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Comparison of the Snellen acuity chart with the spectrum eye care software LogMAR chart amongst children of school going age

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Most vision screening protocols worldwide rely on the measurement of visual acuities (VAs) to detect visual anomalies amongst children of school-going age. This is despite the fundamental design flaws in the Snellen chart. However, there appears to be a growing demand for the usage of modern technology in the eyecare profession. The aim of this prospective and quantitative study was to evaluate the equivalence of a standard Snellen chart compared to the Spectrum Eyecare Software LogMAR chart in evaluating VAs amongst children of school going age. Normative data was collected from three randomly selected schools in Johannesburg (South Africa) on the non-clinical population of 209 children of school-going age mean 10.13 ± 2.45 years. Monocular and binocular VAs was measured using the Snellen chart at six meters and the spectrum computer software program at three meters. The statistical significant differences ($p < 0.05$) were determined using ANOVA for distance binocular and monocular VAs using the Snellen chart and the Spectrum Eyecare Software. The performance of the Spectrum Software LogMAR was found to be one line better than that of the Snellen chart. However, the Snellen chart still remains the simple, easily accessible and inexpensive method to be used for vision screening amongst children of school-going age compared to the Spectrum Eyecare Software.

Recent Publications:

1. Perera C, Chakrabarti R, Islam F M A and Crowston J (2015) The eye phone studies: reliability and accuracy of assessing Snellen visual acuity using smartphone technology. *Eye (London, England)* 29 (7): 888-894.
2. Lodha V S (2015) Comparison of visual acuity measurement by smartphone based application vs. conventional Snellen visual acuity chart. *International Journal of Enhanced Research in Medicines and Dental Care* 2(6): 39-41.
3. Gounder P A, Cole E, Colley S, Hille D M (2014) Validation of a portable electronic visual acuity system. *Journal of Manufacturing Technology Management* 3 (2): 35-39.
4. Zhang Z T, Zhang S C, Huang X G, et al. (2013) A pilot trial of the iPad tablet computer as a portable device for visual acuity testing. *Journal of Telemedicine and Telecare* 19 (1): 55-59.
5. Trivedi R H, Wilson M E, Peterseim M M, Cole K B and Teed R G W (2010) A pilot study evaluating the use of EyeSpy video game software to perform vision screening in school-aged children. *Journal of AAPOS* 14.

Biography

Thokozile Ingrid Metsing is currently a Lecturer at the University of Johannesburg. This article is part of the research conducted by her towards her DPhil study, entitled: "Strategies to improve school vision screenings at primary health care level in Johannesburg, South Africa". She has published six articles with three of them currently under review from the *African Vision and Eye Health and Ophthalmology Clinics and Visual Sciences* journals.

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