Reviewer's report

Title: Developing a viva exam to assess clinical reasoning in pre-registration osteopathy students

Version: 2
Date: 11 July 2014
Reviewer: Jorge Esteves

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Minor Essential Revisions

This is relevant study to educators and policy makers in the fields of osteopathy and manual therapy in general. The study was by and large reasonably well conceived and conducted.

There are a number of points/areas which require the authors’ attention and needed changes implemented before it can be accepted for publication.

In the abstract, the background and methods sections are too long and not entirely well focused. They would benefit from being written in a more concise way; this would enable readers to have a clearer idea of the background, gap in the literature and core utilised methods and methodologies.

In the introduction, there are a number of points which benefit from editing; appropriate terminology should also be consistently used. For example, in line 3, page 5 it would be better to refer to clinical reasoning as core capability. In line 6, it is important to consider that clinical reasoning is not a cognitive process but involves a series of cognitive processes such as reasoning, problem solving and decision making. In line 9, the authors refer to metacognition as reflective thinking; this is not entirely correct and it is suggested that the authors consider the work of e.g., Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive–developmental inquiry. American Psychologist, 34(10), 906-911 - on metacognition. In lines 19-22, the concepts of HD reasoning and pattern recognition are not appropriately introduced; it may be useful to link HD to analytical processing and pattern recognition to non-analytical reasoning i.e., system 2 and system 1 in the dual processing model. In lines 17-18, page 6, it reads as if Vygotsky advocated that. Although he clearly talked about scaffolding and zones of proximal development, it is important that the way in which this author is cited does not lead to a misattribution of this claim/argument to this author. In the general, the interdiction could be more concisely written to enhance clarity and readability.

In the methods section, it is unclear whether (on page 12, lines 1-3) students may have seen these cases as examples of past papers. This needs to be clarified because it would negatively impact on the validity of this assessment approach.

In the discussion section, page 20, lines 23-25, the authors argue that students at point of graduation are more likely to have developed metacognitive (typo
there) skills. This argument needed to be linked to relevant literature. For example, Spadaccini and Esteves (in press) in a small scale study, have recently found that although graduating osteopathy students displayed significantly more analytical decision-making than their novice peers; however, reflective thinking dispositions did not change with increased exposure to osteopathic education. The authors need to critically appraise their argument in line with available literature.

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

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

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests