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The use and prescribing of pocket and portable electronic low vision aids for poeple with visual impairment

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Abstract: Pocket and portable electronic low vision aids (PELVAs) are relatively new devices designed to enhance vision of people with visual impairment. Therefore, the aim of this thesis was to evaluate their use and prescribing patterns for PELVAs for patients with visual impairment and to inform clinicians of the functions or attributes that are most important when considering their prescription. Firstly, the parameters (including magnification screen size, luminance contrast, and resolution) of PELVAs were assessed. Magnification and screen size were also compared with the manufacturers? data. Secondly, data (age, gender, ocular condition, visual acuity, living situation, registration of visual impairment, type of low vision aid prescribed) from 6,668 patients who attended the Low Vision Service for Wales were analyzed to assess the clinicians? prescribing patterns for PELVAs. Thirdly, reading frequency and duration, and self-reported effectiveness of PELVAs and optical low vision aids for patients with visual impairment were evaluated by using a telephone interview based upon the Manchester Low Vision Questionnaire. Finally, reading speed was measured for normally sighted subjects with visual impairment who used a PELVA and an optical low vision aid. The factors that could predict reading speed were investigated. PELVAs enhanced the luminance contrast of high and low contrast letters which may be beneficial for patients with contrast reduction, for example due to cataracts. Variations were found between reported and measured magnification of the PELVA. Only 10% of adult patients were prescribed a PELVA, and younger males were more likely to use them. A larger proportion of children (36.5%) were prescribed a PELVA. Patients who used PELVAs rated them highly for near vision tasks and were more likely to use PELVAs for reading once a day but for a long duration, whereas optical low vision aids were used more frequently and for a shorter duration. It was found tha