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Chinese Medicine Treatment for Menopausal Symptoms in the UK Health Service: Is a Clinical Trial Warranted?

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Abstract:

Objectives: The aims of this pilot study were to evaluate treatment effects, ascertain safety and formulate best practice Chinese medicine protocols relevant for London women suffering from menopausal symptoms.

Study Design: This clinical pilot study employed a case series design within a wider action-based research project. 117 perimenopausal women between 45-55 years of age recruited from the general population were treated for menopausal symptoms by six experienced practitioners of Chinese medicine at the Polyclinic of the University of Westminster. Practitioners were instructed to treat as near to their usual practice style as possible. This involved using Chinese herbal medicine and/or acupuncture along with dietary and lifestyle advice. A maximum of twelve treatments over six months was allowed per patient.

Outcome Measures: The Menopause Specific Quality of Life Questionnaire (MenQoL), the Greene Climacteric Scale, and flushing diaries were used to evaluate treatment outcomes. Liver and kidney function tests were carried out at intake and after one, six and twelve treatments to evaluate the safety particularly in relation to the use of herbal medicines.

Results: Patients showed significant improvement across all domains measured by the MenQoL and Greene Climacteric Scales. Reduction on the MenQoL Scale between first and last visit was from 4.31 to 3.27 (p< 0.001) and on the Green Climacteric Scale from 21.01 to 13.00 (p< 0.001). Study participants did not reliably complete their flushing diaries. No adverse events or abnormal liver or kidney function values were observed during the course of the study

Conclusions: Further research that seeks to investigate the effects observed in more detail and to evaluate them against other forms of treatment and/or no-treatment controls is warranted. This could be achieved by way of a pragmatic randomized controlled trial that evaluated Chinese medicine against orthodox medical care.

1. Introduction:

Nearly 50% of women experiencing symptoms during the menopausal transition find these symptoms distressing [1]. With conventional hormone replacement therapy (HRT) viewed as problematic by both experts and the public [2] women increasingly look for alternative solutions [3], including the use of complementary and alternative medicine (CAM)[4] [5]. Chinese medicine (CM), with its claims to have successfully treated menopausal symptoms for hundreds or even thousands of years, is a popular choice in both China and abroad and consequently has attracted considerable research interest. Chinese medicine is increasingly popular in the West and thought to offer a personalised alternative to HRT. There is some high quality evidence to support this popularity [6] but the overall picture for both acupuncture and Chinese herbal medicine is variable and problematic [7]. Besides issues relating to the quality of research design, we contend that in most of the studies carried out to date the interventions lack validity, as their therapeutic processes are not rooted in an appropriate theoretical framework [8] [9]. In addition, they have failed to engage with the cross-cultural variation known to exist in women's experience of menopausal symptoms [7, 11, 12-14, 38].

Chinese medicine intrinsically lends itself to diagnostic and treatment approaches that are sensitive to local and individual variation in symptoms [9]. However, starting in the 1950s, institutionalised 'Traditional Chinese Medicine' or TCM developed standardised treatment protocols. The predominant TCM menopause protocol, based on a simplified biomedical understanding of the symptoms and their cause, has delivered a one-size-fits-all model into Chinese textbooks and thence into Chinese medicine teaching and practice in the West [7]. This model takes no account of the different experiences of menopause between China and Western countries [7, 11] and does not reflect current practice even in East Asian countries, where the prescribing of Chinese medicinal for menopause is not constrained by textbook standards but draws on a much wider variety of medical formulas and clinical strategies [12].

Hence on the one hand there is a need for clinical evidence on the effectiveness of Chinese medicine for women with menopausal symptoms in the West, but on the other hand there are no credible best practice guidelines, nor accepted expert consensus, to inform a trial protocol. The Westminster Menopause Study was therefore conceived to test a radically different process for ascertaining treatment protocols that can reliably represent best clinical practice for the treatment of menopausal symptoms in given locales.

