

Australian Journal of Acupuncture and Chinese Medicine

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The past six months saw the formation of the Chinese Medicine Board of Australia (CMBA) which signifies the rolling out of national registration of Chinese medicine in Australia. Such a historical event will advance the development of this profession and put it on equal footing with other registered professions. It will, however, greatly impact upon existing practitioners in many respects, including education, professional development and the right to practice. AJACM invited the Executive Officer of CMBA, Ms Debra Gillick, and one experienced and one young Chinese medicine practitioner to comment upon the forthcoming national registration. You will find their reflections in this issue.

We also publish three other papers that are in some respects related to national registration: one is on dry needling, another on mentoring and the third one on practitioners' views of adverse effects of acupuncture.

Central to the heart of many registered or accredited acupuncturists is the debatable issue of dry needling. Is dry needling a form of acupuncture? Should those who practise dry needling be regulated as acupuncturists are? In this issue, we publish a paper entitled 'Acupuncture by another name: dry needling in Australia'. The authors outline the history of dry needling, compare acupuncture with this new alleged form of needling, review its education and accreditation standards, examine how dry needling has become popular in Australia since the title 'acupuncturist' became protected after Chinese medicine registration in Victoria, and discuss the threat of poor training in dry needling to the safety of the public. The paper concludes that 'dry needling' is simply a pseudonym for "acupuncture". We would very much like to hear your views through Letters to the Editor.

Considering the timely contribution the dry needling paper might bring to the debate, the AJACM experimentally published the online version of the paper ahead of its printing. We have received positive feedback on this practice of on-line pre-publication and, therefore, will continue to experiment via this medium.

Part of registration requirements is continuing professional development. Mentoring has been found to be an effective way for both mentors and mentees for ongoing professional

development.¹ Mentoring programs in Chinese medicine in Australia remain relatively rare. The Australian Acupuncture and Chinese Medicine Association Ltd (AACMA) conducted a qualitative study in order to obtain Chinese medicine practitioners' views on mentoring and to identify key needs from a program. A researcher from Monash University analysed the results and prepared a paper of the findings. I hope that both practitioners and educators find this paper useful.

The 'Draft Code of Conduct for Registered Health Practitioners', developed for the 10 registered health professions regulated under National Registration and Accreditation Scheme, requires registered practitioners to discuss adverse effects with their patients. But what are the adverse effects of acupuncture and how frequent are they? Current literatures show a significant discrepancy in the frequency rate. A prospective postal audit of 570 professional acupuncturists in UK reported 15% mild transient reactions out of 34,407 acupuncture treatments.² A similar study was carried out among medical doctors and physiotherapists who also provided acupuncture service, and found a much lower rate at 6.7%.³ Such a difference may reflect the understanding of what adverse events are rather than the skills of the practitioners. One paper in this issue specifically sought the view of practitioners and considered a wide range of events including malpractice and complication.

Chinese medicine practitioners in Australia face some issues that their counterparts in China do not encounter. For instance, patients who seek Chinese medicine treatments are often having concurrent western herbal medicine or seeing other complementary and alternative medicine practitioners. It is common that patients inquire about the micronutrients in the Chinese medicinal herbs. Studies providing answers to such questions are few. One of the papers in this issue studied a commonly used formula, *Si Wu Tang*. It examines not only the metal contents but also the impact of brewing time. Practitioners will find that this paper is particularly informative and might guide the preparation of the decoction.

Continuing with our tradition of publishing case studies, in this issue you will find a quintessential example of how Chinese medicine, with its understanding of pain, and anatomical knowledge of the shoulders are used concomitantly

and contribute to the successful management of a patient with a frozen shoulder.

In our conference report, you will find an article on the first International Forum & Exhibition on Integrative Medicine: Evidence Based Integration of Traditional Chinese Medicine in Australia. The Forum was held in Sydney in October 2011. Again our research snapshots bring you discussion on some latest research.

We hope you will enjoy reading this issue.

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Acupuncture by Another Name: Dry Needling in Australia

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ABSTRACT

Like acupuncture, dry needling involves the insertion of acupuncture needles into specific points on the body to improve health. Unlike acupuncture, the practice of dry needling is unregulated in Australia. This paper challenges the notion that dry needling is not a part of acupuncture practice and also examines the risks associated with the practice of dry needling from a public health perspective. The practice of acupuncture and dry needling are first examined and compared to identify commonalities. A review into the incidence of risks of dry needling reveals very limited literature with only one case report and no review articles identified. Based on the similarities between acupuncture and dry needling, the extensive literature on the serious risks of acupuncture is extrapolated to evaluate the risks of dry needling. Dry needling is not a new or separate practice to acupuncture; rather it is a subsystem of musculoskeletal acupuncture which has been practised continuously for at least 1 400 years. Dry needling is a pseudonym for a brief course of study in myofascial acupuncture also known as *ashi* acupuncture and trigger point acupuncture. Dry needling is likely to result in an increased incidence of serious risks, particularly pneumothorax, due to the short training courses and deep needling techniques which typify the practice. In the interest of public health and safety, the practice of dry needling should be restricted to suitably qualified practitioners.

KEYWORDS acupuncture, dry needling, myofascial acupuncture, trigger point acupuncture, education standards, regulation, serious risk, physiotherapy, Australia.

Background

Australia became the first country in the western world to implement the statutory regulation of acupuncture under a restriction of title system in the State of Victoria in 2001.¹ The current minimum standard for acupuncture registration with the Chinese Medicine Registration Board of Victoria is the completion of an approved four to five year bachelor's degree or a three year graduate-entry master's degree.² This same standard had been used in Victoria for acupuncture endorsement by the other health professions, except for chiropractors and medical practitioners which have adopted a lower standard.³

Although at present limited to just one State,⁴ statutory regulation of the acupuncture profession will be extended to

a uniform national system—the National Registration and Accreditation Scheme for the Health Professions (NRAS)—from 1 July 2012.⁵ NRAS provides for a separate board for each of the 14 registered health professions.⁶ Under the *Health Practitioner National Law Act 2009*, it is an offence to use a restricted title or to hold out to practise in a registered health profession unless the practitioner is suitably registered or endorsed to do so.⁵ Unique to this scheme is that, in addition to the Chinese Medicine Board of Australia (CMBA), each of the other 13 boards may (but is not obliged to) develop its own standard for acupuncture endorsement. A registered health practitioner who meets their respective board's acupuncture endorsement standard may have their registration endorsed

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as such (after 1 July 2012) and will be able to use the title 'acupuncturist' even though they are not registered with the CMBA.⁵ The Physiotherapy Council of Australia is developing an accreditation standard for acupuncture endorsement under the NRAS on behalf of six other national boards, to take effect from 1 July 2012.^{7,8}

Introduction

The statutory regulation of acupuncture which commenced in 2001 in the State of Victoria followed research demonstrating that serious risks to public health and safety were posed by acupuncture⁹ and that these risks could be addressed by regulation.^{4,9} This proposition had to be demonstrated again in 2008 as a prerequisite for acupuncture and Chinese medicine to be incorporated into the NRAS.¹⁰ Since 2002 there has been an increase in the practice of acupuncture under the term 'dry needling'.¹¹ Both registered and unregulated practitioners commonly complete two or three day courses under the titles 'dry needling' or 'myofascial dry needling'¹¹ rather than completing the three to four year degree programs leading to registration or endorsement as an acupuncturist.³ Provided they do not use the protected title 'acupuncturist' nor hold out (advertise) to practise acupuncture, these practitioners operate outside the standards-setting or regulatory environment which protects the public from poorly-practised acupuncture.¹¹

Practitioners of dry needling claim that they are not practising acupuncture as their practice is based upon biomedical research into the treatment of myofascial trigger points (MTTPs) and has no relationship with classical Chinese acupuncture theory and practice.¹² It is claimed that the only similarity between dry needling and acupuncture is the use of the same tool (the acupuncture needle).^{12,13} This paper will examine the serious risks of dry needling and acupuncture to identify if the practice of dry needling poses lesser risks than the practice of acupuncture and therefore should not be subject to regulation. The proposition that dry needling is a pseudonym for the practice of musculoskeletal acupuncture and should be regulated under the existing acupuncture provisions of the NRAS will also be evaluated.

Acupuncture

Acupuncture involves the insertion of fine solid acupuncture needles into specific points on the body to improve health.¹⁴ The selection of points may be based upon traditional medical systems, biomedical research into point functions, or point prescriptions.¹⁵ Despite acupuncture's long history of practice originating in China¹⁶, its biomedical mechanism(s) are not fully understood.¹⁷ Traditional explanatory models of acupuncture relate to the concepts of qi, blood, and channels (meridians).¹⁸ Stimulating an appropriate acupuncture

point removes restriction to the flow of qi and blood in the channels, restores unobstructed circulation and benefits health.¹⁹ Acupuncture points can affect the local tissue in which they are located or have effects on distant parts of the body or on systemic function.¹⁹ Acupuncture is traditionally used for pain and tissue trauma as well as for systemic health complaints.²⁰ A wide variety of needling techniques and non-needle point-stimulation methods may be used.¹⁹ This classical Chinese understanding of the mechanism of acupuncture and its therapeutic application initially developed without an understanding of modern biomedical perspectives of anatomy and physiology.

A biomedical understanding of the mechanism of acupuncture has been sought since at least the mid 1940s.²¹ Immuno-inflammatory mechanisms, hypothalamic-pituitary axis influence, pain control via endogenous pain control systems, neuroplasticity, and myofascial trigger points are all thought to be involved, although none of these models fully explain how acupuncture works.^{17,22} Practitioners who emphasise a biomedical understanding of acupuncture in their practice often refer to their practice as 'medical acupuncture'²³ or 'western acupuncture'.²⁴

It is also possible that the classical acupuncture channels may actually exist in some physical form.^{25,26} Research is exploring the role of connective tissue and the correlation of fascia to the acupuncture channels.^{17,25,26} In such a model the 'qi' of Chinese medicine may relate to a combination of nerve signals, the flow of pacrine signalling molecules, electrical signalling through gap junctions among perineural cells and the distribution of mechanical forces.²⁶ Should the role of fascia be found to correlate with classical meridians, then much of the current biomedical research may need to be re-interpreted in a holistic model, perhaps in a way similar to the classical Chinese model.²⁶

Dry needling

Dry needling has been variously defined according to its context. Initially the term 'dry needling' was used to differentiate the insertion of a solid acupuncture needle into the body for therapeutic effect from the injection of a substance through a hollow needle.^{27,28} In the text *Medical Acupuncture*, Bekkering and van Bussel explain²⁸ "Acupuncture is in principle a 'dry' therapy as no pharmacological substances are administered through the needle". 'Dry' acupuncture works neurophysiologically differently to 'wet' acupuncture where local anaesthetic is usually injected into a point.²⁸

In contemporary literature the term 'dry needling' is typically used to refer to the needling of MTTPs with an acupuncture needle.²⁹ MTTPs are 'hyperirritable spots in skeletal muscle that are associated with a hypersensitive palpable nodule in a taut band'.³⁰ When a needle is inserted into a MTTP a local twitch

response occurs as well as referred pain.²⁹ MTrPs are associated with myofascial pain syndrome (MPS), a common source of acute and chronic pain worldwide.²⁹ MTrPs were first described in the West by John Kellegren in 1938.³¹ He identified small tender points in muscle which reproduced the pain of myalgia when pressed. This pain was typically felt away from the point rather than just locally and would resolve when injected with a local anaesthetic. Janet Travel later termed these points trigger point and labelled the pain associated with them MPS.²⁷

The practice of deactivating trigger points with local anaesthetics (wet needling) remains common.³² However, in 1979 Carl Lewit had demonstrated that inserting a dry needle deeply and accurately into a MTrP was effective in treating musculoskeletal pain.²⁷ Over the past decade or so³³ the use of dry needling (acupuncture) has become popular to treat MTrP.^{33,34} Physical therapists practise dry needling throughout the world.³⁵ In Australia, dry needling courses are offered to physiotherapists, chiropractors, osteopaths, podiatrists, medical practitioners, nurses, massage therapists and other health professionals.³ Part of the popularity of dry needling may be linked to the ease with which acupuncture needles can be obtained by non-medical practitioners compared to the restrictions based on obtaining or injecting local anaesthetics.¹²

The term dry needling is not only concerned with MTrPs. Dr Chan Gunn has developed another system for treating MPS and other conditions which he has named Intramuscular Stimulation (IMS) to differentiate it from other needling practices.^{12,36} Gunn proposes that examination, diagnosis, and treatment with acupuncture needles should be based on a radiculopathy model.³⁶ In this model taut bands in muscles are treated with acupuncture needles and special attention is given to releasing shortened paraspinal muscles that may be compressing a disc, irritating a nerve root and, according to Gunn, initiating the distal muscle pathology.^{12,36} Points are used both locally at the affected spinal segment as well as distally within the respective dermatome or myotome.³⁷

Acupuncture and dry needling

Numerous needling methods incorporating the approach of both MTrP and IMS are described in both classical and contemporary Chinese acupuncture literature. In the classical Chinese medical model MTrP are referred to as *ashi* points and were described by Sun Si Miao in the Thousand Ducat Prescriptions in 652 CE.^{19,34} Baldry³¹ states that trigger point acupuncture is the same as this continuously-practised ancient *ashi* acupuncture. In ancient texts cutaneous, shallow and deep acupuncture methods are described for treating numbness of the skin, muscle constriction, spasms and pain.³⁸ The repeated needling and reinserting of a needle into a muscle in different directions to treat pain, numbness and debility of muscle tissue

is described as one of the ancient five needling methods.³⁸ This latter approach seems similar to that used by Gunn.³⁷ Biomedical research into acupuncture and, in particular, the relationship between spinal segments and dermatomes or myotomes was reported in 1975 and was a component of a standard acupuncture textbook in 1981.³⁹

Injection therapy was considered a relatively new treatment in Chinese acupuncture in 1974⁴⁰ and is indicated for 'positive response points' which may be flat, round, strand like or nodular in shape.⁴⁰ Positive response points should be searched for by light palpation over the back, chest, abdomen and limbs. Of particular importance are the points on the channels which are 0.5 units and 1.5 units lateral to the spine respectively.⁴⁰ These points themselves resemble MTrP, and the systematic approach of examination and treatment is conducted without particular regard to other classical concepts such as qi and blood. These points and their selection seem similar to the systematic approach of examination and treatment, especially paying attention to spinal pathology, advocated by Gunn for his IMS system.³⁶

Gunn states that IMS is not acupuncture because 'IMS requires a medical examination and diagnosis by a practitioner knowledgeable in anatomy, needle insertions are indicated by physical signs and not according to pre-defined, non-scientific meridians, while subjective and objective effects are usually experienced immediately'.⁴¹ The biomedical approaches to acupuncture practice are considered by some to be superior to the archaic and mystical foundations of classical Chinese acupuncture.⁴² Others support the view that the traditional Chinese model has no basis in science⁴³ and that Chinese acupuncture theory is just too hard to learn.⁴⁴ Dommerholt, del Moro and Grobli¹² note that some patients erroneously think that MTrP dry needling (TrP-DN) is acupuncture but assert that they are wrong because, in their view, the practice did not originate from traditional Chinese acupuncture, is based on neurophysiologic principles, and has no similarity with regulating the flow of energy. Dommerholt et al¹² assert that, although Gunn used the term acupuncture instead of IMS in earlier papers, his thinking was not based on Chinese acupuncture theory but on neurology and segmental relationships, and therefore that IMS is not acupuncture.

Acupuncture by another name

Denials that TrP-DN and IMS are acupuncture seem difficult to sustain. Gerwin notes that 'Acupuncture trigger point needling is identical to the dry needling technique described by physical therapists, physicians and others'.⁴⁵ Trigger point acupuncture is also considered to be part of medical acupuncture,²⁷ is taught as part of western acupuncture,²⁴ and is the same as classical *ashi* acupuncture.³¹ Gunn's comments regarding the need for

a medical examination and knowledge of anatomy and the individual selection of treatment points describe well the contemporary acupuncture education models in many parts of the world, particularly in China⁴⁶ and Australia.^{3,47} Acupuncture point descriptions may be standardised in textbooks,⁴⁸ but the practitioner is also advised that point descriptions are to take the practitioner to the vicinity of the point and that sensitivity to finger pressure is the most important guide to point location.^{48,49} Dommerholt et al's discussion on the origin of MTrPs credits sixteenth century and nineteenth century European physicians' observations⁴³ but ignores Sun Si Miao's seventh century discovery of *ashi* points.³¹

A distinction offered for TrP-DN and IMS to be considered separate to acupuncture is its foundation in biomedical theory and neurophysiologic explanations of the mechanism of action.³⁵ Despite research into hypotheses of the mechanisms of action of needling a MTrP, the mechanism remains unknown,^{35,50,51} and the aetiology of MTrP remains speculative.⁴³ The detection of MTrPs is based solely on the clinician's palpatory skills with no objective diagnostic criteria validated.⁵² Rather than being based in scientific theory, TrP-DN and IMS are based on empirical models^{12,37} with explanatory models developed to explore clinical phenomenon. Even though some acupuncture practitioners may prefer to practise strictly in accordance with classical theory, other acupuncturists incorporate biomedical research into their practice.^{15,23} The relationship between the biomedical foundation of TrP-DN and clinical practice describes a variation of classical acupuncture rather than the invention of a new therapy.

Once registration was implemented in Victoria, it became illegal to use the title 'acupuncturist' or to hold out to be qualified to practise acupuncture unless suitably registered or endorsed.⁵³ The subject 'myofascial acupuncture for myotherapists' taught to remedial massage therapists⁵⁴ at one institution became 'myofascial dry needling'⁵⁵ once the title 'acupuncturist' was restricted to qualified and registered or endorsed practitioners. Rather than discussions based upon explanatory models, in this context the term 'dry needling' is used pragmatically to overcome the legal sanctions of holding out to practise acupuncture when not registered or endorsed to do so.

Serious risks of dry needling

Descriptions of the serious theoretical risks associated with the practice of dry needling include pneumothorax³⁷, peripheral and central nervous system injuries, organ puncture and syncope.^{34,56} The incidence of these events among practitioners trained in dry needling or IMS is unknown. A literature search using the keywords 'dry needling' and 'risk' was conducted on Medline, Pedro and Scopus without date restriction and limited to English language results (see Table 1). A total of

108 results contained articles relating to acupuncture risks and only one case report of an adverse event from dry needling. No review articles relating to dry needling risks were identified.

The lack of reports of serious risks from dry needling requires some discussion. It may be that despite its deep needling techniques dry needling is safer than acupuncture and has not led to sufficient harm to warrant investigation. It may be that the practice of dry needling is not as widespread as acupuncture and, considering its relatively recent use,³³ has not attracted the attention of investigators. It may also be that as acupuncture and dry needling are considered by researchers, practitioners and patients to be essentially the same practice and that research on acupuncture has been used to inform the risks of dry needling. Support for this latter possibility is provided by papers including a Cochrane review⁵¹ which use the terms acupuncture and dry needling collectively.^{50,51} Kalchiman and Vulfson's discussion of the risks of dry needling provides further support for this notion where they refer to the risks of dry needling as similar to acupuncture and which are 'well described'.³⁴

Given the foregoing discussion and that the practice of dry needling is identical to the practice of trigger point acupuncture⁴⁵ and *ashi* acupuncture³¹ the serious risks associated with acupuncture can be extrapolated to understand the risks of dry needling. A search of English language articles in Scopus using keywords 'acupuncture' and 'risks' and limited from the year 2000 to 2011 resulted in 1 604 results. A further restriction to 'serious risks' limited results to 92; twenty-three of which pertained to acupuncture risks. Results comprised nine review articles, six case reports, four prospective studies, three articles discussing risks and safe practices, and one randomised controlled trial (see Table 2).

