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Eye-pointing classification in non-speaking children with severe cerebral palsy

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Talk Speech and Language Therapy
4 PUBLICATIONS **10** CITATIONS

Jenefer Sargent
National Health Service
21 PUBLICATIONS **253** CITATIONS

Tom Griffiths
University of Dundee
24 PUBLICATIONS **180** CITATIONS

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Eye-Pointing Classification in Children with Cerebral Palsy View project

Translation and cross-cultural validation of the C-BiLLT into English and other languages View project

Eye-pointing classification in non-speaking children with severe cerebral palsy

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Background

Limitation of body movement imposes restrictions on direct experience and self expression. For the young developing child vision serves as a vital input sense, and use of controlled looking behaviours (e.g. fixations and fixation/gaze shifts) can also be an important means of communicative output. For example, by shifting gaze between an object and a partner they might draw their partner's attention to that object in order to comment on it, or request it etc.

Careful observation of looking responses during the presentation of assessment materials can also be an effective way of determining cognitive and receptive language abilities in this otherwise hard to assess population.

Deliberate fixations can also be used as an access method to augmentative & alternative communication (AAC) systems.

The term eye-pointing is often used when describing such looking behaviours, however, there is often poor agreement between clinicians concerning which looking behaviors constitute genuine eye-pointing for communication and which do not.

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Aim

The aim of this work is to establish a valid and reliable classification scale that will enable clinicians to describe and categorise looking behaviours related to eye-pointing in young non-speaking children with cerebral palsy whose movement restriction precludes the effective use of other pointing methods.

Method

The scale has been developed through the following procedures:
1. a comprehensive literature review to explore how eye-pointing is commonly described;
2. focus group discussions to develop the descriptive scale's content and form;
3. review of the scale through an online survey using purposive sampling to target relevant international audiences;
4. inter-rater and test-retest reliability testing.

Findings

Literature searches including the terms eye-point AND communicat* across 6 databases yielded 338 articles, 71 articles of which were relevant to the researched topic. 1 study (Sargent et al., 2013) offered a clinical description of eye-pointing as:

The context-relevant, controlled and intentional use of sustained gaze in order to direct one or more partner´s visual attention to any item or object for a deliberate communicative purpose. Other communication modes (facial expression, vocalisation, head movement and body position) may be employed, as available, to support the use of gaze. The intended meaning is established collaboratively between the child and the adult.

Focus group discussions, survey feedback and further group evaluations produced a 5-point scale reflecting:
• developmental progression of core looking skills including fixing, disengaging and shifting gaze;
• social use of looking behavior that may be separate from eye-pointing;
• eye-pointing as a socially motivated action on the part of the child to bring about some form of collaborative engagement with someone in relation to some thing.

Current reliability testing in the UK and Portugal suggest the scale will achieve high levels of agreement between raters.

V Other visual behaviours	IV Fixes gaze	III Disengages and shifts gaze	II Uses gaze socially	I Uses eye-pointing
Does not fix gaze	Fixes gaze	Demonstrates Level IV and	Demonstrates Level IV and	Demonstrates Level IV and
		Disengages gaze from objects, shifts gaze and fixes on new objects	Demonstrates Level III and	Demonstrates Level III and
			Shifts gaze from object to partner's face *and/or* Shifts gaze from partner's face to object	Demonstrates Level II and
				Fixes gaze on object, shifts gaze to partner's face and returns gaze to object *and/or* Fixes gaze on partner, shifts gaze to object, returns gaze to partner.

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