Developing a Tool to Classify Functional Communication in Individuals with Cerebral Palsy

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Background

Cerebral palsy (CP) affects 1 in 500 children born each year;[1] many develop communication difficulties, including speech, language, and hearing problems.[2] Yet the reported prevalence of communication disorders varies widely[3,4,5] as no consistent method of classifying communication has been used. The World Health Organization's International Classification of Functioning, Disability, and Health (WHO ICF) proposed that health and disability can be viewed from several perspectives: body/structure, activities, and participation.[6] Communication is described as an activity where messages are produced and received.[6] The classic communication model describes the process of sending (e.g., speaking) and receiving (e.g., understanding) messages within different environments including home and community.

Communication Model

Research Purpose

The Communication Function Classification System (CFCS) will provide a valid and reliable classification of communication performance and activity limitations that can be used for research and clinical purposes. It is analogous, and complementary, to the Gross Motor Function Classification System (GMFCS)[7] and the Manual Ability Classification System (MACS).[8] The CFCS consists of 5 descriptive levels for everyday communication performance.

Participants

A development team of 11 participants from 8 stakeholder groups (see Table 1 for a list) discussed and created the first CFCS draft. An additional 27 people attended 1 of 4 nominal group rounds and 112 completed the first round of a Delphi survey. All 112 Delphi first round participants were invited to participate in the second round survey which occurred approximately 4 months after the first round. The second Delphi round was completed by 69 participants.

Table 1. Participants by stakeholder group.

Stakeholder Groups	Development Team	Nominal Group	Delphi Survey Round 1	Delphi Survey Round 2
Adults with CP	1 (9%)	3 (11%)	16 (14%)	12 (17%)
Educators	1 (9%)	4 (15%)	8 (7%)	5 (7%)
Neurologists	1 (9%)	1 (4%)	5 (5%)	5 (7%)
Occupational Therapists	2 (18%)	2 (7%)	8 (7%)	3 (4%)
Parents of Children with CP	1 (9%)	4 (15%)	7 (6%)	4 (6%)
Pediatricians	2 (18%)	3 (11%)	13 (12%)	8 (12%)
Physical Therapists	1 (9%)	3 (11%)	11 (10%)	5 (7%)
Speech-Language Pathologists/Researchers	3 (27%)	7 (26%)	42 (38%)	28 (41%)
Others	----------	4 (15%)	24 (21%)	13 (19%)
N*	11	27	112	69

*Columns do not sum to N due to some participants' membership in more than one stakeholder group.

Procedures

The CFCS development is based on similar procedures as was used in the GMFCS and the MACS processes. Functional communication literature reviews and stakeholders' experiences were considered. CFCS elements were evaluated for usefulness and clarity. Nominal group processes included progressive feedback, where each group suggested changes and raised issues, building upon the previous group's revisions. Changes that received a majority vote from the nominal group were incorporated into the next CFCS revision. This serial consideration continued until the last nominal group suggested mostly wording changes and a consensus towards the concepts emerged. Two rounds of Delphi surveys were administered in Web- or paper-based formats. Delphi surveys, conducted in two or more rounds until an 80% target agreement is reached, provided a structured method for stakeholders to provide anonymous feedback on CFCS drafts. Reliability studies with professionals and parents using the CFCS are in progress.

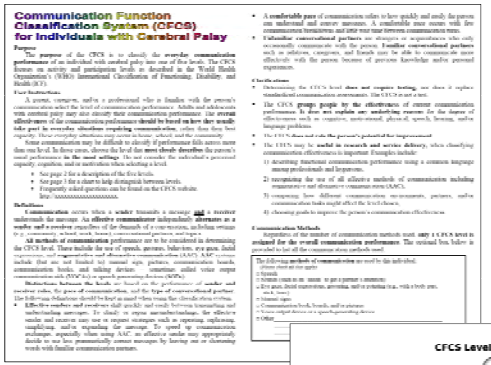
Results

Themes raised by the nominal group and Delphi survey processes included appropriate age levels, description of each level, CFCS uses, the effects of labeling, and distinguishing between levels. We are attempting to address these issues in either the new CFCS draft (reproduced below) and/or in a set of Frequently Asked Questions (FAQs) that will be available on the web. All but the last Round 1 question surpassed the target of 80% agreement. This question then surpassed the target during the second Delphi survey round using the next CFCS draft.

