



M É X I C O

The Development of New Assessment tool of Speech-Language-Communication in children - An attempt to promote the use of children-related categories of ICF in Japan

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Abstract

Objective: The purpose was to devise a speech-language-communication scale for disabled children that could be applied by various medical professionals, family members, and personals in treatment and education institutes and to assess the validity and reliability of that scale. The scale is "Ability for Basic Language and communication Scale for Children" (ABLS-C). **Method:** Subjects were 28 children who visited the National Center for Child Health and Development from August 2015 to January 2016. They were examined using the Kyoto Scale of Psychological Development 2001 (KSPD-2001) and the ABLS-C composed of 5 items (wakefulness, lalognosis, speak, intelligibility, and sociality). Validity was evaluated according to correlations of the ABLS-C with KSPD-2001. Reliability was assessed by a parent's pre-post rating (test-retest reliability). **Result:** The KSPD-2001 total score (developmental age in month) was significantly correlation with the total ABLS-C scores, lalognosis, speak, intelligibility, and sociality but not with wakefulness. Test-retest reliability was demonstrated for all items except wakefulness. **Conclusion:** There were significant correlations between the total ABLS-C scores and KSPD-2001, which suggested that ABLS-C is useful assessment tool of children's individual speech, language, or communication functions.

Introduction

There is possibility that language and communication impairment in early childhood could continues to be prevalent throughout the school years. To support child's language and communication development properly, we must not only assess child's levels of language and communication development, but also identify planning way to improve his/her language and communication ability. However, In Japan, the number of specialist for child's language development, such as speech-language-therapist, is not adequate. We therefore developed the ABLS-C to provide a simple scale that could easily assess child's language and communication ability in daily life.

The aim of this study was to develop a new assessment instrument for language and communication function in early childhood. The tool is "Ability for Basic Language and communication Scale for Children" (ABLS-C), which can be useful to child's primary parents as well as various specialists in this field.

Methods & Materials

Subjects. 28 children who were randomly selected out of all children who were seen at the National Center for Child Health and Development between August 2015 and January 2016 (median 23.5 months, 12boys and 16girls).

Variables. Developmental age in month based on the Kyoto Scale of Psychological Development 2001 (KSPD-2001), score of each item on the ABLS-C and the total score of ABLS-C.

Analysis. (1) Validity: The spearman rank method was employed to explore correlation between items on the ABLS-C or the total scores of ABLS-C and the KSPD-2001 developmental age. (2) Reliability: To evaluate reliability, we employed test-retest reliability. Evaluation was made by child's primary parent using the ABLS-C at the first time visiting and in about a week later.

Ability for Basic Language and Communication Scale for Children (ABLS-C)

ABLS-C (Ability for Basic Language and communication Scale for Children)

Grade	0	1	2	3
Wakefulness	 No response to pain stimulus	 Wakes up when shaken	 Wakes up when called to	 Awake
Lalognosis	 No response when spoken to	 Turns and looks in the direction when spoken to	 Follows commands when communicated with gestures and pointing	 Follows verbal commands without gestures or pointing
Speak	 No speech	 Makes vowel sounds like "oooh" and "ahh"	 Points their finger	 Utters meaningful words
Intelligibility	 Able to speak, but completely unintelligible	 Able to speak, and sometimes intelligible	 Sometimes unintelligible	 Everything is intelligible
Sociality	 No eye contact	 Smiles when spoken to	 Waves goodbye	 Plays with friends
Grade	0	1	2	3

- ◆ It is a new assessment scale to provide information concerning child's language and communication ability.
- ◆ The ABLS-C is composed of 5 items regarding a child's language and communication ability, i.e. wakefulness, lalognosis, speak, intelligibility, sociality.
- ◆ This tool is derived from the ICF component of Activities and Participation and Body Function and Structures (with a particularly focus on language and communication functions).
- ◆ Each item was rated on a 4-point scale from 0 to 3, which indicated the best performance at that time.
- ◆ This measure allows users to check out child's language and communication ability in a short time.

Results

	N=28		KSPD-2001		Cognitive-Adaptive		Language-social		Total	
	Median	Range	r	P	r	P	r	P	r	P
Wakefulness	3	0-3	0.204	0.297	0.275	0.157	0.216	0.270	0.251	0.198
Lalognosis	3	0-3	0.423*	0.025	0.460*	0.014	0.539**	0.003	0.491**	0.008
Speak	3	0-3	0.462*	0.013	0.675**	0.000	0.735**	0.000	0.708**	0.000
Integebility	2	0-3	0.315	0.102	0.768**	0.000	0.830**	0.000	0.754**	0.000
Sociality	3	0-3	0.267	0.170	0.598**	0.001	0.708**	0.000	0.633**	0.000
Total scale of ABLS-C	13	0-15	0.473*	0.011	0.805**	0.000	0.866**	0.000	0.819**	0.000

ABLS-C: Ability of Basic Language Scale for Children

PSPD-2001: Kyoto Scale of Psychological Development 2001

* p<0.005

** p<0.001

- ◆ The KSPD-2001 total score was significantly correlation with the total ABLS-C score (R=0.819), lalognosis (R=0.491), speak (R=0.708), intelligibility (R=0.754), and sociality (R=0.633) but not with wakefulness(R=0.251).
- ◆ In addition, the total scores of ABLS-C significantly correlated with the cognition-adaptive KSPD-2001 (R=0.805) and the language-social KSPD-2001 (R=0.866).
- ◆ Scores on speak (k=0.633), intelligibility (k=0.653), and sociality (k=0.737) indicated strongly test-retest reliability, while lalognosis (k=0.469) and total score (k=0,556) had moderate reliability. On the other hand, wakefulness showed no significant test-retest reliability (k=0.054).

Discussion

- ◆ The total scores of the ABLS-C had significant correlation with the total scores of KSPD-2001, the cognition-adaptation KSPD-2001 and language-sociality KSPD-2001. As a result of this finding, (1) It is possibility that this implement enable child's primary parents to easily assess state of their child language and communication development. (2) Moreover, the child's development specialist may obtain information about child's language and communication impairment by using this tool.
- ◆ Test-retest reliability of ABLS-C was verified in 4 items: lalognosis, speak, intelligibility and sociality. On the other hand, such reliability was not demonstrated in wakefulness, one of possible reason for this finding is thought that rating of this item was depending on the rater's subjectivity. Therefore, to improve the validity and the reliability for wakefulness, the assessment process for wakefulness should be reviewed.