

Special Issue Editorial: Vision function vs functional vision: Assessment and intervention implications for children and young people with vision impairment

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Habilitation is an emerging profession designed to support and maximise orientation, mobility, and adaptive behaviour for independence, in children and young people with vision impairment. This is achieved through structured, systematic, and consistent training; determined by local provision, and driven by child-centred delivery. Habilitation remains to be a relatively unknown area of specialist support (Hayton & Dimitriou, 2019) despite being part of the daily living routine for many children and young people with visual needs worldwide (Hayton & Mort, 2022).

The aim of this special issue was to collate broader perspectives for maximising independence in children and young people with vision impairment. This is because much is said about the importance of maximizing independence skills in this low-incidence high-need population, but little empirical work offers tangible, supportive, evidence-based strategies to facilitate independent living skill development. This special issue offers fresh evidence-based perspectives on dimensions of independence, including how individual priorities and agendas can evolve through the course of development (from birth to adulthood). Habilitation is stated in Article 26 of the United Nations Convention on the Rights of Persons with Disabilities (2006); a global approach to protecting human rights of persons with disabilities. As such, a global approach was taken in the curation of the papers presented in this special issue, to allow sharing of good practice internationally. Represented countries include Greece (Papadimitriou & Argyropoulos, 2023); China (Xie et al., 2023); Belgium (Ben Itzhak et al., 2023); the United States of America (Oliver et al., 2023; Zhang et al., 2023); Italy (Grumi et al., 2023; Petri & Tinelli, 2023); and the Netherlands (Houwen et al., 2023; Szpiro & Hoogsteen, 2023). Each paper offers additional contextual information that seeks to support and enhance provisional arrangement and general understanding of visual needs in children and young people.

The first theme underpinning many of the papers in this special issue is the role of functional vision and visual function. Petri and Tinelli's (2023) systematic review explored the relationship between MRI and vision impairment resultant from periventricular leukomalacia; a brain lesion that can affect visual and motor skill functioning. Petri and Tinelli (2023) reported that as very premature babies are likely to have an MRI in the first few months of life, it is important to identify any possible correlations between anatomical damage and vision impairment. This is because visual function affords early exploration opportunities (of environments, and people and objects within them), and so the ability to identify prognostic indicators (via MRI) that may affect visual functioning is crucial for a clinician to establish a rehabilitation programme as early as possible. Though visual function is important for participation in daily activities, functional vision also plays a crucial role in developing appropriate interventions and support strategies.

Zhang et al. (2023) used visual search strategies and eye tracking as a potentially helpful method to evaluate functional vision in children with cerebral vision impairment, as cluttered visual environments make it harder for a child with cerebral vision impairment to find target objects. Zhang et al.'s (2023) study highlighted the importance of novel, and fun, assessment approaches to identify higher order deficits in children with cerebral vision impairment; particularly noteworthy when visual function/visual acuity is within the "normal" range. Ben Itzhak et al. (2023) also used eye tracking to explore visual orienting functions into cerebral vision impairment screening measures. They reported that highly salient stimuli (cartoons/human-like faces) led to faster responses, though children with cerebral vision impairment needed more time to process their visual scene.

Conclusions that can be drawn from these studies indicated that visually cluttered environments may affect reaction time and accuracy (Zhang et al., 2023), especially in naturalistic settings (home and school; Ben Itzak et al. 2023), where reliance is more on functional vision than visual function.

