Reviewer's report

Title: Measuring the ambiguity tolerance of medical students: a cross-sectional study from the first to the sixth academic year

Version: 2  Date: 6 September 2013

Reviewer: David McLain

Reviewer's report

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Please number your comments and divide them into

- Major Compulsory Revisions

1. The topic of this study and the participants, i.e., medical students are both interesting and the abstract makes clear the importance and potential implications of findings from this study. This makes the study worthwhile. However, the first section of the paper should provide additional theoretical grounding for the study. There is a need to explain why the students might differ in ambiguity tolerance across the years of study and why students might differ from general practitioners. A theoretical argument for these possible differences is needed.

2. The history of ambiguity tolerance research is confused by what might be considered two separate streams of AT research. The first was sociological, accompanied the creation of the construct, and was popular in the 1950s. It tied ambiguity intolerance to dogmatism, authoritarianism, and fascism. That stream was theoretically weak and the associated measures and research were weak, too. The entire theoretical premise and associated research tended to confuse attitudes, ideologies, clusters of points of view, and personality. The measurement problems (unknown or poor psychometric properties) and quality of study designs (typically correlational) resulted in little progress in the quest for knowledge, as is noted by Furnham and Ribchester and others. You might drop reference to authoritarianism and dogmatism in your Background section, paragraph 1 because it relates to the first AT research stream and doesn't have any obvious relationship to your study.

The second stream is psychological and had its beginnings with Stanley Budner and his AT measure which was more cognitive than sociological in theoretical grounding. Budner did not explicitly attempt to create a new conceptualization of AT but by reducing the ideological content of his measure and focusing his efforts on measure development, he helped move AT research toward a more cognitive psychological conceptualization whether intended or not. Budner's measure was the most widely used measure for decades but suffers from poor
psychometric quality. Subsequent AT measures and research have increasingly concentrated on individual variation in responses to ambiguous stimuli and that seems most relevant to your study. The correlates of AT in this stream are risk taking propensity and uncertainty orientation—any trait orientation toward stimuli that involve risk, uncertainty, complexity, unfamiliarity, and related perceptions.

Therefore, the theory on which you are founding your study and the nature of your measures of both AT and your dependent variables are important for the reader to know if he or she is going to understand and interpret your findings. Ideally, your study would have used multiple measures but, absent that, a discussion of the content of the Reis measure, a presentation of the reliability and other psychometric properties of the Reis measure using your data, and the implications of using that measure for your hypothesized relationships, is warranted. Also, elaborate some on the theoretical rationale for your expected relationships.

3. This is an extension of comment 2. The use of the Reis measure of AT is very important to your findings. Provide some discussion of why the Reis measure is the best measure for your study and explain how its multi-dimensional nature clarifies the hypothetical influences you expect to find. Each dimension receives separate discussion in your results section, therefore, each dimension should be discussed in your background leading up to the study. Does the measure comprehensively measure the dimensional components of AT as you believe it should? Is there anything deficient about the totality of dimensions in the Reis AT measure?

4. You conducted separate t-tests of mean differences to arrive at your findings. I recommend you also report an F-test to show how AT overall influences your dependent variables. This is especially of interest considering the relatively weak effects you found, i.e., somewhat high p-values for some relationships, and the relatedness of the set of tests you performed. Your sample size and response rates are excellent, by the way.

5. In discussing your study limitations, you state that your study is not cross-sectional. It appears cross-sectional in that the data were collected at one point in time. I was confused by this statement and perhaps it needs elaboration to help me understand what you are saying about the study’s design.

- Minor Essential Revisions

6. There are occasional grammatical errors or awkward sentences that should be remedied by proofreading and editing.

- Discretionary Revisions

7. You clearly explain why you measured academic year but did not explain why you incorporated the other two chosen demographic variables in your analyses ("age" and "gender"). The distribution of age in your sample seems to be non-representative of a more general population of medical practitioners or
students considering it has two centers, one in the early 20s and one in the early 50s. Why not include other variables, for example, area of specialization or practice location (rural or urban--this seems to be relevant to your arguments for the implications of your study)?

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

**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'