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Comparison of Problematic Behavior Assessment by Physical and Occupational Therapists

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Abstract. [Purpose] We used the Japanese version of the Aberrant Behavior Checklist (ABC-J) to investigate whether or not physical therapists (PT) and occupational therapists (OT) assess problematic behaviors of handicapped children differently. [Subjects] The subjects were 11 mentally-retarded children undergoing physical therapy at T Hospital. The examiners were classified into two groups: PT and OT. Wilcoxon's signed rank sum test was conducted on the two groups' ABC-J scores for, *irritability*, *lethargy*, *stereotypy*, *hyperactivity* and *inappropriate speech* scores. [Results] No significant differences between the two groups were observed for most problematic behavior types, although the effect sizes were small. Physical therapists, however, assessed the *lethargy* of the subject children as more problematic than occupational therapists did. [Conclusion] The results that some bias may occur depending on examiner occupation, although the ABC-J allows anyone to be an examiner as long as he/she knows the subject child well.

Key words: Assessment, Handicapped children, Aberrant Behavior Checklist

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INTRODUCTION

According to the Japanese Ministry of Health, Labour and Welfare, there are approximately 550,000 mentally-retarded (MR) people including 117,000 MR children[1)] in Japan, and approximately 420,000 live at home and 130,000 in institutions[2)]. The occurrence rate of MR children varies broadly from 0.86% to 5.6% depending on reports, but is quite high; generally 1 child out of 50 (2 to 3 per 100 births) is MR[3)].

Problematic behaviors include irritability, lethargy, stereotypy, hyperactivity, and inappropriate speech. and they could be factors which delay human motor development. Physical therapists often treat mentally-handicapped children as well as physically-handicapped children[4)]. Physical therapists are required to increase their understanding of mental retardation[5)], and physical therapy approaches are required to account for coexisting mental retardation[3, 6–12)]. In addition, cooperative approaches, in which different types of therapists work together treating children with disabilities, are required in pediatric rehabilitation[5–10)]. We suspected that different types of therapists might not share the same recognition of children's problematic behaviors. Therefore, we investigated whether or not physical therapists and occupational therapists assess problematic behaviors of handicapped children differently, when using the Japanese version of the Aberrant Behavior Checklist (ABC-J)[13)].

SUBJECTS AND METHODS

The subjects were 11 mentally-retarded children undergoing physical therapy at T Hospital (7 boys and 4 girls, aged from 5 years and 6 months to 18 years and 1 month, with an average age of 11 years and 2 months ± 4 years and 4 months) (Table 1). The subjects were diagnosed as having cerebral palsy (4 subjects), head injury aftereffects (1 subject), mental retardation (2 subjects) and acute encephalopathy aftereffects (4 subjects). The examiners were 8 physical therapists and 7 occupational therapists, 15 examiners in total, who worked at the hospital and knew the subject children well (Table 2). The physical therapists had 2 to 14 years of work experience (average: 3.7 years), and the occupational therapists had 2 to 24 years of work experience (average: 8.3 years). The examiners individually assessed the subjects using the ABC-J. The ABC is a questionnaire developed by Aman et al. for assessing problematic behaviors of mentally-handicapped persons. The ABC has been used by many studies, including studies of syndrome phenotypes and pharmacotherapy effects. The examiners were classified into two groups: physical therapist (PT) and occupational therapist (OT). Wilcoxon's signed rank sum test was conducted on the two groups' ABC-J score for *irritability*, *lethargy*, *stereotypy*, *hyperactivity* and *inappropriate speech*. Statistical analyses were conducted using R 2.8.1 software. The ABC-J questionnaire consists of 58 items in total: 15 *irritability*, 16 *lethargy*, 7 *stereotypy*, 16 *hyperactivity*, and 4 *inappropriate speech* items. The examiners who knew the subjects well answered each questionnaire item by giving a score of 0 to 3: 0 indicates not problematic, 1 indicates slightly problematic, 2 indicates problematic, and 3 indicates seriously problematic. The subjects' problematic