The emphasis on the importance of accommodating functional vision arguably enables us to better understand the differences between clinical and functional assessments and identify areas of research priority. Szpiro & Hoogsteen's (2023) qualitative study mapped connections between functional, psychological, and social facets of daily life for adults with low vision. In their analysis Szpiro & Hogsteen (2023) identified the complex needs of persons with low vision and offered salient considerations for research and development in the creation and evaluation of assistive technology to holistically support daily living and independence. Accommodation of functional vision also spotlights practitioner and researcher responsibility to work with the adult or child and their residual functional visual capacity as opposed to working mainly from clinical vision assessment outcomes. The incorporation of unique visual needs in practice and intervention design was explored by Oliver et al. (2023), who harnessed parental perspectives to develop recommendations for practitioners and professionals in supporting their child(ren) with cerebral vision impairment. Oliver et al.'s (2023) main finding was that to have a timely diagnosis and early intervention, clinician knowledge and awareness of CVI needs to be enhanced. Additionally, developing support systems with and for parents of children with CVI is needed to encourage parent and patient involvement in daily activities/intervention. The recommendations offered by Oliver et al. (2023) indicated types of holistic support that can be embedded in everyday practice.

This holistic, child-centered approach extends to the paper by Grumi et al. (2023), who used the Delphi method in their development of a patient/parent outcome measurement tool for adaptive behaviour for independence in children with vision impairment. Involving the patients and parents in the development of this measure helped to identify areas of priority relative to various areas of independent living skills. A triangulated approach was adopted to ensure co-operation between healthcare professionals, parents and patients, emphasizing the importance of collaboration to develop personalised care. In keeping with the theme of developing and adapting assessment measures, Houwen et al. (2023) adapted existing sensory profile measures to accommodate their use with children with vision impairment. The findings have broad implications for home, public, and educational settings. They reported that both younger and older children had sensory processing problems, however older children showed fewer behavioural problems in comparison to the younger group. It was argued that this could be due to older children being more attuned to social and physical environments, and as such had learned coping strategies to better respond to overwhelming sensory experiences.

Extending from coping strategies, Xie et al. (2023) explored three areas of psychosocial adaptation: coping, self-esteem, and social integration. They reported that self-esteem of a person with vision impairment plays a crucial role in their adaptation to stressful circumstances and personal development of effective coping strategies. Although they reported that self-esteem may be fragile in children and young people with vision impairment, problem-solving and personal action plans can support self-esteem development. Therefore, encouraging positive self-evaluation in children and young people with vision impairment can support active problem-solving in daily life. This can be enhanced with inclusion opportunities in mainstream settings. Xie et al. (2023) reported that social integration positively predicted self-esteem, but there is space to enhance and increase public acceptance of people with vision impairment in mainstream contexts. The role of self-esteem also links to the paper by Papadimitriou and Argyropoulos (2023), as they postulated that Braille skills are a factor in improving social lives in school and in employment settings. They reported that people

with Braille literacy skills have greater life and job satisfaction, in addition to higher self-esteem. The positive effects of Braille literacy were part of the foundation of their work examining phonological type errors in Braille spelling. Through their project, they identified error prone fingers for Braille typing skills and reported that these errors can be corrected through a task analysis approach.

Whilst most of the papers included within this special edition of the journal offer broader practical recommendations (e.g., raising awareness, technology use, multidisciplinary working), the field of childhood vision impairment should move toward more nuanced practical strategies and solutions. This would ensure that we offer forward-thinking, innovative, practical solutions for the field and crucially, the beneficiaries. This includes but is not exclusive to consideration of standardized measures and tailored interventions for people with vision impairment. Arguably, this narrower lens would focus further research and seek to bridge the research to practice gap.

The importance of bridging the gap between research and practice ensures that practical and evidence-based solutions give clear outcomes to support Habilitation Professionals and wider practitioners in their work. Only by having these focused and nuanced recommendations, as provided for example in the paper by Papadimitriou and Argyropoulos (2023), can practitioners truly translate and apply this evidence to their own caseloads, consistently and in a meaningful way.

To sum, each paper in this special issue provides an important and practical contribution to further the field of vision impairment and habilitation. The variety of research questions, approaches, and methods, speak to many areas of topical concern in the field, though the foundations of provision and support are grounded in collaboration, advocacy, and multi-disciplinary working. All papers call for increased clinician and public knowledge and awareness of childhood vision impairment to provide holistic, and ideally early support strategies.

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