Reviewer’s report

Title: Post traumatic stress symptoms and heart rate variability in Bihar flood survivors following yoga: a randomized controlled study

Version: 6 Date: 14 January 2010

Reviewer: Anand Dhruva

Reviewer’s report:

The manuscript is much improved with the current revisions. Only these discretionary revisions remain:

Discretionary Revisions

COMMENT 6: Another limitation of the study is the lack of a control group that controls for attention. For example, did the yoga participants feel better just because someone spent time with them in the classes? Please discuss in the discussion section.

RESPONSE 6: There was a control group. The 22 participants were randomized as a yoga and wait list control group.

We regret if this was not clearly mentioned.

REVIEWER’S RESPONSE: It would seem that the authors have misunderstood the original comment. I will clarify. The question relates to the issue of the nature of the control group. In the current study a wait-list no treatment control was used. This leaves the study open to the criticism that it wasn’t yoga that produced the improvements in sadness, but rather just the time spent with participants (1 hour per day). An attention control is one in which this effect is accounted for. For example, an attention control group could receive education sessions matched to time that the intervention group spends in yoga classes. In this sort of design, the issue of “attention” is accounted for and any improvements achieved by the yoga group are more likely to be truly due to yoga rather than “attention”.

I have decided that this comment is better placed as a discretionary revision rather than compulsory, and it is the choice of the authors whether they want to include a discussion of a lack of attention control in their study in their final manuscript.

COMMENT 8: Please discuss how the specific pranayama, asana routine impacted on your findings.

RESPONSE 8: We have attempted to explain how the different yoga practices
may have
influenced the variables assessed.

‘Previous studies have shown that the practice of yoga postures interspersed with
relaxation while supine reduced sympathetic nervous activity more than a comparable
period of supine rest alone (Sarang, Telles, 2006). Also, the same combination of
postures and supine rest delayed the latencies of certain evoked potential
components
which are generated in the cerebral cortex (Subramanya, Telles, 2009). Apart from this,
an hour of practicing yoga postures increased the levels of the inhibitory
neurotransmitter
gamma-aminobutyric acid (GABA) compared to an equal duration of time spent
reading
(Subreeter, Jensen, Perlmutter, Cabral, Tian, Terhune, Ciraulo, Renshaw, 2007). The
individual effects of separate asanas have not been worked out.
Apart from yoga postures, loosening exercises (sithilikarana vyayama) were
shown to increase flexibility and reduce musculoskeletal discomfort in professional
computer users (Telles, Dash, Naveen, 2009).
The effects of yoga breathing practices have been assessed more individually.
High frequency yoga breathing (kapalbhati) has been shown to increase the low
frequency power of heart rate variability suggesting an increase in sympathetic nervous
system activity (Lepicovská, Dostálek, Kovárová, 1990). In contrast alternate
nostril yoga
breathing (anulom-vilom pranayam; Raghuraj, Telles, 2008) reduced the systolic,
diastolic, and mean pressure values suggestive of lower sympathetic nervous system
activity. Hence there may have been no overall effect of yoga voluntarily
regulated
breathing (pranayama) on the sympathetic nervous system activity in participants, which
may have been the reason why there was no change in the heart rate variability.’

References:
1. Sarang P, Telles S: Changes in heart rate variability during and after two yoga


REVIEWERS RESPONSE: This comment relates to the pranayama and asana routine in the author’s study. In the comment, I am asking if the particular routine used in the authors study had any specific implication on the study results. Do the authors think any of the pranayama or asana practices they chose to include in their study impacted on the findings? For example, do the authors think kapalabhati is the key ingredient in their yoga routine that explains the improvement in sadness?

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests: I declare that I have no competing interests.