Reviewer's report

Title: Teaching Evidence-Based Complementary and Alternative Medicine (EBCAM); Changing behaviours in the face of reticence: A cross-over trial

Authors:
Edward J Mills (emills@ccnm.edu)
Taras T Hollyer (thollyer@ccnm.edu)
Ron Saranchuk (rsaranchuk@ccnm.edu)
Kumanan R Wilson (Kuman.Wilson@uhn.on.ca)

Version: 2 Date: 9 Oct 2001

Reviewer: Dr Andrew Vickers

Level of interest: A paper whose findings are important to those with closely related research interests

Advice on publication: Unable to decide on acceptance or rejection until I see revised version

This paper makes an important point and it should be published once the following revisions are made. The most important revision involves the statistics: the authors are not clear on the methods they used with particular respect to the particular time point at which data were compared.

1. The first paragraph is rather boring and pedantic. Is it really necessary to quote Eisenberg every time we want to study any aspect of CM?

2. I disagree with the characterization of the evidence-base of both conventional and complementary medicine. I would leave out discussion of conventional medicine here as it is irrelevant. With respect to CM, the point is that 'evidence' has never been seen as an issue. CM practitioners do what their teachers do and what books suggest. The truth status never comes into it.

3. The statistical methods section is inadequate. The authors mention a t-test. But what data were used? First phase? End of trial? Data for control and treatment phases combined? In my view, the most powerful analysis would have been analysis of co-variance with baseline score as a co-variate.

4. Avoid the +/- notation. Use SD for standard deviation instead.

5. The paragraph under 'scores' on page 8 needs to be completely rewritten. Some phrases that should be changed include: 'there appears to be a slight upward trend'; 'there does not appear to be a statistically significant difference'; 'men scores were similar suggesting that training did not result in a statistically significant difference.' If the authors cannot see what is wrong with these remarks, see a statistician.

6. Report confidence intervals for the differences between means.

7. The authors need to discuss the possible drawbacks of a non-randomized study.
8. A cross-over trial is a strange design for an intervention that is intended to have persisting effects. This issue should be discussed in the introduction and discussion section. The methods should make reference to how this problem was dealt with.

9. The key reason why the teaching was ineffective was, in my view, that EBM was tacked on at the end. You can't teach a four-year course and then, right at the end say, 'oh, by the way, all this has to be based on evidence.' EBM isn't a technique, it is a way of thinking. Presumably, the school does not teach naturopathy by instructing students on individual therapeutic techniques and then, at the end, introducing the concept of aiding the body's own recuperative powers.

**Competing interests:**

None declared.