An Uncontrolled Pilot Study of HT7 for ‘Stress’

Joseph Chan, Dianne Briscomb, Esther Waterhouse, Anne-Marie Cannaby

Introduction
In any medium to large organization where staff are constantly under pressure from their superiors to perform well, ‘psychological stress’ in the work place is likely to be common. In an environment where staff are caring for terminally ill patients, consideration for the well being of staff is essential. At LOROS Hospice a pilot project using acupuncture to help reduce ‘psychological stress’ was explored as a way of enhancing well-being of employees. If such a method could reduce ‘psychological stress’ levels amongst the staff, and enable them to have less time off sick and to spend more time in a productive working pattern, the better and more efficiently an organization could be run.

A rating scale was needed to monitor the progress of subjects’ ‘psychological stress’ levels over the course of the study period. Various scales are available but most of them were designed for a particular purpose and in a particular situation. For example the Hospital Anxiety and Depression Scale, Edinburgh Postnatal Depression Scale, Hamilton Depression Rating Scale (HAM-D), Beck Depression Inventory or State-Trait Anxiety Inventory. The EPDS scale ranged from a top score of 30 (highly anxious/depressed) to a lowest score of zero (no stress at all). In the postnatal situation, the validation study showed that mothers who scored above a threshold of 12/13 were most likely to suffer from significant depression or anxiety. In this study the subjects were neither post-partum nor hospital in-patients, so it is not entirely clear whether any of the above pre-existing scales are valid or relevant. None-the-less a widely accepted scale is preferable to a lesser known one. After reading through all the available rating scales, the Edinburgh Postnatal Depression Scale (EPDS) was found to be the most user-friendly. EPDS can be completed quickly and its preset questions are easily understood.

Methods
Staff were invited to participate in the study via a memo attached to their pay slips in LOROS Hospice. All staff working at the Hospice were included. Employees who expressed interest in joining in this study were given a full outline of

Summary
Bilateral acupuncture needling at HT7 was an effective method for reducing the rating of ‘psychological stress’ in 16 out of a group of 17 volunteers (94%), recruited from staff in a hospice. Ratings were made using the Edinburgh Postnatal Depression Scale (EPDS), which was felt to be the most useful scale of those considered, despite not being validated in this population. Four brief acupuncture sessions were performed at weekly intervals. The greatest fall in the EPDS scores was observed within the first two treatments. At the end of the study, there was an average reduction of 44% in the EPDS scores. Further research is needed, including a suitable control group, to determine whether the effect observed in this study was a specific effect of needling at HT7.

Keywords
Acupuncture, stress, HT7.
the study and all of them participated voluntarily. Staff who were currently under treatment for depression or stress either pharmacologically or by any other methods were excluded.

HT7 (Shenmen) is located at the ulnar aspect at the end of the distal transverse crease of the wrist, between the flexor carpi ulnaris and the flexor digitorum superficialis.

The acupuncture treatment consisted of bilateral HT7, using Seirin No.3 needles (0.20x15mm), inserted perpendicularly down to an area just lateral to the pisiform and pecked the periosteum of the pisiform for two seconds. This was not a time consuming procedure and it fitted well into everybody’s work schedule.

Four once weekly treatments were given to all participants. Prior to each treatment, subjects were asked to complete the Edinburgh Postnatal Depression Scale (EPDS) paying attention to their mental state over the past seven days. The final EPDS assessments were filled in a week after their final fourth acupuncture treatment. The acupuncturist was not known to the staff and was not allowed to have any verbal nor social contacts with the subjects throughout this pilot study to reduce the non-specific effects related to the therapeutic interaction. EPDS were filled in before each treatment and were collected for later analysis.

**Results**

Seventeen volunteers were recruited. There were 16 females and one male. They had a median age of 43 (range 24-58). No dropouts or exclusions were recorded in this small pilot study. Using the threshold of 12/13 on the EPDS to indicate a significant level of ‘psychological stress’ (depression or anxiety), 11 out of the 17 volunteers were feeling ‘stressed’ at baseline.

We compared their pre-treatment EPDS scores to their scores one week after the final (fourth) acupuncture treatment. Sixteen of the 17 volunteers responded positively by lowering their EPDS scores. The score of the volunteer that did not seem to respond changed from nine at baseline to 10 at the end of the study (see table 1).