Altogether the Westminster Menopause Study consists of three distinct phases. This paper relates to the second phase of the project, which is clinical study with an action-research approach [10]. The aims of this study are to provide a preliminary evaluation of treatment effects, ascertain safety and formulate best practice Chinese medicine protocols relevant for London women suffering from menopausal symptoms. We have previously shown [12] that London women's experience of menopause differs significantly from that of women in other locales, hence a similar focus on London women was employed for the present study.

This paper relates specifically to the treatment effects and safety issues. Phase 1 of the project consisted of a large-scale survey of symptoms experienced by menopausal women in London [11] as well as extensive archival research documenting the historical emergence and variability of approaches to menopausal symptoms within the CM tradition [7, 12-15]. Phase 3 is planned to be a

randomised controlled trial (RCT) evaluating the effectiveness of the best practice protocols derived from Phase 2.

2. Methods

2.1 Design

The study was a practice-based pre-post design with no control group. Participants were recruited from the general population. 117 menopausal women were treated in the University of Westminster Polyclinic in central London by six experienced practitioners of Chinese medicine.

2.2 Participants

The study included 117 menopausal women residing in London. Participants had to be aged between 45 and 55 years to be included in the study. Data was collected between May 2008 and October 2011. A sample size calculation indicated that 119 participants were needed to detect an effect size of 0.3 with a power of 90% and probability of Type 1 error of 5% [16].

Participants were recruited from the general population. The initial design was to do so via delegation by general practitioners (GPs) in two London boroughs (Westminster, Lewisham). However, GPs were extremely reluctant to delegate patients to the study. Ethics permission was therefore obtained to change the study design and recruit via advertisements in a free London newspaper, and on the University of Westminster intranet site. Interested potential respondents contacted the research administrator, who sent them relevant documents to take to their GP or consultant who could then delegate them to the study. These documents included an introductory letter, a research summary, an invitation and explanatory letter, inclusion and exclusion criteria and a delegation pack. Once their GP or consultant had signed the delegation letter, the woman could arrange an appointment at the polyclinic. The administrator allocated a practitioner to each participant ensuring that each practitioner treated approximately the same number of women over the course of the study. Once recruited, the practitioner informed the participant's GP of their patient's inclusion in the study. GPs were also sent a final letter when the woman was discharged from the study.

Menopause is most commonly experienced by woman aged 45-55, though it may also occur earlier or later. As the presence or not of menopausal symptoms appears mediated by a range of personal and cultural rather than being strictly the result of the biological cessation of periods [12, 38], for the purpose of this study we selected women between 45 and 55 years who experience menopausal symptoms such as night sweats and mood changes. Women were excluded from the study if they had one or more of the following characteristics: receiving HRT treatment; with surgically or drug induced menopause; menopause occurring before age 45 or unnatural menopause; already receiving Chinese medicine or acupuncture and not willing to suspend such treatment for the duration of the study; on warfarin or other drugs with a very narrow therapeutic dosage that required constant monitoring; suffering from severe systemic disorders such as cancer or multiple sclerosis who were receiving immunosuppressive treatment, radiation treatment, or

chemotherapy; suffering from severe psychiatric disorders who were being treated with lithium or neuroleptic medication and required constant psychiatric supervision; with known allergies to herbal products; diagnosed during their initial assessment interview as requiring treatment for the Chinese medical disorders *diankuang* 癲狂 (mania and withdrawal) or *benglou* 崩漏 (uterine bleeding), or were already participating in another medical study. If potential participants had abnormal liver or kidney function detected in the course of routine monitoring during the first visit, they were excluded from the study and referred back to their GP for investigation.

