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The effectiveness of refractive correction for low vision patients in Taiwan

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Purpose: To investigate refractive correction (including refractive lenses and filter lenses) efficiency for patients with low vision.

Method: There were totally 220 patients from 7 to 99 years of age (51.31±19.54) who were referred from Taiwan Resource Portal of Assistive Technology, the Ministry of Health and Welfare during 2016 to 2017, patients who could not identify hand moving at 40 cm were excluded in the study. There were 119 males (54.1%) and 101 females (45.9%); 42 (19.1%) patients were identified as mild visual impaired, 76 (34.5%) were moderate and 102 (46.4%) were severe.

Result: Eye disease and examination data were listed. 90% patients showed more or less refractive errors (spherical≤-0.75D, ≥+0.75D or astigmatism over 0.50D) and about half of patients' visual acuity could be promoted by refractive correction, the best corrective VA (LogMAR value) were significant effective when comparing with un-correction (LogMAR VA mean difference=0.17±0.3, t=7.285, p=0.000); in addition, eye frame prescription was also positive correlated with light sensitivity or photophobia (Pearson X^2=4.028, p=0.045), nystagmus (Pearson X^2=8.477, p=0.004) and visual field (Pearson X^2=10.192, p=0.001). Moreover, filter lenses were also correlated with presbyopia patients (Pearson X^2=4.408, p=0.044), light sensitivity or photophobia (Pearson X^2=18.630, p=0.000) and contrast sensitivity (Pearson X^2=27.293, p=0.000).

Conclusion: Refractive correction is the first step when proceeding low vision examination, patients' VA increased about 1.48 times and might decrease near ADD from 16.7D (uncorrection LogMAR VA 1.2) to 10.0D (after correction LogMAR VA 1.0). In the meanwhile, light sensitivity or photophobia, nystagmus, contrast sensitivity and even visual field were improved. To yield twice the result with half the effort, refractive correction plays the main role before prescribing low vision aids.

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