Acupuncture is considered safe when practised by well trained practitioners.⁵⁷ However, acupuncture has also been associated with a range of serious complications including death.⁵⁸ A systematic review of deaths after acupuncture found that 86 fatalities were reported among 32 articles.⁵⁸ The most common cause of death was pneumothorax followed by puncture of the heart, large blood vessels, central nervous system structures, the liver or infection.⁵⁸ The number of deaths have increased over time and are not limited to China, Japan and other parts of Asia but include deaths in the United States, Germany and Norway.⁵⁸ The authors note that pneumothorax is not only the most common cause of death but also the most frequent serious non-fatal complication arising from acupuncture. The authors observe that all deaths would likely be avoided with adequate acupuncture training.⁵⁸ In another review the authors speculate on the reasons for different rates of reporting from different Asian and Western countries but conclude that adverse events would be avoided if all acupuncturists were trained to a high level of competency.⁵⁹

In an Australian study of adverse events in Chinese medicine (primarily acupuncture) it was found that⁶⁰ 'adverse event rates for practitioners with 0–12 months of CAM (complementary and alternative medicine) education were significantly higher than for those with 37–60 months education'. In the same study it was found that the risk of pneumothorax among medical practitioners practising acupuncture was twice the rate of non-medically trained acupuncturists.⁶¹ The study found that only 25 of 458 medical practitioners surveyed had completed more than 12 months of traditional Chinese medicine (TCM) education with the remaining 72% either not answering the question on training or had completed less than two weeks of training.⁶¹

While studies into deaths and serious risks associated with acupuncture support thorough training in acupuncture, there is an assumption that much of this study should be focused on anatomy.^{37,62,63} The Australian study demonstrates that it is not enough to have thorough training in anatomy and biomedicine alone. Comprehensive training in acupuncture seems to be associated with a lower risk profile than being a medical practitioner.⁶¹ TrP-DN and IMS favour deep needling methods²⁹ which carry an inherently greater risk of organ

puncture than superficial methods. It should be noted that courses on dry needling in Israel, Canada, the US and Australia are all in the range of 16–36 hours duration^{27,34} and fall into the higher risk category found in the above study.⁶¹

Discussion

Acupuncture is neither a single technique nor underpinned by a single explanatory model.^{15,19,64} For thousands of years acupuncture theory has been developed and refined, useless theory has been discarded and innovations incorporated.^{19,46,64-66} Acupuncture is evolutionary and different cultures have adapted it to local conditions and modified acupuncture theory and practice over time. Japanese^{66,67}, Korean⁶⁸ and French variants⁶⁹ are well established and the concepts of medical acupuncture²³ and western acupuncture²⁴ have emerged.⁵¹ Research has continued to explore the mechanism of acupuncture from a biomedical perspective for more than five decades and, while some elements of the mechanism have been uncovered,¹⁷ a comprehensive understanding of the mechanism of acupuncture regarding MTrP^{43,51} remains elusive.

TABLE 1 Search Strategy and Results for Dry Needling and Acupuncture risks

Database	Medline	Pedro	Scopus	Scopus
Date Range	1977-2011	no restriction	no restriction	2000–2011
Search Terms	Dry needling AND risks	Dry needling AND risks	Dry needling AND risks	Acupuncture AND Risks: 1604 results; limited to serious risks
Search type	Keyword and SmartText via Ebscohost search	Title and abstract	Title, abstract and keyword	Title, abstract and keyword
Results	91	11	6	92
Results for acupuncture risks	2	1	0	23
Results for dry needling risks	1	0	0	0
Total needling risks results	3	1	0	23

TABLE 2 Results of acupuncture risks by article type

Article type	Case Report	Review	Prospective study	Discussion of Risks & Safe Practice	Randomised Controlled Trial	Total
Number	6	9	4	3	1	23

It is inaccurate to label a practice that has become popular over the past decade or so as a new or different practice when it is virtually identical to another practice that has been established and used for more than a thousand years.^{31,45} Advocates of dry needling argue that it is the explanatory model underpinning dry needling that differentiates it from acupuncture.^{35,37} The explanatory models they refer to are incomplete,^{35,45,52} have not been validated,⁵² and at best fall into the category of research into the mechanism of acupuncture. It is clinical experience rather than the gold standard of evidence-based medicine that guides dry needling, IMS and medical acupuncture practice.^{43,52,70}

Dry needling, IMS and MTrPs have added another chapter to the story of acupuncture by systemising elements of classical practice. This systemisation appears to make it easier to achieve clinical results for neophyte practitioners³⁴ in the same way that 'cook-book' fixed-point prescriptions of acupuncture⁷¹ have been used previously. These approaches should prove a valuable addition to the curriculum of comprehensive acupuncture programmes along with other modern innovations such as auriculotherapy, laser stimulation, electro-acupuncture and point injection therapy.

The preceding reviews of serious risks link them with negligence and indicate that serious risks can be avoided with adequate training.⁷² An Australian insurer⁷³ noted an increased incidence of pneumothorax among physiotherapists practising acupuncture in 1996 and expects the incidence to increase as more physiotherapists take up acupuncture. The insurer reminds physiotherapists of the need for adequate training and to provide adequate explanations to patients.⁷³ Negligence is a professional act or omission leading to a patient's harm.⁷⁴ By contrast an inherent risk of practice is a risk that cannot be eliminated from a procedure even when a procedure is correctly performed.⁷⁴ Under Australian law, failure to warn a patient of an inherent risk may lead to an action of negligence.^{74,75} It may be that the short courses and deep needling techniques associated with these two or three day courses popular among physiotherapists⁶ make pneumothorax an inherent risk among such practitioners. This shift in thinking is already reflected in some countries with consent forms declaring the risk of a pneumothorax from dry needling to patients before proceeding with treatment.⁷⁶⁻⁷⁸

The World Health Organization's (WHO) Guidelines on Basic Training and Safety in Acupuncture (GBT) recommend that allied health practitioners who are not prepared to complete a full 2500 hour program of study in acupuncture should study acupressure instead because of the risks associated with brief training in acupuncture.⁷⁹ Redefining the practice of acupuncture to dry needling could be seen as an attempt to avoid the conflict of non-compliance with well established

educational and safety guidelines developed by WHO. The range of health practitioners practising acupuncture safely at bachelor's or master's degree level³ is confounded by the growth of two day courses in dry needling.³ It may be difficult for the public to discern between a practitioner who is registered or endorsed to practise acupuncture from a practitioner who is practising dry needling when, to the public, elements of each practice appear to be the same.¹²

The relatively small number of deaths from cervical spine manipulation numbering 26 worldwide⁸⁰, and associated non-fatal strokes⁸¹, have been sufficient to restrict this practice in Australia to chiropractors, osteopaths, medical practitioners and physiotherapists.^{5,81} A risk analysis has shown that the reduced competition that a restriction of practice entails is warranted if it is outweighed by the risk posed to public health and safety through not restricting the practice.⁸¹ The incidence of deaths from poorly trained acupuncture practitioners is more than three times higher than for cervical spine manipulation⁵⁸. The proliferation of short courses under the label dry needling³ using deep needling techniques will only increase the number of poorly trained practitioners and the incidence of serious risks.⁷³

Conclusion

If dry needling were truly a new and different practice to acupuncture then the evidence of its safety should be obtained before this invasive procedure, with potentially serious or fatal inherent risks, is offered to the public. If dry needling is the same practice as acupuncture then the research into the adverse events and serious risks of acupuncture should inform an adequate education and training standard for the practice.

The paper has demonstrated that dry needling is not a new or separate practice from acupuncture which has its roots in Chinese medicine and which continues to evolve and develop within the domains of scientific research, medical acupuncture and Chinese medicine. Dry needling is a pseudonym for very brief training in myofascial acupuncture also known as trigger point acupuncture and *ashi* acupuncture. The deep needling techniques which are preferred and characteristic of the dry needling approach have an inherently higher risk of pneumothorax and other serious risks than other needling methods. Acupuncture is safe in well-trained hands; however the risk of serious adverse events, though rare, has been found to be much higher among practitioners who have minimal training in acupuncture even if they have detailed knowledge of anatomy and biomedicine. The World Health Organization's GBT make it clear that short courses in acupuncture are an unnecessary risk and that acupressure should be studied instead.

In the contested market place of acupuncture practice in Australia, the use of the term 'dry needling' appears to be an attempt to circumvent the role of the well qualified acupuncture workforce and substitute them with other health professions who practise with a rudimentary understanding of just one tool in the acupuncturist's tool-kit. While acupuncture may offer a great contribution to public health, the education standard underpinning the practice of dry needling poses a real threat.

In the Australian context all registered health professions have access to education programs which make them eligible for registration or endorsement in acupuncture. It is not in the public interest to allow poorly trained practitioners to provide an invasive procedure with inherent risks of harm when suitable training courses and well trained professionals are available instead. Short courses in acupuncture to a wide audience under the label 'dry needling' may be profitable; however they appear not to be in the public interest. The practice of acupuncture including its several pseudonyms should be restricted to suitably registered or endorsed acupuncturists in accordance with the NRAS in order to adequately address the risks posed by brief training in acupuncture.

TABLE 3: Glossary of Abbreviations and Acronyms

AHPRA	The Australian Health Practitioners Regulatory Agency
CMBA	Chinese Medicine Board of Australia
CMRBV	Chinese Medicine Registration Board of Victoria
GBT	World Health Organization Guidelines on Basic Training and Safety in Acupuncture
HPRA	Health Practitioners Registration Act 2005
IMS	Intramuscular Stimulation
MPS	Myofascial Pain Syndrome
MTiP	Myofascial Trigger Point
NRAS	National Registration and Accreditation Scheme for the Health Professions
TCM	Traditional Chinese Medicine
TrP-DN	Trigger Point Dry Needling
WHO	World Health Organization

Clinical Commentary

This paper examines acupuncture and dry needling from a public health perspective. 'Dry needling' is found to be a pseudonym for a very brief course of study in myofascial acupuncture also known as ah shi acupuncture and trigger point acupuncture. Dry needling is likely to result in an increased incidence of serious risks and particularly pneumothorax due to the short training courses and deep needling techniques which typify the practice. In the contested market place of acupuncture practice in Australia, the use of the term 'dry needling' appears to be an attempt to circumvent the role of the well qualified acupuncture workforce.

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Metal Analysis of *Si Wu Tang* in Relation to its Clinical Application

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ABSTRACT

Si Wu Tang, a Chinese herbal formula composed of four Chinese herbs (*Danggui*, *Chuanxiong*, *Baishao* and *Shudi*) was analysed for its magnesium, manganese, zinc, iron and calcium concentrations when made into a decoction. The commonly prescribed amount is 42 g in a specific ratio of the four herbs, and from this it was determined that all metals analysed were within safe limits and daily tolerable limits would not be able to be reached by ingesting this formula (42 g/day) alone. The highest metal in the *Si Wu Tang* decoction was found to be magnesium at 25 mg/L, which is under the daily intake recommendations. Varying the brewing time during the preparation of the herbs was found to have various effects on the different micronutrients when made up into separate decoctions from 1 g of each separate herb and these observations may be beneficial to Chinese medicine practitioners who wish to vary the *Si Wu Tang* formula to better suit a patient's needs. Samples were analysed at least in triplicate and error was found not to be over 15% at the 95% confidence level. Investigating the amount of metals present will increase the understanding of the levels of these beneficial metals and the potential curative effects they provide.

KEYWORDS *Si Wu Tang*, magnesium, dysmenorrhoea, herbal decoction.

Introduction

Si Wu Tang, also known as the four agents' decoction, is a traditional combination of Chinese herbs ingested as a decoction and has been in use for about 800 years. This brew (*Si Wu Tang*) is a leading formula prescribed to women suffering from gynaecological conditions such as irregular menstruation, abdominal pain and menopausal symptoms. As the use of complementary and alternative medicines become more popular in the western world, women seeking relief of painful symptoms are turning more to traditional Chinese medicine, and to the herbal medicament *Si Wu Tang*.

The herbs *Danggui* (*Radix Angelicae Sinensis*), *Chuanxiong* (*Radix Ligustici Chuanxiong*), *Baishao* (*Radix Paeoniae*

Lactiflorae) and *Shudi* (*Radix Rehmanniae Glutinosae Conquistae*) when combined in a specific ratio create a decoction known as *Si Wu Tang*. This formula has been prescribed to women for hundreds of years and is known for its ability to relieve women's menstrual symptoms, and this formula is the most popular decoction prescribed by Chinese herbalists for women suffering from menstrual and gynaecological problems.¹

The relationship between this decoction and the symptoms of gynaecological complaints is complex. There have been many studies investigating the role of different components of the formula such as the phenolics and bioactive components and the apparent therapeutic effects of the formula² but no research has yet gone into the amounts of metal present in this herbal formula. The formula has been long known for its effects

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in assisting with relief of the symptoms of some of these conditions; however, yet to be explored are the mechanisms of why they help.³ In this study, the presence and amount of several beneficial metals from the herbs made into decoction is to be determined. Investigating the amount of metals present will increase the understanding of the levels of these metals and the potential beneficial effects they provide.⁴ By also studying the effect of the brewing time on each of the separate herbs, more can be understood about the leaching potentials of the metals from the separate herbs and may provide useful information for Chinese medicine practitioners. Knowledge of the effects and concentrations of bioactive elements in foods and herbs may guide the selection of Chinese herbs in clinical practice in conjunction with traditional Chinese medicine theories.⁵

The presence of certain beneficial metals in the herbs being analysed helps to relieve certain symptoms of conditions such as primary dysmenorrhoea, metrorrhagia and metrostaxis. Previous research has been undertaken on metals, such as magnesium, and it was determined that the ingestion of extra magnesium helps relieve pain caused by cramps.³ Another study found that after ingesting a different traditional herbal medicine, *Shao Yao Gan Cao Tang*, both the frequency and the severity of the cramping was reduced. It is believed that the mechanism involves the ingestion of the extra magnesium in that formula which reduces the pain.⁶ In other studies, magnesium has been found to be more effective than placebo for pain relief and resulted in less additional medication being required.⁷

It is believed that the presence of certain beneficial metals in the herbs being analysed helps to relieve certain symptoms of gynaecological conditions such as primary dysmenorrhoea, metrorrhagia and metrostaxis. A higher level of magnesium ingested from the decoction is thought to help relieve some of the pain from the menstrual or other gynaecological conditions.⁷ Magnesium is an important mineral that helps the body to complete hundreds of functions, including making and controlling insulin. It is also known to play a role in lowering inflammation in the body. Headaches and muscle pain, for example, can occur when magnesium levels in the body are low.⁷

Iron is an important micronutrient and its intake may need to be increased during menstrual cycles or during menopause as levels may drop.⁸ Potentially high iron content in *Si Wu Tang* decoction may help relieve the effects associated with blood loss, and will help to invigorate the blood and help with circulation.⁸ The key function of iron is to facilitate oxygen transport by haemoglobin, the oxygen carrying pigment of erythrocytes. It is also involved in oxygen storage by myoglobin, an iron containing protein that transports and stores oxygen within muscle and releases it to meet increased metabolic demands during muscle contraction. This is relevant as involuntary

muscle contractions occur during menstruation, and the iron content would help relieve the cramps. The average western diet is estimated to contain 5–7 mg/1000 kcal, whereas the Food Standards Australia and New Zealand recommended daily intake of iron is 18 mg/day for adult women.⁹

Zinc is an essential trace element known to play an important role in all human living cells. The human body contains approximately 2 g of zinc in total with 30% found in bone mass and 60% found in skeletal muscle, although it is found in all body tissues and fluids.¹⁰ Dietary intake of zinc is normally 6–15 mg per day, but less than half of this amount ingested is absorbed by the body.¹¹ It is now known that zinc absorption is influenced by many factors and adequate dietary intake is not necessarily representative of adequate zinc levels.¹¹

Zinc limits oxidant-induced damage in a number of indirect ways such as restricting free radical production and possibly acting as a scavenger of free radicals.¹¹ As zinc is known for its antioxidant properties as well as acting as an important cofactor in wound healing and immune function, there is no doubt that ingestion of zinc is beneficial to the human body. While its role in providing relief from primary dysmenorrhoea is not as important as other micronutrients, it is obvious that its ingestion overall helps with the healing of the body.

As traditional Chinese medicine (TCM) practice focusses on disharmony patterns, combinations of herbs should address these presentations exactly. Since a TCM formula contains multiple interactive ingredients, it is customary to rank the compositions into four groups when analysing the role they play in the formula. Traditional Chinese decoction is the process by which herbs are boiled and the remaining liquid is used for health purposes. Different decocting methods are employed depending on the nature of the substance and the individual's state of illness, and it is very important to follow each step in the decoction process to achieve good results. Decoctions prepared incorrectly may not work as desired and may have unintended effects. Therefore, TCM practitioners must pay attention to how decoctions have been historically prepared and, with further research and understanding, may be able to more effectively address individual patients' needs.

The aim of this experiment is to quantitatively and qualitatively determine if there is any trace of magnesium, manganese, zinc, iron or calcium in Chinese herbs that are used in combination to relieve symptoms of primary dysmenorrhoea and other gynaecological conditions; and, at the same time, determine what effect the brewing time the formula has on the metals present in the herbs and to determine what is potentially the best duration to brew the formula depending on which micronutrients are to be targeted.

Materials and Methods

SAMPLE COLLECTION

Si Wu Tang is a mixture of four herbs in different proportions. The four herbs and their Latin names are *Danggui* (*Radix Angelicae Sinensis*), *Chuanxiong* (*Radix Ligustici Chuanxiong*), *Baishao* (*Radix Paeoniae Lactiflorae*) and *Shudi* (*Radix Rehmanniae Glutinosae Conquिताe*). All samples were obtained from a local supplier, Ruifeng Australia Pty Ltd, and had been imported from mainland China.

TEA PREPARATION

The traditional method of ingesting this decoction has always been in the form of a decoction; however variations occur on the preparation method or the actual mass of each of the herbs. The traditional ratio used in this project was: *Danggui* 10 g, *Chuanxiong* 8 g, *Baishao* 12 g and *Shudi* 12 g. Two different brewing times (20 minutes and 40 minutes duration) were conducted.

For the 40 minute decocting method 10 mL of water was added for each 1 g of herb (total 420 mL) and then brewed for 40 minutes as per the recommended traditional method. The fluid was then decanted, and fresh 10 mL of water for each herbal gram (total 420 mL) added to the residue and brewed for a further 40 minutes. The two decoctions were combined and filtered and made up to volume in a 100 mL flask

For the 20 minute decocting method 10 mL of water was added for each gram of herb (total 420 mL) but this time the mixture was brewed for 20 minutes and, similar to the 40 minute method, the fluid decanted and fresh 10 mL of water (total 420 mL) for each herbal gram added to the residue and brewed for a further 20 minutes. The two aliquots of the brew were mixed together and made up to volume in a 100 mL flask. Both of these methods are recommended by Chinese medicine practitioners.