2.3 Study intervention

Patients were offered 12 sessions of Chinese Medicine for free over a 6-month period. Based on discussions within the research times, we considered this to corresponds to the average frequency of treatments Chinese medicine practitioners would deliver across a range of conditions in normal practice. The frequency of treatments was not fixed; some received weekly treatments, some fortnightly and others less frequently, according to the practitioner's usual style and the patient's individual circumstances In order to achieve a high level of external validity, each practitioner treated their patients based on their knowledge and experience as well as their personal approach to clinical practice. This is representative of the complexity of CM in practice and its varied traditions [9] Practitioners were instructed to treat as near to their usual practice style as possible; this involved using Chinese herbal medicine and / or acupuncture along with dietary and lifestyle advice. Owing to fire safety regulations at the University of Westminster Polyclinic moxibustion could not be employed. There was no standardised protocol to guide their clinical decision besides being limited to the maximum of 12 sessions.

Chinese medicine is geared to relieving patient distress by making use of a range of different clinical tools in an integrated fashion. There is evidence that the combined use of acupuncture and herbal medicine in the treatment of menopause related symptoms achieves better outcomes than the use of herbal medicines alone [14]. Each of the six practitioners providing the treatments possessed a minimum of 10 years of experience and represented a range of training backgrounds in Chinese medicine, though each one practiced according to a traditionally based theoretical framework [8]. Diagnostic and treatment procedures were determined according to each practitioner's own understanding and application of this framework. The diagnosis informed the personalised herbal prescriptions, the selection of acupuncture points and the frequency of treatments, but these were reviewed and adjusted to reflect changes in the patient's condition over time. Concentrated herbal granules, manufactured by Sun Ten Pharmaceutical Co. Ltd were supplied by Herbprime UK Ltd. Practitioners emailed prescriptions to the company who dispensed and sent the prescription onto the patient. Due to a change in herbal legislation in 2011, in the final year of the study prescriptions were dispensed by the practitioner at the polyclinic and given directly to the patient. The products were prescribed in the form of a granulated powder to be consumed as an instant drink twice a day. As treatment was individualised there was no standard dosage but a range of between 5 and 20g per day.

A variety of commercially available sterile single-use acupuncture needles were used according to the choice of the practitioner, raging in gauge from 0.15 to 0.35 by 25 to 50mm in length.

Participants were offered dietary and life-style advice in line with their Chinese medical diagnosis drawing on practitioners' experience and training.

2.4 Study outcome measures

Two questionnaires and a flushing diary were used as outcome measures. The Greene Climacteric scale measures current experience, and the Menopause Specific Quality of Life Questionnaire (MenQoL) measures experience over the previous month.

The Menopause Specific Quality of Life Questionnaire (MenQoL) is a validated instrument developed in 1996, which assesses physical, vasomotor, psychosexual, and sexual domains of life quality. A difference in one point on a domain score represents a 15 percent change [17]. MenQoL has been applied in Europe, US and overseas [18-20]

The questionnaire consists of 29 items. All items follow the same format - each woman is asked whether she experienced the symptom in the previous month. If the answer is no she moves to the next item, while if the answer is yes she is asked to indicate how bothered she had been by the symptoms on a 7 point scale ranging from 0 = "not at all bothered" to 6 = "extremely bothered".

The Greene Climacteric Scale assesses the severity of self-reported symptoms in the psychological, somatic, and vasomotor domains, along with one question on sexual dysfunction [21]. It is commonly used to assess changes in different types of menopausal symptoms related to treatment. There are twenty-one items. Each woman rates the extent to which she is bothered at the moment by the symptom using a four point scale ranging from 0 = "not at all" to 3 = "extremely".

A data collection sheet for recording the number of hot flushes experienced per day was also used.

2.5 Data collection

At the first consultation with the Chinese Medicine Practitioner, the three major symptoms, which were most bothering the patients were recorded. At the first, sixth and final consultation the two questionnaires to assess severity of menopausal symptoms were self-administered. If patients decided to terminate treatment early and did not return to the clinic the final assessment could not be carried out. The herb formulae and acupuncture treatments prescribed at each consultation were recorded. Blood tests were administered at the first, second, sixth and final consultations. A data collection sheet for recording hot flushes was provided at the first consultation, and the patients were requested to complete this for a week during the first week, and before their sixth and their final visit.

