Assessing communication for children with movement disorders – a practical approach

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Abstract

Children with movement disorders, for example Cerebral Palsy, can have speech and language difficulties. In order to identify strengths and weaknesses within their communication profile individual assessment is required. This assessment should inform clinical decision making. The principles of a communication assessment are the same as those used with children who do not have movement disorders; however due to some children's motor difficulties accessing traditional assessments may be difficult, therefore adaptations and accommodations to the assessment may be required. Assessment at an impairment level can support in identifying areas of difficulties, however assessment of a child's functional communication is equally as important. Participation is the ultimate goal when we decide on interventions. We can only support this if we are aware of a child's present abilities, limitations and the impact of these on daily life. Thorough assessment enables us to do this and this article outlines which approaches in practice are most useful in children with both communication difficulties and movement disorder.

Keywords cerebral palsy; communication; language; language tests; speech

Epidemiology

Cerebral Palsy (CP) is the most common of all movement disorders in childhood. It affects approximately one in four hundred live births in the UK, and between 1.5 and 4 per 1000 live births in the world. CP is an umbrella term for a group of disorders of the development of movement and posture. It is a consequence of disturbance that occurred in the developing fetal or infant brain; it is often accompanied by disturbances of sensation, cognition, communication, perception and/or behaviour and/or by a seizure disorder. It is non progressive but consequences may change over time.

We can describe CP in terms of distribution in the body (hemiplegia vs diplegia); motor subtype (spastic, dystonic, mixed, ataxic); aetiology and neuroanatomical basis. There are helpful tools that describe a child's impact in terms of gross motor function: the Gross Motor Function Classification Scales (GMFCS levels I–V); manual ability and function: the Manual Ability Classification System (MACS levels I–V) and communication: Communication Function Classification System (CFCS levels I–V).

Not every child with a movement disorder will have CP. Therefore it is important to be aware of the aetiology, phenotype and classification of a child's diagnosis before considering how and what you will focus on in assessment.

CP can coexist alongside neurodevelopmental conditions such as Autism Spectrum Disorder (ASD) and Attention Deficit Hyperactivity Disorder (ADHD). The prevalence of ASD in the CP population is higher compared to general population. It is important that difficulties are not attributed purely to a child's movement difficulties and that differential diagnoses are made where appropriate. Neurodevelopmental difficulties may further impact on a child's participation and function.

The purpose of a language assessment

Communication impairments are common in children with CP. At a population level communication difficulties are associated with gross motor function, intellectual impairments, sensory impairments, prematurity and seizures. Studies have shown that the prevalence of communication disability directly correlates to the severity of the motor impairment. In children with GMFCS I–III 50–75% of children will have receptive and/or expressive difficulties and 100% of children with GMFCS IV and V will have communication difficulties. Although the severity of impairments tends to correlate within the CP population, such correlations cannot be assumed at an individual level, therefore careful individual assessment of a child's communication is crucial. It is important that communication difficulties are identified as social and educational participation may be reduced and quality of life may also be impacted.

Augmentative Alternative Communication

Children with CP may require additional support for their communication. This can be in the form of Augmentative Alternative Communication (AAC). AAC describes all forms of communication, other than speech. For children who have severe speech and language difficulties, AAC may supplement speech or replace speech if it is unintelligible. AAC may require no additional equipment; this may be termed as 'unaided communication' for example gestures, signing, pointing. AAC can make use of equipment; this can be described as 'aided communication'. The equipment that is used may be low-tech and does not require power. Such systems include paper based systems, such as communication books or boards which use symbols and photos. AAC can also be high tech and requires power to operate. These range from simple single message switches to tablet devices. It is recognised that if the introduction of communication support and AAC is delayed, there may be difficulties in: language development, social interaction, learning, development of life skills. There may be difficulties in controlling one's environment and also limitations in participation which can impact leisure, education and employment. In order to set meaningful goals and provide appropriate support

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and interventions, an assessment to determine a child's strengths and weaknesses is imperative. Without baselines, it is not possible to ascertain if the support which has been provided has been beneficial.

