World Federation of Chinese Medicine Societies)  
Visit <http://www.2010wccm.com>
- 6–7 November      San Francisco, USA  
WFAS International Symposium on Acupuncture 2010  
(World Federation of Acupuncture-Moxibustion Societies)  
Visit <http://www.wfas2010usa.com>

## 2011

- 20–22 May      Perth, Australia  
AACMAC 2011  
(Australian Acupuncture and Chinese Medicine Association Annual Conference)  
Visit <http://www.acupuncture.org.au>