The procedure at the first, sixth and final visit to the clinica was as follows: On arrival at the polyclinic women filled out the questionnaires relating to the quality of life measures. They returned the completed flushing diary (week six and final visit) and were provided with a blank one. Blood tests were undertaken, followed by recording of the case history, and provision of the treatment by

the practitioner. The participant received lifestyle advice, and could choose to receive acupuncture, herbal medicine or both. A leaflet informing the participant of possible idiosyncratic or adverse events was provided along with instructions on what to do in such an event. Any adverse events associated with the herbal medicine were to be recorded by the practitioner and sent to the Medicines and Healthcare products Regulatory Agency (MHRA) via the Register of Chinese Herbal Medicine (RCHM) using their yellow card scheme.

Practitioners recorded the three main presenting symptoms that bothered the patient along with detailed case histories of treatments provided and their reflections on each case.

On completion of a course of treatment the practitioner filled in a treatment monitoring form recording dates of treatments, herbal prescriptions used, acupuncture use, primary, secondary and tertiary symptoms and the Chinese medicine diagnoses as well as the records of the administration of the MenQol and Greene Scale questionnaires. This information along with the outcome tools described above provided the data for statistical analysis.

All the practitioners participated in group meetings to discuss and reflect on their clinical experiences and treatments. These meetings were chaired by an independent observer and the research administrator was also present. The purpose was to share knowledge, allowing each practitioner to expand their skill set and thereby influence their practice. This was carried out in order to, through ongoing action research cycles, define frequently seen symptom patterns and identify potentially effective treatment protocols for each. The intention was that these treatment protocols would define best practice for testing in a subsequent randomized controlled clinical trial. The findings regarding the treatment protocols and the process of this action-research are reported in separate papers.

2.6 Measurement of liver and kidney function

A Reflotron Plus®desktop biochemical analyzer (Roche) was used to test liver function as Alanine aminotransferase (ALT) and kidney function as Glomerulo Filtration Rate (GFT). The machine was calibrated before and cleaned after each use. A sample of blood was taken by finger prick and transferred to the test strip by glass pipette and immediately tested, with the results available within two minutes. Baseline testing was carried out at the first visit. If the woman was prescribed herbal medicine, follow up tests were carried out at the second, sixth and final visits.

2.7 Adverse events

All research participants were monitored for side effects and adverse events as long as they were taking part in the study. Due to logistical limitations the researchers were unable to follow-up patients after they completed a course of 12 sessions or reached the end of the six-month period. However, participants were able to contact the research team in case any concerns may arise after leaving or completing the study.

2.8 Ethical considerations

The study was assessed and approved through St Mary's Hospital Trust and Lambeth, Southwark and Greenwich NHS Research Ethics Committee. The University of Westminster's Research Ethics Committee also approved the study.

Informed conset was obtained from all participants prior to enrolling in the study. All women were able to leave the study at any time. All records were stored in locked cabinets and the data anonymised. The six practitioners belonged to relevant professional regulatory bodies (British Acupuncture Council & Register of Chinese Herbal Medicine), which have stringent codes of ethics and safe practice.

2.8 Data analysis

Data were analysed using the Statistical Package for Social Science Version 18.0 (SPSS, Chicago, Illinois, USA) apart from the regression analysis for the flushing data, for which STATA Statistical Software Version 11 (Stata Corp, College Station, Texas, USA) was used.

The symptoms were coded and classified into 15 categories as follows (with examples of the individual symptoms in brackets): Aches and pains; Digestion; Dryness (e.g. eyes and vagina); Emotions (e.g. anger, anxiety, depression, irritability), Energy (e.g. fatigue, lack of motivation); Headaches; Heart (e.g. palpitations, strong heart beat); Lungs (e.g. difficult breathing); Memory; Reproduction (e.g. irregular periods, heavy bleeding; painful periods); Skin (e.g. rashes, eczema); Sleep (insomnia); Temperature (e.g. hot flushes, sweating, chills); Urinary, and Other (e.g. dizziness, mouth ulcers, weight gain).

