Reviewer's report

Title: Communicating effectiveness of intervention for chronic diseases: what single format results in the "best" decision?

Version: 1 Date: 24 January 2008

Reviewer: Judithq Covey

Reviewer's report:

The authors report the findings of an experimental study designed to examine the concordance between the decisions that people make about a preventive treatment when presented with information about the risk reducing or life-extending benefits of the treatment presented in a single format with the decisions they subsequently make when "comprehensive" information is provided. They were particularly interested in whether the degree of concordance was dependent on the format used to present the single piece of information. Hence, participants were presented with one of four single formats (absolute risk reduction ARR, number needed to treat NNT, relative risk reduction RRR, and prolongation of life POL) and their decisions were compared with the decisions they subsequently made when "comprehensive" information was provided which was all four formats plus a pictorial representation of the risk reduction.

On the whole the experiment conducted was robust in its design and the data has been appropriately analysed (some specific points are raised below). The paper is also generally well-written. However, my main comment about the paper concerns the inference the authors draw about what the degree of concordance between the decisions participants make between the single and comprehensive format means.

At the centre of the paper (including the title shown above) is the claim that if there is discrepancy between the two decisions that participants make the decision they make with the "comprehensive" information is a better decision than the one they previously made with the single format. Hence, as the authors themselves state in paragraph 6 of the introduction "If decisions made on the basis of a single format differ significantly from the decisions made when the more nuanced story is told, this will indicate that the use of this single format for decision-making is sub-optimal." Whilst this claim has intuitive appeal (because we might like to think that people are better informed and make better decisions if they are provided with more information and, more specifically are presented with a range of perspectives on an issue) it is entirely speculative. For example, it is not inconceivable that one of the four formats has a biasing effect on participants' evaluations of treatments then a discrepancy between the single and comprehensive formats might actually be indicative of the additional information provided in the comprehensive format leading people away from their "best" decision. And, there is some evidence of this in the literature in a paper published by some of the co-authors on this paper in which
participants’ choices between risk-reducing interventions were more likely to choose an intervention with a higher relative risk reduction rather than a higher absolute risk reduction when relative risks were explicitly stated (Gyrd-Hansen et al., 2003, Risk Analysis). In other words presenting relative risks as well as absolute risks and baseline risks arguably produced worse decisions (if one’s aim is to maximise absolute risk reductions) than if only absolute risks and baseline risks had been presented. Hence, more comprehensive information may not always be better than less.

I feel that the authors need to respond to this issue and if appropriate the paper would require a MAJOR COMPULSORY REVISION.

I will now turn to more specific points about the paper. I would consider all of these MINOR ESSENTIAL REVISIONS.

Abstract
Objectives: Doesn’t mention that all four formats also included a pictorial representation
Subjects and methods: In the Method section the age range is 40-59 not 40-60
Interpretation: See my general comment above

Introduction
Paragraph 3: It would have helped to give examples of the four formats and explain how they relate to one another (particularly POL). I think the unfamiliar reader might struggle to see the difference and may not be willing to trawl through the appendix.

Paragraph 4: In Covey’s (2007) meta-analysis it was actually noted that the format for the NNT was generally similar across studies but that RRR and ARR tended to vary quite a lot. Again can you illustrate the pictorial representation for the reader.

Paragraph 5: Related to the point made above can you elaborate how POL and ARR are derived from data

On a more general point you don’t mention anything about the baseline risk or effect size manipulations in the introduction. It would be useful if you could do that and say something about the rationale for including these variables in the design.

Methods
Paragraph 2: You mention that you have used 16 out of 24 interview formats. But say nothing about what the other 8 were used for. Also on this point could you use the term interview guide rather than interview format to avoid confusion with risk presentation formats. Can you show the reader examples of the four formats (plus pictorial). I did look at the appendix but many readers might not and also they aren’t actually identified for the reader in the appendix.

Paragraph 3: Can you say more (possibly in the introduction) about the rationale for the baseline risk and effect size manipulations. Also could you state what your
predictions are about what effects these manipulations should have on choices.

Paragraph 4: Can you confirm that each interviewer did the same number of each type of interview guide across the study as a whole?

Paragraph 5: I’m not entirely clear what % difference you are talking about in your power calculation. Do you mean that you were powered to pick up a 15% difference in concordance levels?

Statistics

Paragraph 2: You haven’t made it entirely clear what dependent measure you are analysing in your regression. I only worked it out when I saw the results in Table 5.

Results

Generally clear although in paragraph 3 you could elaborate what you mean by ‘not entirely consistent’ (in terms of the level of effectiveness variable).

Discussion

A balanced discussion although as noted above I don’t buy the idea that lack of concordance means the decision made in the single format is necessarily a poor one.

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.

Declaration of competing interests:

I declare that I have no competing interests