ATOMIC ABSORPTION SPECTROSCOPY (AAS) MEASUREMENTS

The metals were determined on a Varian SpectraAA-400 atomic absorption spectrometer (Varian Inc., Mulgrave,

Australia). Iron and manganese were measured using the multi-element (Fe/Mn/Cu/Cr/Ni) hollow cathode lamp. Magnesium was measured using the dual element hollow cathode lamp (Mg/Ca) and zinc using a single element lamp. An air acetylene flame was used for all samples with a Varian Mark VI model burner.

The wavelengths for these elements were 202.6 nm, 279.5 nm, 213.9 nm and 248.3 nm respectively. Magnesium (10 000 ppm), iron, manganese and zinc (1000 ppm) standards were purchased from the Sigma-Aldrich website. AR grade nitric acid (65% and 69%) was obtained from Merck Pty. Ltd.

All of the metal standards were prepared in accordance with the recommendation from the Varian Australia Pty. Ltd. For Flame (Atomic absorption spectrometer – SpectrAA-400), all sample and standards were made up in a 2% nitric acid solution.

Results and Discussion

The theory behind the relief of the gynaecological symptoms brought about by this decoction is that the trace elements present are in levels high enough to benefit the blood and allow for relief of cramps and headaches, as well as enriching and invigorating the blood flow. By measuring the amount of the metals that are present when the formula is brewed, we can see how much metal would be ingested by the consumer.

By comparing the two different traditional recipes for the preparation of the *Si Wu Tang* formula it can be determined which of the two similar decoction methods is more efficient and provides a higher beneficial metal concentration in the decoction. From Figure 1, it is clear that both of the decoction preparation methods result in no significant difference. For a Chinese medicine practitioner to recommend one method over the other to a patient would be redundant as both methods yields similar results and the most likely method to be chosen would be the one most preferable to the consumer of the decoction.

Table 1 shows the concentrations of each of the elements made from each of the herbs separate decoctions. If the

TABLE 1 Search Strategy and Results for Dry Needling and Acupuncture risks

Herb	Mg (mg/g)	Mn (mg/g)	Zn (mg/g)	Fe (mg/g)	Ca (mg/g)
<i>Danggui</i>	3.344 ± 0.421	0.029 ± 0.001	0.022 ± 0.002	0.123 ± 0.007	0.430 ± 0.046
<i>Chuanxiong</i>	4.193 ± 0.523	0.095 ± 0.006	0.044 ± 0.004	0.456 ± 0.029	0.580 ± 0.063
<i>Baishao</i>	1.275 ± 0.162	0.061 ± 0.004	0.030 ± 0.003	0.092 ± 0.005	0.095 ± 0.010
<i>Shudi</i>	2.442 ± 0.301	0.054 ± 0.003	0.073 ± 0.007	1.460 ± 0.094	2.473 ± 0.269

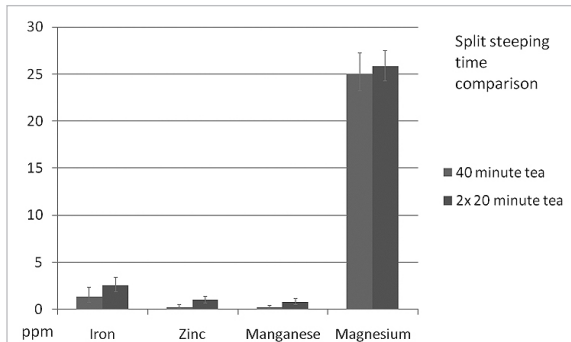


FIGURE 1 Different methods of brewing *Si Wu Tang* comparison error bars

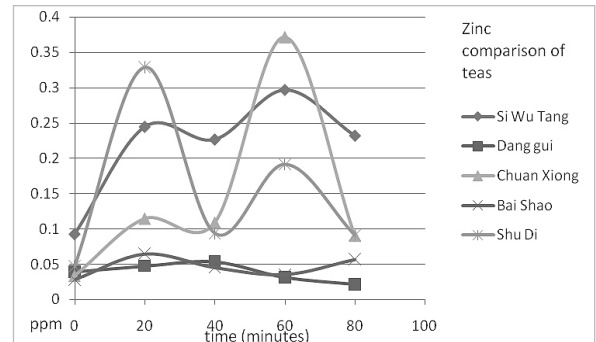


FIGURE 2 Zinc concentrations in teas made from single herbs and combination

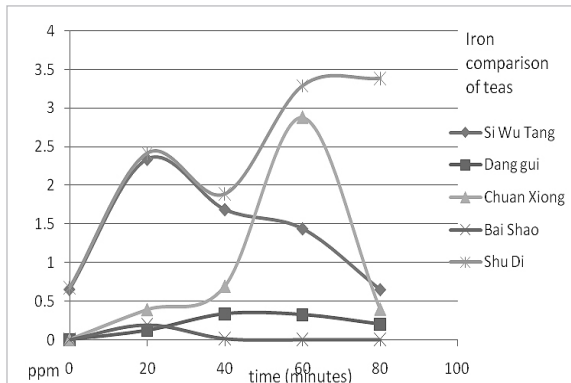


FIGURE 3 Iron concentrations in teas made from single herbs and combination

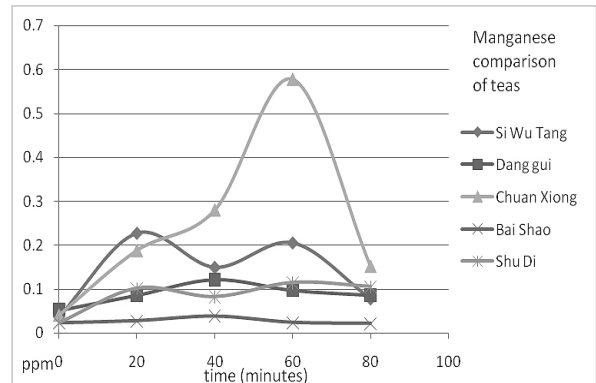


FIGURE 4 Manganese concentrations in teas made from single herbs and combination

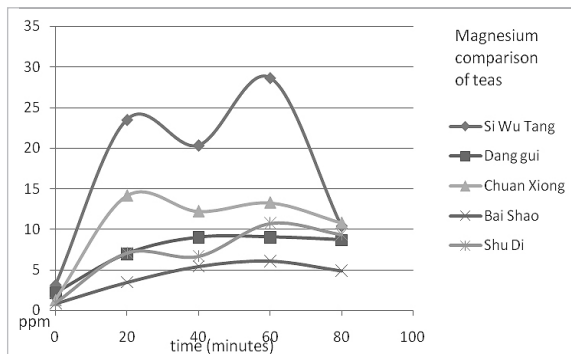


FIGURE 5 Magnesium concentrations in teas made from single herbs and combination

traditional ratio of herbs was applied and the decoction was ingested, by comparing these predicted results with the known recommended daily intakes and upper tolerable levels, we can determine that 26% of the RDA of magnesium would be ingested, 16% of the RDA of zinc, and only 3.9% of the RDA of calcium. Manganese content is 0.1 mg but still 22% of the RDA upper limit and 52% of the upper limit of iron would have been ingested. These levels all show that the predicted

levels of these micronutrients are within a safe limit in the *Si Wu Tang* decoction and would not exceed these by ingestion of the decoction alone.¹²

Once it was determined that all metals were within safe levels, variations of the experiments were performed on the formula brewing procedure, where samples were brewed for 20 minute intervals up to 80 minutes to determine the best possible brew duration to allow for the majority of each of the metals to leach out of the herbs.

Figures 2–5 show each of the metal combinations for the separate decoctions for each of the herbs made from 1 g of herb, and a smaller scale of *Si Wu Tang* which was made using 1.0 g *Danggui*, 0.8 g *Chuanxiong* and 1.2 g *Baishao* and *Shudi*. For each of the graphs there are variations with the times that each metal is leached to its maximum potential. In Figure 2, the zinc concentrations for *Shudi* and *Chuanxiong* are at their highest when the formula is brewed for either 20 or 60 minutes; 0.33 mg/L for *Shudi* and 0.37 mg/L for *Chuanxiong* respectively. If a consumer wished to consume more zinc than other metals in the combination of *Si Wu Tang*, a practitioner would be able to either recommend a brewing time of 60 minutes to take

advantage of the most zinc, or alternatively add more of the herb *Chuanxiong* to allow for more ingestion of the zinc.

Whilst *Shudi* showed the highest amount of iron when brewed for over 60 minutes (See Figure 3) the combination *Si Wu Tang* would have its highest iron concentration if brewed for approximately 20 minutes. This is also similar to manganese (Figure 4) where *Chuanxiong* showed the highest amount of manganese at 60 minute brew time (0.58 mg/L), but *Si Wu Tang* is best brewed for 20 minutes to obtain the highest manganese level overall (0.23 mg/L). The manganese levels recorded after 60 minutes brewing of *Chuanxiong* alone did not occur when it is used in combination with the other herbs.

Magnesium showed the highest metal levels in this study for each of the herbs that make up *Si Wu Tang*, and the highest levels of just under 30 mg/L are found at 20 and 60 minutes brewing time, with an inexplicable drop at the 40 minute mark.

Traditional Chinese medicine needs to be individualised to each patient's needs. With more being understood about the combination of herbs in *Si Wu Tang*, practitioners are better equipped to adjust the medicine to better suit a patient's individual condition. Magnesium is of special interest in the treatment of gynaecological disorders due to its known cramp and migraine-pain-reducing abilities.

There is a relatively high amount of each of the metals present in the herbs, only a small percentage of this metal is leached from the herbs when they are prepared by the decoction method.¹² Although the overall metal content of the herbs is important, this study focused on how much of the metals was leached from the herbs when made into a decoction, and therefore the metal content that would be ingested. Potential ways to increase the available ingestible micronutrients would be to finely chop the herbs to allow for a better percentage of the metals to be released from the herbs. As each of the herbs had different levels of each of the metals, the traditional ratio of the formula can be varied so that patient's individual symptoms can be catered for. For example, a sufferer of a gynaecological condition requires more magnesium so the herb ratio can be adjusted by a Chinese herbal medicine practitioner to allow for more of a herb with a higher magnesium content to make up the majority of the formula.

Conclusion

The levels of magnesium, manganese, iron and zinc found in decoctions brewed from the herbs *Danggui*, *Baishao*, *Chuanxiong* and *Shudi* both separately and made into the combination known as *Si Wu Tang*, are all within safe Recommended Daily Intake limits. Magnesium was found to

have a higher concentration in the formula which is related to its therapeutic effects. By studying the effect of brewing time on each of the decoctions it was determined that each herb has not only different metal concentrations, but the concentration of the metals depends on the amount of time for which it is brewed. Brews for the singular herbs can show great variances in concentration and time, and the *Si Wu Tang* averages out the concentrations, but for each of the metals to be leached to their highest amount requires different brewing times. The time for brewing the formula can be altered to allow for certain metals to be higher and this information can help Chinese medicine practitioners refine their prescriptions depending on a patient's individual need.

Clinical Commentary

The knowledge of the effects and concentrations of bioactive elements in foods and herbs could guide the selection of Chinese herbs in clinical practice in conjunction with traditional Chinese medicine theories. The data may also be of use to practitioners wishing to further individualise their prescriptions to better meet their patient's needs.

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Australian Acupuncture and Chinese Medicine Association Ltd (AACMA) 2008 Mentoring Survey Summary

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ABSTRACT

Background: There has been long-standing discussion by Chinese medicine practitioners in Australia concerning the ways in which they could best be supported in their endeavours. Mentoring by experienced practitioners is considered a possible format for this to occur. **Aims:** To gain an understanding of AACMA members' perceptions and requirements regarding mentoring. **Design:** A written survey composed of 15 questions with quantitative and qualitative components. **Subjects & setting:** The survey was distributed to all AACMA members in Australia in 2008. **Interventions & outcome measures:** Qualitative survey data was analysed using thematic analysis. **Results:** From 129 responses, a number of themes emerged regarding members' perceptions and requirements for mentoring. **Key themes include:** a variety of understandings of what mentoring is; the purpose of mentoring is to develop confidence and clinical experience; the need for guidelines and support for mentors; restrictions on who can be a mentor; that anyone can be a mentee; participation can be optional; any program should be flexible and suit the individuals involved; and that a mentoring program is seen as valuable and good for the profession. **Conclusions:** The study provides an evidentiary basis for the establishment of a pilot mentoring program for practitioners and, auspiced by a professional association such as AACMA, may indeed be a timely and valuable endeavour on behalf of the profession.

KEY WORDS professional development, professional support, mentoring, education, clinical practice, qualitative research.

Introduction

One of the main outcomes from recent research into Chinese medicine degree students and graduates in Australia has been that there is a perceived need for mentoring during the transition period from being a student into active practice in the profession.¹ This transitional period for new health care professionals is acknowledged as stressful, as they learn to apply the skills they have learned in the 'real world' clinical setting.²⁻⁵ One strategy proposed to facilitate the entry and continuing practice of Chinese medicine practitioners is the

implementation of a mentoring program. Various forms of mentoring have been implemented in a number of related professions, including medicine, nursing, and occupational therapy.⁶⁻⁸

Mentoring has been given a number of definitions in a variety of settings and has emerged as a concept with increasing proliferation in recent years. It may be understood as a learning partnership that is specific to the individuals involved and, as a unique relationship, it may be seen as a process which is characterised by the nature of the support provided to the mentee

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by the mentor.⁹ Mentoring may be distinguished from other similar types of support such as role-modelling and supervision in that it may be initiated formally or informally, occur in a number of different contexts, and varies widely in the structure of the relationship and types of interactions between the individuals involved. The Australian Acupuncture and Chinese Medical Association Ltd (AACMA) mentoring survey was conducted in order to gain insight into members' perceptions and requirements regarding professional development and support of new members through mentoring. Findings from this survey will inform the Chinese medicine (CM) profession in Australia as to the perspectives of practitioners regarding mentoring.

Method

The AACMA mentoring survey was distributed in October 2008. The target population was current acupuncture and Chinese medicine practitioners in Australia and the survey was offered in paper format to all AACMA members as part of their annual information update. Participants were given until 12 December 2008 to complete and return the survey by mail. As consultant to the AACMA mentoring committee in 2009, I was asked to analyse the mentoring survey data, post-hoc.

The survey was composed of 14 questions of varying statistical design that offered both quantitative and qualitative response options. Statistical analysis of the quantitative components was carried out using descriptive counts, and the qualitative responses to questions were analysed using thematic analysis. The qualitative data from the open-ended question responses, which sought participants' attitudes and opinions, provided a rich field of data for inquiry, and the focus for this article.

A copy of the survey can be found in Appendix 1.

Results

Out of 1633 AACMA members in 2008 that were sent the survey, there were 129 responses, giving a total response rate of 7.9%.

Key themes emerging from the survey data are summarised in Table 1.

Results from question one, 'which of the following best describes your understanding of mentoring?' indicate that most participants understand mentoring in a variety of ways. The most popular responses suggest that mentoring is understood as formal ($n = 45$), semi-formal ($n = 50$), and informal ($n = 35$). A number of respondents said they felt mentoring

included all or combinations of the possible responses – formal, informal, semi-formal, group, co-mentoring, and e-mentoring. Results from themes in question two responses indicate that participants view the purposes of a mentoring program to develop confidence, personal growth, clinical practice and experience. Responses included one participant's desire:

'To develop as a practitioner – to have the confidence to find one's own way to be with clients, to clarify one's own healing philosophy and then how to relate new knowledge and skills to this base.'

And from another, 'It's also about setting and maintaining a high standard of clinical practice and professionalism in the service through the guidance of more experienced practitioners.'

When asked in question three which activities could be considered part of mentoring, responses were largely spread evenly over all possible responses, although observation ($n = 46$) and experience gained from assisting ($n = 40$) or working in a senior practitioner's clinic ($n = 43$), and regular one-on-one ($n = 51$) or group contact ($n = 22$) in order to discuss practice and/or professional matters, received overall higher level of responses than other possible activities.

In question four, responses were fairly evenly divided between whether or not mentors should receive formal training (yes: $n = 69$, no: $n = 54$). Key themes arising out of the comments from this question include providing training in teaching skills and clarifying the professional expectations to mentors. The provision of guidelines for mentoring, including a code of ethics and standards of practice, was also seen as important by participants, as well as clear expectations about mentor and mentee roles. The level of experience or qualifications of the mentoring practitioner, as well as their length of time in practice and level of communication skills, also emerged as key issues.

Participants also reported a desire for a mentoring program to be a specified length of time, preferably shorter rather than longer, and that its implementation allow for individual adjustment and flexibility, according to the needs of the mentee and mentor. For the mentor, the requirements of a desire to mentor and the time to commit to it were expressed as important by survey respondents. It can also be seen from the data that continual access to support for the mentor is an issue to consider in the design and implementation of any program.

When asked if there should be any restriction on who can be a mentor in question five, 95 responded 'yes' while 26 responded 'no'. Popular themes coming out of this question include the number of years of practice and the experience and qualifications of the mentor.

TABLE 1 Questions and key themes

Question	Key Themes
1. Understanding of mentoring	Variety of understandings Number of options available
2. Purpose of mentoring	Developing confidence Personal growth Clinical practice Clinical experience All of these options
4. Formal training for mentors	Provide teacher training Professional expectations Need guidelines/code of ethics/standards of practice provided Define roles and issues Provision of support for mentors needed Short in length Room for individuals Mentors must have desire & time
5. Restrictions on who can mentor	Consider years of practice Experience and qualifications important Professionalism/ set of practice standards Reputation/respect/character/ lack of ego Relevance of experience Time and commitment Individual room for mentor and mentee relationship to develop
7. Restrictions on who can be a mentee	Must be registered/qualified Optional – willing to learn/serious/ they want it Students, new graduates and existing professionals who want support – anyone Need previous understanding of professional & ethical behaviour
12. Length of a (part-time) mentoring program	Needs to be flexible To suit the individual Short
15. Any comments that would assist with developing a mentoring program	Must be flexible and supportive Good for profession Different for experienced practitioners (vs. new graduates) Have a contract between participants Look to other professions Ensure time and simple format It's valuable and adds value Participation up to individuals/voluntary

Examples of responses include:

'Mentoring should be restricted to practitioners who have had some training, or past experience as clinical supervisors.'

'[The] mentor would ideally be reputable and experienced practitioners with the appropriate skills for guiding and instructing newer practitioners.'

The issues of professionalism, practice standards, reputation, respect, character, lack of ego and relevance of experience of the mentor were also raised. Again, having the time and commitment,

as well as room for individuals within the mentoring arrangement, were communicated by participants of the survey. Overall, it was largely agreed that mentors should be required to have from five ($n = 56$) to 10 ($n = 44$) years in practice.

