

## Reviewer's report

**Title:** Applying psychological theory to evidence-based clinical practice: Identifying factors predictive of managing upper respiratory tract infections without antibiotics.

**Version: 1 Date:** 12 January 2007

**Reviewer:** Nick Sevdalis

### Reviewer's report:

Review of Implementation Science MS "Applying Psychological theory to evidence-based clinical practice: Identifying factors predictive of managing upper respiratory tract infections without antibiotics" by MP Eccles et al.

#### General

The authors report a study, in which they used a number of psychological models that predict/explain behaviour to model Scottish GPs decision to prescribe antibiotics for the treatment of URIs. The authors found better (i.e., less noisy) modelling of self-reported behavioural intention to prescribe and of simulated prescription behaviour than of actual prescription behaviour (measured via each participants' individual prescription rates). The authors' data also allow a within-model assessment of the importance of different factors and also a cross-model comparison.

These findings are interesting and the subject matter is certainly of interest to the audience of IS. The main strength of the study is that it is theory-driven. In other words, unlike much similar research, the study starts off with a number of models that purport to measure human behaviour (or behaviour change) and uses them to model a specific behaviour in a group of clinicians. In addition, it is commendable that the authors examined 3 different measures of behaviour. (In both these respects, the study should be of interest to social psychologists as well.)

I do, however, have reservations regarding the publication of the manuscript, as, in my view, the study could have been written up more clearly (see my comments below).

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Essentially, the study is attempting to extend previous findings regarding GPs prescription behaviour (as reviewed on p. 5). This is not evident at all from the way the study is "positioned". I understand that the authors may want to focus on methodological issues, but the manuscript is not written for a social psych journal. With this in mind, I feel that an attempt should be made to show some continuity in the available evidence on prescribing behaviour.

Moreover, in the Discussion the authors could explore more \*systematically\* their findings in terms of what parts of each theory appeared to work well in their models. (As it stands, the Discussion looks like a list of possibilities, not very well integrated with each other.) This would tie in nicely with the specific behaviour that they are trying to model. In other words, I'm not asking for a full-blown discussion of the components of the theories. I am asking for a discussion of how well specific components of the theories worked in the modelling of prescription behaviour. (This discussion may also inform the authors' reasoning regarding the low explained variance in actual prescribing behaviour.)

Furthermore, I do have concerns regarding the presentation of the Methods and of the Results sections of the manuscript – as should be evident by my suggested revisions in the following section. The authors' description of what they did does not always match what they report in the Results. Moreover, there are bits of the text that are unclear. These require revision, if the manuscript is to be read and understood easily (as the manuscript stands, some parts are not at the moment).

One last point: I wonder whether the fact that some of the GPs reported having changed their management of URIs affected the modelling. The authors report models based on the whole sample, but are the models for the 2 sub-groups of doctors (those who did and those who didn't change their management) the same? I understand there's a statistical issue here (not enough subjects), but, nevertheless, I wonder whether this analysis would reveal sth interesting.

Additional points:

- P. 8: secondly, individual prescribing...to conduct a sensitivity analysis”: very unclear section, needs rewriting.
- P. 8, last sentence: “low score...high intention...not to prescribe”. I suggest: “responses were summed and scaled so that higher scores indicate higher intention to prescribe” – be simple when defining scale anchors! The full range of the measure should also be given here (I assume it is 3-21) and it should then be repeated on p. 12. Alternatively, do not add the measures, average them (as it’s easier for the reader to keep in mind the 1-7 scale throughout the manuscript).
- Pp. 9-10: “Having done this...regression analysis”: unclear what the authors mean
- P. 11 and 17: the N of participants who said that others write prescriptions in their name is reported as 45 on p. 11, but then becomes 39 on p. 17. Requires clarification.
- Pp. 11-12: independent group comparisons are reported but the test statistic is not mentioned (is it a t-test, for instance?)
- Pp. 11-13: the authors report the number of participants who endorsed the statement “I have already decided to change my management of URTIs...etc”. The number is 167 on p. 11, 182 on p. 12 and then becomes 188 on p. 13 – unclear, requires clarification.
- P. 13: similar point: adding up the 188 participants who did and the 66 participants who did not endorse the statement gives us a sum of 254, but the total N = 228 (p. 11). As above, requires clarification.
- P. 14: the knowledge item(s) are mentioned here for the first time – they do, however, feature in Table 4. The authors need to explain what the items were, give examples in Table 1, and include the items in their presentation of the predictive factors in the Methods section (p. 7).

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

- P. 9: a reference is needed to Green’s work

Discretionary Revisions (which the author can choose to ignore)

- P. 11: the inter-correlations between the measures would be easier to read if they were presented in a correlation matrix instead of in the text
- P. 15, 2nd para: perception of the condition
- Throughout the manuscript: word limits permitting, I suggest the authors avoid the acronyms for the theories

**What next?:** Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

**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.