

A correlation between measurements obtained with the LEA symbols visual acuity chart and the gold standard ETDRS VA chart for 3 to 7 years old normal

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Aim: This study is a comparison between the Visual Acuity (VA) measurements with the preliterate LogMAR LEA symbols VA chart (LH) and the standardized Early Treatments for Diabetic Retinopathy Study VA chart (ETDRS) in young children to help further define reported validity limitations of the former.

Method: Forty (40) healthy and visually normal children age 40 to 83 months were recruited in a cross-sectional prospective study with all participants being required of being able to recognize the 10 Sloan letters. Under a standardized and controlled clinical setting, VA was measured monocularly and randomly using both the LEA and the ETDRS charts. A child's VA threshold level is reached when a minimum of three letters on a line cannot be read correctly.

Results: VA scores of the two charts were highly correlated ($r=0.90$, $p<0.0001$), with a clinically significant over estimation of 0.04 (<0.50 line) LogMAR in the LEA chart scores regardless of the subjects' age or gender. The two charts were in total agreements in the detection of subjects' inter-ocular difference.

Conclusion: This study indicates that the preliterate LEA chart can provide a valid alternative that matches the accuracy of the standard adult ETDRS chart for measuring VA in young normal children. However, the LEA chart may overestimate the acuity score measured by the ETDRS chart; therefore, the two charts cannot be used interchangeably.

Biography

Safiah Mulla is a Faculty Staff at the Department of Optometry. She holds her BSc in Optometry from King Saud University (1987). Currently, she is the Rector's Counsellor for Maintenance and Operating Affairs for King Saud University Female Campus.

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