Data from the daily flushing diaries were summed to give frequency of flushes across a one week period. To examine average change in number of flushes per week by time elapsed since first diary entry, mixed-effects regression analysis was undertaken using the *xtmixed* procedure in STATA, with a linear random intercept and random slopes model.

For analysis of the MenQoL data, scores were allocated as follows: 1 for "No", 2 for "Yes" (Not at all bothered) through to 8 for "Yes (Extremely bothered)". There are four domains: Vasomotor (items 1 – 3), Psychosocial (items 4 – 10), Physical (items 11 – 26) and Sexual (items 27-29) and the domain scores are calculated as an average of the individual symptom scores.

For analysis of the Greene scale data scores were allocated as follows: 0 for "Not at all", 1 for "A little", 2 for "Quite a bit" and 3 for "Extremely". There are four domains: Psychological (symptoms 1 – 11), Somatic (Physical) (symptoms 12 – 18), Vasomotor (symptoms 19 – 20). Symptom 21 is a probe for sexual dysfunction. The domain scores are calculated as a sum of the individual symptom scores. Thus, both scales have domains with variable numbers of items included in them. MenQoL scores can be compared across domains as they denote average scores, while Greene scores cannot be compared between domains as they denote total scores, and the number of items differs between domains .

Quality of life (QOL) score and Greene scores by domain are presented as mean ± standard deviation, since data distributions were approximately normal.

The paired t test was used to compare domain scores at the first visit with domain scores at the final visit. Two-tailed tests with $p < 0.05$ were considered statistically significant. Only those participants who attended 6 or more consultations were included in this analysis. Effect sizes (Cohen's d for paired samples) were calculated as the ratio of t to the square root of the sample size [22].

3. Results

3.1. Number of visits

117 patients were referred to Chinese Medicine therapists. Of these, 99 patients attended 6 or more sessions with their therapist. The number of visits ranged from 1 (six patients) to 15 (one patient). Figure 1 shows the frequency distribution of patients by the number of Chinese medicine sessions they attended. About half of the patients attended 12 sessions which was the number specified in the protocol. Records were collected for a total of 1103 sessions. Table 1 shows the variability between the six practitioners in number of sessions per patient and total treatment duration. "Duration of treatment" in Table 1 refers to the number of days between the first and final sessions in which treatment using Chinese herbal medicine and / or acupuncture was provided along with dietary and lifestyle advice. 18 participants dropped out the study prior to completing their sixth session whereas around 1/3 of participants had 6 to 11 treatments. Although we tried to contact drop-outs by phone to determine the reasons this was not successful.

INSERT FIGURE 1 HERE

Figure 1: Graph showing frequency of patients by number of visits (Total number of patients = 117)

Practitioner ID	Number of patients treated	Number of visits per patient		Duration of treatment in days	
		Range	Median	Range	Median
A	7	6 – 12	12	98 – 182	182
B	21	2 – 12	8	14 – 77	77
C	21	1 – 15	12	0 – 154	154
D	25	1 – 12	11	0 – 189	189
E	20	1 – 12	12	0 – 189	189
F	23	1 – 12	11	0 – 140	140
Total	117	1 – 15	11	0 – 154	154

Table 1: Number of visits per patient and duration of treatment by practitioner

3.2 Type of symptoms

Figure 2 shows the frequency of symptoms reported at the first visit, by category. For the 115 primary symptom reports, nearly two thirds related to "temperature" (n = 74), and nearly one-fifth related to "emotions" (n = 21).

INSERT FIGURE 2 HERE

Figure 2: Bar chart showing frequency of primary symptoms reported for the five most commonly reported symptom categories (n = 115)

3.3 Hot flushes

54 individuals completed flushing diaries. Regression analysis revealed a statistically significant trend across time in number of flushes per week. Figure 4 shows the individual linear regression lines for each patient and the overall regression line for the group. The average number of flushes per week at the start of the diaries was estimated at 28 and the overall regression coefficient was -0.56 flushes per week (95% CI: -1.04, -0.07 $p < 0.001$). Hence over the 18-week treatment period seen here there was a reduction of approximately 10 flushes (36.1%), a clinically significant effect. 64% of the residual variance was between subjects, and only 36% within subjects. This shows that most of the variability in the data for number of flushes is due to differences between individuals, not to changes across time within individuals.