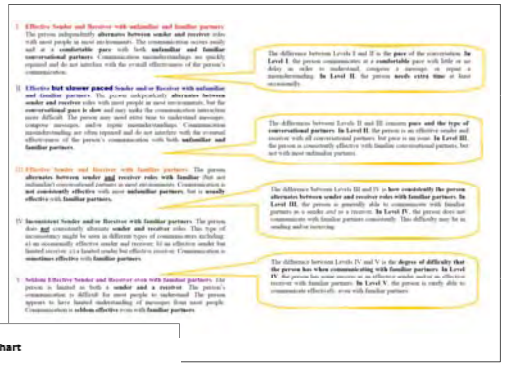
Table 2. Delphi responses (Round 1 N=112, Round 2 N=69).

Delphi Survey Questions	Round 1 Yes	Round 1 No	Round 2 Yes	Round 2 No
Did you have a good idea of what the scope of the CFCS was when you read the bullet points?	97%	3%		
Do the instructions make sense?	94%	6%		
Do the definitions and explanations make sense?	95%	5%		
For Level I, is the wording clear?	92%	8%		
Is the wording of Level II clear?	94%	6%		
Is the wording of Level III clear?	95%	5%		
Is the wording of Level IV clear?	94%	6%		
Is the wording of Level V clear?	98%	2%		
Are the functional communication abilities and limitations of individuals with cerebral palsy sufficiently identified within the levels of the CFCS?	93%	7%		
Are there any two levels which might be hard to tell apart or have some overlap?	36%	64%	10%	90%

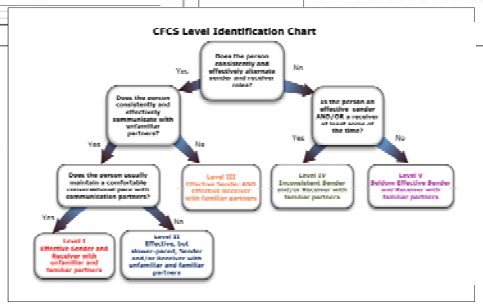
Note: Some chose not to respond to every question. Individual questions were answered by 101 to 108 in Round 1 and by 59 to 69 in Round 2. Percentages are based on the number who answered that question.



CFCS Draft



This is the latest draft of the CFCS. Since it is still under development, please do not use without permission. If you would like to join our listserv to be notified of progress on this project, please send your request to CFCS@epi.msu.edu



The 5 levels in this system are based upon how the individual with cerebral palsy usually performs 'sender' and 'receiver' tasks with familiar and unfamiliar communication partners.

When this poster is staffed, you can use the CFCS to classify communication samples.

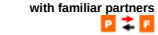
Example of CFCS Levels Drawings

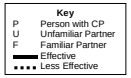
Some people have requested an illustration of the levels. Please give us your suggestions and thoughts on the following draft.

I. Effective Sender and Receiver with unfamiliar and familiar partners

II. Effective but slower paced Sender and Receiver with unfamiliar and familiar partners

III. Effective Sender and Receiver with familiar partners





IV. Inconsistent Sender and/or Receiver with familiar partners

V. Seldom Effective Sender and Receiver with familiar partners

Clinical Implications

The CFCS may be useful for both research and clinical applications. When the CFCS is combined with the existing GMFCS and MACS, a more comprehensive view of the daily lives and functional abilities of individuals with CP should emerge.

References

Available on request.

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