Most volunteers recorded a drop in their EPDS scores within the first two acupuncture treatments. After this initial drop the scores tended to level out (see figure 1). In the 11 volunteers who recorded EPDS scores above the 12/13 threshold, 10 of them achieved scores below the threshold at the end of the study. One volunteer started at 23 and ended at 17, still above the threshold, but having recorded an improvement of 26% on the scale.

From baseline to the end of the study, there was an average reduction of EPDS scores of 44%. The change of EPDS scores in this study ranged from a reduction of 88% to an increase of 11% (see figure 2).

Repeated measures analysis of variance (ANOVA) indicated that a significant change had occurred over the course of the study (p<0.001). Using a paired t test for the analysis there was a significant reduction in EPDS scores from baseline to the second time point (p<0.002) and to each subsequent time point (p<0.001).

**Discussion**

All but one of the 17 volunteers improved their

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**Table 1** EPDS scores at five time points over the study period.

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<td>Mean</td>
<td>13.3</td>
<td>10.0</td>
<td>8.53</td>
<td>7.29</td>
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<tr>
<td>SD</td>
<td>4.93</td>
<td>4.64</td>
<td>3.66</td>
<td>4.48</td>
<td>4.57</td>
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EPDS – Edinburgh Postnatal Depression Scale

Time point 1 – baseline, prior to first treatment
Time point 2 – prior to second treatment
Time point 3 – prior to third treatment
Time point 4 – prior to fourth treatment
Time point 5 – follow-up, one week following fourth and last treatment
EPDS scores. That volunteer started at nine and ended one point higher. One could see that the original level was below that of the threshold and although the acupuncture did not improve the score, it remained essentially the same. The individual percentage change of score is shown in graph 2 and the average reduction of EPDS score was 44%.

This was an uncontrolled study and the result, although encouraging, needs to be interpreted with caution. The study does not differentiate between the specific and non-specific effects of acupuncture, or control for other effects such as regression to the mean. The Beck Depression Inventory (BDI) may be considered as a more appropriate outcome measure in this population, as the EPDS was validated in a post-natal population, however, the EPDS was found to be much more user-friendly than the BDI or any of the other scales.

Over the years several studies have investigated the effect of acupuncture on ‘psychological stress’ and anxiety using different acupuncture points, and most describe positive results. The major difference in this study was the simplicity and the brevity of the HT7 treatment.

In a series of 800 cases, whilst using the auricular points Shenmen and Stomach in an attempt to treat obesity, Apostolopoulos noted a reduction in anxiety in 46.7% of 697 patients.
In a cohort study (n=68), Dong used the Hospital Anxiety and Depression Scale (HAD), and demonstrated 42 out of 60 anxiety scores had returned to normal after one month of treatment. In this study the majority of reduction occurred within the first two weeks, but there was no mention of the acupuncture points used in the study.

In a controlled trial of the treatment of anxiety (n=240), Guizhen et al compared acupuncture alone (AO), behavioral desensitization alone (DO) and combined acupuncture with behavioural desensitisation (CAD). The cure rates after a course of therapy were reported as 20% (AO), 26.3% (DO) and 52.5% (CAD). In this study they used a selection of acupuncture points, each session of treatment lasted half an hour, and treatments were given every other day.

Finally, in a randomised controlled trial on pre-operative volunteer patients (n=55), Wang and Kain demonstrated a significant reduction of short-term anxiety by using press-needles bilaterally at a specific auricular ‘relaxation’ point (located at the superior lateral wall of the triangular fossa of the ear), as compared with Shenmen (auricular) or a sham point. Objective measures – blood pressure, heart rate and electrodermal activity, were unaffected by group allocation, but a significant effect was recorded with the State-Trait Anxiety Inventory (STAI). The same paper appears to demonstrate, for the first time, a point specific effect of auricular acupuncture in reducing anxiety scores on the STAI.

**Conclusion**

This pilot study showed that by performing acupuncture weekly at HT7 on both wrists, a significant improvement in the rating of ‘psychological stress’ on the EPDS could be achieved. The acupuncture treatment itself was simple to perform and was not time consuming. If the effect was due to acupuncture at HT7 it is tempting to believe that ‘psychological stress’ can be reduced in a quick and simple way that would be suitable for the majority of the population. Further research is needed, including a suitable control group, to determine whether the effect observed in this study was a specific effect of needling at HT7.

**Reference list**

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