Shortening the VF-14 visual disability questionnaire

Konrad Pesudovs, PhD

Research Fellow, and Deputy Director of The Centre for Clinical Research Excellence in Ophthalmology Outcomes Research

David B Elliott, PhD

Professor and Head of Department of Optometry

1. Centre for Clinical Research Excellence in Ophthalmology Outcomes Research, Department of Ophthalmology, Flinders Medical Centre and Flinders University, Bedford Park, South Australia, 5042, Australia.
2. Department of Optometry, University of Bradford, Richmond Road, Bradford, West Yorkshire, BD7 1DP, UK

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**Address for correspondence:** Konrad Pesudovs, Department of Ophthalmology, Flinders Medical Centre and Flinders University, Bedford Park, South Australia, 5042, Australia.

Phone (+61 8) 8204 4899, Fax (+61 8) 8277 0899, email Konrad.Pesudovs@flinders.edu.au

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Pager should be commended for his paper *Assessment of visual satisfaction and function after cataract surgery* as it tackles some important and difficult issues. However, the work on shortening the VF-14 deserves further comment. Pager claims “only 1 proposal to shorten the VF-14 has been advocated”, but three other reports introducing shortened versions of the VF-14 have previously been published, including Velozo et al’s 10-item version,¹ and Mallinson et al’s five 7-item versions² which were evaluated with Rasch analysis. Rasch analysis examines the pattern of questionnaire responses using an iterative probabilistic model to determine the calibration of person ability and question (and response scale) difficulty along the same linear scale. This provides truly linear measurement, and a powerful insight into the questionnaire’s internal consistency by reporting question fit to the model.¹⁻⁴ These advantages have led to the widespread use of Rasch analysis in ophthalmology e.g. ¹⁻⁴. Indeed, in a recent review of the psychometric properties of existing vision-related quality of life questionnaires, the use of Rasch analysis was one of the criteria proposed to identify questionnaire quality.⁴ Velozo et al found that there were not enough “difficult” items in the VF-14 and there were gaps in the scale which suggested additional items were required.¹ They added 10 questions and included 2 in a final VF-10. Mallinson et al used Rasch analysis to determine whether shortening the VF-14 resulted in a loss of measurement precision.² They found that items could be removed without losing precision as long as the “easier” tasks were removed. If the “harder” tasks were removed an unacceptable loss of measurement precision occurred. They also found redundancy within the VF-14, for example “reading small print” or “reading the newspaper” were predictable based on the response to the other question so it was beneficial to remove one of these items. Notably both remained in Pager’s VF-7. Pager justified the 7-item scale by its correlation with the 14-item scale. However, a high correlation doesn’t imply interchangeability, a Bland-Altman limits of agreement analysis would be required to demonstrate interchangeability.⁵ In addition, few of the psychometric properties suggested by de Boer to evaluate vision-related questionnaires were included in Pager’s report. Clinicians and scientists looking to use a shortened version of the VF-14 would be well advised to consider the work of Velozo and Mallinson and use a Rasch analysed shortened version of the VF-14.
References