Table 1. Characteristics of subjects

Case	Diagnosis	Age	Sex	GMFCS (I-V)	Language (4 stage)	RyouikuTechou (3 stage)
1	Cerebral Palsy	16Y7M	male	III	Babbling	A
2	Cerebral Palsy	11Y1M	male	I	Two word sentences	
3	Cerebral Palsy, Mental Retardation	15Y2M	male	V	Two word sentences	
4	Cerebral Palsy, Mental Retardation	13Y10M	female	V	Babbling	
5	acute encephalopathy aftereffects	18Y1M	male	V	No verbal	
6	acute encephalopathy aftereffects	5Y6M	female	III	Two word sentences	
7	acute encephalopathy aftereffects	9Y0M	female	V	No verbal	A
8	Mental Retardation	6Y4M	male	III	Two word sentences	
9	head injury aftereffects	14Y8M	male	III	Two word sentences	
10	Mental Retardation	6Y3M	female	III	Two word sentences	
11	acute encephalopathy aftereffects	6Y7M	male	V	Babbling	

YM: represent year and month

Table 2. Characteristics of raters

PT	Sex	Years work experience	OT	Sex	Years work experience
A	female	7	a	female	10
B	male	2	b	female	2
C	male	2	c	female	11
D	male	2	d	female	2
E	male	2	e	female	2
F	female	2	f	female	24
G	female	14	g	female	7
H	female	2			

behaviors were assessed by recording the points on the score sheet.

We provided information about this study, in writing, to the parents of all subject children in advance of the research, and they all agreed that their children could be included in the research. This study was approved by the Kobe International University Ethical Committee (Approval No. G2011-015).

RESULTS

The significance of differences (p) between the PT and OT groups and their effect sizes were as follows: *Irritability*: p = 0.4372, ES = 0.2500; *Lethargy*: p = 0.0091, ES = 0.8037; *Stereotypy*: p = 0.3428, ES = 0.3161; *Hyperactivity*: p = 0.1953, ES = 0.4021; *Inappropriate Speech*: p = 0.3991, ES = 0.2845. The results for *lethargy* were 5 (0.5–5) as scored by the PT group and 10 (2.5–12) scored by the OT group (median (25%–75%).

DISCUSSION

No significant differences between the two groups were observed for most problematic behavior types, although the effect sizes were small. In the ABC-J, questionnaire items are arranged randomly so that examiners cannot see which problematic behavior type a questionnaire item relates to. Despite this, the two groups assessed questionnaire items related to *lethargy* differently (p = 0.0091, ES = 0.8037). Physical therapists assessed the *lethargy* of the subject children as more problematic (average score: 8.1 ± 7.8) than occupational therapists did (average score: 3.8 ± 4.8). We previously studied the reliability of the ABC-J at pediatric facilities with operational and physical therapists as examiners[14]. In that study, the scores of some problematic behavior types were consistent and reliable between examiners, but the reliability of the *lethargy* scores was particularly low. The occupational therapists' average score was 0.3 (±0.5) whereas the physical therapists' average score was 3.2 (±8.9), showing a similar tendency to the results of the present research. Occupational therapists tend to observe children taking static postures, including sitting, whereas physical therapists tend to observe children when they are more active. This observational difference might explain why physical and occupational therapists assess *lethargy* as a problematic behavior differently . In addition, we also thought the length of work experience of OT group might have influenced the result. Our results suggest that some bias may occur depending on examiner occupation, although the ABC-J allows anyone to be an examiner as long as he/she knows the subject child well. Our results also suggest that we must remember that the assessment of *lethargy* as a problematic behavior varies significantly depending on

the therapist type. Although physical therapists and occupational therapists often treat the same children, we found no research literature on such differences between physical and occupational therapists in assessing problematic behaviors of child patients. This study is meaningful since it points out a problem in cooperative approaches, in which different types of therapists work together to treat children. This study is also a new and significant physical therapy study.

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