Almost double the respondents felt that there should be no restriction on who can be a mentee ($n = 79$), when compared to there being any restriction ($n = 40$). Many participants reported feeling that mentees should be registered or qualified, and that mentees should have a prior understanding of professional and ethical behaviours. Survey respondents also felt that participation in a mentoring program should be optional for mentees and

open to those who are willing to learn and want to participate. An emergent theme from this question was that mentees may be anyone – final year students ($n = 41$), new graduates ($n = 53$) or existing professionals who want support ($n = 54$). As one respondent said, *'I've been practising for over 10 years and there are still days when I think I don't know how best to handle some cases (e.g. unusual presentations or complex presentations).'*

Results for question nine strongly suggest that mentoring as an AACMA-provided program is desired by respondents – who would either consider participating as a mentor ($n = 50$) or as a mentee ($n = 61$). This is considerably more than the respondents who were either not interested at this time ($n = 37$), or not at all interested ($n = 3$). Allowing for the limited options available for response, more practitioners considering participating as a mentor expressed interest in 'a semi-formal seminar-based training program' ($n = 66$) to 'a formal mentor training course leading to an award' ($n = 38$). More respondents considering becoming a mentor felt that, 'a statement of attendance for CPE points is sufficient' than any other preference option available. The use of CPE points as recognition for mentoring was a recurring theme.

When asked, 'What do you think the length of a (part-time) mentoring training program should be?', the most popular responses were ad-hoc seminar-based training ($n = 44$), or three months ($n = 29$). Themes arising from the qualitative response section to this question were: flexibility in the program; allowance in the program to suit the individuals involved; and a short program length. These suggestions most likely arose from the 'other (please specify)' option within the question.

It was clear from respondents that they do not feel any charges or fees for mentoring should be considered ($n = 76$). This is compared to the other available responses of: charges or fees 'paid to the mentor by the mentee(s)' ($n = 32$); or charges or fees 'paid by the practitioner for mentoring training' ($n = 15$). A number of qualitative responses were given to this question, however no dominant themes arose.

Themes that did emerge from the final survey question, in which participants were invited to make any further comments that they thought might assist in the development of a mentoring, were many. In particular, the desire for a program that was flexible towards and supportive of participants, including rural practitioners, arose again. One respondent felt it was important for *'some flexibility in the structure of the program so that the mentor/mentee relationship can grow and develop.'*

Another stated, *'I think it's fantastic that AACMA is developing these programmes. Flexible consideration to people with commitments (family/work/sickness) should also be considered.'*

No clear preference regarding a mentoring program format arose; however, suggestions from participants did include: looking to other professions for program structures; that any program consider the different needs of new graduates and existing practitioners; and the use of a contract or agreement between mentors and mentees involved. Other suggestions included the importance of considering the time involved, the need to keep the program simple, and that participation in a mentoring program be voluntary and up to the individuals involved.

Mentoring as a response by the profession to issues arising from the isolation of practice was mentioned by a number of respondents. Responses included the following statements:

'I think a mentoring program is definitely in need and highly overdue. I am very excited that there may be one available to us practitioners in the near future. Hopefully sooner rather than later.'

'I had a mentoring program throughout my six years of study. I found practitioners that encouraged students to observe and assist, and I believe in having this experience I am a much more confident practitioner. It would be great if students had a service in which they could find practitioners to become mentors. We all need to support each other for our industry to shine and I believe this is an imperative way to do this.'

'I feel that some form of mentoring is essential to support new graduates especially, and an assisted ongoing program to match less experienced with more experienced practitioners in a mentor/supervisor role would be a huge boost to the profession. Such a scheme would, in my opinion, lead to more successful practitioners and a more cohesive TCM community.'

'I feel that mentoring is essential to our profession. There is a very high attrition rate in the college and first few years of practice. Students need the inspiration of experiencing successful acupuncture clinics in the community.'

These above examples highlight that, for respondents to this survey, overall it was considered that informal mentoring experiences were valuable and that a mentoring program would be beneficial to the profession.

Discussion

This survey highlights the desire for a mentoring program for Chinese medicine practitioners in Australia. Although the issue of mentoring has been discussed previously^{1,10,11,12}, to the author's knowledge this is the first time an Australian CM professional association has carried out a survey of this size specifically on CM practitioner attitudes towards mentoring.

Because of the focus on the views of AACMA members in Australia and the relatively low response rate, the results of this survey have limited generalisability to the rest of the CM practitioner population. The question structures and lack of demographic data mean that information, such as differences between responses from practitioners based on years of practice, cannot be derived. Likewise, limitations such as self-selection and self-reporting biases on behalf of participants must also be considered. However, as a beginning guide to determining practitioner views and experiences of mentoring, particularly from the qualitative perspective, this survey is a valuable contribution to the discussion.

Results from this study emphasise a need for flexibility within our understanding and implementation of mentoring. With many different possible understandings of mentoring, it will be important that any program allow for the variety of practitioner styles and practice settings that exist in a profession as diverse as CM in Australia. This is further emphasised by the recognition that CM practice in Australia is largely carried out in private practice, and not the hospital or public health setting found in other countries such as China and Hong Kong. As a primarily self-employed profession in Australia, mentoring has been argued to be particularly suited to CM.¹¹ Of particular relevance to the CM profession in Australia, is the need for business establishment and clinic management skills, including marketing and communication skills.⁵ A more formal mentoring program may be a way to observe and develop these skills in practice.

While most CM educational providers in Australia allow for students to have external clinic experiences as part of their undergraduate training, including a chance to study in China, results from this study suggest that more opportunities to experience local clinical situations and support from more experienced practitioners is desired. This is in line with other fields of healthcare that are now acknowledging the importance of role models and clinical experience in the formation of practitioners.^{13,14} Results from this study support the 'intuited/ previously anecdotal' use of and overall appreciation for informal mentoring arrangements by both the mentor and mentees involved. Looking further at formal mentoring programs developed by other professional associations, such as Mentorlink by Occupational Therapists Australia¹⁵, may provide AACMA with more support towards developing their own mentoring program.

An encouraging result from this study is the finding that there are a number of experienced practitioners willing to participate in a mentoring program as mentors. The participation of more experienced practitioners in the development of newer practitioners practice may be reflective of the increased awareness of the need for wider professional connection and participation, in order to consolidate the wider CM profession in Australia.

This may also reflect recent acknowledgement of the benefits found in mentoring for the mentor, including possible personal and professional development.¹⁶ The request for support of mentors, and not just mentees, was another finding of this survey. The benefit of supporting mentors for the strength of the profession has been recognised in the field of nursing.¹⁷

The recognition of post-graduate education, such as in the medical profession in Australia and CM colleges in USA, as well as the development and promotion of good practice standards, is part of the 4th Term Strategic Plan of the Chinese Medicine Registration Board of Victoria.¹⁹ In recognition of the upcoming need for more formalised CPD and clinical supervision, policy and supervision guidelines by the Chinese medicine registration board of Victoria have been released this year.²⁰ With the requirement for demonstration of continuing professional development within the upcoming national registration CM in 2012, a formalised mentoring program as guided by this and other research, may be supportive to the profession at this time. While ultimately a formal mentoring program may not be the most effective delivery of professional support for new and practicing CM practitioners in Australia, results from this study will provide the basis for a pilot study investigating mentoring in Chinese medicine, due to begin in 2012 through Monash University.

The particular recognition that mentoring is a reflection of the increasing professionalisation of CM in Australia was expressed as meaningful by participants. As with other professions, support for new and at risk practitioner members may be seen as an important aspect to the development of a wider culture of professionalism and not just for the individuals involved.²¹ Cosgrove¹⁰ argues that the use of mentoring is like CM itself, reflecting prevention and support of the development of a balanced professional life. Savage¹² suggests that while mentoring may be understood differently by different people, it is inherent in the CM philosophy of holism and the maturation of the profession.

Conclusion

From this survey, it can be seen that overall mentoring is desired by AACMA members and may be viewed as potentially beneficial for individual practitioners as well as the wider CM community. Results suggest that mentoring was understood in a variety of ways by AACMA members, and that flexibility in structure and implementation of a formal mentoring program is desired, according to the needs of the mentor and mentee. Also, while there should be some restrictions on who can be a mentor, it was largely reported that there should be no restrictions on who may participate as a mentee. The majority of respondents felt that there should not be any charges or fees and that recognition be

obtained by CPE points. Participants felt that mentoring may be a way to support not only practitioners at risk but anyone who would like help in their Chinese medicine practice, as well as contributing to the overall standing of the profession. With national registration of the CM profession commencing in July 2012, professional associations must ensure they are providing the services and support to their members in the area of professional development. Results from this survey support the notion that the implementation of a pilot mentoring program, auspiced by a professional association such as AACMA, is worthy of active investigation, and may be beneficial for the CM profession at this time.

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Clinical Commentary

Continuing professional development as a means to enhance clinical practice skills, update clinical knowledge, and increase professional attributes of new and existing practitioners is a current requirement for professional association membership and soon-to-be requirement for national registration. Mentoring may be a way to provide this professional development and support for individual practitioners in clinical practice. Results from the 2008 mentoring survey performed by AACMA suggest that mentoring is desired by practitioners, and offers insight into members' perceptions and requirements for mentoring. These preliminary findings support the establishment of a pilot mentoring program by AACMA.

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APPENDIX 1 Mentoring Survey – October 2008

1. Which of the following best describes your understanding of mentoring? (Please tick; if more than one applies, please rank in order of importance)

- Formal mentoring program – where the one-t-one relationship between mentor and mentee is facilitated and supported by AACMA
- Informal mentoring – where the relationship between mentor and mentee is created spontaneously and maintained informally by the mentor and mentee
- Semi-formal mentoring – a combination of the above
- Group mentoring – where more than two individuals come together, with one or more in the group providing support or direction to the others
- Co-mentoring – where both parties recognise the shared benefit for all in the relationship and both act in the role of mentor and mentee
- E-mentoring – where the relationship between the mentor and mentee occurs primarily or exclusively online
- Other (please describe)

2. What do you see as the purpose of a mentoring program? (Please tick; if more than one applies, please rank in order of importance)

- To develop technical skills and knowledge
- To learn how to run a small business
- How to deal with difficult patients
- How to deal with difficult health problems
- To develop a better understanding about patient management
- To expand professional networks
- For social contact
- Other purpose(s), (please describe)

3. Which of the following activities could be considered part of mentoring? (Please tick; if more than one applies, please rank in order of importance)

- Attendance at seminars and workshops
- Study groups (for example, initiated and run by members in a local area)
- Case discussion groups (for example, as run by AACMA State Committees)
- Clinical forums (for example, as run by AACMA State Committees)
- Fellows Dinners (for example, where Fellows meet together, with a speaker followed by discussion)
- Observation in an experienced member's clinic
- Acting as a clinical assistant in an experienced member's clinic
- Working under the supervision or direction of a senior practitioner
- Volunteering as a practitioner or assistant in a community health centre (for example, the Hands on Health free acupuncture clinics in Victoria targeted at the financially disadvantaged)
- Regular one-on-one contact with a designated practitioner for discussion about practice/professional matters
- Regular group contact with a designated practitioner for discussion about practice/professional matters
- Professional supervision (for example, a formal 'counselling' relationship to discuss professional issues)

4. Do you think mentors should receive formal training to be a mentor? Please give reasons

- Yes
- No

5. Should there be any restriction on who can be a mentor? Please give reasons

- Yes
- No

6. Should mentors be required to have a certain number of years in practice?

- Yes – 20 years
- Yes – 10 years
- Yes – 5 years
- No

Comments:

7. Should there be any restriction on who can be a mentee? Please give reasons

- Yes
- No

8. Please rank, in order of importance, the type of members who could be a mentee?

- Final year student
- Neophyte practitioner – 1st or 2nd year out
- Practitioner with 3-5 years experience
- Practitioner returning to practice after a period of non-practice
- Practitioner with under 10 years experience
- Anyone – so long as they feel they need help

Comments:

Formal Training of Mentors

9. Are you interested in participating in a formal AACMA mentoring program? (tick whichever applies)

- As a mentor
- As a mentee
- Not interested at this time
- Not at all interested

10. As a mentor, would you be interested in

- A formal mentor training course leading to an award
- A semi-formal seminar-based training program

11. Please advise your preference (Please tick; if more than one applies, please rank in order of importance)

- I would like to obtain a formal award such as a graduate certificate
- I would be happy with a non-award certificate of attendance
- A statement of attendance for CPE purposes is sufficient
- Don't care

12. What do you think the length of a (part-time) mentoring training program should be? (Please tick; if more than one applies, please rank in order of importance)

- 3 months
- 6 months
- 12 months
- Ad hoc seminar-based training
- Other (please specify)

13. What delivery mode would best suit you? (Please tick; if more than one applies, please rank in order of importance)

Face-to-face formal training with contact on:

- A weekly basis
- A fortnightly basis, or
- A monthly basis
- On-line with face to face elements
- On-line with chat-room or phone contact access
- Correspondence/distance mode
- Ad hoc face to face seminars

Other

14. Should there be any charges or fees for mentoring?

- Yes – paid by the practitioner for mentor training
- Yes – paid to the mentor by the mentee (s)
- No – no charge for mentoring

Comments:

15. Please add any comments that you think would assist with the development of a mentoring program?

Should we wish to follow up on your responses, it would be helpful if you supplied your name and contact number.

Name (optional)

Contact phone (optional)

Thank you for taking the time to complete and return this survey.

Measuring Practitioner Opinion on Adverse Reactions to Acupuncture

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ABSTRACT

Background: The terminology associated with the categorisation and reporting of adverse reactions to acupuncture (ARA) does not necessarily fit well with other universal adverse reaction reporting systems. Evaluation of practitioners' interpretation of ARA concepts and associated terminology is needed to ensure high quality reporting. This study reports the survey of acupuncture practitioners' opinion regarding ARA terminology, using a custom- designed Adverse Reactions to Acupuncture Questionnaire (ARAQ). The questionnaire was administered on two separate occasions to examine the consistency of question response in the context of usual clinical practice over time. **Method:** Twelve female acupuncturists (11 physiotherapists and one general practitioner), mean age 46.83 (± 8.3) years completed the initial and follow-up ARAQ administered eight months apart. **Analysis:** Intra-rater agreement analysis was performed using intra-class coefficients (ICCs) for the visual analogue scales (VASs) and linear weighted Cohen's κ coefficients for the ranked questions. A systematic decision rule process analysed the repeated responses for the word categorisation task. **Results:** A statistical level of intra-rater agreement ($P \leq 0.05$) was achieved in 77% of the VAS questions (0.76–0.88) on repeated administration of the ARAQ. In the word categorisation task, 41% of acupuncture-related symptoms attained entry to identical adverse event domains on repeated responses. Whilst overall hierarchical weighting of preference responses were predominantly unchanged for the ranking questions the majority of κ coefficients for individual ranking tasks were low. **Conclusion:** The levels of practitioner intra-rater agreement in the VAS questions and word categorisation task relating to ARA performed most consistently over time. It is suggested that the styles of questions be carefully considered in future questionnaire development of this nature. The variation in agreement may be as a result of the style of question however it is acknowledged that the responses may also be confounded by changing opinions of experts as they acquire new or different knowledge.

KEYWORDS questionnaire, question styles, opinion, acupuncture, adverse events, nomenclature.

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Introduction

Acupuncture is a treatment modality not without risk¹ and the assessment of such risk is reliant on the accurate reporting of negative outcomes by practitioners. In turn, for the adverse reaction to acupuncture (ARA) report to be valid, there must be a consensus of opinion on the terminology and the definitions used to describe them. Standardised terms holding the same meaning and weighting between individual practitioners are needed for this process. Such agreement plays an important role in improving the quality of information available for analysis in adverse reporting systems², and a lack of consensus on terminology would appear to be a major deficit in the area of adverse reactions to acupuncture, preventing meaningful assimilation of data.³

While the term adverse reaction to acupuncture (ARA) has been defined in retrospective⁴⁻⁷ and prospective studies⁸⁻¹⁸, there is little factual information available regarding the views and opinions of practising acupuncturists, including their conceptualisation of ARA nomenclature or their views on ARA reporting related issues. The frequency of ARA events has been extensively reported.^{8,9,11,14-17,19,20} However, the wide variation in the terminology, particularly in the definition of an ARA, limits any ability to draw comparisons between such studies.³ The problem is compounded further by the loose use of nomenclature whereby terms such as 'adverse reaction', 'adverse event', 'adverse effect', 'complication' and 'side effect' are used synonymously and interchangeably throughout the literature.³ While the concept of an 'adverse event' and an 'adverse reaction' have accepted definitions within the drug literature²¹ they appear to be less consistently utilised in the acupuncture field. The clinical weighting of symptoms is also problematic; minor sequelae following acupuncture such as nausea, faint and fatigue¹⁰ have been similarly categorised as adverse reactions together with the more serious consequences of infection²², cardiac tamponade²³ and pseudoaneurysm.²⁴ Severity and seriousness must also be considered in context; a migraine following acupuncture, for example, may be a severe response but not necessarily a serious response.

An integral aim to the questionnaire design was to examine the quality of measured opinion, by assessing the level intra-rater agreement of a variety of question designs on two separate occasions. Visual analogue scales (VASs), ranking tasks and word categorisation tasks were used in the affective (factors that were likely to impact on the reporting of an ARA and level of agreement with statements about when an ARA should be reported) and reporting domains of the questionnaire. A key research concept explored in this questionnaire was whether or not acupuncturists conceptualise the same paradigm when considering issues relating to ARA and whether or not their opinion and viewpoints are consistently held over time.

In this paper, the development of a new ARAQ is described and the responses of health professionals who were considered expert in the field of acupuncture to three question styles contained in the questionnaire are assessed for intra-rater agreement longitudinally over a period of eight months on the repeated administration.

Methods

DEVELOPMENT OF THE ADVERSE REACTION TO ACUPUNCTURE QUESTIONNAIRE (ARAQ)

A literature search using the databases of Medline, AMED, CINAHL, PubMed, PEDro, DARE and the Cochrane Database of Systematic Reviews, from their inception to March 2005 and limited to English language and human, was carried out to gain an appreciation of the opinions and themes regarding ARA. Search keywords used were: acupuncture, adverse effect, adverse reaction, complication, questionnaire, terminology, survey and opinion. Of the 455 papers reviewed no independently validated general health instruments, questionnaires or disease activity indexes applicable to screening for adverse reaction to acupuncture or to the interpretation of the associated terminology could be located. Eight definitions^{9,10,15,17,19,20} and 52 keywords^{3,5-7,17,20,23,25-34} of relevance in the context of ARA were identified from these papers and these definitions formed the basis of the item generation in the development of the questionnaire.

QUESTIONNAIRE STRUCTURE

The ARAQ incorporated a range of tools to measure opinion and maximise response rates. The affective and reporting domains of the ARA were designed to capture the range of opinion, levels of preference and interpretation and incorporated three different question styles comprising two VAS questions, a word categorisation task, and three ranking questions.

The two VAS questions used semantic differentials with opposing phenomenon at the extremes of the scale³⁵ in which respondents had to indicate their response. Horizontal lines (100mm)³⁵ were selected and the anchor phrases exactly the same/completely different, strongly agree/strongly disagree or not at all/absolutely were used because their meanings were distinct, with maximum distance between meanings to avoid overlap.³⁶ The first VAS question comprised five scales and examined the synonymy between interchangeable ARA terms (adverse event, side effect, adverse effect, complication and medical error) and that of adverse reaction. The second VAS question examined respondent's views pertaining to their reporting practice of an ARA over six different scales.

