Reviewer’s report

Title: Interpretation of evidence in data by untrained medical students: a scenario-based survey

Version: 1 Date: 17 June 2010

Reviewer: Gitte Lindgaard

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- Minor Essential Revisions

I enjoyed reading this neat paper, and it is interesting, perhaps not surprising that students find it easier to think in terms of the likelihood ratio than the translating the inverse p-value. That has important implications for teaching physicians statistics. Please note that the research reported is not a survey but rather an empirical study.

I did not see any reference to ‘Box 1’ in the text. Did I miss it?

In ‘Box 2’, as in the accompanying text, I was unable to discern how you arrived at a p-value of .08. Clarification on this would be helpful.

Is the term ‘Box’ conventional in your parlance? I have never seen it before.

Table 1 is difficult to interpret. Please say what the various values are (n, %). Also, I found it confusing that you referred to the number of participants who did not have a clear opinion in the text, but you report the number of people who ‘have a clear opinion’ in your table. It is really the sum of ‘For’ and ‘Against’, but that does not stand out clearly from the organization in the Table.

p. 4 From the sentence “What approach to inference is better is debated” it is unclear if the issue is discussed in this paper, or if it is debatable.

p. 4 (and p. 8) scenarii’ is, strictly speaking, correct, but the term ‘scenarios’ is commonly used in English.

p. 6, para 2, sentence 1 ‘....either statistical test or likelihood ratio but in version A the statistical test approach was in favour of the disease...’ Suggest break sentence after ‘likelihood ratio’ and leave out ‘but’, as it sounds like you are about to contradict what you just said.

p. 6 you say that ‘the proportion who applied the likelihood ratio approach was somewhat lower for version A’ – was that difference not statistically significant at the p < .014 level? If I read it correctly, I would use a stronger term than ‘somewhat’.

p. 6 ‘...the strength of evidence was rated lower for version A than for Version B’. Yes, but only if ‘Very strong’ is either included with ‘Strong’ or ignored.

p. 7 discussion, first sentence ‘interpreted' should be ‘interpret'.
**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**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