

Author Response: Agreement between optometrists and ophthalmologists in the certification for vision impairment

Dear Editor,

We appreciate the interest of Jawaid et al.¹ in our recent paper.² The comparison of raters to a consensus panel to determine agreement has been widely used in medicine.³⁻⁶ We sought to undertake a comparison against a standardised outcome, determined by a consensus panel, rather than the assessment of absolute differences between groups. The former is more meaningful and reliable in the context of the underlying goal of the analysis, to evidence whether low vision optometrists have the appropriate ability in the certification process for vision impairment.

We agree with the sensitivity and specificity values calculated by Jawaid et al.¹ However, given that such values rely on the underlying assumption that the true state is known, the presentation of agreement values is more appropriate to our study.

Any judgement on the performance of the raters is relative and fails to appreciate the importance of the finding of equivalence in outcomes between the optometrists and ophthalmologists. Indeed, variation in opinion between clinicians on patient management is not uncommon.^{7,8}

The background information in each case was identical to that in the original medical records. We would like to highlight the methodological importance of presenting identical information to each rater, rather than the format of the information itself. Nevertheless, we acknowledge the subjective nature of the clinical task under evaluation.

We consider that it would be misleading to rely on visual acuity (VA) measurements alone, given the lack of precision of this measure of visual function, especially at poor levels of VA.^{9,10} Both VA and visual field outcomes were considered together by the participants, in order to represent the clinical task. However, an investigation of the differences in interpretation with respect to each outcome was not undertaken systematically and may be warranted.

Jawaid et al.¹ suggest eligibility should include the global index, Mean Deviation (MD). The MD does not allow for the separation of generalised and localised loss and is dependent upon the level of media opacity,¹¹ thus complicating interpretation. Another complication is the considerable variability of the visual field at -22dB MD.^{12, 13} Furthermore, such criteria exclude individuals with significant fixation instability e.g. late age-related macular degeneration (AMD), in whom a reliable visual field outcome may not be possible.

Finally, we wish to highlight the impact of our findings on patients, given the potential for patients with atrophic AMD to access certification through primary care in the UK.

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References

1. Jawaid I, Rotchford AR, Stead RE, King AJ. Letter to editor: Agreement between optometrists and ophthalmologists for sight impairment registration *Eye* 2020
2. Bartlett R, Jones H, Williams G, Farewell D, Acton JH. Agreement between ophthalmologists and optometrists in the certification of vision impairment. *Eye* 2020; <https://doi.org/10.1038/s41433-020-0860-x>
3. Fongemie JM, Al-Qadheeb NS, Estes NA 3rd, et al. Agreement between ICU clinicians and electrophysiology cardiologists on the decision to initiate a QTc-interval prolonging medication in critically ill patients with potential risk factors for torsade de pointes: a comparative, case-based evaluation. *Pharmacotherapy*. 2013;33(6):589-597.
4. Gabel MJ, Foster NL, Heidebrink JL, et al. Validation of consensus panel diagnosis in dementia. *Arch Neurol*. 2010;67(12):1506-1512.
5. Plassman BL, Khachaturian AS, Townsend JJ, et al. Comparison of clinical and neuropathologic diagnoses of Alzheimer's disease in 3 epidemiologic samples. *Alzheimers Dement*. 2006;2(1):2-11.
6. Miloslavsky EM, Naden RP, Bijlsma JW, et al. Development of a Glucocorticoid Toxicity Index (GTI) using multicriteria decision analysis. *Ann Rheum Dis*. 2017;76(3):543-546.
7. Choong YF, Devarajan N, Pickering A, Pickering S, Austin MW. Initial management of ocular hypertension and primary open-angle glaucoma: an evaluation of the royal college of ophthalmologists' guidelines. *Eye (Lond)*. 2003;17(6):685-690.
8. Viswanathan AC, Crabb DP, McNaught AI, et al. Interobserver agreement on visual field progression in glaucoma: a comparison of methods. *Br J Ophthalmol*. 2003;87(6):726-730.
9. Leinonen J, Laakkonen E, Laatikainen L. Random measurement error in visual acuity measurement in clinical settings. *Acta Ophthalmol Scand*. 2005;83(3):328-332.
10. Rosser DA, Laidlaw DA & Murdoch IE. The development of a 'reduced logMAR' visual acuity chart for use in routine clinical practice. *Br J Ophthalmol* 2001;85:432-436.
11. Heijl A, Lindgren G, Olsson J, Åsman P. Visual Field Interpretation With Empiric Probability Maps. *Arch Ophthalmol*. 1989;107(2):204-208.
12. Heijl A, Lindgren A, Lindgren G. Test-retest variability in glaucomatous visual fields. *Am J Ophthalmol*. 1989;108(2):130-135.
13. Wild JM, Pacey IE, O'Neill EC, Cunliffe IA. The SITA perimetric threshold algorithms in glaucoma. *Invest Ophthalmol Vis Sci*. 1999;40(9):1998-2009.