A purpose-designed word categorisation task based on the methodology and criteria outlined by Fernandez³⁷ was utilised to examine the ability of the respondents to determine membership of descriptors to the adverse reaction domains (malpractice, complication, adverse reaction or known side effect). In this task, respondents were required to assign 39 acupuncture-related signs, symptoms and sequelae (S, S & S) to one of four ARA domains or, to the alternative options of don't know or other—please describe using pre-coded responses.

The three ranking questions explored participant opinion utilising levels of preference. In the first question respondents were required to rank their first, second and third preferences for an operational definition of an ARA out of eight possible options. The second question explored the respondent's perceived levels of seriousness related to six word domains (malpractice, complication, adverse reaction & adverse effect, adverse event, side effect) according to their perceived level of seriousness. The third question required respondents to prioritise six clinically relevant factors influencing the decision to report an ARA.

The language used throughout the questionnaire was targeted at a professional group with above average verbal skills and the layout of the questions was spaced to ensure none were missed due to visual clutter. Instructions for question responses were included within the questionnaire and the keywords in both the instructions and the questions were placed in bold typeface. A research assistant separated the consent forms from the questionnaires to ensure anonymity from the researcher.

STUDY SAMPLE

A purposive sample of 12 health professionals deemed to be expert in acupuncture on the basis of their academic qualifications, clinical and teaching experience in the area of acupuncture were approached to take part in this study. Initial consent by the respondents to be involved was given by electronic mail followed by written informed consent. The group was surveyed on two occasions eight months apart to (1) reduce any practice effect of undertaking the questionnaire and (2) to pragmatically provide a reasonable time gap in which to request busy clinicians to dedicate time to repeat the questionnaire. A secondary rationale was to longitudinally validate the different questionnaire approaches for future use with a larger national group. Participants were blinded to their responses in the initial ARAQ and those of their peers when undertaking the follow-up ARAQ. The content of the initial and follow-up questionnaire was identical. Ethics approval for this study was granted by the local Human Disability and Ethics Committee.

STATISTICAL ANALYSIS

Demographic data from the initial ARAQ were presented as means/standard deviations or percentage values. The VAS data from the initial and follow-up ARAQs were presented as

median and inter-quartile ranges (IQR). The initial and follow-up responses to the word categorisation task were evaluated by two decision rule processes.³⁷ The first process singled out unclassifiable descriptors by identifying those S, S & S terms in which the relative frequency of the sum of responses for the options of don't know, multiple response and no responses exceeded 60%. In the second step, the remaining descriptors were assigned to one of four ARA domains using a three step decision rule based on criteria of absolute frequency, relative frequency and uni-modality characteristics.³⁷ In step one, the absolute frequency of each S, S & S had to exceed one response under the domain or be removed before the second step. Step two required the relative frequency of the S, S & S categorisations to exceed 50% under a domain and finally, step three excluded any S, S & S which achieved greater than 33% assignment under any other domain (indicating bi or multi-modality). The percentage of common descriptors assigned to the same word domain in the initial and follow-up questionnaires was determined.

In the three ranking tasks the respondents' hierarchical 'order of choice' was obtained by allocating weighted points for each item. For example, in the first ranking question (Table 4) (seeking the most appropriate operational definition of an ARA), the first choice was weighted by five points, the second by three points and the third by a single point.

Intra-rater reliability assessing levels of agreement between the initial and follow-up responses for the VAS questions was carried out using single measures intra-class correlation coefficients (ICC) using a two-way random model, and for the ranked questions, linear weighted Cohen's κ coefficients, along with their associated 95% confidence intervals were used. The ICC values were interpreted according to the criteria of Fleiss (ICC < 0.40 poor; 0.40–0.75 fair to good; 0.75 and above excellent).³⁸ For the κ values; the criteria set out by Landis & Koch³⁹ (0.00 to 0.20 slight agreement; 0.21 to 0.40 fair agreement; 0.41 to 0.60 strong agreement) were used. Data analyses were performed using MedCalc version 11.4.1.0 (Medcalc Software, Mariakerke, Belgium). Alpha levels of significance were set at $p \leq 0.05$.

Results

DEMOGRAPHICS

Twelve female acupuncturists (11 physiotherapists and one general practitioner) with a mean age 46.83 (± 8.3) years completed the initial and follow-up questionnaires. All respondents were practising within the private sector and had a mean of 14.5 (± 4.5) years of clinical experience and of these, nine (75%) held professional qualifications in acupuncture, while three others (25%) held university or equivalent

qualifications. The respondents were involved in the teaching of acupuncture in programmes which had been formally endorsed by the Physiotherapy Acupuncture Association of New Zealand or the Medical Acupuncture Association of New Zealand. All respondents had observed an ARA in their own clinical practice and 25% had observed adverse reactions in their colleagues' patients. Ten (83%) respondents held an ARA reporting policy in their practice and 58% had reported an adverse reaction during the course of their career.

DATA COMPLETENESS

From the initial questionnaire (including demographic data) data for a total of 76 possible responses from 15 questions per questionnaire were tabulated. Missing data for responses were low (range 0 to 11% per question). A total 20 of a possible 912 responses were missing (2%). Fifty percent of respondents endorsed all 76 responses (100% complete data), 25% missed one response and 17% missed two responses.

From the follow-up questionnaire (excluding demographic data), data for a total of 65 possible responses from six questions per questionnaire were tabulated. Missing data for responses were low (range 0 to 15% per question). A total 50 of a possible 780 responses were missing (6%). Sixty-seven percent of respondents endorsed all 65 responses (100% complete data), 8% missed one response, and 8% missed out three responses. One respondent (8%) missed 34 responses.

VISUAL ANALOGUE SCALES

The median values (IRQs) for the five VASs regarding synonymy with the term adverse reaction and the six VASs reporting practice of adverse reactions to acupuncture in the initial and follow-up questionnaires are presented in Tables 1 and 2 respectively. The ICC values for the responses examining the synonymy of terminology ranged from 0.17–0.80 (Table 1) and for statements on reporting practice from -0.58–0.88 (Table 2) with 77% of the scales in the two VAS questions reaching statistical levels of agreement ($p \leq 0.05$).

WORD CATEGORISATION TASK

In the word categorisation task, 16 out of a possible 39 (41%) descriptors achieved membership to identical domains of known side effect, malpractice and adverse reaction in the initial and follow-up ARAQ (Table 3). Two descriptors (headache & new symptoms) met the entry criteria for the known side effect domain, one descriptor met the entry criteria for adverse reaction (psychiatric disturbance) and five others (endocarditis, haematoma, hepatitis, pleural empyema & osteomyelitis) that of the malpractice domain in one but not on both occasions. No descriptors in either data set met the entry criteria for the complication domain in the initial or follow-up questionnaire.

RANKING TASKS

Consistent endorsement based on hierarchically weighted points was achieved for two out of three responses examining choice of an operational definition for an adverse reactions to acupuncture (Table 4) and five out of six responses for the perception of severity of terms (Table 5).

Consistent endorsement for all responses regarding factors influencing the decision to report an adverse reaction to acupuncture were also achieved (Table 6). The weighted Kappa values for the ranking preference for the operational definition of an ARA were fair to strong (0.23–0.31, Table 4) and slight to strong (-0.09–0.47) for the ranking of terminology in terms of severity (Table 5). The Kappa values for the factors influencing the decision to report an ARA also ranged from slight to strong over the six options (-0.08–0.55, Table 6).

Discussion

Our analysis showed that the responses from the VAS questions were more consistent over time compared to the performance of the ranking tasks as measured by intra-rater agreement levels between the initial and follow-up ARAQ. The application of stringent criteria to the word categorisation task also yielded clinically meaningful sets of descriptors for adverse event classification domains of known side effect, malpractice and adverse reaction (Table 3) with 41% of descriptors achieving entry to the end-point ARA. This latter result compares favourably with the original methodology described in the pain questionnaire on which it was based.³⁷

The wide range of options offered in the ranking tasks and small sample size may explain the failure of the Kappa values to achieve stronger agreement levels. As a consequence, a recommendation for future questionnaires would be to reduce the number of options for the ranking questions in the case where more stringent analysis of the information is required. Alternatively more complete descriptors could have been supplied for the individual terms so as to remove any possibility of ambiguity. However an assumption was made that a perceived global lack of knowledge and poor clinical understanding of ARA issues would be minimised by confining the study cohort to expert acupuncturists. This assumption was also based on the premise that the more experienced a respondent is in thinking about a given topic the better they are able to think anew about that topic and to answer a relevant question.⁴⁰ It was also assumed that the expert opinion would be more likely to be fixed and stable over time compared with novice practitioners.

With an interval of eight months between the two questionnaires it is acknowledged that the relatively wide range of responses in the VAS questions (Tables 1 & 2) may represent a combination

TABLE 1 Synonymy of adverse reaction terms-median (inter-quartile range) for five visual analogue scale items in the initial and follow-up Adverse Reactions to Acupuncture Questionnaire (ARAQ) and intra-class correlation coefficients (ICC)

Synonymy with the term <i>adverse reaction</i>	Median (inter-quartile range)		ICC (95% confidence interval)
	Initial ARAQ	Follow-up ARAQ	
Adverse effect	4.50 (-0.40,4.85)	3.65 (1.88,4.48)	0.67 (-0.15,0.90)*
Averse event	2.00 (-1.45,4.60)	0.75 (-1.83,4.58)	0.33 (-1.70,0.81)
Complication	-1.5 (-2.95,2.90)	-0.55 (-2.63,0.88)	0.63 (-3.5,0.89)
Side effect	-2.00 (-3.5,-1.00)	-2.25 (-4.00,-0.08)	0.80 (0.29,0.94)**
Medical error	-4.70 (-5.00,-3.7)	-4.50 (-4.70,0.55)	0.17 (-1.37,0.74)

* $P \leq 0.05$, ** $P \leq 0.01$ 5 agree synonymous, -5 disagree synonymous

TABLE 2 Reporting practice of adverse reactions to acupuncture-median (inter-quartile range) for six visual analogue scales from initial and follow-up Adverse Reactions to Acupuncture Questionnaire (ARAQ) and their intra-class correlation coefficients (ICC)

Statement	Median (inter-quartile range)		ICC (95% confidence interval)
	Initial ARAQ	Follow-up ARAQ	
1 All Adverse reactions to acupuncture which the patient perceives as adverse should be reported	-1.90 (6.15)	-2.40 (8.50)	0.67 (-0.15,0.90)*
2 All adverse reactions to acupuncture which require medical attention should be reported	4.50 (1.90)	4.70 (1.15)	-0.58 (-7.34,0.59)
3 All adverse reactions to acupuncture that alter a patient's function for more than 24 hours should be reported	2.40 (3.65)	3.80 (5.38)	0.71 (0.10,0.92)*
4 All adverse reactions to acupuncture that are unexpected should be reported	-3.30 (6.20)	-2.00 (5.00)	0.63 (-0.13,0.89)*
5 All physiological reactions to acupuncture that are amplified should be reported	-2.50 (4.35)	-1.80 (4.50)	0.88 (0.58,0.97)***
6 All reactions that occur due to practitioner error should be reported as an adverse reaction to acupuncture	0.50 (5.85)	-0.55 (3.51)	0.74 (0.18,0.92)**

* $P \leq 0.05$, ** $P \leq 0.01$, *** $P \leq 0.001$ 5 agree with statement, -5 disagree with statement

TABLE 3 Word classification task assigning adverse reactions to acupuncture into domains

Known side effect	Adverse reaction	Malpractice	Unclassifiable signs, symptoms & sequelae
Aggravation of symptoms	Convulsion	Cardiac tamponade	Angina pectoris
Bruising	Psychiatric disturbance*	Endocarditis*	Galactorrhoea
Feeling cold	Seizure	Forgotten needle	Granuloma*
Headache*		Hepatitis*	
Insomnia		Osteomyelitis*	
Nausea		Peritonitis	
New symptoms*		Pleural empyema*	
Pain at the needle site		Pneumothorax	
Point bleeding			
Sleepiness/fatigue			

* denotes classification in one occasion but not two, whilst the remainder were classified into the same domain in the initial and follow-up questionnaire.

TABLE 4 Ranking order (hierarchical weighting points) for an operational definition of an adverse reaction to acupuncture from initial and follow-up Adverse Reactions to Acupuncture Questionnaire (ARAQ) and weighted Cohen's κ coefficients

Ranked definition preference	Initial ARAQ (weighting points maximum possible 60)	Follow-up ARAQ (weighting points maximum possible 60)	Weighted κ values (95% confidence intervals)
First preference: Any adverse effect possibly related to acupuncture making treatment necessary or severely interfering with the patient's well being.	1 st (25)	1 st (42)	0.23 (-0.11,0.58)
Second preference: A non-intended effect of acupuncture that may threaten the patient's life.	2 nd (24)	2 nd (39)	0.14 (-0.18,0.45)
Third preference: Any ill effect no matter how small that is unintended and non therapeutic, even if not unexpected.	3 rd (15)		0.31 (0.02,0.60)
Those reactions observable in standard practice, of a systemic or local nature, distinct from therapist negligence.		3 rd (12)	0.31 (0.02,0.60)

TABLE 5 Ranking opinion (hierarchical weighting points) regarding severity of terms from the initial and follow-up Adverse Reactions to Acupuncture Questionnaire (ARAQ) and weighted Cohen's κ Coefficients

Key terms	Initial ARAQ (weighting points maximum possible $n = 132$)	Follow-up ARAQ (weighting points maximum possible $n = 132$)	Weighted κ Coefficients (95% confidence intervals)
Malpractice	1 st (122)	1 st (111)	-0.09 (-0.22,0.03)
Adverse event	2 nd (78)	2 nd (81)	-0.29 (-0.59,0.00)
Adverse reaction	3 rd (72)	3 rd (67)	0.08 (-0.32,0.49)
Complication	3 rd (72)	4 th (65)	0.26 (-0.22,0.74)
Adverse effect	5 th (64)	5 th (49)	-0.02 (-0.31,0.27)
Side effect	6 th (24)	6 th (23)	0.47 (-0.01,0.96)

TABLE 6 Ranking opinion (hierarchical weighting points) of factors influencing the decision to report an adverse reaction to acupuncture from initial and follow-up Adverse Reactions to Acupuncture Questionnaires (ARAQ) and weighted Cohen's κ coefficients.

Factor	Initial ARAQ (maximum weighted points =132)	Follow-up ARAQ (maximum weighted points =132)	Weighted κ coefficients (95% confidence intervals)
Medical intervention	1 st (120)	1 st (120)	0.55 (0.17,0.94)
Loss of function	2 nd (88)	2 nd (88)	0.04 (-0.29,0.37)
Permanence	3 rd (76)	3 rd (83)	0.32 (-0.05,0.68)
Severity	4 th (63)	4 th (67)	0.04 (-0.29,0.37)
Duration	5 th (36)	5 th (34)	0.18 (-0.25,0.60)
Perception of the patient	6 th (22)	6 th (18)	0.08 (-0.33,0.48)

of altering data completeness levels, test-retest properties of the question design and a possible change in the experts opinion.⁴¹ The observed changes in opinion may have arisen from external events such as media exposure, topics covered in continuing professional development programmes or the event of an ARA within their patient cohort. Hence, the lack of agreement in the performance attributes of the question styles examined in this study cannot be attributed solely to the question styles alone.

One limitation of the study was the ranking questions sought practitioner interpretation of the terminology itself without a supporting contextual framework. For example 'malpractice' was considered to be a more serious than an 'adverse event' (Table 5). It could be argued that many adverse events are more life threatening than some forms of malpractice. However for a practitioner the reporting of negligence or error (malpractice) might seem to have more serious repercussions than an adverse event which has a recognised low degree of preventability.⁴² In another ranking question a clearly ranked preference for two operational definitions of an ARA emerged out of eight possible options provided to the respondents from the literature (Table 4).

In the word categorisation task, respondents were required to make a clinical decision for each descriptor and in doing so, filtered out rare outliers into the unclassifiable domain and incorporated the better known descriptors such as nausea^{7,16} and bruising⁷ into appropriate ARA domains (Table 3). One exception was that of fainting, which despite being one of the most frequently cited adverse symptoms to acupuncture⁷ showed multimodal distribution across all domains and hence failed to achieve membership to any of the domain options. The word categorisation task was unique in its ability to describe the conceptualised domains with respondents showing that they were much more readily able to classify S, S & S which were more extreme (less and more severe) in nature. The descriptors in each adverse reaction domain were not definitive but serve to provide a formalised framework in which to communicate findings in a simple, effective manner for further discussion and policy formation.

The questionnaire includes questions pertaining to types of adverse events but also events of differing seriousness. Whilst the impetus for reporting reviewed in the questionnaire includes the factors of medical intervention, loss of function, severity, duration and patient perception the concept of seriousness may infiltrate all of these factors. The homogeneity of the population sample is seen as a strength in the design thereby reducing the confounding factor of variation in practitioner expertise. The lack of patient input as to what constitutes an adverse reaction is noted however the scope of the study was directed towards practitioner opinion rather than seeking consumer viewpoint or overall consensus agreement on statements relating to ARA.

Conclusion

The levels of practitioner intra-rater agreement in VAS questions and word categorisation task relating to ARA performed most consistently. It is suggested that the styles of questions be carefully considered in future questionnaire development of this nature. In the face of usual clinical practice over time the variation in agreement may be as a result of the style of question however it is acknowledged that the responses may also be confounded by the changing opinions of experts as they acquire new or different knowledge.

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Disclosure Statement

No competing financial interests exist.

Clinical Commentary

This study examines the practitioner's view of a definition of an adverse reaction to acupuncture, the language used to describe an adverse reaction and factors influencing their reporting practice. A questionnaire to measure the practitioner's opinion in a user-friendly manner was developed and the responses of 12 health professionals were examined on its repeated administration, eight months apart. Visual analogue scale type questions, ranking questions and a word categorisation task were used to measure and gauge opinion. Ultimately, agreement between practitioners on what constitutes an adverse reaction to acupuncture will serve to strengthen the quality of reporting systems.

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Case Report: Acupuncture Treatment for Frozen Shoulder Resulting from Traumatic Injury

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ABSTRACT

In our literature review we find the evidence in both conventional and complementary therapies does not reliably inform us of the effectiveness of treatments for frozen shoulder (FS). Physiotherapy, non-steroidal anti-inflammatory drugs, glucocorticosteroid injections, capsular stretching, exercises and surgery demonstrated limited evidence of efficacy. Similarly, studies varied greatly regarding the effectiveness of acupuncture treatment for shoulder injury. In the following case study we discuss acupuncture treatment of a FS resulting from traumatic injury. However in this case, traditional acupuncture intervention markedly improved the patient's symptoms. After eight treatments the pain level was significantly reduced and stabilised. Furthermore, full range of motion was regained. MRI findings two months post-injury and two months post-acupuncture treatment also provide evidence of anatomical improvement during the course of treatment. We suggest future acupuncture research trials would be more clinically relevant, and likely show more clinically significant results, if subjects were treated according to their presenting TCM diagnosis and neuro-anatomical presentations.

KEYWORDS injury, shoulder (including shoulder impingement/tendonitis and frozen/painful shoulder), rotator cuff, acupuncture.

