

Commentary: A novel miniaturized visual acuity chart design

Estimation of visual acuity remains the gold standard outcome measure to assess the vision potentials in Ophthalmology practice. The evolution of visual acuity charts dates back to the 1862 when the Dutch Ophthalmologist Herman Snellen designed an alphanumeric chart that fits within a 5×5 grid.^[1] The chart later saw improvements in the design and continues to find its place in most eye care practices even after 2 centuries. The known flaws in the Snellen chart led to the development of the standard logMAR-based visual acuity charts^[2,3] such as the ETDRS visual acuity chart^[4] which were then validated and continues to be the gold standard testing tool for visual acuity. Though logMAR-based visual acuity estimation has its technical

advantages, it has not yet penetrated all eye care practices and the possible reasons include unfamiliar scoring system, perceptions related to the time consuming nature of the measurement and the chart's size.^[5] This becomes more relevant in community eye care as the visual acuity tests need to be cost effective, portable, time saving, and also compact. There have been attempts in the past to overcome these difficulties with the development of tests such as the pocket vision screener,^[6] modified logMAR,^[7] and the reduced logMAR^[5] visual acuity test charts.

The standard testing distance for visual acuity has remained 4 meters and beyond for estimating the visual acuity thresholds without ocular accommodation influencing the test results especially in younger population. This paper^[8] brings out a new perspective to these attempts by coming out with the mini log MAR that shows reliability and repeatability at a 1 meter testing

distance. The MLM deploys tumbling E optotypes scaled to be tested at 1 meters through a +1.00 DS spectacles to account for the dioptric demand. This chart has been validated on an adult sample with a mean age of 31.08 (14.86) years and has shown to be valid compared to the standard logMAR visual acuity estimates. The authors propose a regression equation to predict the visual acuity estimates at 6 meters based on the MLM estimates. The agreement between the calculated visual acuity with the MLM is well within the clinically agreeable limits compared to standard Log MAR visual acuity estimation. It is important to note that the chart has not been validated in the pediatric age group and also for a range of refractive errors. The clinician also needs to be aware of the standard lighting requirements to ensure accuracy of visual acuity testing. The use of the illiterate E optotype has advantages of reducing the cognitive load associated with identifying the optotype as the only variable influencing the measurement is the optotype size.^[9] This makes it applicable for testing subjects who are not familiar with alphabets. But the directionality component of the tumbling E needs to be borne in mind when testing subjects who have confusions with orientation, and in the pediatric age group less than 8 years for whom the directionality sense is in the developmental phase. Nonetheless this miniaturized version of the standard logMAR does has its scope in the routine clinical and community vision screening practices for the adult population.

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