Reviewer's report

Title: Measuring benefits and patients' satisfaction when glasses are not needed after cataract and presbyopia surgery: scoring and psychometric validation of the Freedom from Glasses Value Scale (FGVS(c))

Version: 1 Date: 4 October 2009

Reviewer: Mark Atkinson

Reviewer's report:

Title: Measuring the benefits and patients' satisfaction when glasses are not needed after cataract and presbyopia surgery: Scoring and psychometric valuation of the Freedom from Glasses Value Scale (FGVS)

This manuscript is quite well written and reports on the psychometrics of a newly developed measure (FGVS) for cross-sectional evaluation of patients' satisfaction with surgical outcomes. There are a number of places in the manuscript that would help the reader understand the performance of the measure; as well as some factors researchers may want to consider when examining scale performance as it relates to sample composition(s). Also the use of certain terms and statistical methods should be reworked or justified.

The title is long, can it be shortened?

Pp 2: Background, last sentence: “which measures the benefits in cataracts…” perhaps the benefits of… among cataracts…” would be clearer.

Pp 3: Para 1, Sentence 3: Is the use of the term crystalline lens correct, don’t you mean natural lens?

Pp 4: Para 2, The FGVS: Please define the response options for the 5 point rating scales.

Pp 4: Para 3, Patients and study design: It would be informative to list the general criteria used to identify surgical candidates (e.g., the severity criteria for presbyopia or cataracts in terms of visual acuity assessment).

Pp 5, Last Para: The authors operationalize the terms convergent and discriminant validity of items in unusual ways. Typically demonstration of construct convergence and discrimination employ the use of other (previously validated) measures. Please provide references to support the use of these types of validity analyses applied to item-item and item-scale construct analyses. (http://www.socialresearchmethods.net/kb/convdisc.php)

Pp 6, Para 3: Why were non-parametric statistics used if the rating scale were likert-type? These sorts of analysis is a bit weaker than parametric methods. Moreover, the use of PCA is a parametric method. Consistency is important here and, if selecting non-parametric analytic approaches MDS or Cluster analysis
might have been more appropriate?

Pp 6, Last Para: Would it be possible to report the visual acuity ranges for hyperopia, astigmatism and myopia prior to surgery? The reported percentage of hyperopia is surprisingly high. Did this group also contain persons with presbyopia? Also, the study was reported to include persons with cataracts and presbyopia, but there is no description of the percentages of participants with presbyopia.

Pp 7, Para 3: It would be interesting to know the ceiling effects associated with the with vs. without glasses groups, I suspect that most of the observed effects would be among those who did not use glasses following surgery.

Pp 8, Para 1 & Table 3: Please report the item factor loadings, Eigen values, and R squared statistics for the two scales.

Pp 9, Last Paragraph: Please clarify why means were reported when non-parametric analyses were performed, wouldn’t medians be more appropriate?

Table 5: The potential impact of co-morbidities on scale performance is interesting. Please indicate what co-morbidities contributed to FGVS variation, as this could be important to other using the measure.

Table 1: Since the percentages do not add up to 100%, this table should have a note indicating the co-occurring conditions of myopia, hyperopia and astigmatism (and presbyopia) in the sample.

Table 4: A Cronbach’s alpha was computed for a theoretical scale with two items (i.e., Evaluation of the Results), how was this statistic estimated?

Table 6: Could be enhanced by reporting statistics and tests for various types of post-surgical co-morbidities.

**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:**

While not directly competing with the intent of this review, I do conduct research in the area of ophthalmology that is sponsored by Alcon Labs.

Our work is not directly related to publications of this manuscript nor the evaluation of temporary corrective aids - and thus is not associated with my financial benefit.
The sponsoring company (Alcon) could realize financial benefit by using the measure to demonstrate greater patient satisfaction with their IOL products in terms of lower need for temporary corrective lenses after surgery.

I believe I have provided a fair and rigorous review; one that is not biased by my other relationship with the sponsoring company.

MJA