Background

Chronic shoulder pain is a common medical and social problem. While some Western medical treatments appear to be efficacious, there is limited evidence to support most of them. Studies examining acupuncture treatment of shoulder problems also have variable outcomes. Nevertheless, some studies suggest that a combination of distal and local points may be helpful.

According to one survey, 13% of the Norwegian working population have experienced significant work-related neck and shoulder pain during the past two weeks.¹ Furthermore, in Australia shoulder disorders are third only to back and neck complaints, as musculoskeletal reasons for primary care consultation.²

Frozen shoulder (FS) is a common disorder affecting the glenohumeral joint. It involves a non-specific chronic inflammatory reaction of the sub-synovial tissue that causes the associated capsular and synovial thickening.³ FS is often associated with supraspinatus tendon inflammation resulting from constriction between the greater tuberosity of the humerus and the inferior surface of the acromion process.⁴ Various stages of tendon degeneration may then occur, through to ultimate calcification, with pain and restricted movement occurring at any stage. Of significance, FS is uncommon in patients younger than 40 years.^{5,6} A predisposing factor to FS appears to be supraspinatus tendon degeneration, caused by the numerous daily physical stresses placed on the arm and shoulder over many years.⁷

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FS onset is usually gradual and idiopathic. However, it may be acute and associated with a previous history of minor injury to the shoulder joint.^{3,4} The clinical picture of FS is characterised by pain and restricted active and passive Range Of Motion (ROM). Pain, which can be severe, may cause pronounced sleep disturbance. ROM-restriction is usually marked with external rotation, but less prominent with abduction and internal rotation.^{5,7} FS is usually self-limiting but the duration and severity may vary greatly. Most patients recover within two years of onset, although for some, symptoms may last longer.⁸

Objectives

In this paper, we review the evidence available for acupuncture treatment of frozen shoulder resulting from traumatic injury (TI). We then explore the use of acupuncture in a case study and discuss possible reasons for the variable study outcomes that we found in the literature.

Literature review

SEARCH STRATEGY

The research question for the review was 'Does acupuncture treatment of FS successfully reduce pain and increase range of motion?'. Table 1 shows the keywords identified using the PICO format:

TABLE 1 Keywords	
Injury	
Shoulder	Including shoulder impingement/tendonitis and frozen/painful shoulder
Rotator cuff	
Acupuncture	

The search strategy, using Boolean operators, was:

- Injury
- Shoulder OR rotator cuff OR frozen shoulder
- #1 AND #2
- Acupuncture OR acupuncture therapy
- #3 AND #4

MeSH-terms and truncation symbols were utilised where available. Abstracts and keywords were searched. Search results were limited to Systematic Reviews and Randomised Controlled Trials (RCT) because they rate the highest on the National Health and Medical Research Council evidence

ranking scale for interventions.⁹ The following databases were searched for relevant studies: PubMed, Science Direct, Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials, Blackwell Synergy, Medline, CINAHL, ACP Journal Club and DARE.

ANALYSIS OF AVAILABLE EVIDENCE

Numerous options are available for treatment of shoulder injuries. Commonly used treatments include physiotherapy, non-steroidal anti-inflammatory drugs, glucocorticosteroid injections, capsular stretching, exercises and surgery.^{2,3} While some physiotherapy interventions such as exercises, mobilisation and laser treatment may be regarded as efficacious¹⁰⁻¹², there is limited evidence to support most treatments.¹²⁻¹⁵ Similarly, study results vary greatly regarding the effectiveness of acupuncture for shoulder injury (SI). A Cochrane review of acupuncture treatment for shoulder pain analyses nine trials.^{2,16} However, no conclusions are drawn regarding acupuncture efficacy. Consequently, the evidence found does not reliably inform us of the effectiveness of acupuncture treatment for SI.

Poor study designs, including avoidable biases and confounders, weakens their findings.¹⁷ Acupuncture appears to be more effective than ultrasound treatment¹⁸; however, a non-intervention control group was not used. Significant differences between the control and study group size weakens one RCT comparing exercises alone to shoulder exercises combined with leg point acupuncture.¹⁹ Extra shoulder movements during the study group acupuncture sessions introduce further bias. Other acupuncture studies have allowed analgesic medications.^{15,20} Reduced pain due to analgesics may improve ROM in both the control and study groups, distorting the true acupuncture effect. In contrast, another study monitors the study subjects' use of analgesics for symptomatic relief. It finds that acupuncture in conjunction with physiotherapy, shows greater improvement in shoulder function and decreases the use of analgesic medication, in comparison to the group receiving physiotherapy alone.²¹ As with many acupuncture trials, adherence to use of prescribed acupuncture points is likely to reduce both statistical and clinical significance. According to traditional acupuncture, a study has clinical relevance only when point selection duplicates the individualised treatment provided in usual clinical practice. Without this, the true significance of the acupuncture effect is not apparent. Lack of RCT point specificity is a common scientific community criticism of SI-acupuncture trials.¹⁵ Nevertheless, clinically, point selection varies according to patient presentation. Therefore the relevance of point specific studies to clinical practice needs to be considered carefully.

Additionally, contradictory findings create confusion. Ceccherelli et al²² suggest that deep acupuncture needling has a greater and longer lasting analgesic effect than superficial needling. This is thought to be because muscular afferent fibres

more efficiently transmit acupuncture signals than those in the skin. However He et al²³ use electro-stimulation pads placed on the skin. They claim that at three year follow up their 'acupuncture' group has better results than the control group. In another study they demonstrate that needling muscle tissue has no significant difference between the control and study groups after three months.²⁴

The number of treatments given may also influence study results. Long term reduction in pain, improved sleep and increased quality of life are associated with 8–12 acupuncture treatments.^{22,25,26} Insufficient treatment numbers may therefore contribute to poor long-term acupuncture results in other studies.^{15,27,28}

UNDERSTANDING TRADITIONAL CHINESE MEDICINE (TCM)

Understanding TCM diagnosis is fundamental to understanding TCM treatment. In TCM, TI causes Qi and Blood stagnation in the affected *jing-luo* and tissues.^{29,30} This may cause pain. TCM and WM view musculoskeletal tissues differently (see Table 2). TCM also considers whether underlying physiological imbalance impairs healing. In WM biochemical changes associated with chronic pain are known to decrease pain threshold activation, prolonging recovery

time.³⁰ In TCM these physiological changes may involve Organs (*zangfu*) or Qi, Blood, Essence/Jing or Body Fluids.^{30,31}

Both WM and TCM evaluation of FS should thoroughly ascertain the involved structures. After TI prolonged Qi/Blood stagnation may disrupt local microcirculation, preventing adequate nourishment of the surrounding tissues.²⁹ Similarly, in WM chronic pain is associated with activation of the sympathetic nervous system, which causes vasoconstriction.³⁰ When prolonged, this inhibits healing of injured tissues. SI may involve trauma to other anatomical areas. For example the spine, ribs, their surrounding muscles, vasculature and nerves may be traumatised as a result of SI and contribute to the pain presentation.^{32,33} The thoracic spinal cord provides sympathetic innervations to the upper limb.³⁰ Consequently, microcirculation is further impaired if there is also vertebral dysfunction.

Furthermore, in TCM weakening of affected areas may allow external pathogens such as Wind, Heat, Cold or Damp to invade.³⁴ Pathogenic invasion may complicate or reduce the effectiveness of many treatments. Differentiation of pain quality and character is an important part of diagnosing which pathogens are involved (see Table 3).

TABLE 2 WM/TCM tissue correlations³⁰

TCM tissue	WM correlation	Involved Organs	Tissue nourished by
Joints (formed by sinews and bones)	Joints and all their associated structures/tissues	Liver, Spleen, Kidney	Liver-Blood, Fluid-Ye, Jing
Sinews	Fascia, tendons, ligaments, subcutaneous tissue, some parts of muscle, joint capsules, cartilage, some blood vessels	Liver	Liver-Blood
Muscle/Flesh	Muscle	Spleen/Stomach, Liver, Kidney	Spleen Qi, Liver-Blood
Bones	Muscle	Kidney, Spleen	Jing, Fluid-Ye, Nutritive Qi

TABLE 3 TCM pain/pathogen differentiation^{29,30,35}

Pathogenic factors	Pain presentation
Qi stagnation	Generalised/distending/pulsing; often affected by emotions/stress; better with pressure, e.g. massage
Blood stagnation	Sharp/fixed/local: often worse at night; worse with pressure
Wind	Moving/changeable; often sudden onset
Cold	Contracting/spastic/constant/severe; worse with cold; relieved by warmth
Heat	Hot/swollen; aggravated by heat; relieved by cold
Damp	Swelling/numbness/heaviness; affected by weather changes

Consequently, TCM treatment of any SI should vary according to diagnosis. Treatment may include acupuncture, moxibustion, Chinese herbal medicines/liniments, exercises and dietary therapy.^{29,35}

Appropriate treatment of any injury is important. Chronic pain is associated with maladaptive responses that create secondary pain and musculoskeletal complications.³⁰ There is little scientific evidence supporting any treatment for SI. Therefore, rigorous research to more clearly define appropriate treatments for SI is essential. TCM theory provides another approach to viewing traumatic injury. This case history explores the use of TCM and neuroanatomical acupuncture for the treatment of an unresolved SI that has caused secondary FS.

Case Report

This patient is a 52-year-old female teacher diagnosed with left side FS as result of traumatic injury. A summary of the details of her presentation is shown in Table 4.

MRI findings two months post-injury show: bone marrow oedema in the major tubercle which is possibly due to an old tear-off fracture; substantial scar tissue in the subcoracoid bursa; joint capsule and coracoacromial ligament thickening. The patient's pulse was deep and fine; her tongue small, short, pale and swollen.

TCM DIAGNOSIS

TI is responsible for the initial Qi-and-Blood-stasis in the *jing-luo* of the shoulder, neck and upper thoracic area. Trauma to the thoracic/cervical spine, ribs and surrounding muscles as a result of the initial injury is likely to be contributing to the patient's presentation due to their anatomical proximity and the neurological associations discussed previously. Cold invasion is indicated by the cold sensation in the shoulder joint, intense nature of the pain and the 'freezing' of the ROM.³⁵ Furthermore, underlying Kidney yang deficiency, as indicated by the tongue and pulse^{31,37}, has probably prevented resolution of this condition.

History and presentation	Affected activities of daily living	ROM assessment
Onset: skiing fall impact injury to anterior shoulder one year earlier	Unable to walk with normal arm swing – arm uncomfortable unless in a sling	Pain and stiffness with passive and active movement. Normal muscle strength until ROM reaches pain level.
Gradual onset of pain and stiffness	Unable to do any of her usual aerobic training	Flexion 90°
Cold sensation in the shoulder joint	Unable to ride a bicycle	Extension 10°
Intense pain in the rhomboid muscle area at the level of T1 to T5		Abduction 20°
Previous treatment: 1 x cortisone injection and physiotherapy		Internal rotation 5°
Palpation elicits tenderness over the anterior glenohumeral joint, upper trapezius, rhomboids and supraspinatus		External rotation 5°

Western medicine	TCM
Secondary FS due to trauma ³⁶	TI causing Qi/Blood stagnation in the <i>jing-luo</i> of the shoulder, neck and thoracic spine, ribs and muscles
	Invasion of Cold
	Kidney Yang deficiency

Points used	Method	Action
BL 18 <i>Ganshu</i>	Reduction	Reduces rigidity/pain of neck and spine ³⁸
Rhomboid trigger points ³³	Low frequency electro-acupuncture	Increase local circulation, strengthen regional tendons/ligaments, and stimulate muscle ³⁰

TREATMENT PLAN AND TREATMENT DETAILS

Using an integrative approach, applying knowledge of both TCM as well as neuroanatomy, the aim of treatment was to reduce pain and increase ROM. Due to scheduling difficulties, acupuncture treatment was planned for only once a week for 10 weeks, with the intention to re-evaluate progress at that time.

The TCM treatment principle used was: circulate Qi/Blood in the *jing-luo* of the shoulder, neck and thoracic area; disperse pathogenic Cold in *jing-luo* of shoulder; and tonify Kidney Yang.

ACUPUNCTURE

Deep needling of the points shown in Table 6 was favoured, as it appears to have a greater and longer lasting analgesic effect than superficial needling.²² Cloud & Dragon sterile acupuncture needles were used. The size was 0.30x0.25mm and 0.30x0.40mm. The depth and angle of needling were performed according to the standard described.³⁸ Qi was obtained at the start and end of the treatment. For the electro-acupuncture an IC-1107+ ITO CO., LTD machine was used with low frequency at 2.5–5.5 Hz.

Each treatment session started with needling of ST 38 *Tiaokou*. Qi was obtained with deep needling. The needle was lifted and thrust while the patient moved her arm. Thereafter, LU7 *Lieque* was needled on the right side and KI6 *Zhaohai* on the left. Followed by SP 4 *Gongsun* on the right side and PC 6 *Neiguan* on the left. These four needles were removed in reverse order. Points on the left arm and the rest of the body were then needled. The needles were removed after 20 minutes. The rhomboid trigger points were then needled and electro-acupuncture applied for 10 minutes. Each time the patient came to treatment the same procedure was followed. The patient found the treatment painful, especially when

ST 38 *Tiaokou* was needled and she had to move her arm in painful directions. Therefore we had to perform this in short intervals of half a minute each time.

This patient experienced considerable improvement with acupuncture treatment. A significant increase in ROM and reduction in pain was noticeable after each treatment. The upper trapezius tenderness decreased after the first treatment. After sessions two and three the intense thoracic area pain decreased. The generalised pain decreased over the following weeks. In week seven, pain and stiffness intensified after one week of heavy cross-country skiing, but then settled significantly after treatment. After eight treatments the pain level was significantly reduced and stabilised, and full ROM was regained. Pain improvement was measured using a visual analogue scale. Pain and ROM change over the course of treatment is visualised in the graph below (see Figure 1).

Rehabilitation then continued to focus on shoulder strengthening exercises⁴⁰ and return to normal ADL. The patient was told to perform two stretching exercises daily on her own. One of them was to crawl her painful arm up a wall using her fingers. She was to start at hip height and crawl up as far she managed. The other exercise was to fold a dishtowel and use it as an extension between her arms across her back. She was to hold her painful arm above her head, bend the elbow and let the lower part of the arm fall down towards her back. The other arm was to get hold of the other end of the dishtowel and move it back and forth.

Comparison of the original MRI-findings to those taken two months post-treatment (Figure 2) showed significant improvement in the appearance of the joint capsule and the coraco-acromial ligament. An orthopaedic specialist examined the images and confirmed that these were clinically significant structural changes associated with resolution of frozen shoulder.

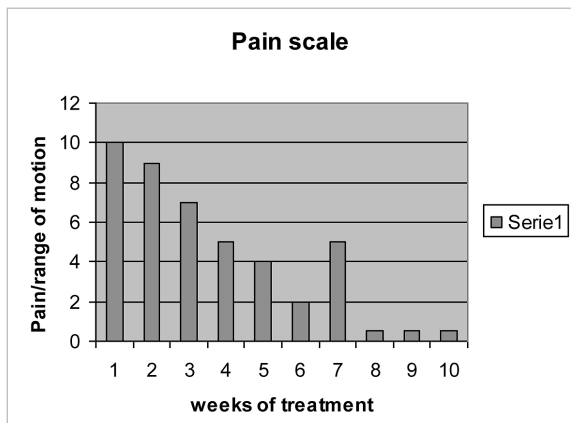


FIGURE 1 Visual representation of change in pain and ROM over the course of treatment

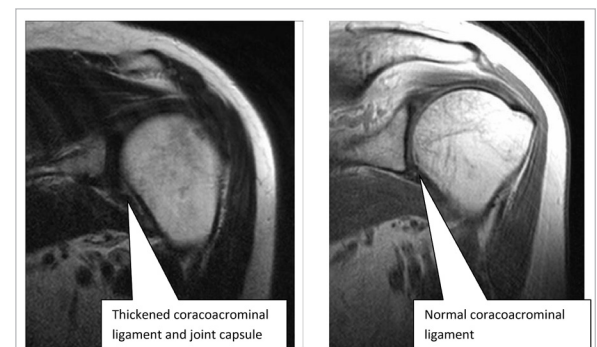


FIGURE 2 MRI pictures demonstrating difference between before and after acupuncture. Coronal (pd+t2)

Conclusion

This case study discussed treatment of a chronic SI⁴¹ leading to a diagnosis of FS. One challenge in study evaluation is the great variations in diagnosis of SI.⁴² In this case, neuro-anatomical consideration and TCM evaluation enabled a more in depth analysis and treatment than indicated by WM diagnosis. This may be particularly significant for problems arising from chronic SI. However, the acupuncture studies evaluated for this paper, suggest that TCM practitioners do not consider wider neuro-anatomical involvement. It is possible that integrating neuro-anatomical concepts with TCM theory may improve future study outcomes.

Future studies also need to explore needle depth and treatment number. In this case history the pain levels decreased significantly in incremental steps over the first eight treatments and then stabilised with exercise rehabilitation. This aligns with the studies suggesting that 8–12 treatments are required for long-term pain relief. Deep needling was favoured for this patient's treatment. However, further studies are required to clarify the significance of needle depth. As discussed in the evidence analysis, future studies also need to adequately identify sources of bias and include a control group.

Of particular significance, the MRI results associated with this case history provide objective findings that justify a call for further investigation of acupuncture treatment for frozen shoulder, based on both TCM and neuro-anatomical analysis.

Clinical Commentary

Diagnostic imaging may not always be relevant for shoulder injuries. If an abnormality is found on digital images, the question arises whether it is relevant or not. In other words, does the imaged finding account for the clinical findings? Regardless of diagnostic imaging, a competent acupuncture practitioner considers what neuro-anatomical areas may have been compromised as a result of TI. Treatment is formulated based on this information as well as their TCM diagnosis. In order to more accurately reflect the effectiveness of acupuncture treatment of SI, and indeed in order to be clinically relevant, trials need to evaluate the effectiveness of treatment based on these individual presentations.

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Australian News: National Registration

EDITOR'S NOTE: With the imminent introduction of national registration, the AJACM Editorial Board thought it timely to publish a selection of views about the impact of national registration on Chinese medicine practitioners and the profession. We sought views from the Chinese Medicine Board of Australia (CMBA), the Australian Acupuncture and Chinese Medicine Association Ltd (AACMA), and three practitioners of Chinese medicine: a veteran practitioner, a relatively new member of the profession, and an overseas-trained practitioner.

Impact of national registration on Chinese medicine practitioners

By **Debra Gillick**

Executive Officer for the Chinese Medicine Board of Australia

Historically, the regulation of health professionals was undertaken by states and territories, without a consistent approach across Australia. From 1 July 2010, however, health regulation became a national function in Australia. Implementing the National Registration and Accreditation Scheme (NRAS) has meant significant upheaval and no part of Australia's health system has been left untouched. This new National Scheme marks the first time one country has regulated the practice of 10 health professions – made up of more than 530,000 health practitioners - using a single National Law, to protect the public and facilitate access to health services.

While many features of the National Scheme are new and different, the core focus of practitioner regulation on patient and public safety remains unchanged.