INSERT FIGURE 3 HERE

Figure 3: Line graph of predicted values of flush for each patient, and predicted values for the group, using linear mixed effects regression (n = 54)

3.4 Quality of Life scores

Mean domain and total scores for Quality of Life at the first visit and final visit are shown in Table 2 and Figure 5. Only those patients who had 6 or more consultations were included in the comparisons. All differences are highly statistically significant.

Domain	N	Mean score at first treatment	Mean score at final treatment	Paired t	P
Vasomotor	90	4.51 (2.21)	3.33 (1.71)	5.6	< 0.001
Physical	90	4.47 (1.70)	3.44 (1.63)	6.5	< 0.001
Psychosocial	90	4.28 (1.29)	3.25 (1.33)	8.9	< 0.001
Sexual	88	3.99 (2.12)	2.98 (1.85)	5.2	< 0.001
Total	**88**	**4.31 (1.27)**	**3.27 (1.21)**	**8.6**	**< 0.001**

Table 2: Mean Quality of Life domain scores at first and final treatment sessions

INSERT FIGURE 4 HERE

Figure 4: Bar chart of mean Quality of Life Scores by domain (N = 88 – 90)

3.5 Greene scores

Mean domain and total scores for the Greene scale for the first visit and final visit are shown in Table 3. Again, this table includes only those patients who attended for 6 or more Chinese Medicine consultations, and all differences are highly statistically significant.

Domain	N	Mean score at first treatment	Mean score at final treatment	Paired t	P
Psychological	78	13.22 (6.13)	8.09 (5.89)	9.0	< 0.001
Somatic	72	5.36 (3.79)	3.21 (2.68)	6.4	< 0.001
Vasomotor	83	3.27 (1.97)	1.72 (1.54)	7.5	< 0.001
Sum	**68**	**21.01 (8.78)**	**13.00 (8.05)**	**9.1**	**< 0.001**

Table 3: Mean Greene scale domain scores at first and final treatment

3.6 Effect sizes

For MenQoL, the changes in mean score from first to final treatment translate into effect sizes [22] of 0.59 for the Vasomotor domain, 0.69 for Psychological, 0.94 for Physical, 0.55 for Sexual, and 0.92 for the overall score. For the Greene scale domains the corresponding values are 1.02 for Psychological, 0.75 for Somatic, 0.82 for Vasomotor, and 1.10 for the overall sum.

4. Discussion

The aims of this study were to evaluate treatment effects, ascertain safety and formulate best practice Chinese medicine protocols relevant for London women suffering from menopausal symptoms. In this paper we evaluate treatment effect and safety. 117 women were recruited from the general population and attended up to twelve sessions of Chinese medicine treatments over a six-month period. We found the treatments to be highly effective, and there were no adverse reactions. The findings relating to the best-practice protocols will be reported separately.

For the group of patients included in the current study, symptoms related to "temperature" affected nearly two-thirds. In population-based cohort and cross-sectional studies, the symptoms most consistently associated with menopause are vasomotor symptoms, and affect 50 percent or more of women [26]. The higher proportion affected in the current study was to be expected since the participants were not randomly sampled from the population, and experience of menopausal symptoms such as night sweats and mood changes was one of the inclusion criteria.

