Personality and treatment response to electroacupuncture.
A new measure of mood change and further analysis of questionnaire response styles

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Background

We previously used the Brunel Mood Scale (BRUMS$_{24}$) and multiple numerical rating scales (NRS-M) to assess moods and their changes. We also investigated the effects of some personality measures and the reported helpfulness of prior acupuncture on these changes. Here we pilot a multiple mood *change* Likert scale (MMCL) instead of using before and after measures, and consider a different and extended set of personality questionnaires.

Objectives

- To pilot a multiple mood *change* Likert scale (MMCL), examine its validity and internal consistency, and compare its performance retrospectively with the NRS and Likert mood scales used before.

- To explore the effects of personality on mood changes in response to electroacupuncture (EA).

- To further investigate *how* questionnaires are completed.

Methods

90 respondents were recruited during six EA teaching sessions in the UK and Denmark. Ethics and institution approval were obtained.

Before the session, respondents completed a series of standard personality and attitude questionnaires: (1) Attitudes to Technology; (2) Behavioural Approach and Inhibition; (3) Body Awareness; (4) Positive and Negative Affect; (5) the Jung Typology Test™.

They also reported on their previous experience of receiving acupuncture treatment.

After treatment, they completed the MMCL and recorded which EA parameters they found most/least pleasant/intense.

How questionnaires were completed was assessed using measures of response style (midpoint or extreme, MRS or ERS), range (standard deviation, SD), responsiveness and variability or informativity (Shannon entropy, SE).

Analysis was conducted using SPSS v 23 and Excel 2010 v 14.0.

Further information available at
http://www.qeeg.co.uk/electroacupuncture/mood3.htm, also accessible through the QR code at the head of this poster.

Multiple mood change Likert scale (MMCL)

Compared to how you felt just before the treatment you received today, do you now feel:

Feeling	Considerably less …	Somewhat less …	Neither more nor less …	Somewhat more …	Considerably more …	Don't know/ not sure
Alert	-2	-1	0	1	2	?
Anxious	-2	-1	0	1	2	?
Confused	-2	-1	0	1	2	?
Dispirited	-2	-1	0	1	2	?
Energetic	-2	-1	0	1	2	?
Negative	-2	-1	0	1	2	?
Pain	-2	-1	0	1	2	?
Positive	-2	-1	0	1	2	?
Relaxed	-2	-1	0	1	2	?
Tired	-2	-1	0	1	2	?

MAIN RESULTS – MMCL

Cluster analysis

Items fall into 2 clusters: 1. 'desirable' ('relaxed' + 'energetic'); 2. 'undesirable' + 'tired'.

Convergent and divergent validity

Spearman's |*rho*| > 0.4 (p<0.001) for correlations between 'desirable' OR 'undesirable' mood changes, but |*rho*| < 0.1 (n.s.) for correlations between 'desirable' AND 'undesirable' mood changes.

Internal consistency

Cronbach's *alpha* > 0.5 for 'desirable' and 'undesirable' mood changes analysed separately, but not together.

Sensitivity to mood changes – retrospective comparison

Using 1-sample T-tests for differences from 0, median effect size for MMCL was 0.585 (range 0.05-1.10), but only 0.245 for NRS-M and 0.420 for BRUMS$_{24}$ (ranges 0.10-0.37 and 0.04-0.45, respectively).

Using binomial tests on *counts* of score increases/decreases rather than score *values*, median relative risk was 13.2 for MMCL (range 2.5-88.0), 3.15 for NRS-M (range 2.3-5.9) and 5.2 for BRUMS$_{24}$ (2.0-10.9).

MMCL average mood changes

MMCL change counts
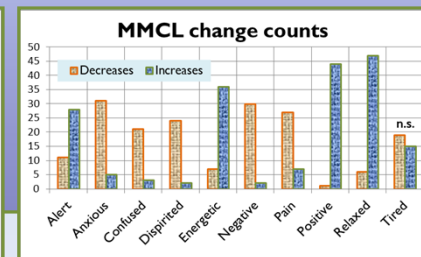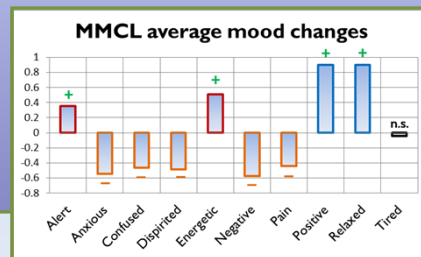
Some other results

- Mood changes in response to treatment did not appear to be greatly affected by personality type, attitude or whether acupuncture had been found helpful in the past.

- However, those with a more positive view of life were more likely to report benefits from past acupuncture treatment, and also feeling relaxed after EA.

- We again found that Jungian Intuition and Feeling types significantly outnumbered Sensing and Thinking types among acupuncture students and practitioners.

- For most questionnaires, variance of response (SD) correlated strongly with 'extreme' response style (ERS) and Shannon entropy (SE), although all represent different constructs.

- Men tended to use a MRS rather than an ERS, and – for most questionnaires – were less informative than women.

- There was also a tendency for older respondents to demonstrate lower SE when completing some scales.

Conclusions

The MMCL is simpler to use and possibly more sensitive to mood changes than BRUMS$_{24}$ or the NRS-M.

This study sheds little light on whether personality affects treatment response.

It is anticipated that differences in SE with age and gender may reflect underlying physiology.

Limitations and future directions

This was a small study on a non-clinical population, with a missing data issue. Comparisons between mood (change) measures were retrospective and from different samples. Short-term mood changes may not adequately reflect treatment benefits. Only a few personality/attitude scales were used.

Further study is required using different mood measures concurrently, and on actual patients. In addition, the relative usefulness of RS, SD, responsiveness and SE merits further investigation.

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