A recent paper has now been published as Online Early in Australian Health Review by Vivian Lin (former President) and Debra Gillick (former Registrar) of the Chinese Medicine Registration Board of Victoria (CMRBV). The Victorian experience of registration and complaints handling suggested that the decision to regulate Chinese medicine was appropriate, that is, that minimum standards of qualification, competence and conduct in healthcare were needed and have had to be enforced, in the interest of protecting public health and safety, through non-registration of some existing practitioners as well as disciplinary measures against some of the registered practitioners. The experience of CMRBV gives credence to the initial policy research and the subsequent decision to adopt statutory registration. As such, the experience provides an endorsement of the decision by Australian Health Ministers in 2009 to move to national registration, and points to the usefulness of the AHMAC criteria as the basis for deciding which professions are riskier and should be registered.

With registration in place only in Victoria, the limitation of federalism means that consumers of Chinese medicine elsewhere in Australia have not been afforded the same level of protection. The data from the CMRBV experience point to persistent problems in other jurisdictions, and therefore the desirability of a national approach. The challenges are expected to be similar, such as cultural differences, English language proficiency, fragmented representation of profession, majority in independent practice, grandparenting for existing practitioners, limits of 'title protection' as legislative mechanism, overseas qualifications and access to scheduled herbs.

From 1 July 2012, four more health professions, including Chinese medicine, join the scheme and Chinese medicine practitioners must then be registered under the NRAS.

The Australian Health Workforce Ministerial Council (AHWMC) appointed the nine inaugural members to the first Chinese Medicine Board of Australia under the Health Practitioner Regulation National Law Act, as in force in each State and Territory, from 1 July 2011. In making the appointments, Ministers took into account the feedback they received from submissions on the size and composition of the boards and decided that the Chinese medicine board would have nine members, comprising six practitioner members and three community members. The National Board has since begun important preparatory work to enable Chinese medicine practitioners to join the national scheme in July 2012.

The primary objective of the national scheme is the same as that for all the previous state-based systems – public safety. The national scheme has additional benefits though in that it will also enable practitioners to move around the country easily, reduce red tape, provide greater safeguards for the public and promote a more flexible, responsive and sustainable health workforce.

The role of the Chinese Medicine Board of Australia, as for the 13 other Boards, is broad policy direction. It is required to set standards which apply to all registered practitioners for the purpose of protection of the public.

This is different to the role of, say, professional associations which importantly represent the interests of the profession.

The Australian Health Practitioner Regulation Agency (AHPRA) has a different role too – its role is to provide administrative and operational support to the national boards and is tasked with ensuring the efficient and effective operation of NRAS. The AHPRA website is at <<http://www.ahpra.gov.au/>>.

Educational institutions fulfil another important role by delivering entry-level practitioner training and will seek Board approval so that their graduates are eligible for registration.

The Board members are called upon to contribute to careful consideration and decision-making on all matters brought before the Board. NRAS aims to drive national consistency of standards, processes and decision-making.

The transition to the National Scheme entails a number of challenges for the Board and a initial focus includes familiarising itself with the provisions of the National Law and ensuring that the Board's decision-making reflects the objectives and guiding principles of that legislation. A clear requirement to declare and properly deal with conflicts of interest is spelled out in the National Law (Schedule 4, Clause 8) and the Board adheres carefully to these requirements.

To support registrants and other stakeholders in the transition to the National Scheme, the Board has made a number of presentations to stakeholders and will continue to do this as final decisions are made.

The National Boards for the 2012 professions (the four new professions entering the scheme from 1 July 2012) have each developed their proposed mandatory registration standards drawing on the AHWMC-approved equivalents that were implemented by the National Boards for the 10 professions that are currently regulated under NRAS. The Board is expected to work towards national consistency in the regulation of Chinese medicine practitioners. The scheme aims for consistency in the professional standards that registered practitioners must meet and consistency in the approach to managing notifications and responding to practitioner and community queries across all of our state and territories offices. This will advance the shared goal of implementing best practice regulation of Australian health practitioners. National practitioner data across Australia will also be useful for workforce policy and planning.

The Board is making significant progress. In September 2011 the National Board released a consultation paper on proposed registration standards for:

- Continuing professional development

- Criminal history
- English language skills
- Professional indemnity insurance
- Recency of practice
- Grandparenting.

The consultation generated prolific and polarised feedback. Following this the Board was required to carefully consider all feedback and prepare final drafts to be submitted to the Ministerial Council (all Health Ministers in Australia) for final approval.

In November 2011 it will release consultation documents on:

- Advertising Guidelines
- Code of Conduct
- Guidelines for mandatory notifications
- Patient records
- Composition of Accreditation Committee

The closing date is expected to be 9 January 2012. Please keep an eye on the Chinese Medicine Board website <<http://www.chinesemedicineboard.gov.au/>>.

By late February 2012 the Board plans to have the registration applications forms ready and it strongly encourages practitioners to submit applications by the end of March 2012 to enable it to complete the huge task of assessing thousands of applications for registration under the special grandparenting arrangements.

Special grandparenting provisions for registration are set out under Section 303 of the National Law. An individual may be eligible to apply for registration until 1 July 2015 even if the person does not hold an approved qualification for registration, but does have other relevant qualifications, training, or experience practising the profession. The intent is to ensure that practitioners who are legitimately practising the profession (particularly in those jurisdictions that did not require registration) are not unjustly disadvantaged because they are not automatically transitioned to the national registration scheme as a state or territory registrant or because they do not hold an approved qualification.

It is important to note that all of the other eligibility for registration requirements set out in section 52 of the National Law also apply to people seeking registration using the grandparenting provisions.

In conclusion, the Chinese Medicine Board of Australia is in its early stage of operation to fulfil its role in protecting public health and safety through standard setting and registering qualified practitioners. It looks forward to working with the profession and other stakeholders to achieve these goals collaboratively.

What national registration means for a professional association – the AACMA view

By **Judy James¹** and **Ian Murray²**

1. Chief Executive Officer of AACMA
2. President of AACMA

Undoubtedly, the commencement of national registration in 2012 represents a watershed in the development of the profession in Australia. This has been achieved through the hard work and dedication of many individuals and organisations over the past three decades, although it only came to fruition in recent years.

In our view, the key positives for national registration clearly outweigh the negatives. National registration will, for the first time, enable minimum national standards of Chinese medicine education to be legally enforceable. This creates the basis for a minimum national standard for entry in the profession and means that, in the future, unqualified practitioners will be prevented from commencing acupuncture and/or Chinese herbal medicine practise in Australia.

Public safety is enhanced through enforceable practice standards and guidelines. Through independent complaints processes, it is expected that unethical and unsafe practitioners would be progressively weeded out of the profession or placed in programs to improve their performance to an acceptable level. This can only benefit the profession through increased public confidence in a profession that adheres to high standards of ethics and practice.

Other benefits to accrue from national registration include access to funding programs, such as the Nursing and Allied Health Scholarship and Support Scheme, and better cooperation and communication with other registered health professions. The Enhanced Primary Care program is another area targeted for the post-registration environment.

However, national registration has not been without its critics and there is a level of concern about the possible negative impact that national registration may have on the profession in the long term.

These concerns include potential narrowing of the focus of practice, loss of diversity of practice, reduced innovation, standardisation as opposed to individualisation, and the financial cost of registration. While these concerns may never fully actualise, AACMA will be carefully monitoring developments to ensure that we retain the core values and practices that have brought us to this point. Chinese medicine

is, after all, the internationalised health profession and practice with the longest uninterrupted history of development.

By far the issues of most immediate interest to existing practitioners are the standards that will apply in the first three years of the scheme (that is, up until 30 June 2015). The transitional (or grandparenting) standards had not been approved by Ministerial Council at the time of writing and therefore were unavailable for comment in this article. AACMA had lodged a fairly detailed submission that heavily criticised aspects of the proposed grandparenting standard. Similarly, the draft mandatory registration standards (continuing professional development, criminal history, English language, professional indemnity insurance, and recency of practice) received a mixed response.

The key issues raised in the AACMA submission to the CMBA on the draft registration standards were:

- The proposed criteria for proving competence in Chinese herbal medicine could result in many Chinese medicine practitioners who initially qualified in acupuncture and later added Chinese herbal medicine into their practices being driven out of Chinese herbal medicine practice – whereas an unregistered practitioner (such as a naturopath or Western herbalist) would be able to prescribe manufactured Chinese herbal medicine products with apparent impunity;
- A likely impact will be that distributors of manufactured Chinese herbal products listed with the Therapeutic Goods Administration may find it necessary to relabel product to remove all reference to Chinese herbal medicine and traditional formula names – in order to supply product that can be used by practitioners not registered in the Division of Chinese Herbal Medicine;
- The criteria for proving competence in the practice of acupuncture and/or Chinese herbal medicine (applies to applicants who do not hold a qualification recognised for grandparenting purposes) on their surface do not cater for qualified practitioners of Japanese acupuncture, Japanese Kampo medicine and Korean oriental medicine, all of which have a legitimate expectation of being registered with the CMBA.

Of course, these issues may have been addressed in the revised standards being considered by Health Ministers – so watch this space for updates.

The other immediate issue of concern to acupuncturists is the proposed Acupuncture Accreditation Standard prepared by the Australian Physiotherapy Council on behalf of a number

of the existing national boards. Under the national law, the other (non-Chinese medicine) boards may set a standard for endorsement for their registered practitioners to use the title 'acupuncturist'. As the primary purpose of registration is to protect the public, it would be counter to this principle if the standards were not comparable to the standards set or being set by the Chinese Medicine Board of Australia. Otherwise, how are consumers to know that Practitioner A is a qualified CMBA-registered acupuncturist and that Practitioner B has done a short course in acupuncture and obtained 'endorsement' by another board to use the title 'acupuncturist'?

The AACMA arguments on these issues are outlined in detail in the AACMA submissions to the Chinese Medicine Board of Australia and the Australian Physiotherapy Council which can be downloaded from the following sites: <www.acupuncture.org.au>, <<http://www.chinesemedicineboard.gov.au/News/Past-Consultations.aspx>> and <<http://www.physiocouncil.com.au/consultations/consultation-paper-proposed-acupuncture-accreditation-standard/consultation-paper-proposed-acupuncture-accreditation-standard>>.

Finally, it is important that practitioners understand the difference between the CMBA and the AACMA. The CMBA is/will be the national regulator whose primary purpose is to protect the public. The AACMA is the peak national professional body whose purpose is to protect, develop, represent and promote the profession and to provide services to its members. The profession will continue to need a strong and viable national association to provide leadership and representation, to lobby for appropriate standards of education and practice, and to do what is necessary to protect its interests.

What national registration means to me – a veteran practitioner

By Christine Berle

In private practice, Sydney

I graduated in 1976 from Acupuncture Colleges (Australia) and actively helped establish the acupuncture profession in Australia. I have an established acupuncture practice at Guildford, NSW and have practised acupuncture in the area for 35 years.

What does national registration mean to me? During 2011 I was an expert witness for the Office of the Director of Public Prosecutions (DPP) in a trial where an untrained acupuncturist allegedly committed two counts of sexual intercourse without consent and assault with act of indecency to a patient. During the months prior to the trial I reviewed the police case notes and prepared my expert report. As a result of the trial the defendant was convicted and is now serving four years incarceration. This is but one example of why we

need registration – to protect the public against unscrupulous and inadequately trained practitioners. Another criminal case involving a Chinese medicine practitioner convicted of sexual assault was reported in the Sydney media this week.

When patients walk through our clinic doors for treatment they come with respect and trust – unfortunately sometimes these people are in need of protection.

Over the past few months there has been a lot of documentation produced about national registration. I have been confused but thought I had worked it all out and submitted an angry response to the Chinese Medicine Board of Australia (CMBA)'s Consultation Paper. I mistakenly thought the proposed grandparenting standard and addendum advocated that an oldie like me would not be eligible for registration because my initial training did not have a minimum of 390 hours of clinical training. I thought that if the proposed CMBA standards were accepted by the Ministers for Health I would not be eligible for registration.

When asked to write this article I jumped at the chance, being alarmed and worried at the thought of being excluded. After all, I have been on ethics committees for probably nearly 20 years, have reviewed cases from 'the practitioner's dog bit the patient' to a practitioner using a 10 cm needle on GB21 causing a pneumothorax, to which the practitioner said 'oh the patient must have bumped the needle in'. Please do not think that there are only the odd ethical issues, there are many. Because of our name, the Acupuncture Ethics and Standards Organisation (AESO*), we receive many complaints from the public; a few about members, but many that are not. I was also a member of the AESO Executive which wrote the first submission in support of registration in 1983.

When I started to write this article I realised that I was not entirely clear about the whole process. If the Ministers approved a standard requiring everyone to have completed 390 hours of undergraduate clinical training – would it be too late to appeal? Did we need a campaign, did we need to contact our local members, the Greens, the Democrats, the Senate, the media ... everyone?

With a recent background in science (Master of Science, by Research) my desire for facts, truth and accuracy won over emotion and I made a few phone calls to ensure that anything I committed to print was accurate, trustworthy and reliable. I realise that many of my veteran colleagues are like me – a little nervous, anxious and fearful and I did not want to add to this unnecessarily.

I now understand that the national law and the proposed standard provides for a clear pathway for legitimate practitioners

to gain registration. If the final standard does not render our qualifications to be adequate (a fact we do not know yet as the CMBA may have modified its proposed standard based on the consultation feedback, for submission to the Ministers) experienced practitioners like myself can apply under the Health Practitioner Regulation National Law Act 2009, section 303(1)(c).

This section says:

Qualifications for general registration in relevant profession
(1) *For the purposes of section 52(1)(a), an individual who applies for registration in a relevant health profession before 1 July 2015 is qualified for general registration in the profession if the individual—*
(c) *has practised the profession at any time between 1 July 2002 and 30 June 2012 for a consecutive period of 5 years or for any periods which together amount to 5 years.*

My understanding is that those applying for registration through grandparenting will have to show evidence of practice as required by this section, and the CMBA is also requiring evidence of competency (per s.52(1)(b)(ii) of the National Law) – an addition I fully support.

According to the Consultation Paper, evidence of practice can be readily shown according to the list of items in Schedule 1 of the proposed standard (for example, health fund rebate status, professional indemnity insurance, membership of association, etc.) and evidence of competency, according to Schedule 2 it is proposed to be shown through various criteria including a statement from a Chinese medicine professional association which states that the practitioner's competency has been assessed against criteria acceptable to the CMBA (but this standard has not been set at this stage).

I believe the CMBA has an enormous job within a very restrictive timeframe. I believe traditional Chinese medicine practitioners are well represented on the CMBA and I wish them well in their onerous task.

I hope this article demystifies and resolves some of the concerns held by my fellow veteran practitioners. I personally recommend to my colleagues that they:

- read all consultation (and final) documents very carefully;
- attend any information sessions offered by the CMBA or our association;
- ask questions and make sure you have a full and accurate understanding of what is being proposed;
- engage actively and professionally with the consultations we are invited to participate in.

[* Editor: AESO merged with AACMA in 1995.]

What national registration means to me – as a recent-to-clinic practitioner

By Peter Kington

In private practice, Brisbane

Each day I get in my car, drive to my clinic, open the door, answer the phone and treat people. My daily focus is always on the health outcomes of my clients and this includes offering my clients a clean treatment space with safe practice.

I imagine, when the national registration scheme comes into effect on 1 July 2012, that this routine will not change. It is most unlikely my clients will have the remotest idea that, overnight, I have gone from being a practitioner working in an unregulated health field, to suddenly being 'regulated' by virtue of my inclusion on the national register of acupuncturists.

What might be different are the services I offer in my practice. I am a four-year trained Chinese medicine practitioner. My major was acupuncture and I have a minor study in herbal medicine. My practice has always included acupuncture and where appropriate, the prescription of patent herbal pills, capsules or granules. Depending on my ability to satisfy the standard set in the draft grandparenting guidelines, I may not be able to continue my Chinese herbal medicine practice post 1 July 2012. I believe the Board's definition of a Chinese medicine herbalist is exclusive and makes it difficult for well-trained people like me to be fully grandparented into the new scheme.

Our profession is being included in the national registration scheme because we are considered dangerous enough in our scope of practice to warrant inclusion. Ironically, the public may not necessarily see it this way. Often their perception is that inclusion in such a scheme amounts to an endorsement; that somehow our profession is more valid due to its inclusion in the scheme. It makes me wonder whether, in time, being party to the national registration scheme will lift the esteem to which the public and others, view our profession? Perhaps this will be the first step towards inclusion in the myriad of government-funded health schemes.

With national registration I will be able to take my skills to any part of the country and practice. For the public, it means that when they seek treatment from an acupuncturist or Chinese medicine herbalist, they will be treated by someone whose qualification to call themselves an acupuncturist or herbalist has been tested against a national standard. Unfortunately, the thorny issue of 'dry needling' will not be resolved as the registration scheme currently stands, but as a profession we

have it in us to continue the fight against this, in the name of public safety and professional integrity.

Overall, national registration is a very good thing and, being the optimist I am, I am confident that once the process of registration is complete and we all adjust to the new way of doing business, the opportunities for our profession will far outweigh the threats we face. Right now, it is the uncertainty about my practice's future and the very real financial impact that will have on me, which is occupying my thoughts. Only time will tell.

What national registration means to me – as an overseas-trained practitioner

By Lily Feng

In private practice, Adelaide

The introduction of the national registration system for Chinese medicine in July 2012 means official recognition of traditional Chinese medicine practice in Australia. I believe it is the outcome of several decades of practitioners and professional bodies' persistent advocacy. I am happy to be part of this historical change for the profession.

As a TCM practitioner who was educated, trained and gained clinical experience in China and then coming to practise in Australia, I have witnessed many changes including the growth of the profession and especially the increasing acceptance and popularity from the public. This has encouraged me to continuously expand and improve the services I provide.

My TCM educational background from China has helped me to form the vision that TCM is not only an artistic endeavour to help treat illnesses, but also an effective approach to help people learn health prevention which has been a guiding principle for my clinical work. I hope that the national registration system will benefit the profession by providing a better relationship between the public and Chinese medicine practitioners.

It has been an advantage for me to understand Chinese language. This allowed me to act as a bridge between fellow practitioners in both Australia and China in terms of exchange of professional information and much more. During the years I have lived in Australia, I have come to understand both medical systems. I believe there is something I can contribute to the profession within the national registration system. I am looking forward to a new era with practitioners from different cultural backgrounds working together towards the same goal.

Book Review

General Practice; The Integrative Approach

By Kerryn Phelps and Craig Hassed
Elsevier, 2010
ISBN 9780729538046

A lack of trust and understanding are often the two main reasons that prevent doctors and complementary and alternative medicine (CAM) practitioners working collaboratively. CAM practitioners often feel threatened when they think doctors are invading their turf and doctors are often reluctant to work with practitioners of a therapy they do not understand. Integrative healthcare requires a collaborative approach with respect and trust between all parties that can only be achieved through education. *General Practice; The Integrative Approach* attempts to set the foundation to break down the 'us and them' mentality which still exists between many doctors and practitioners of CAM.