The number of hot flashes experienced by participants in this study decreased on average by ten across an 18 week period (the median length of time the diaries were recorded) , a 36% reduction from baseline. However, based on patient and practitioner feedback, the hot flush diaries used in the current study to record the frequency of hot flushes do not constitute a reliable tool for this purpose. First, our study did not recruit menopausal women suffering only from vasomotor symptoms, so they were not necessarily their prime concern and, as a consequence, not the main focus for the treatment administered. Second, patients consistently failed to report their flushes as they occurred. Instead, they recorded remembered scores written down at the end of the day or even week, or they would forget altogether and then make up a score. Practitioners noted that while hot flushes did not necessarily reduce in frequency, patients reported significant changes in their intensity. Finally, our patients presented with a wide variety of types of hot flushes, with differences in what was experienced (heat, cold, sweating or a combination), where on the body they felt it and at what time of the day or night. Such variability is not measured by flushing diaries but crucial to Chinese medical diagnostics, at least in the view of some practitioners. We therefore argue that the design of a tool that facilitates more accurate reporting of vasomotor symptoms relevant to Chinese medicine is essential for comparisons between various studies to be made.

By contrast with the flushing diary the MenQoL and Greene Climacteric Scale instruments capture a wider range of menopausal symptoms and their impact on the patients' lives. On the basis of Cohen's classification of effect sizes (0.2 as a small effect, 0.5 as a moderate effect and 0.8 as a large effect [27]) the MenQoL and Greene Scale changes represent medium or large effects for each domain and large for the overall scores. Since the study was uncontrolled, the findings cannot be used to conclude that the treatment was effective. However these effect sizes do provide promising indicative evidence and support the call for further investigation of CM for the treatment of menopausal complaints through an RCT study.

With regard to choice of rating scale for an RCT study, in the current study a greater proportion of the sample provided complete data for the MenQoL instrument (n = 88, 75% of 117) compared to the Greene instrument (n = 68, 58% of 117. This may relate to number of response categories available, since MenQoL has a seven point scale and Greene has a four point scale. Preston and Colman [23] found that scales with two, three, or four response categories were least preferred by respondents, and scales with 10, 9, and 7 were most preferred. Also test - retest reliability coefficients were higher for seven- to ten- point scales compared to two-, three-, or four-point scales [23]. For the study of menopause, the MenQoL questionnaire has two additional advantages over the Greene scale. Firstly of ease of interpretation of findings, since mean domain scores are comparable in the former. Secondly, the one-month time period used in the MenQoL potentially reduces the danger of over-influence from one particularly good or bad day. With regard to safety, during the treatment of 117 women by Chinese medicine using acupuncture and herbs no adverse events were reported. Liver and kidney function tests for all participating women remained in the normal range. Chinese medicine thus appears to be a safe treatment. For a fuller picture, however, it will be essential to gather data on the long-term effects of such medicines, particularly with a view to their hormonal effects.

We perceive the major strength of this study to be its use of Chinese medicine practice that responds flexibly to the individual needs of women with menopausal symptoms. Robust evidence for both the effectiveness of Chinese medicine in treating menopausal symptoms, and its effectiveness

in a Western context is currently lacking. Of six RCTs using Chinese herbal medicine [24-30] three found a significant difference in effectiveness compared to placebo [24, 29, 30]. Similarly the evidence for acupuncture's effectiveness in relieving menopausal hot flushes is not conclusive to date [31]. As argued in the introduction, we consider most of these studies problematic because they fail to engage with local variation in women's experience of menopausal symptoms and they follow standardised approaches that are detached from Chinese medicine's theoretical framework and clinical traditions.

This paper therefore reports on treatment effects and safety of a more broadly conceived pragmatic feasibility study whose overarching goal was explore what kinds of strategies are most suitable to a London based population of menopausal women. We will discuss the action research process underpinning this phase of the larger study and report on the best practice protocols we have gleaned from it in separate papers. In as much as such protocols will only be of interest to a wider community of researchers and clinicians if they promise to be both effective and safe, this sequence of reporting appears most sensible to us.

