

Comments on: Validating tablet perimetry against standard Humphrey Visual Field Analyzer for glaucoma screening in Indian population

Dear Editor,

We read with interest the study by Icchpujani *et al.* in which they assessed the correlation between the perimetric outcomes using iPad-based “Visual Fields Easy” (VFE) program and Humphrey Visual Field Analyzer (HVFA), in normal as well as glaucomatous eyes. The study outcomes showed that VFE was not suitable as a rapid screening tool for mass screening of glaucoma.^[1]

The authors stated the study as a prospective, cross-sectional observational investigation. To our knowledge, a prospective study design implies follow-up visits with multiple tests. A cross-sectional study design implies a single test or visit. A study cannot be prospective and cross-sectional at the same time. Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) does not recommend using words “prospective” or “retrospective”.^[2] Thus, it would be beneficial if the study design is clarified to avoid confusion.

Further, in methodology, it would be worthwhile for the readers to know whether the participants used a reading glass or trial lens to perform the test. Also, conducting the test in a dim and evenly lit room with no direct reflections of doorways or windows on the screen was found to give optimum results.^[3] An explanation on this aspect would be appreciated.

The authors have observed a significant inverse relationship between missed points on VFE with mean deviation (MD) and a parabolic relationship with pattern standard deviation (PSD) values obtained with 24-2 Swedish Interactive Thresholding Algorithm (SITA) Standard [Fig. 2 in the original article].

However, in methodology, the authors have mentioned that all study participants had undergone 24-2 SITA Fast strategy. The authors might recheck the statements or provide a pertinent justification for the same.

The authors highlighted an enhanced application for tablet perimetry, called Melbourne Rapid Fields (MRF) that offers a thresholding algorithm and gives output as MD and PSD. Moreover, they mentioned the paid nature of the application and limited availability, which deters using the same for research and screening purposes. However, we have managed to conduct a cross-sectional observational study at our center, comparing MRF application and HVFA 24-2 SITA standard program in glaucoma patients.^[4]

MRF software could test $30^{\circ} \times 20^{\circ}$ of the visual field using the radial pattern full test in which 66 locations were used. The thresholding strategy started with a 17 dB stimulus and used a three-presentation binary Bayesian protocol to yield eight steps (0, 3, 6, 12, 17, 22, 26, and 30 dB) across the 30 dB range (Zippy Estimation by Sequential Testing, ZEST). In our study, MRF showed significantly lower MD, higher PSD, and lesser number of points depressed at $P < 5\%$ on PSD probability plot compared to HVFA, pointing towards the possibility of underestimating glaucomatous defects and missing early cases of glaucoma. MRF cannot replace HVFA, the current gold standard. However, it can be used extensively for screening so that in a community, at least the moderate-advanced glaucoma cases can be detected and referred for complete management. The lack of Internet strength in rural areas and questionable detection of early cases with MRF may require an upgrade.^[4] Considering one of the drawbacks, attempts are being made by the designers of the application to store the data locally (on the iPad) until next web connection when the data will be uploaded to the web.

One of the limitations of VFE application noted by the authors was the creation of smudges on touching the display, which lead to a decrease in quality and contrast sensitivity of

the target. This limitation can be avoided by using a Bluetooth keyboard spacebar connected to the iPad device to record the response, as used in our study, so that the screen is devoid of any fingerprints.^[4] Furthermore, better tactile feedback was provided to the patient on making the response.^[5]

We believe a response from the authors on our comments will add to the translational value of the study and help the readers to have a better understanding of this novel technology.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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References

1. Ichhpujani P, Thakur S, Sahi RK, Kumar S. Validating tablet perimetry against standard Humphrey Visual Field Analyzer for glaucoma screening in Indian population. *Indian J Ophthalmol* 2021;69:87-91.
2. Vandembroucke JP, von Elm E, Altman DG, Gøtzsche PC, Mulrow CD, Pocock SJ, *et al.* Strengthening the reporting of observational studies in epidemiology (STROBE): Explanation and elaboration. *PLoS Med* 2007;4:e297.
3. Vingrys AJ, Healey JK, Liew S, Saharinen V, Tran M, Wu W, *et al.* Validation of a tablet as a tangent perimeter. *Transl Vis Sci Technol* 2016;5:3.
4. Kumar H, Thulasidas M. Comparison of perimetric outcomes from melbourne rapid fields tablet perimeter software and Humphrey field analyzer in glaucoma patients. *J Ophthalmol* 2020;2020:8384509.
5. Kong YX, He M, Crowston JG, Vingrys AJ. A comparison of perimetric results from a tablet perimeter and Humphrey field analyzer in glaucoma patients. *Transl Vis Sci Technol* 2016;5:2.

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Access this article online

Quick Response Code:	Website: www.ijo.in
	DOI: 10.4103/ijo.IJO_3793_20

Cite this article as: Kumar H, Thulasidas M. Comments on: Validating tablet perimetry against standard Humphrey Visual Field Analyzer for glaucoma screening in Indian population. *Indian J Ophthalmol* 2021;69:1017-8.

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