

Clinically feasible set of outcome measures for children and adolescents with Cerebral Palsy in Finland: Descriptive Classification of Scales and Outcome Measures in Physiotherapy

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Objective

To find reliable, valid and clinically feasible set of outcome measures for children and adolescents with CP via a multiprofessional working model.

Background

According to a national health service report published in 2005 over 220 different outcome measures were used for clinical assessments in children and adolescents with CP. For example, a total of 60 different measures were used by physiotherapists. This methodological diversity has led to a serious attempt to develop national consensus on outcome measures that are based on existing evidence when available and otherwise on best expert opinion with continuous evaluation of effects.

Method

The project was established in 2008 in neuropediatric units of two university hospitals (Turku and Helsinki) and one outpatient clinic (Turku). During the first year the multiprofessional teams selected the most valid outcome measures based on the available evidence, expert opinion and ICF framework. The selected outcome measures were used in everyday clinical practice (Jan to June 2009 and year 2010). Altogether 269 families with a child with CP gave their permission to participate. The information gathered by the selected measures was systematically collected after every assessment, and the clinical utility of the results was analysed.

Results

All the 269 children were classified by GMFCS, MACS (4 years onwards), and Communication Function Classification System (CFC5). Furthermore, cognition was classified by a four-level scale (1.normal cognition 2.normal cognition, but specific impairment 3.moderate delay; -1 SD to -2 SD 4.mental retardation). The distribution of diagnoses and the results of the functional scales are presented in table 1. As an example of the consensus achieved, the outcome measures categorized by the ICF components and used by physiotherapists are illustrated in figure 1. The assessment methods used by physiotherapists were chosen based on child's age and GMFCS level of child (Figure 2).

Study population (n = 269)		Table 1. The distribution of diagnoses and the levels of the functional classifications in a study population of 269 children with CP.				
Age range	0.8 - 20years					
Bilateral spastic	118 (44%)					
Unilateral spastic	112 (41%)					
Dyskinetic	27 (10%)					
Ataxic	5 (2%)					
Unspecified	7 (3%)					
GMFCS		I 134	II 52	III 36	IV 28	V 18
MACS		I 88	II 82	III 38	IV 15	V 5
CFC5		I 181	II 37	III 20	IV 22	V 5
Cognition		I 97	II 93	III 43	IV 35	

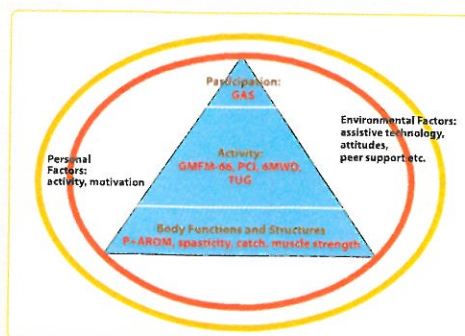


Figure 1. The outcome measures used by physiotherapists according to the ICF components: Goal Attainment Scale (GAS), Gross Motor Function Measure-66 (GMFM-66), Muscle strength (measured manually acc. to Daniel-Worthingham), Passive (P) and Active (A) Range of Motion (ROM), Physical Cost Index (PCI), Six minute walking distance (6MWD), Spasticity (defined by Catch and/or modified Asworth Bohannon), Timed up and go (TUG)

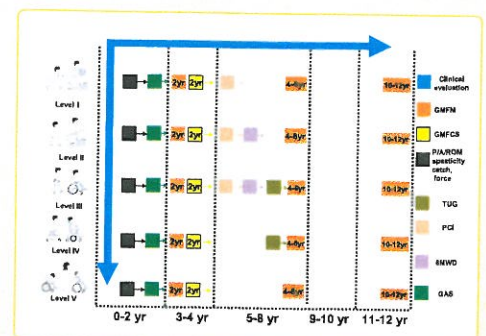


Figure 2. The assessment methods used by physiotherapists were chosen based on age and GMFCS level.

Conclusion

The multiprofessional working model presented here has greatly facilitated the process of developing national guidelines. Two other university hospitals (Kuopio and Oulu) and three state-owned special schools for children with CP have already started to change their practice according to the suggested guidelines. Consequently our future aim is to use the achieved national consensus on outcome measures for benchmarking evaluations.