There are three major limitations of the study. The most significant limitation is the lack of a control group. Hence the effects of the intervention may be inflated by factors such as expectancy (placebo), natural healing and regression to the mean. RCTs with no treatment, usual orthodox care or alternative treatment groups would control for some of these factors and they are well established for acupuncture effectiveness evaluation[32, 33]. They can achieve a high level of external validity and provide the most suitable vehicle for economic evaluation and clinical decision-making [9, 34]. Substantial placebo effects have been measured in trials on menopausal symptoms [35] but placebo controls may be inappropriate even with single modality Chinese medicine treatment] [36] and impossible with the sort of multi-modal approach used here (and in usual practice) [37].

 Secondly, because Chinese medicine was perceived as a complex intervention including acupuncture, herbal medicine, and dietary and lifestyle advice participants may have received all three therapies at varied phases of their treatment. It is not possible, therefore, to make any claims as to which of these individual therapies made the greatest contributions to the effects observed, or if, on the contrary, they had mutually counteractive or synergistic effects.

Thirdly, there were no follow-up measurements after the end of treatment, so longer-term outcomes are unknown. It is possible that there were post-treatment adverse events that were unreported.

5 Conclusions

This paper reported on the clinical outcomes of a feasibility study whose overarching goal was to devise best practice protocols for the treatment by Chinese medicine of London women suffering from menopausal symptoms. Despite its limitations we suggests it has implications for both research and practice.

5.1 Implications for research

Effect sizes indicate that Chinese medicine as administered in the course of this study does have positive clinical outcomes for the population treated, and that such treatment appears to be safe. We therefore conclude that research that seeks to investigate the effects observed in more detail and to evaluate them against other forms of treatment and/or no-treatment controls is warranted. At this stage, we do not however claim to make any statements regarding effectiveness or efficacy that go beyond these limited observations.

First, in relation to measuring devices used, the MenQoL questionnaire is preferable to the Greene scale. Participants found it easier to complete the MenQoL questionnaire, it is simpler to interpret findings from it and the one-month time period used in the MenQoL reduces the danger of over-influence from one particularly good or bad day.

Second, the use of simple flushing diaries to record vasomotor symptoms in studies recruiting women with a broad range of menopausal symptoms is unlikely to yield reliable results that can be compared across contexts. Furthermore, such diaries provide data that is of little value to a more complex Chinese medical diagnosis. We suggest that not only the frequency but also intensity of vasomotor symptoms be recorded and that such recording be treated not as accurate representations of actual flushes but as momentary impressions subject to a wide range of influences.

5.1 Implications for practice

Unlike other studies that simply seek to evaluate treatment outcomes, the present study was part of a larger action-research program aimed at defining potentially effective Chinese medical treatment strategies for menopausal women in London. Our focus on women in London emerged from anthropological research that demonstrates that symptoms experienced by menopausal women in different locales vary significantly [36]. In fact, a survey we conducted in preparation of the present study, which compared the symptoms experienced by London women to those in China, Japan, the United States, and Canada, corroborated the existence of these differences [11]. As the Chinese medical tradition makes available a range of different approaches to the treatment of menopausal symptoms [12-14], we argue that rather than claiming universal validity and reach, treatment approaches must be tailored to what anthropologists of menopause refer to as 'local biologies' [38].

Our study was therefore designed to reflect contemporary CM clinical practice in London, drawing on the expertise of a variety of experienced practitioners. A future paper will analyse these treatment approaches in more detail and provide concrete suggestions for the development of clinical practice guidelines. We are hopeful that the profession will take up these guidelines widely. We also plan to provide a more in-depth description of action research approach we utilised, the benefits it provides for practitioners involved in research, as well as its implications for other pilot studies in this domain.

Chinese Medicine: Delivering NHS Based Solution." Sun Ten Ltd of Taiwan and their UK distributor Herbprime Ltd. provided a sixty percent discount on the purchase of the herbal granules prescribed in the study. Neither Sun Ten nor Herbprime were otherwise involved in the design and analysis of this study or the dissemination of its results. The authors acknowledge the input of the other practitioner-researchers involved in this study: Ann Bradford, Shi Jun, Felicity Moir, Katie Scampton and Alan Treharne. We are grateful for the support of the director and staff of the Westminster Polyclinic and of all of the women who participated in the study.

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