General Practice; The Integrative Approach is a general practice textbook written to guide general practitioners (GPs) through the integrative medicine approach. The book uses the definition of integrative medicine as developed and adopted by the Consortium of Academic Health Centers for Integrative Medicine; 'Integrative medicine is the practice of medicine that reaffirms the importance of the relationship between practitioner and patient, focuses on the whole person, is informed by evidence, and makes use of all appropriate therapeutic approaches, healthcare professionals and disciplines to achieve optimal health and healing'. It includes a large amount of information from the most basic introduction to the concept of integrative medicine and the principles

of general practice through to detailed chapters on diagnosis, investigation and management of many common conditions seen in general practice.

The authors are two very well known general practitioners. Professor Phelps is Adjunct Professor at Sydney University in the Faculty of Medicine. She is also Conjoint Professor at the University of NSW in the School of Public Health and Community Medicine. She is a past Federal President of the Australian Medical Association, and is currently President of the Australasian Integrative Medical Association (AIMA). Dr Craig Hassed is a general practitioner and senior lecturer in the Monash University Department of General Practice and a founding board member of the AIMA.

It is a full colour text and contains a table of contents, list of contributors, list of reviewers, a Foreword, a Preface, Acknowledgements, an Appendix, a list of Picture Credits and an Index. The book is divided into seven Parts containing 62 Chapters, Part 1 Principles of Integrative Medicine, Part 2 Principles of General Practice, Part 3 Systems, Part 4 Men's Health, Part 5 Women's health, Part 6 Lifecycle Health and Part 7 Social Conditions.

As you would expect of a book with the title *General Practice; The Integrative Approach* it dedicates a significant portion of its text to the principles of integrative medicine. The first 124 pages contain 14 chapters covering

subjects that include the basic concepts in integrative medicine, principles of herbal medicine, the essence of good health, behaviour change strategies, clinical nutrition and spirituality.

Some reviewers have been critical about the practicalities of using this book as a clinical resource because of its size. It weighs in at more than 3 kg and is certainly not a textbook that you would carry around for quick reference. I would suggest that this criticism is a little unfair because purchase of the book entitles you access to an electronic copy via Student Consult <<http://www.studentconsult.com>>. This means that with an electronic tablet or smart phone with an internet connection the entire book can be available to you in the palm of your hand.

The disappointing part of an otherwise satisfactory textbook are the pictures on page 552 labelled Figure 38.5 and 38.6. Bearing no apparent relation to the text, the pictures of electro-acupuncture and laser acupuncture do not make much sense at all and do nothing to depict how these therapies are commonly practised. This is most likely due to the teething problems associated with a first edition.

General Practice; The Integrative Approach is recognition that a general practitioner needs to understand the art of medicine and not just the hard science of the reductionist model. It challenges the reader to practise a more comprehensive holistic medicine which considers not just the physical but also social,

emotional and spiritual needs of each patient. It encourages referral between doctors and practitioners of CAM to achieve optimal health outcomes for patients. Although some GPs might be tempted to use this book as a 'CAM how to guide' it does not provide enough information to perform CAM safely and effectively without appropriate training.

Regardless of whether you practise allopathic medicine or CAM, most of us are, in reality, working in a form of general practice and seeing patients from many different walks of life presenting with a wide variety of conditions. This book provides detailed information on a range of conditions commonly seen in general practice and also provides

us with a chance to reflect on how we interact with our patients.

If you want to understand the direction that integrative medicine is taking then you need to get involved and *General Practice; The Integrative Approach* might be a good place to start.

Reviewed by Ian Murray

Research Snapshots

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THE EFFICACY AND SAFETY OF A CHINESE HERBAL PRODUCT (XIAO-FENG-SAN) FOR THE TREATMENT OF REFRACTORY ATOPIC DERMATITIS: A RANDOMISED, DOUBLE-BLIND, PLACEBO-CONTROLLED TRIAL

OBJECTIVE: To evaluate the efficacy and safety of a Chinese herbal formula, Xiao-Feng-San (XFS), in the treatment of atopic dermatitis (AD) using a randomised, double-blind, placebo-controlled trial.

METHODS: The trial consisted of an eight-week treatment period and a four-week follow-up period. A total of 71 subjects with refractory, extensive and non-exudative AD were enrolled and randomised at a ratio of 2:1, to receive XFS ($n = 47$) or placebo ($n = 24$) in powder form. The XFS herbal formula consisted of the herbs *Saposhnikovia divaricata* (*Fang Feng*), *Schizonepeta tenuifolia* (*Jing Jie*), *Angelica sinensis* (*Dang Gui*), *Rehmannia glutinosa* (*Sheng Di Huang*), *Saphora flavescens* (*Ku Shen*), *Atractylodes lancae* (*Cang Zhu*), *Cryptotympana pustulata* (*Chan Tu*), *Linum usitatissimum* (*Hu Ma*), *Anemarrhena asphodeloides* (*Zhi Mu*), *Gypsum fibrosum* (*Shi Gao*), *Clematis armandii* (*Chuan Mu Tong*), *Glycyrrhiza uralensis* (*Gan Cao*) and *Articum lappa* (*Niu Bang*); while the placebo consisted of caramel, lactose and starch. The powders were to be mixed in 120 ml of warm water, and taken three times a day during the treatment period. The

dosages varied according to age group of subjects: 3 g per dose for those aged 3–7 years; 6 g per dose for those aged 8–12; and 9 g per dose for those above 13 years. Subjects were asked to maintain current diet and dermatological treatments during the trial. Assessments were carried out at the beginning of the trial and in weeks four, eight, and 12. The assessments include total lesion score, erythema score, surface damage score, pruritus score and sleep score; blood chemistry/laboratory examinations were done as part of the safety assessment. Subjects were required to keep a daily diary to record treatment compliance and occurrence of side-effects.

RESULTS: Sixty-nine subjects were included in the intention-to-treat analysis. Fifty-six subjects completed the treatment and follow-up period. At the end of the treatment period (week eight), there was a significantly greater improvement in total lesion score, erythema score, surface damage score, pruritus score and sleep score in the XFS group compared to the placebo group. At week 12, after the follow-up period, the XFS group maintained a significant difference in all outcome measures, except in erythema score. There was one case of transient elevation of aminotransferase, which was resolved within eight weeks from the time of cessation of the intervention; and two cases of gastrointestinal upsets were reported.

CONCLUSION: It was concluded that XFS can be an alternative form of therapy for severe, refractory, extensive and non-exudative AD.

COMMENTS: According to the age groups of 3–7 years, 8–12 years and over 13 years, subjects were asked to take 3 g, 6 g, and 9 g of the intervention at each dosing point respectively. However, this will result in a daily dose of 9 g, 18 g and 27 g, which is much higher than the recommended 6–12 g and may be the reason such good results were achieved in this trial. Furthermore, subjects were asked to maintain their dermatological treatments. They applied topical corticosteroids with the same frequency and strength during the trial as they did prior to the study. In previous studies, participants were allowed to reduce the usage of concurrent therapies as their condition improved during the treatment period. The maintenance in concurrent treatment dosage might suggest that XFS is better as an adjunct treatment for AD rather than an alternative treatment. Also, the placebo used in this trial was made of caramel, lactose and starch. In Chinese medicine, sweet foods generate damp and heat which can worsen AD. The presence of sweet substances such as caramel and lactose in the placebo might have prevented a better improvement in the endpoints of the placebo group.

Cheng HM, Chiang LC, Jan YM, Chen GW, & Li TC. The efficacy and safety of a Chinese herbal product (Xiao-Feng-San) for the treatment of refractory atopic dermatitis: A randomised, double-blind, placebo-controlled trial. International Archives of Allergy and Immunology 2010; 155(2):141–148. DOI: 10.1159/000318861

Hsiewe Ying (Amy) Tan

THE BIOLOGICAL BASIS OF ACUPUNCTURE: A NOVEL MECHANISM

OBJECTIVE: This study tested a novel mechanism for the transmission of the acupuncture signal. Instead of transmission through neural cells, this model proposes that manipulation of acupuncture needles send out acoustic shear waves, which act to stimulate surrounding tissues.

METHODS: The team, led by Geng Li, developed and tested a mechanical needle movement model that is based on the propagation of an acupuncture signal as an acoustic shear wave, which induces measurable changes at the cellular and whole body level. Acoustic shear waves are mechanical vibrations that can be interpreted as sound. When being propagated through a tissue, an acoustic shear wave moves perpendicular to the direction of wave propagation, does not converge and has a degree of continuity. The first set of experiments was performed in 12 human subjects. Needles (0.4 mm silver Hwato needles) were inserted using a piezoelectric drive at a verum acupuncture point (GB 35 *Yangjiao*) or sham acupuncture point 1 cm away, and a shear acoustic wave was generated. Mechanical excitation by the vertical movements of the needle was also used; however, the presence of *deqi* was not determined after manual or piezoelectric stimulation. The propagation of the resulting acoustic shear wave signal was monitored by magnetic resonance elastography (MRE) to determine the spatial and temporal propagation of the wave at the verum and sham acupuncture locations. MRE is a medical imaging technique that images propagating mechanical waves using MRI. Rather than measuring blood flow, MRI measures the stiffness of muscles and tissues. The second set of experiments was performed in a tissue culture dish. These experiments monitored intracellular calcium changes using a Calcium sensitive dye after

cultured cells were stimulated with an acoustic wave. There was no verum or sham acupuncture point examined in the tissue culture experiments. Cells derived from different tissue sources were used: cultured fibroblasts, endothelial cells, cardiac myocytes and neural PC 12 cells. Calcium activation, propagation and latency were quantified using a confocal microscope that detected changes in calcium levels associated with changes in fluorescent dye emission. The contribution of calcium channels to the observed result in the cultured cells was tested *in vitro* by blocking or inhibiting the calcium channel. The third set of experiments was performed in a mouse hind limb. These experiments relied on the introduction of a plasmid DNA construct containing the calcium indicator, GCaMP2, which is one of the most robust calcium indicators, into the hind limbs of mice. The introduction of the plasmid by electroporation resulted in the production of transformed cells expressing GCaMP2, an EGFP/calmodulin fusion protein used for studying calcium fluxes *in vivo*. The spatial and temporal changes in intracellular calcium levels were monitored *in vivo* in the mouse hind limb using a two-photon fluorescence microscope after an acoustic shear wave acupuncture stimulus at ST 36 *Zusanli* was applied. The sham acupuncture control for this experiment consisted of inserting a needle into the hind limb without subsequent stimulation. The final sets of experiments, which were performed in mice, measured the activation of beta-endorphins by measuring the blood serum levels of beta-endorphin using a protein based antibody detection kit (ELISA) after acupuncture. The dependence of the beta-endorphin response on calcium was determined by measuring beta-endorphin level after acupuncture and the systemic administration of a calcium channel blocker.

OUTCOMES: Shear acoustic waves were propagated at both the verum

and the sham acupuncture points; however, there was a statically significant difference in the degree of tissue response and spread of signal in the verum acupuncture point compared to the sham point. The shear wave was propagated more than twice the distance in the longitudinal direction compared with the transverse direction, suggesting a direction of signal flow. In cultured cells, the acoustic shear waves activated intracellular calcium stores and produced calcium response waves. In many cases, the calcium signal was long lasting and a response was detected up to 1.5 hours after stimulation was stopped. Removing calcium from the bath, the application of a calcium channel inhibitor blocked these responses, which suggests that calcium is mediating the shear wave acoustic signal. In the mouse hind limb, *in vivo* acoustic shear wave stimulation showed a significant increase in calcium responses that spread to adjacent muscle fibres compared with a control non-stimulated acupuncture needle. Blocking the effect of the calcium channels also decreased the calcium response in the hind limb. There was an increase in circulating beta-endorphins after the shear wave stimulation *in vivo* at ST36 (*Zusanli*) in mouse hind limb and this increase was blocked when calcium receptors were blocked. The change in beta-endorphins was not tested with a control non-stimulated acupuncture needle insertion.

CONCLUSIONS: The biological basis of acupuncture was well represented using an acoustic shear wave model. Even though activation of calcium at non-acupuncture points was observed, this signal was approximately halved compared to the verum acupuncture signal, thus indicating that the verum response was always stronger and long lasting. This result may explain the observed beneficial result with sham acupuncture points in clinical trials. Even though sham produces a result, verum acupuncture is always better. After stimulation, there was a

measurable change in cytosolic calcium and beta-endorphins. The observed calcium waves were able to spread to adjacent tissue and were long lasting, which supports the observed movement of acupuncture stimulation along meridians and its long lasting effect.

COMMENT: Overall, this was a very well controlled study designed to investigate the biological basis of the acupuncture signal. The identification of dynamic and sustained calcium modulation after acupuncture is exciting because of the multitude of roles that calcium plays in the cell. Calcium is critical for muscle contraction,

maintaining osmotic balance and is a common second messenger used to transduce signals within the cell. The calcium changes observed after acupuncture stimulation strongly suggest that the long lasting effects of acupuncture are mediated through calcium signalling causing a sustained change in cell physiology. As with any study, there are a few small experimental issues to keep in mind. There was no stated rationale for the use of GB35 *Yangjiao*. The amount of plasmid DNA introduced *in vivo* can be variable when using electroporation, which may have increased the variability of their result unless the results were standardised. In

addition, although they provide statistical analysis of their data, the number of animals and replicates is missing. This study is a necessary first step in testing the acoustic shear wave model. As the authors point out, the article does not investigate analgesia or pain suppression, which is the next step in determining if this model is able support the observed analgesic effects of acupuncture.

Li G, Liang J-M, Li PW, Yao X, Pei PZ, LI W, et al. Physiology and cell biology of acupuncture observed in calcium signaling activated by acoustic shear wave. Eur J Phy. 2011; 462:587-597.

Keely Bumsted O'Brien

Conference Report

International Forum & Exhibition on the Evidence Based Integration of TCM

Sydney, Australia
21–23 October 2011

Suzanne Grant

The Forum and Exhibition on the Evidence Based Integration of TCM was designed to discuss the potential for greater integration of conventional medicine and traditional Chinese medicine (TCM) in key areas of pain management, sleep disorders and rehabilitation. The aim was to facilitate communication, research, cooperation and understanding of the potential benefits of TCM.

More than 200 researchers, academics and practitioners from Australia and China gathered for the Forum. A welcome dinner on the Friday night attended by senior practitioners from TCM hospitals and the State Administration of TCM in China was a great opportunity to share experiences. Dr Ross Walker provided an entertaining and informative talk on the many examples of CAM being found to be effective – but, that time and time again these findings are relegated to the back page of the journal and fail to be integrated into ‘mainstream’ medicine, the upshot being that patients often miss out.

Sessions on the Saturday were structured to provide a conventional medicine perspective and a TCM point of view on the key areas. A panel was convened to discuss integration.

Professor Kerry Phelps provided an excellent insight into how integrative

medicine is currently practised in Australia. These range from the ‘integrative’ GP to the integrative medical centres or the systems of referrals between conventional medical practitioners and CAM practitioners. Prof Phelps noted that the medical profession is very conservative and unfortunately building relationships between CAM and conventional medicine would need more evidence for wider usage. Professor Lu Aiping described the way in which TCM is part of the State health system in China and there is almost seamless integration. He also noted that TCM was being rolled out in a community clinic model to locations in China where there is access to little or no other healthcare. Professor Hosen Kiat presented some of the latest evidence of Chinese medicine and CAM in cardiology research. As this evidence continues to grow so too will the acceptance of TCM by the conservative medical establishment. This will take time.

The session on Chronic Pain and Rehabilitation was excellent. There is so much potential here for TCM and mainstream medicine to work together. Prof Philip Siddal, a pain specialist who was also trained in classic Chinese medicine, spoke on why Chinese medicine, in particular acupuncture, has not been taken up by the mainstream medicine in spite of a large number of clinical trials being published. He

considered the key being the quality of evidence. A number of systematic reviews of acupuncture concluded that current trials were of poor quality and small sample sizes. Prof Liqun Jia from Beijing presented his exciting findings from randomised controlled trials of Chinese herbal bath for hand and foot syndrome and peripheral neuropathy in cancer patients caused by chemotherapy. The panel discussion was the highlight of the session. The panel consisted of the two speakers: Dr Winnie Wing-Lee Hong, a pain specialist, and Dr Zhen Zheng, a Chinese medicine practitioner who specialises in pain research. The audience asked when there would be ‘enough evidence’ for Chinese medicine to be considered part of a treatment plan. Where pain medication was unable to provide relief, as was the case for a young girl hospitalised with burns, there is clear place for other modalities such as acupuncture. The panel all agreed that the Chinese medicine profession has been actively engaged in research, and was continuing to develop creative methods suitable to Chinese medicine in order to produce high quality evidence.

In Regulation, Registration and Health Records session, Ms Debra Gillick, executive officer of the Chinese Medicine Board of Australia, talked about the benefits and details of registration. The primary objective of the Board is to maintain public trust and confidence in the Chinese medicine profession and

to protect the public. It will be illegal to use titles such as Acupuncturist, or Chinese medicine practitioner unless you meet the standards set by the Board. The Board is currently working through submissions to finalise these standards and to determine what constitutes acceptable qualifications and experience for registration.

Alongside the Forum, business matching sessions were held. These sessions brought together growers of herbs, manufacturers of herbs and those interested in bringing herbs into the Australian marketplace. Companies and government representatives discussed facilitators and barriers to

product development in Australia. The significant cost of bringing a new herbal product into Australia without any commercial 'patent' over its usage was cited as a considerable barrier.

The Forum was a prelude to the opening of a purpose built Centre of Excellence in Integrative Medicine, which will open in Chatswood late 2012. It is being supported by the New South Wales Government, University of Technology Sydney, University of Sydney, University of New South Wales and various Chinese institutions. The Centre of Excellence in Integrative Medicine is a \$75 million project and is a collaborative initiative of the NSW Government and the

Government of the People's Republic of China. The Centre of Excellence is aimed at holistic patient care, wellness, health prevention and early intervention of chronic diseases. Specialist visiting medical staff and support services will be provided by the Chinese Government, while other partners in the venture, including the universities located in Sydney, will support clinical education and research with PhD students and post-doctoral staff. We look forward to the Centre providing a place for western medicine specialists and Chinese medicine practitioners along with other modalities to work together to build the evidence base.

UPCOMING INTERNATIONAL CONFERENCES

2012

- 25 February London, England
ARRC 14th Annual Research Symposium
(Acupuncture Research Resource Centre)
Visit <http://www.arrcsymposium.org.uk>
- 25–27 May Brisbane, Australia
AACMAC 2012
(Australasian Acupuncture and Chinese Medicine Annual Conference)
Visit <http://www.acupuncture.org.au>
- 31 May–5 June Rothenburg, Germany
43rd TCM Kongress
(Arbeitsgemeinschaft für Klassische Akupunktur und TCM e. V)
Visit <http://www.tcm-kongress.de>
- 22–24 June Wellington, New Zealand
NZRA Annual Conference
(New Zealand Register of Acupuncturists)
Visit <http://acupuncture.org.nz>
- 14–16 September Seoul, Korea
16th International Congress of Oriental Medicine
(International Congress of Oriental Medicine)
Visit <http://www.icom2012.org>
- 16–18 November Bandung, Indonesia
WFAS International Congress of Acupuncture 2012
Contact email: paksi_dpp@yahoo.com

2013

- 2–4 November Sydney, Australia
WFAS 8th World Conference on Acupuncture
(World Federation of Acupuncture-Moxibustion Societies)
Visit <http://www.wfas.org.cn/en/>