

Modified LogMAR Chart: New Insight of Vision Chart

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ABSTRACT

Introduction: Visual acuity measurement is one of the most common method of assessing any abnormalities of visual functions such as amblyopia. Earliest detection of amblyopia may reduce the prevalence of vision impairment in adult. Crowding is a phenomenon in which there is difficulty in recognition of target due to the presence of neighboring objects (flankers) specifically in amblyopia. The lesser the spacing between target and flankers, the greater crowding is.

Objectives: This study develops a digital portable modified LogMAR chart with closer spacing between the letters as compared to other available charts in the market.

Materials and Method: The chart is created and presented using Dell INSPIRON 3420 laptop with screen size 14.0 inches, with resolution of 1366 x 768 pixels. The chart consists of four sets of presentations and each presentation containing 44 slides with acuity ranged 0LogMAR (6/6) to 1.0LogMAR (6/60). The acuity is a smallest letter that could be resolved with 0.033logMAR per letter adjusted. Twenty normal participants are chosen to mimic anisometropic and strabismic amblyopia as well as control. Visual acuity of participants was measured using four different visual acuities charts namely: Sheridan Gardiner, standard logMAR chart, modified logMAR chart one letter width separation and half letter width separation and then crowding magnitude between these acuity charts was compared.

Results and Discussion: Analysis of the study will be presented later in detail.

Conclusion: This study will be beneficial in a way that by developing a modified LogMAR chart, the amblyopia can be diagnosed as early as possible because early detection is a key to the treatment of amblyopia.

KEYWORDS: Visual Acuity, Crowding, Amblyopia, LogMAR Chart

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