Reviewer's report

Title: A cost-effectiveness study of ICT training among the visually impaired in the Netherlands

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Reviewer: Chris Dickinson

Reviewer's report:

As the authors point out, it is rare for cost-effectiveness studies to be carried out regarding low-vision rehabilitation, so this study regarding ICT training is very welcome. It is also timely, considering the ever-increasing number of potential technological solutions for visually impaired individuals.

However, the study lacks clarity in some aspects of the experimental detail; and some of the hypotheses explored, and assumptions made, need further explanation.

Specific (the line numbers referred to are those added by the authors, rather than the submission system)

Abstract line 7 (and elsewhere eg page 6 line 13) It is confusing to refer to the several different instruments used as outcome measures as if they were a single questionnaire: it should be made clear that at each relevant time point there were 6 questionnaires employed. Was the order of the 6 questionnaires the same on each occasion?

Page 4 lines 2/3 In an international journal, it would be better to give VA in logMAR notation.

Page 4 line 19 There is another study of cost-effectiveness of low vision rehabilitation published recently - Bray et al Acta Ophthalmologica doi:10.1111/aos.13255

Page 6 line 3 I appreciate the rationale for the "before and after" study design, even though it is not desirable. However I think the recruitment of participants should be reported with as much rigour as if it was an RCT. How many participants formed the potential pool? How many were interested? In how many cases was it judged inappropriate? How many had training but were not in the study? How many dropped out of the training? This information could be added to the Appendix 1 figure, which is currently rather uninformative, and this should be moved to the
main text. The authors need to disclose as well as they can any sources of bias in the recruitment/follow-up, or ways in which they attempted to avoid bias. I was dismayed to see that researchers in some cases helped to complete the questionnaires with participants, which is not good scientific practice. It appears there was no age limit on the participants (based on Table 1) - so why use ICECAP O rather than ICECAP A? Was there a target number of participants based on a power analysis? Or recruitment across a fixed period? Were participants undergoing any other forms of treatment or rehabilitation at the same time?

Page 6 line 13 The choice of questionnaires is not well justified. This is particularly the case for the questionnaires which are not available to the reader to go and look up (page 7) - although citations are given, the text is either not available or in Dutch (refs 8,9). It appears from information given in the Results, that "medical consumption" also includes what might more usually be termed "social care" ie, assistance around the home. What was the hypothesis about change in "Medical Consumption" or "Productivity Cost"? What use was made of the information gathered on level of education or daily activities (I don't really know how to interpret "work disability" and "pre pension"?)?

Page 8 line 1 (and p11 line 9) - Is the data parametric or non-parametric? This should be established and then either t-test or Wilcoxon signed rank performed as appropriate.

Page 8 line 8 What is the rationale for including all the medical costs? Page 12 suggests it was because they proved to be higher after training, but the authors couldn't have known this at the start.

Page 8 line 14 I think more detail is needed on drop-outs, or those who had not completed training. These people still appeared to create some costs, and yet these are not accounted for. You say some people had not completed training "within the study period". Did this mean that their training was particularly lengthy, and therefore more costly? If they are not being counted this would artificially lower the mean training cost.

P11 line 9 (and Table 2) p<0 and p=0 are impossible - presumably you mean p<0.001?

P13 - Are the QALY estimates based on the change in the EQ-5D scores? How is the "years of well-being" derived from the ICECAP score? I thought that the metric in the ICECAP was "Years of Full Capability"?
Although the ICT training effect might persist for 15 years (although that's a bit of a stretch considering there is only 3 months of follow-up data to base it on), it seems very unlikely that the health status of the participant will be maintained as they age another 15 years.

P14 lines 12/13 I don't understand this sentence?

P16 The discussion about the need for a more sensitive measure than EQ-5D is highly relevant, although I would expect the authors to consider the use of VisQoL, considering that it was designed for this purpose.

P 16 Although this is primarily a cost-effectiveness study of what is described as an established intervention, I think some discussion of the intervention itself is warranted. Firstly I thought the direct outcomes of the training (improvement in computer use) were rather disappointing as shown in Table 1, with substantial proportions of participants still having difficulty with many basic aspects of operation (e.g., screen and mouse). The training protocols are obviously also very loosely interpreted, since individual programmes ranged from 2-63 sessions. One could argue that this training protocol needs to be more tightly specified before meaningful economic evaluations can be carried out.

I also thought the authors might have made more of the result of the caregivers questionnaire, which showed the "delayed" effect from T1 to T2, rather than immediately from T0 to T1. This would seem to be much more promising as a sign that participants were further developing their usage, and independence, in the period after training.

Typos
Table 2 77.02 in penultimate row

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.
No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.
No

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.
No
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