Language and communication development in children with CP

Evidence suggests that although the pattern of language development may be fundamentally similar to that of typically developing children, the patterns of interactions are different. For example, conversations tend to serve a particular purpose, rather than for general discussion. Parent interaction styles are altered and primarily parents are more directive in their communication. For example, they will initiate more, ask more questions and make more requests. Beyond confirming, denying and acknowledging, when a child tries to convey information they are less likely to be understood and clarification is required. Where children have severely reduced speech intelligibility, higher levels of parental directedness have been observed and by comparison, children with more intelligible speech have a wider range of communicative functions, which allows conversation to be more varied. Recent research indicates that children with CP who have communication difficulties have reduced levels of participation (involvement in life situations) and perceived quality of life in the area of interaction with parents.

Assessment

As with all children who have speech and language difficulties, an assessment will involve a case history, observations, play, social interaction and assessment.

It is necessary to start from where the child is now and work up from there. We can use our skills of observation to begin our assessment alongside what we know about their specific diagnosis and the implications of this diagnosis on their abilities and development. Observations should be followed up with assessment (formal and informal) ensuring we challenge our expectations.

The most common areas that a language and communication assessment will focus on are:

- Attention and Listening: how long can the child attend to an adult-directed task and a self-directed task? Is their attention single channelled? Can they demonstrate joint attention?
- Play: What does the child like to play with? What types of play do they engage in? For example, exploratory, cause-effect, imaginary
- Receptive Language: What types of words and instructions can the child understand?
- Expressive Language: How does the child convey information and what communicative functions do they use?
- Speech: Does the child use vocalisations or any speech? How intelligible is the speech?
- Social Interaction: Does the child make eye contact? Can they initiate and respond in conversation?

Frameworks such as Light's competencies' model may be useful to look at to support assessment to identify strengths and in weaknesses in child's a child's communication profile. This model is for people who require AAC, however the competencies can be applied to general communicative competence. Lights' model has four domains, each of which has an impact on communication (Figure 1).

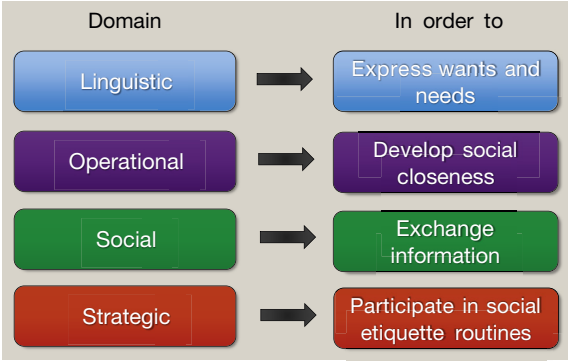

Figure 1 Lights competencies' model.

A detailed case history is required as this can provide a Speech and Language Therapist (SLT) with information about where to start when they begin direct assessment. The information that parents provide is also helpful in understanding where they feel their child's level of skill is. Helpful questions to ask are included in Box 1 (below).

Direct assessment

In addition to a child's level of motor difficulty there are other factors that need to be considered for direct assessment. Although not an exhaustive list, the factors to be considered are summarised in Table 1.

The child's opinion

As well as obtaining information from parents and professionals working with the child, where possible opportunities for the child to give their opinions is essential. For example: what are their interests? What do they want to communicate about? Who do they want to talk to? What are their preferred communication methods?

Using a tool such as Talking Mats will enable a child, through the use of pictures/photos to explore their opinions and feelings about activities, people and places in their lives.

Formal assessment

When assessing children with the most severe movement disorders (GMFCS IV–V), the traditional standardised assessments that SLTs often use to assess language can be difficult for this group of children to access. These assessments typically require children to point to pictures and/or to manipulate objects. Assessments may require a child to provide a verbal response and

Taking a history: helpful questions

- What does your child do when they want more of an activity?
- How do they indicate that they want to finish?
- How does your child indicate that they would like a toy?
- Can your child request a particular activity in such a way that you know for sure what activity is requested?
- Does your child look at people or objects when they are named?
- Can your child make a choice when options are presented?
- Can your child give a yes and no response?

Box 1