Reviewer's report

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

Version: 3 Date: 6 September 2009

Reviewer: Patricia L Gerbarg

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Discretionary Revisions

1. Introduction: Rather than describing the loss of life as "colossal" provide some government estimate of the actual number of lives lost.

2. Here or in the Discussion section, the authors could mention the study: Descilo T, Vedamurtachar A, Gerbarg PL, Nagaraja D, Gangadhar BNG, Damodaran B, Adelson B, Braslow LH, Marcus M, Brown RP. Effects of a Yoga-Breath Intervention Alone and in Combination with an Exposure Therapy for PTSD and Depression in Survivors of the 2004 Southeast Asia Tsunami. Acta Psychiatr Scand 2009 [in press]. The abstract is available online or through the National Library of Medicine Database.

3. How were the participants screened for the possibility of developing PTSD? Was this based on their being directly affected and having lost relatives and friends or property?

4. Of the 1089 participants, how were the 28 subjects selected? Were there only 28 volunteers or was some other method used?

5. Intervention. In the description of the breath intervention, it would be helpful to indicate the rate of breathing and the length of each of the practices because these are important factors affecting heart rate variability. Also, this information would help in comparing different breath practices to better understand their various observed effects.

6. When were the autonomic respiratory variables measured in relation to the breath practices?

7. Results. This study is particularly interesting because it showed not only a reduction in sadness in the yoga group, but also an effect of possibly preventing the development of anxiety. This is the first study in which a yoga intervention appears to prevent an increase in anxiety in trauma survivors.

8. Discussion. A more elaborated discussion of the differences in breath techniques as a possible explanation for the lack of change in HRV and respiratory rate in this study as compared to other studies of breath programs in disaster survivors would help to advance the development of more effective breath programs. Some studies consider 10-14 breaths per minute to be slow,
whereas other studies show that rates of 5-6 breaths per minute optimize HRV and that small changes in breath rate have significantly different effects on HRV.

9. Discussion section paragraph 5. The sentence beginning with "In fact, the close connection between emotional states and breathing..........." is not intelligible.

10. Discussion section paragraph 6 indicates that the conditions in the camp limited the number of subjects to 28. Clarify how this affected the selection process described in the Methods section.

11. The intent of final sentence of the discussion section might be clearer by deleting "which are recurrent but none the less damaging to health." This last phrase speaks to the significance of this study and of efforts to develop effective interventions to relieve psychological distress in survivors of mass disasters. This point could be made more clearly in a separate sentence.

12. References. The spelling of the name of the first author in reference number 12 should be Franzblau.

13. Overall this study makes an important contribution to the growing literature on interventions to alleviate the psychological and physiological effects of mass disasters. It is particularly challenging to do studies in the aftermath of disasters, but such studies are much needed. The authors have acknowledge the limitations in the number of subjects. Although it is difficult to do longer follow-ups following mass disasters, future studies should attempt to determine whether the benefits of the intervention persisted beyond one week.

**Level of interest:** An article of importance in its field

**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 interest.