

Sir,
Reliability of a question inventory for structured history taking in children with cerebral visual impairment

Cerebral visual impairment (CVI) is the commonest cause of impaired vision in childhood.¹ Perceptual visual dysfunction from dorsal and/or ventral stream damage is often present¹⁻⁴ and is effectively elicited by structured history-taking.^{1,2} To do this, we apply a 51-question inventory, in seven sections that requires validation.

Case report

Thirty-six consecutive children presenting to our clinic over 12 months with problematic CVI (mean age 10.8, range 5–16.5 years, SD 3.1) and 156 children (mean age 8.24, range: 4.5–11.6 years, SD 1.92) from seven mainstream primary schools (excluding those with poor reading skills, dyspraxia, autism, and other developmental and behavioural disorders) comprised patients and controls.

Respondents completed a five-point Likert item scale, where questions were phrased such that lower-value answers of 'Never' (score 1) or 'Rarely' (score 2) denote normality, and 'Sometimes' (score 3) 'Often' (score 4), and 'Always' (score 5) denote impairment.

Scores were summated for each section. Internal reliability was tested with Cronbach's α ,⁵ comparing the variance in response for individual questions, to the variance in response for the whole section. Intra-rater reliability was tested by 19 consecutive families completing the inventory twice, one week apart. The intra-class correlation was computed on total coefficient scores. Analyses were performed using SPSS (Version 15) and Minitab (Version 16).

Results are shown in Table 1. Forty-nine of the 51 questions showed consistency and reproducibility in the control population; the responses of 'often' and 'always' not occurring, apart from two questions. Patient

responses for all seven subsections indicated poorer visual performance than for control children. The intra-class correlation score was 0.98, indicating good intra-rater agreement.

Comment

This, now validated, structured history-taking inventory helps characterise high functioning CVI,^{1,3,4} and is a practical tool that is used by colleagues internationally. Two questions concerning visual attention were found to be nonspecific and have been reworded.¹

Acknowledgements

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Table 1 Cronbach's α scores for each subsection of the inventory for the control and clinical cohorts

Subsection	No. of questions	Cronbach's α -controls	Cronbach's α -patients
1. Visual fields	13	0.91	0.81
2. Perception of movement	5	0.95	0.81
3. Search	9	0.98	0.71
4. Guidance of movement	11	0.68	0.77
5. Attention	4	0.98	0.56 ^a
6. Crowded scenes	4	1.0	0.82
7. Recognition and navigation	7	1.0	0.77

Scores below 0.7 suggest more than one trait is being investigated by the questions in the subsection, whereas scores above 0.9 suggest redundancy, with questions investigating the same traits.

^aThis value became 0.79 on removal of two redundant questions. Within the control group, there was a high degree of redundancy (α values >0.9) for all sections, except for guidance of movement.