Evaluation of a Universal Reading Acuity Chart in a Clinical Population

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Purpose:
The purpose of this study was to examine the Odom-Robin reading charts in a clinical population.

Methods:
Reading charts require different versions for each language. The Odom-Robin Charts are number charts making them relatively independent of the language of the reader. The chart consists of 10 blocks of numbers whose size range from 0.9 LogMAR to 0 LogMAR in 0.1 LogMAR steps. Five lines and two columns of the same print size are grouped into a block. Visual acuity (VA) may be scored using a modified version of ETDRS scoring in which a line corresponds to a letter. Critical text size or time measures may be calculated using a modified version of the MNREAD strategy using a block as a sentence.

One eye of 39 patients with cataracts (mean age 70.62±0.56 years) was selected for evaluation at the Eye Clinic of the 2nd Affiliated Hospital of Zhejiang University in Hangzhou, China. The patients’ mean distance VA using standard Chinese acuity charts was 0.54±0.38 logMAR. Patients being evaluated for cataract surgery were asked to read the Odom-Robin Charts prior to dilation. The chart was held at a distance of 40 cm. Patients were asked to read each line of numbers and state if the two numbers were the same or different. The time required to read each block was measured with a digital timer and the number of errors per block also determined. Near visual acuity was calculated by determining the number of lines read correctly and multiplying by 0.02 logMAR. Mean time per line read correctly (T/Lc) was calculated by dividing the total time by the number of lines read correctly.

Results:
We calculated the correlation of patients’ distance VA to their Odom-Robin near VA and T/Lc. Mean Odom-Robin near VA was 0.53±0.22 logMAR (r = 0.54, p < 0.01). Mean T/Lc was 9.06±24.07 seconds. The correlation to distance VA was 0.49 (p < 0.01) indicating that patients with poorer VA took a longer time to read each line correctly.

Conclusions:
The Odom-Robin Charts can be used in a non-English speaking population with media opacities to determine near VA. The Charts can be used by persons who are proficient in any language which uses Arabic numerals as found in all European and most non-European languages. Further evaluation in a broader range of ages and conditions is required to determine the charts’ utility.