

Modified LogMAR Chart: *Can We Make It Real?*

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ABSTRACT

Introduction: Visual acuity is one of the visual function assessments performed in a routine eye examination to generally examine how well a patient see. From visual acuity finding (and other assessments), an examiner can diagnose and/or observe the progression of any visual abnormalities in monitoring the treatment plan e.g. for vision therapy in amblyopia cases.

Objectives/Research Problem: In clinical setting, Snellen and LogMAR charts are frequently used to assess visual acuity. However, previous studies reported that Snellen and LogMAR charts bear some weaknesses to be used in children and special needs population. Snellen chart showed poor reliability and repeatability in visual acuity measurement due to inconsistency in the letter size progression, number of letters per line and letter separations between the lines. This study aims to establish a new modified LogMAR chart to overcome the some weaknesses posed in Snellen and LogMAR charts, so as to potentially produce better results in clinical setting and screening purposes, yet easy to be used in children and special needs population.

Materials and Method: The modified LogMAR chart was designed and created in Power Point slides and being presented on a laptop. The letter sizes were calculated precisely at 3m viewing distance with acuity ranged of 0 logMAR (6/6) to 1.0 logMAR (6/60). Each slide presentation consisted of 3 letters, each of which was separated by half letter width (Snellen chart: inconsistent separations between the letter; LogMAR chart: one letter width separation between the letter). A total of 20 subjects participated in this study and their visual acuities were measured with modified LogMAR chart, Snellen chart and standard LogMAR chart, and the results were compared.

Results and Discussion: It would be expected that the visual acuity measurement using modified LogMAR chart could produce reliable results and sensitive enough to detect visual abnormalities e.g amblyopia during eye screening. Detail findings of the study would be presented during the KAHS research week.

KEYWORDS: Visual Acuity, Modified LogMAR Chart, Snellen Chart, LogMAR Chart, Amblyopia

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